

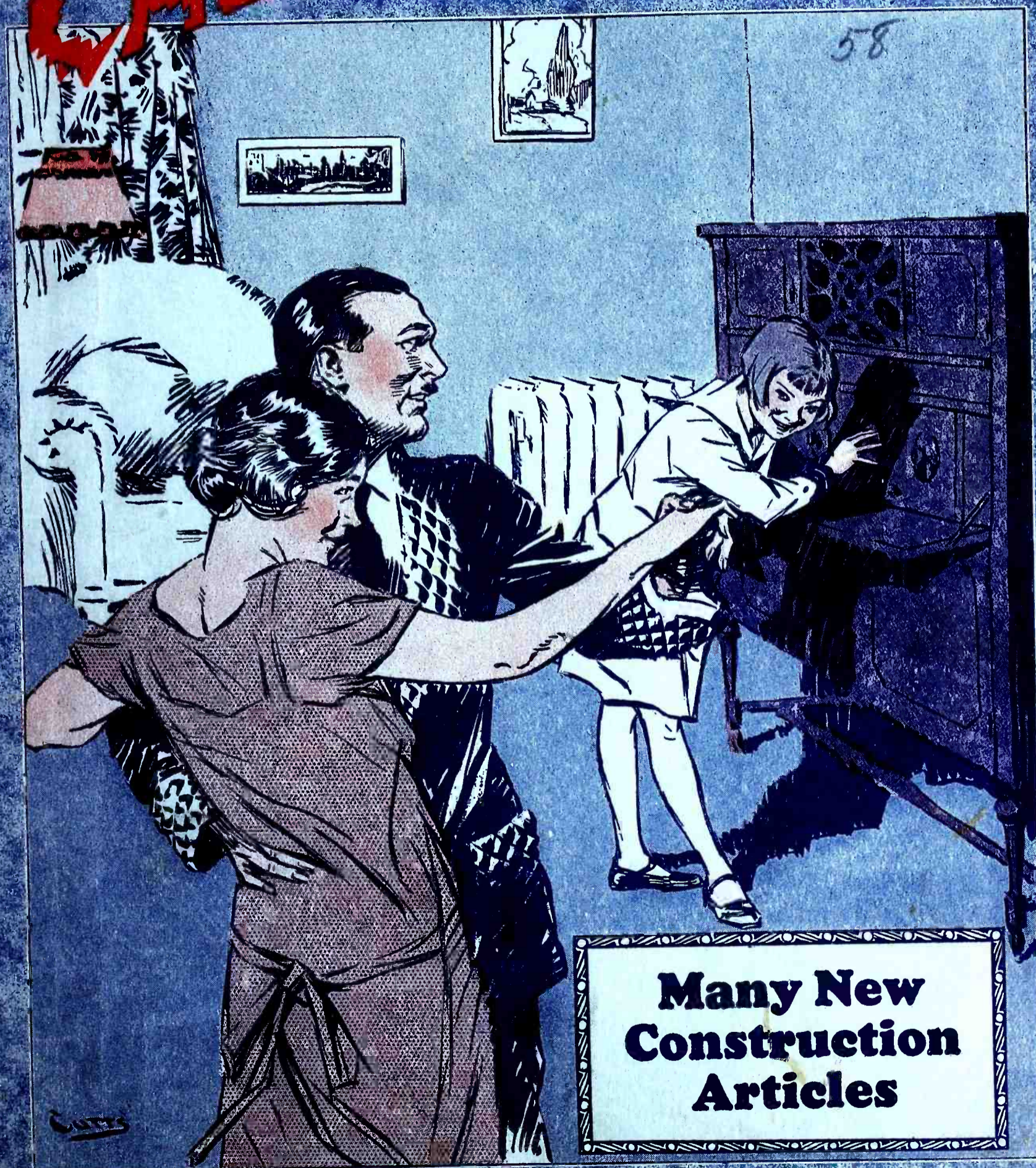
Citizen's

RADIO CALL BOOK

50¢

REG. U.S. PAT. OFFICE
A
COMPLETE
RADIO CYCLOPEDIA

FOREIGN
65 CENTS



**Many New
Construction
Articles**

* "Used the World Over"



In the
ORANGE and
BLUE CARTON

Also for your radio sets
C-12, C-12A, C-12B, C-12C, C-12D, C-12E, C-12F, C-12G, C-12H, C-12I, C-12J, C-12K, C-12L, C-12M, C-12N, C-12O, C-12P, C-12Q, C-12R, C-12S, C-12T, C-12U, C-12V, C-12W, C-12X, C-12Y, C-12Z, C-12AA, C-12AB, C-12AC, C-12AD, C-12AE, C-12AF, C-12AG, C-12AH, C-12AI, C-12AJ, C-12AK, C-12AL, C-12AM, C-12AN, C-12AO, C-12AP, C-12AQ, C-12AR, C-12AS, C-12AT, C-12AU, C-12AV, C-12AW, C-12AX, C-12AY, C-12AZ, C-12BA, C-12BB, C-12BC, C-12BD, C-12BE, C-12BF, C-12BG, C-12BH, C-12BI, C-12BJ, C-12BK, C-12BL, C-12BM, C-12BN, C-12BO, C-12BP, C-12BQ, C-12BR, C-12BS, C-12BT, C-12BU, C-12BV, C-12BW, C-12BX, C-12BY, C-12BZ, C-12CA, C-12CB, C-12CC, C-12CD, C-12CE, C-12CF, C-12CG, C-12CH, C-12CI, C-12CJ, C-12CK, C-12CL, C-12CM, C-12CN, C-12CO, C-12CP, C-12CQ, C-12CR, C-12CS, C-12CT, C-12CU, C-12CV, C-12CW, C-12CX, C-12CY, C-12CZ, C-12DA, C-12DB, C-12DC, C-12DD, C-12DE, C-12DF, C-12DG, C-12DH, C-12DI, C-12DJ, C-12DK, C-12DL, C-12DM, C-12DN, C-12DO, C-12DP, C-12DQ, C-12DR, C-12DS, C-12DT, C-12DU, C-12DV, C-12DW, C-12DX, C-12DY, C-12DZ, C-12EA, C-12EB, C-12EC, C-12ED, C-12EE, C-12EF, C-12EG, C-12EH, C-12EI, C-12EJ, C-12EK, C-12EL, C-12EM, C-12EN, C-12EO, C-12EP, C-12EQ, C-12ER, C-12ES, C-12ET, C-12EU, C-12EV, C-12EW, C-12EX, C-12EY, C-12EZ, C-12FA, C-12FB, C-12FC, C-12FD, C-12FE, C-12FF, C-12FG, C-12FH, C-12FI, C-12FJ, C-12FK, C-12FL, C-12FM, C-12FN, C-12FO, C-12FP, C-12FQ, C-12FR, C-12FS, C-12FT, C-12FU, C-12FV, C-12FW, C-12FX, C-12FY, C-12FZ, C-12GA, C-12GB, C-12GC, C-12GD, C-12GE, C-12GF, C-12GG, C-12GH, C-12GI, C-12GJ, C-12GK, C-12GL, C-12GM, C-12GN, C-12GO, C-12GP, C-12GQ, C-12GR, C-12GS, C-12GT, C-12GU, C-12GV, C-12GW, C-12GX, C-12GY, C-12GZ, C-12HA, C-12HB, C-12HC, C-12HD, C-12HE, C-12HF, C-12HG, C-12HH, C-12HI, C-12HJ, C-12HK, C-12HL, C-12HM, C-12HN, C-12HO, C-12HP, C-12HQ, C-12HR, C-12HS, C-12HT, C-12HU, C-12HV, C-12HW, C-12HX, C-12HY, C-12HZ, C-12IA, C-12IB, C-12IC, C-12ID, C-12IE, C-12IF, C-12IG, C-12IH, C-12II, C-12IJ, C-12IK, C-12IL, C-12IM, C-12IN, C-12IO, C-12IP, C-12IQ, C-12IR, C-12IS, C-12IT, C-12IU, C-12IV, C-12IW, C-12IX, C-12IY, C-12IZ, C-12JA, C-12JB, C-12JC, C-12JD, C-12JE, C-12JF, C-12JG, C-12JH, C-12JI, C-12JJ, C-12JK, C-12JL, C-12JM, C-12JN, C-12JO, C-12JP, C-12JQ, C-12JR, C-12JS, C-12JT, C-12JU, C-12JV, C-12JW, C-12JX, C-12JY, C-12JZ, C-12KA, C-12KB, C-12KC, C-12KD, C-12KE, C-12KF, C-12KG, C-12KH, C-12KI, C-12KJ, C-12KK, C-12KL, C-12KM, C-12KN, C-12KO, C-12KP, C-12KQ, C-12KR, C-12KS, C-12KT, C-12KU, C-12KV, C-12KW, C-12KX, C-12KY, C-12KZ, C-12LA, C-12LB, C-12LC, C-12LD, C-12LE, C-12LF, C-12LG, C-12LH, C-12LI, C-12LJ, C-12LK, C-12LL, C-12LM, C-12LN, C-12LO, C-12LP, C-12LQ, C-12LR, C-12LS, C-12LT, C-12LU, C-12LV, C-12LW, C-12LX, C-12LY, C-12LZ, C-12MA, C-12MB, C-12MC, C-12MD, C-12ME, C-12MF, C-12MG, C-12MH, C-12MI, C-12MJ, C-12MK, C-12ML, C-12MM, C-12MN, C-12MO, C-12MP, C-12MQ, C-12MR, C-12MS, C-12MT, C-12MU, C-12MV, C-12MW, C-12MX, C-12MY, C-12MZ, C-12NA, C-12NB, C-12NC, C-12ND, C-12NE, C-12NF, C-12NG, C-12NH, C-12NI, C-12NJ, C-12NK, C-12NL, C-12NM, C-12NN, C-12NO, C-12NP, C-12NQ, C-12NR, C-12NS, C-12NT, C-12NU, C-12NV, C-12NW, C-12NX, C-12NY, C-12NZ, C-12OA, C-12OB, C-12OC, C-12OD, C-12OE, C-12OF, C-12OG, C-12OH, C-12OI, C-12OJ, C-12OK, C-12OL, C-12OM, C-12ON, C-12OO, C-12OP, C-12OQ, C-12OR, C-12OS, C-12OT, C-12OU, C-12OV, C-12OW, C-12OX, C-12OY, C-12OZ, C-12PA, C-12PB, C-12PC, C-12PD, C-12PE, C-12PF, C-12PG, C-12PH, C-12PI, C-12PJ, C-12PK, C-12PL, C-12PM, C-12PN, C-12PO, C-12PP, C-12PQ, C-12PR, C-12PS, C-12PT, C-12PU, C-12PV, C-12PW, C-12PX, C-12PY, C-12PZ, C-12QA, C-12QB, C-12QC, C-12QD, C-12QE, C-12QF, C-12QG, C-12QH, C-12QI, C-12QJ, C-12QK, C-12QL, C-12QM, C-12QN, C-12QO, C-12QP, C-12QQ, C-12QR, C-12QS, C-12QT, C-12QU, C-12QV, C-12QW, C-12QX, C-12QY, C-12QZ, C-12RA, C-12RB, C-12RC, C-12RD, C-12RE, C-12RF, C-12RG, C-12RH, C-12RI, C-12RJ, C-12RK, C-12RL, C-12RM, C-12RN, C-12RO, C-12RP, C-12RQ, C-12RR, C-12RS, C-12RT, C-12RU, C-12RV, C-12RW, C-12RX, C-12RY, C-12RZ, C-12SA, C-12SB, C-12SC, C-12SD, C-12SE, C-12SF, C-12SG, C-12SH, 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C-12XD, C-12XE, C-12XF, C-12XG, C-12XH, C-12XI, C-12XJ, C-12XK, C-12XL, C-12XM, C-12XN, C-12XO, C-12XP, C-12XQ, C-12XR, C-12XS, C-12XT, C-12XU, C-12XV, C-12XW, C-12XX, C-12XY, C-12XZ, C-12YA, C-12YB, C-12YC, C-12YD, C-12YE, C-12YF, C-12YG, C-12YH, C-12YI, C-12YJ, C-12YK, C-12YL, C-12YM, C-12YN, C-12YO, C-12YP, C-12YQ, C-12YR, C-12YS, C-12YT, C-12YU, C-12YV, C-12YW, C-12YX, C-12YY, C-12YZ, C-12ZA, C-12ZB, C-12ZC, C-12ZD, C-12ZE, C-12ZF, C-12ZG, C-12ZH, C-12ZI, C-12ZJ, C-12ZK, C-12ZL, C-12ZM, C-12ZN, C-12ZO, C-12ZP, C-12ZQ, C-12ZR, C-12ZS, C-12ZT, C-12ZU, C-12ZV, C-12ZW, C-12ZX, C-12ZY, C-12ZZ

Your Radio Set Can Be No Better Than Its Tubes

YOU may build an aerial that will overtop the Eiffel Tower, you may construct a set of materials that are worth their weight in gold, but if you put a single inferior tube in any socket of your receiver—you will never know what it means to hear clear, pure, resonant tones.

Cunningham RADIO TUBES

Since 1915—Standard for all sets

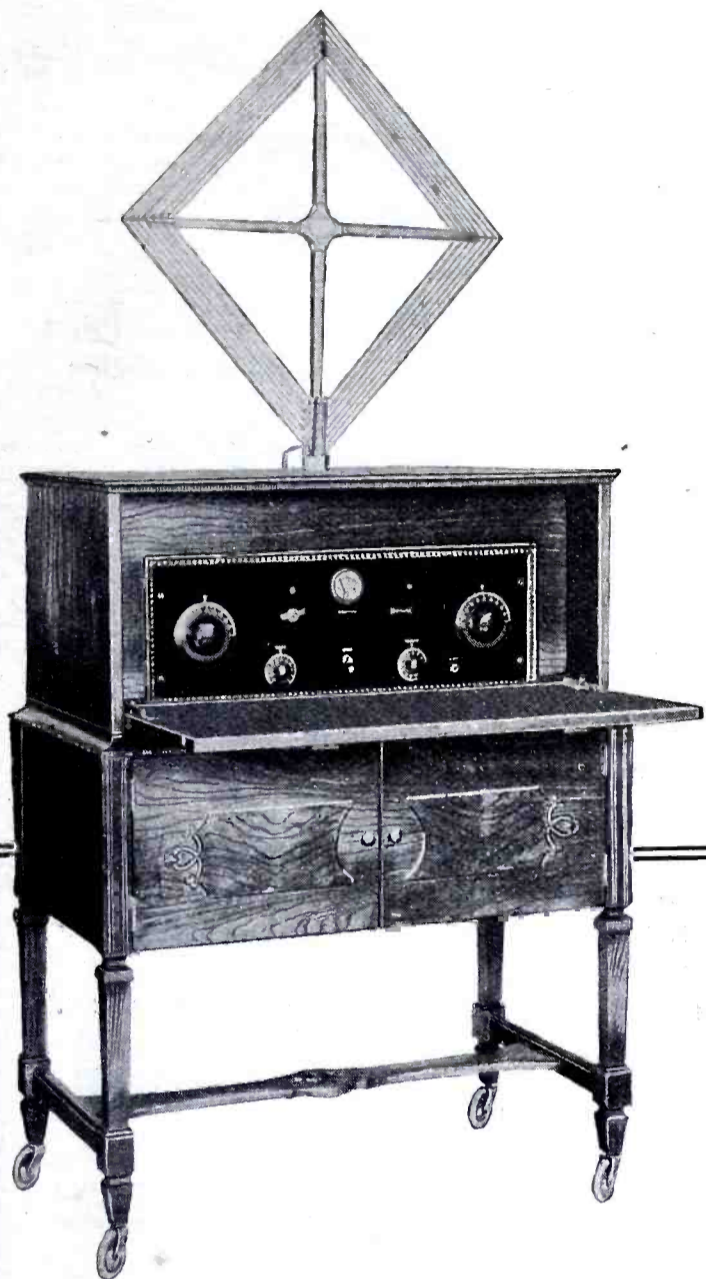
—dedicated to the task of intensifying the world's radio enjoyment
—will bring a magic symphony of radio delight into your home.

E. J. Cunningham Inc.

NEW YORK

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And Now—

a new Howard Neutrodyne Radio Receiver that will Operate on Loop Antenna

Licensed by
 Independent Radio Manufacturers, Inc.
NEUTRODYNE
 Pat. March 27, 1923 and April 1, 1924
 Reg. U.S. Pat. Off. Reg. U.S. Pat. Off.
 Hazeltine Pat. Nos. 1,450,080 and 1,489,228
 Other Patents Pending

sizes of Howard Neutrodyne Radio Receivers as follows:—

- Model DB, Dry Cell Battery Receiver, 6 tube, Price.....\$150.00
 - Model No. 150, Storage Battery Receiver, 5 tube, Price.. .\$.150.00
 - Model No. 200, Storage Battery Receiver, 6 tube, Price.....\$200.00
 - Model No. 250, Storage Battery Receiver, 5 tube, Price.....\$250.00
 - Model No. 325, Storage Battery Receiver, 6 tube, Price.....\$325.00
 - Model No. 425, Storage Battery Receiver, 6 tube, Price.....\$425.00
- All Prices quoted include no accessories.

If you want the ultimate in radio reception, see and hear the Howard before you buy. Further details of their superb workmanship and performance will be gladly furnished on request.

TRUE to tradition this latest Howard achievement measures up to the well-known Howard ideal — "the production of the finest possible."

Seven tubes are employed in the operation of this receiver and it is entirely enclosed with metal which acts as a shield making it extremely selective.

See and hear this new Howard at your dealer's or write us for details.

There are many other styles and

HOWARD RADIO COMPANY, 451-469 East Ohio Street, Chicago, Illinois

Howard radio



Tell 'Em You Saw It in the Citizens Radio Call Book

475
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FROST-RADIO

Ask Your Neighbor

Pacific Coast Prices
Slightly Higher

Pacific Coast Prices
Slightly Higher

FROST-FONES



FROST-FONES

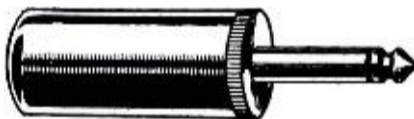
\$3.00

\$3.50

TO EVERY OWNER of a radio receiving set we recommend a test of **FROST-FONES** at your dealer's. This test will convince you that **FROST-FONES** are better from the standpoint of tone quality, finer from the angle of design and appearance, and far more comfortable than any other head fones on the market. This is a test your dealer will be glad to arrange for you.

The new light-weight aluminum shell **FROST-FONES** are marvels of compactness and their weight is about half that of old-fashioned head-tiring fones. No. 174 **FROST-FONES**, 2,000 ohms, cost but \$3.00; No. 175, 3,000 ohms, \$3.50. These have shells of polished aluminum and special compact bi-polar magnets which are adjusted to positively eliminate shattering of tone. Order a pair of **FROST-FONES** from your dealer today.

FROST-RADIO ACCESSORIES



FROST-RADIO
No. 140—2-Fone Plug 60c



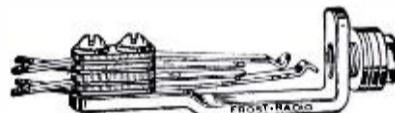
FROST-RADIO
No. 141—Automatic 2-Fone Plug 75c



FROST-RADIO
No. 142—Single Fone Automatic Plug . . . 40c
No. 143—Double Fone Automatic Plug . . 50c



FROST-RADIO
Pan-Tab Jack Switches 65c to 95c



FROST-RADIO
Standard Jacks 45c to 70c



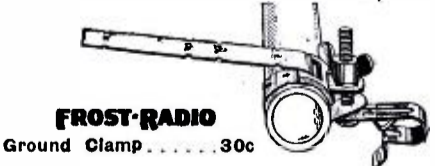
FROST-RADIO
Pan-Tab Jacks 65c to 90c



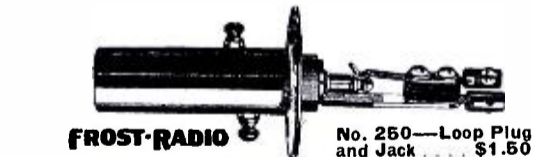
FROST-RADIO
No. 712—Musselman Selective Antenna, 75 feet \$3.00



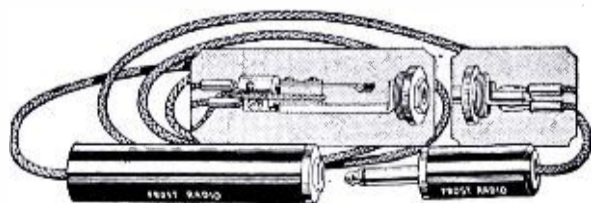
FROST-RADIO
No. 501—Jac-Box, complete with cord and plug \$2.50



FROST-RADIO
Ground Clamp 30c



FROST-RADIO
No. 250—Loop Plug and Jack \$1.50



FROST-RADIO
No. 332—30-foot Extension Cord, complete with plug and jack housing, twin conductor cord \$2.50
No. 336—Mounted Jack only, 75c

HERBERT H. FROST, Inc.

314-324 WEST SUPERIOR STREET, CHICAGO, ILLINOIS
NEW YORK CITY CLEVELAND KANSAS CITY LOS ANGELES

Tell 'Em You Saw It in the Citizens Radio Call Book

FROST-RADIO

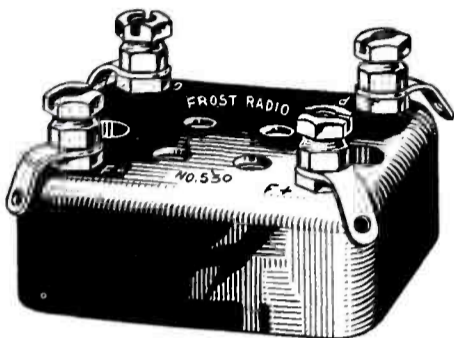
Ask Your Neighbor

Pacific Coast Prices Slightly Higher

Pacific Coast Prices Slightly Higher

Fits all new type tubes

Two new items for your set



FROST-RADIO

No. 530 **FROST-RADIO** SOCKET . . . 40c

No. 530
FROST-RADIO
SOCKET . . . 40c

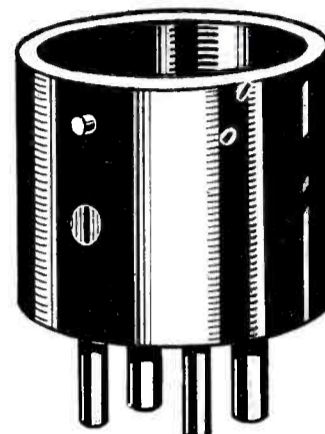
This new socket takes ALL tubes with the new type bases. Has perfect spring construction which grips each tube prong full length with self-cleaning, sliding contact. We believe this socket to have the most satisfactory contacts of any socket made. All terminals plainly marked. It is equipped with soldering lugs. Genuine black Bakelite in high lustre finish. Order from your dealer today.

No. 540
FROST-RADIO
ADAPTER . . . 25c

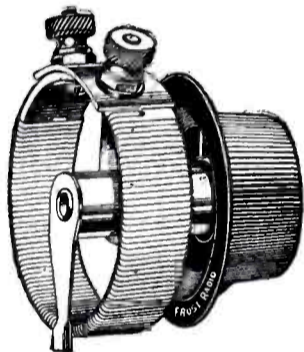
Convert your present standard sockets to UX199-CX299, or UX120-CX220 with this Adapter

With this handy and inexpensive adapter you can instantly fit the new CX299 or UX199, and the CX220 or the UX120, into your present standard base sockets.

No need to rebuild your set to take the new tubes. Genuine black Bakelite—high lustre finish. Ask your dealer to supply you.



FROST-RADIO



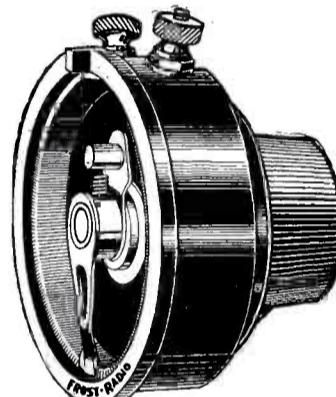
FROST-RADIO

No. 600—Metal Frame Plain Rheostat, 6 ohm . . . 60c
No. 602—Metal Frame Plain Rheostat, 35 ohms . . . 60c
No. 606—Metal Frame Plain Rheostat, 25 ohms . . . 60c
No. 614—Metal Frame Plain Rheostat, 10 ohms . . . 60c
No. 615—Metal Frame Plain Rheostat, 15 ohms . . . 60c



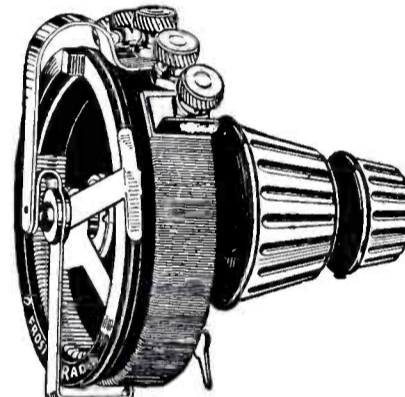
FROST-RADIO

No. 601—Metal Frame Vernier Rheostat, 6 ohms . . . 80c
No. 604—Metal Frame Vernier Rheostat, 35 ohms . . . 80c
No. 613—Metal Frame Vernier Rheostat, 25 ohms . . . 80c



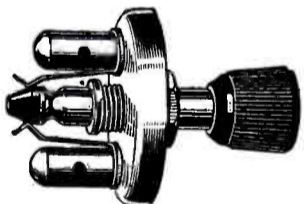
FROST-RADIO

No. 650—BAKELITE Plain Rheostat, 6 ohms . . . \$1.10
No. 652—BAKELITE Plain Rheostat, 35 ohms . . . \$1.10
No. 656—BAKELITE Plain Rheostat, 25 ohms . . . \$1.10
No. 651—BAKELITE Vernier Rheostat, 6 ohms . . . \$1.25
No. 653—BAKELITE Vernier Rheostat, 35 ohms . . . \$1.25
No. 657—BAKELITE Vernier Rheostat, 25 ohms . . . \$1.25
No. 654—BAKELITE Potentiometer, 0-400 ohms . . . \$1.25
No. 655—BAKELITE Potentiometer, 0-200 ohms . . . \$1.25
No. 658—BAKELITE Plain Rheostat, 10 ohms . . . \$1.10



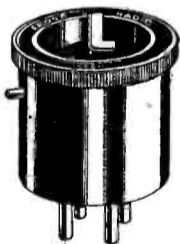
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No. 607—BAKELITE Tube Control Unit, combining 6 ohm Vernier Rheostat and 400 ohm Potentiometer . . . \$1.75
No. 609—Same as No. 607, but with 25 ohm Rheostat and 400 ohm Potentiometer . . . \$1.75
No. 610—Same as No. 607, but with 35 ohm Rheostat and 400 ohm Potentiometer . . . \$1.75



FROST-RADIO

No. 608—Push-Pull Battery Switch, single hole mounting, complete . . . 30c



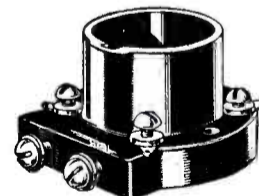
FROST-RADIO

No. 611—BAKELITE Adapter for UV-199 C-299 Tubes . . . 60c



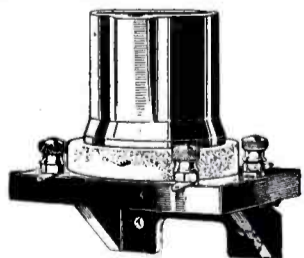
FROST-RADIO

No. 619—BAKELITE Shock-Absorber Socket, 3-gang standard base type . . . \$3.25



FROST-RADIO

No. 612—BAKELITE Socket for UV-199 C-299 Tubes, panel or table mounting . . . 65c



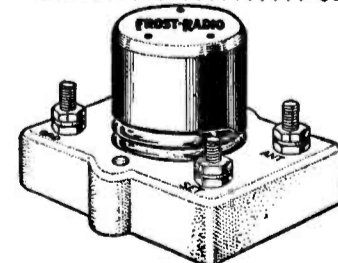
FROST-RADIO

No. 618—BAKELITE Shock-Absorber Socket, standard base type, for panel or table mounting . . . \$1.25



FROST-RADIO

No. 622—BAKELITE Toggle Switch, black . . . 50c
No. 623—BAKELITE Toggle Switch, maroon . . . 50c



FROST-RADIO

No. 700—Protector, complete . . . \$1.50



FROST-RADIO

No. 253—Automatic Cord Tip Jack . . . 20c

HERBERT H. FROST, Inc.

314-324 WEST SUPERIOR STREET, CHICAGO, ILLINOIS
NEW YORK CITY CLEVELAND KANSAS CITY LOS ANGELES

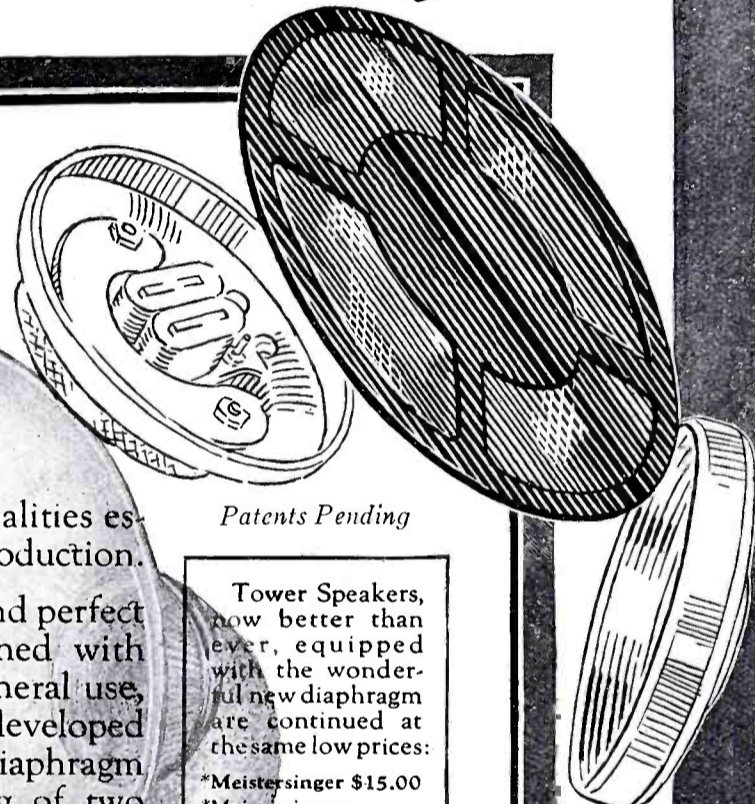
Tower Achieves another Sensation



Develops NEW Diaphragm

IT has long been recognized that the Tower Reproducing Unit gives the most perfect tone quality that science has developed. This already dependable unit is now endowed with new super-performing and super-efficiency qualities establishing a new peak in radio reproduction.

Realizing that true tone color and perfect resonance could never be obtained with the type of diaphragm now in general use, the Tower Mfg. Corporation developed this distinctively new type — a diaphragm of varying thicknesses, consisting of two different materials, so arranged that the deep bass notes of the organ or drum as well as the high notes of the clarinet or violin are reproduced with a clarity and roundness of tone that is *wholly new*. Thus, this new diaphragm covers the entire musical register as never before accomplished in the art of radio — an achievement long sought but not until now fully realized.



Patents Pending

Tower Speakers, now better than ever, equipped with the wonderful new diaphragm are continued at the same low prices:

- *Meistersinger \$15.00
- *Meistersinger (Cabinet Type) 15.00
- *Scientific 8.50
- *Little Spitfire 4.95
- *Midget Speaker 3.95
- *Phonograph Attachment 3.95
- *Scientific Headset 2.95

*REG. U. S. PAT. OFF.

On sale by Reliable Dealers from Coast to Coast



DR. HERMAN FISHER

Designer of the new Tower Diaphragm, first won world fame by discovering the tone secrets of the master violin makers. In tone tests in Paris, Fisher violins outscored genuine Stradivarius and Guaragnini instruments. Dr. Fisher, retained by the Tower Mfg. Co., now applies to radio his wonderful new discoveries, exclusively employed in the new Tower Speakers.

TOWER MFG. CORPORATION
 BOSTON MASS.

CITIZENS RADIO CALLBOOK

A
COMPLETE
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CYCLOPEDIA

Vol. 7

SPRING, 1926

No. 1

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CITIZENS RADIO SERVICE BUREAU

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Telephones—Wabash 8057-8067

CHAS. O. STIMPSON, President
J. R. MAC FARLAND, Vice-President
D. H. BELL, Secretary and Treasurer

E. M. GIBSON, Advertising Manager
M. H. HARRIS, Circulation Manager
ARTHUR ELKINS, Technical Editor
F. C. BURLINGTON, Assistant Technical Editor

Philadelphia: C. S. PALMER
731 Victory Bldg.
Telephone, Walnut 6568

New York City
1674 Broadway, Room 606
Telephone, Circle 4887

Baltimore: H. BOYD
1202 Maryland Ave.
Telephone, Vernon 0771

Chicago, Ill.: A. B. MILLS
508 So. Dearborn St.
Telephone, Wabash 8057-8067

Boston, Mass.: E. H. JAUDON
99 Chauncey Street
Telephone, Beach 5714

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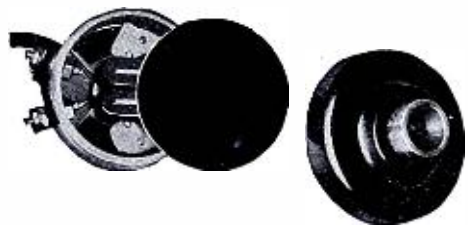
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Brings the artists into your very room, so realistic is its reproduction. Piano music, the most difficult to reproduce, sounds so natural that you are carried away by its beauty.



Unit with Diaphragm Removed

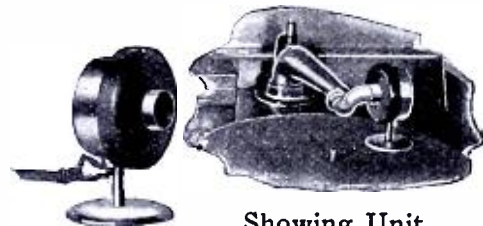
Vocal selections retain all of the colorings of the artist.

Orchestra music is a treat, every instrument can be heard, clear and full.

Magnetic diaphragm control—used exclusively in the Kellogg unit—is the new principle that performs these wonders in radio reception.

No excess vibrations, no chattering, every tone true.

The Kellogg Unit is available for use with a phonograph, and will reproduce voice or music with a full, sweet, clear tone.



No. 73A Unit with Stand

Showing Unit Attached to Phonograph

A popular instrument—the Kellogg Symphony Reproducer—is a revelation in Tone—Volume—Clarity. At your dealers—hear one today.

No. 554 Symphony Reproducer.....\$25.00 70A Reproducer Unit.....\$6.00
 73A Phonograph Unit and Stand.....\$6.75

Write for our bulletin covering a complete line of Kellogg radio equipment

With Every Kellogg Product, Use—Is the Test

Kellogg Switchboard & Supply Company

1066 West Adams Street, Chicago, Ill.

Columbus, Ohio

Kansas City, Mo.

San Francisco, Calif.

Portland, Ore.

Tell 'Em You Saw It in the Citizens Radio Call Book

Telephone Broadcasting Stations

For the United States

KDKA—Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa. 309.1 meters, 970 kilocycles, 1000 watts, class B. Mon, Wed, Fri & Sat, 6:15-9:55 pm. Tues & Thurs, 6:15 pm-12:30 am. Sun, 4-8:45 pm. Eastern standard time.
 1st Dial 2nd Dial 3rd Dial

KDLR—Radio Elec. Co., Devil's Lake, N. Dak. 231 meters, 1300 kilocycles, 5 watts, class A. Daily ex Sun, 12:10 pm, weather; 6:15 pm, markets. Mon, 9:30 pm, studio program. Sun, 11 am, church; 4:30 pm, studio program. Central standard time. Slogan: "The Community Station. The Voice of the Lake Region."
 1st Dial 2nd Dial 3rd Dial

KDPM—Westinghouse Elec. & Mfg. Co., 1216 W. 58th St., Cleveland, Ohio. 270 meters, 1870 kilocycles, 750 watts, class A. Schedules various and experimental. Eastern standard time.
 1st Dial 2nd Dial 3rd Dial

KDPT—Southern Elec. Co., San Diego, Calif. 244 meters, 1230 kilocycles, 50 watts, class A. Pacific time.
 1st Dial 2nd Dial 3rd Dial

KDYL—Newhouse Hotel, Salt Lake City, Utah. 245.8 meters, 1221 kilocycles, 50 watts, class A. Daily ex Sun, 3-4 pm; 6:30-8 pm, news, music, entertainment. Sun, 11-1 am. Mountain time. Slogan: "Out on the Great Divide."
 1st Dial 2nd Dial 3rd Dial

KOZB—Frank E. Siefert, 1402 20th St., Bakersfield, Calif. 209.7 meters, 1250 kilocycles, 100 watts, class A. Daily ex Sun, 8-9 pm, reports & music. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFAB—Nebraska Buick Auto Co., 13th & Ives Sts., Lincoln, Neb. 340.7 meters, 880 kilocycles, 1000 watts, class B. Sun, 4-5 pm. Daily ex Sun & Thurs, 9:30-11 am, 1:15-6:30 pm, 8:10-10:30 pm. Thursday, 9:30-9:55 am, 3-3:30 pm. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFAD—McArthur Bros. Co., 134 So. Central St., Phoenix, Ariz. 273 meters, 1100 kilocycles, 100 watts, class A. Daily ex Sun, Mon, 6-7 pm; 8-9 pm. Daily ex Sun, Wed, 6-7 pm, 8-11 pm, concerts, news, stock. Mountain standard time. Slogan: "The Voice of the Atwater Kent Radio."
 1st Dial 2nd Dial 3rd Dial

KFAF—Alfred E. Fowler, 31st & San Antonio Sts., San Jose, Calif. 217.3 meters, 1380 kilocycles, 50 watts, class A. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFAJ—University of Colorado, Boulder, Colo. 261 meters, 1150 kilocycles, 100 watts, class A. Fri, 11 pm, studio program. Sun, 3-5 pm, organ selections. Mountain time.
 1st Dial 2nd Dial 3rd Dial

KFAN—University of Idaho, Moscow, Idaho. 231 meters, 1300 kilocycles, 50 watts, class A. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFAU—High School, Boise, Idaho. 280.2 meters, 1071 kilocycles, 750 watts, class B. Daily ex Sun & Sat, 4-4:45 pm, market, weather, educational. Tues, Thurs, 8-10:30 pm, musical entertainment. Sun, 7:30-9 pm, church services. Mountain time. Slogan: "Idaho Station KFAU."
 1st Dial 2nd Dial 3rd Dial

KFAW—The Radio Den, 115 N. Broadway, Santa Ana, Calif. 280 meters, 1070 kilocycles, 10 watts, class A. Pacific time.
 1st Dial 2nd Dial 3rd Dial

KFBB—F. A. Buttrey Co., Havre, Mont. 275 meters, 1090 kilocycles, 50 watts, class A. Daily ex Sun, 12:45 am-1:30 pm. Mountain standard time.
 1st Dial 2nd Dial 3rd Dial

KFBC—Normal Heights Station, San Diego, Calif. 224 meters, 1080 kilocycles, 100 watts, class A. Tues, Thurs, 8-9 pm, educational talks & lectures. Sun, 8:15 am, sermon. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFBK—Kimball Upson Co., 610 Calif. St., Sacramento, Calif. 248 meters, 1210 kilocycles, 100 watts, class A. Mon, Thurs, Sat, 7:30-10 pm. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFBL—Leese Bros., 2814 Rucker Ave., Everett, Wash. 224 meters, 1340 kilocycles, 100 watts, class A. Daily, 7:30-8:30 pm. Pacific time.
 1st Dial 2nd Dial 3rd Dial

KFBS—School District No. 1, Trinidad, Colo. 238 meters, 1220 kilocycles, 15 watts, class A.
 1st Dial 2nd Dial 3rd Dial

KFBU—St. Matthew Cathedral, Laramie, Wyo. 270 meters, 1110 kilocycles, 500 watts, class A. Mon, Wed, Fri, 9-11 pm. Sun, 2:30-3:30 pm, 7:30-8:30 pm. Mountain standard time.
 1st Dial 2nd Dial 3rd Dial

KFCB—Nielsen Radio Supply Co., 311 N. Central Ave., Phoenix, Ariz. 238 meters, 1260 kilocycles, 125 watts, class A. Mon, Wed, 8-9 pm, prize contest, musical. Sat, 7-8 pm, educational program. Sun, 9:30-11 am, Bible class program. Mountain standard time. Slogan: "The Voice of the Great Southwest."
 1st Dial 2nd Dial 3rd Dial

KFCG—First Congregational Church, Holter & Benton Sts., Helena, Mont. 248 meters, 1210 kilocycles, 10 watts, class A. Mountain time.
 1st Dial 2nd Dial 3rd Dial

KFCF—Frank A. Moore, 707 Baker Bldg., Walla Walla, Wash. 256 meters, 1170 kilocycles, 100 watts, class A. Mon, 8-10 pm. Thurs, Fri, 8-12 midnight. Pacific time.
 1st Dial 2nd Dial 3rd Dial

KFDD—St. Michael's Cathedral, Boise, Idaho. 275 meters, 1090 kilocycles, 50 watts, class A. Sun, 11:15 am-12:30 pm, 7:30 pm-9:15 pm, church services. Mountain time.
 1st Dial 2nd Dial 3rd Dial

KFDH—University of Arizona, Tucson, Ariz. 258 meters, 1160 kilocycles, 50 watts, class A.
 1st Dial 2nd Dial 3rd Dial

KFDJ—Oregon Agricultural College, Corvallis, Ore. 280.2 meters, 1180 kilocycles, 500 watts, class B. Mon, 8-9:45 pm. Wed, 7:30-8:15 pm. Fri, 7:30-9 pm. Pacific standard time. Slogan: "Science for Service."
 1st Dial 2nd Dial 3rd Dial

KFDM—Magnolia Petroleum Co., Box 798, Beaumont, Texas. 315.6 meters, 950 kilocycles, 500 watts, class B. Tues, & Fri, 12:30 noon, band concert; 7 pm, children's program; 8 pm, band concert. Sun, 11 am & 7:30 pm, church services. Central standard time. Slogan: "Kall For Dependable Magnolene."
 1st Dial 2nd Dial 3rd Dial

KFDX—First Baptist Church, Shreveport, La. 250 meters, 1200 kilocycles, 100 watts, class A. Sun, 10:50 am; 7:45 pm. Wed, 9-10 pm. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFDY—South Dakota State College, Brookings, S. Dak. 273 meters, 1100 kilocycles, 50 watts, class A. Daily ex Sun, 12:15 noon, livestock markets & weather. Tues, 11 am, college assembly exercises. Thurs, 8-9 pm, special music & educational talks. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFDZ—Harry O. Iverson, 2510 Thomas Ave., South, Minneapolis, Minn. 231 meters, 1300 kilocycles, 10 watts, class A. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFEC—Meyer & Frank Co., Portland, Ore. 248 meters, 1210 kilocycles, 50 watts, class A. Daily ex Sun, 12 noon, weather, reports; 4-5 pm, music; 6:30 pm, weather, crop markets, reports. Sat, 11 am-12 m, children's hour. Pacific time.
 1st Dial 2nd Dial 3rd Dial

KFEL—KFEL Broadcasting Station, 1281 Grant St., Denver, Colo. 254 meters, 1180 kilocycles, 50 watts, class A. Daily ex Sun, 11-12 am; 2-3 pm; 4-5 pm; 5-6 pm; popular music. Tues, 9-10 pm, music; 8-12 pm, music. Mountain standard time.
 1st Dial 2nd Dial 3rd Dial

KFEQ—Scroggin & Co. Bank, Oak, Neb. 268 meters, 1120 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 2-3 pm, orchestra music. Tues, Thurs, 9-10:30 pm, musical. Sun, 4:30-6 pm, musical; 9-10:30 pm, orchestra. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFEY—Banker Hill & Sullivan Mining & Concentrating Co., Industrial Y. M. C. A. Station, Kellogg, Idaho. 233 meters, 1290 kilocycles, 10 watts, class A. Wed, 6:30-7:30. Sat, 6:30-7:30 & 9-10 pm. Sun, 7:30-8:30 pm, church. Pacific standard time. Slogan: "The Voice of the Coeur d'Alenes."
 1st Dial 2nd Dial 3rd Dial

KFFP—The First Baptist Church, Moberly, Mo. 242 meters, 1130 kilocycles, 50 watts, class A. Central standard time. Slogan: "The Gospel Messenger of the Air."
 1st Dial 2nd Dial 3rd Dial

KFFV—Graceland College, Lamoni, Iowa. 250 meters, 1200 kilocycles, 100 watts, class A.
 1st Dial 2nd Dial 3rd Dial

KFGQ—The Crary Hardware Co., Boone, Iowa. 226 meters, 1330 kilocycles, 10 watts, class A. Sun, 3-4 pm. Wed, 8-9. Slogan: "The Daniel Boone Station." Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFH—Hotel Lassen, Wichita, Kansas. 268 meters, 1120 kilocycles, 500 watts, class B. Sun, 9:15-10:15 pm. Daily ex Sun, 9-10 pm, musical program. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFHA—Western State College of Colorado, Gunnison, Colo. 252 meters, 1190 kilocycles, 50 watts, class A. Tues & Fri, 7:30-9:30 pm, musical program. Mountain standard time. Slogan: "Where the Sun Shines Every Day."
 1st Dial 2nd Dial 3rd Dial

KFHL—Penn College, Oskaloosa, Iowa. 240 meters, 1250 kilocycles, 10 watts, class A. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFI—Earle C. Anthony, Inc., Packard Motor Car Bldg., Los Angeles, Calif. 467 meters, 642 kilocycles, 3000 watts, class B. Mon, Wed, Fri, 10:45-11:05 am, 7-11 pm. Tues, Thurs, Sat, 7-11 pm. Sat, 11 pm-3 am. Sun, 10-10:45 am, 4-5 pm, 6:30-11 pm. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFIF—Benson Polytechnic Institute, Portland, Ore. 248 meters, 1210 kilocycles, 100 watts, class A. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFIO—North Central High School, Spokane, Wash. 265.3 meters, 1130 kilocycles, 100 watts, class A. Fri, 8-9:30 pm. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFIQ—First Methodist Church, 332 Miller Bldg., Yakima, Wash. 256 meters, 1170 kilocycles, 100 watts, class A. Wed, Sat, 7:30 pm, musical program. Sun, 11 am, 7:30 pm, church services. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFIU—Alaska Elec. Light & Power Co., Juneau, Alaska. 226 meters, 1330 kilocycles, 10 watts, class A. Mon, Wed & Fri, 6-7 pm, daily news items, steamer sailings, music, vocal & instrumental. Alaska time. (Note: 6 am Seattle time is 5 am Alaska time.) Slogan: "A Voice From the Far North."
 1st Dial 2nd Dial 3rd Dial

KFIZ—The Daily Commonwealth & The Wisconsin Radio Sales, Inc., Fond du Lac, Wis. 273 meters, 1100 kilocycles, 50 watts, class A. Daily 5 pm, markets, weather, news. Occasional programs of music. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFJB—Marshall Elec. Co., 1603 W. Main St., Marshalltown, Iowa. 248 meters, 1210 kilocycles, 10 watts, class A. Daily ex Sun, 10 am, market reports. Tues & Fri, 7:30-11 pm, musical programs. Sun, 10 am-12 pm, vespers, 3-6 pm. Central standard time. Slogan: "Marshalltown, the Heart of Iowa."
 1st Dial 2nd Dial 3rd Dial

KFJC—R. B. Fegan (Auspices of the Episcopal Church), 410 N. Jefferson St., Junction City, Kan. 218.8 meters, 1370 kilocycles, 10 watts, class A. Central standard time.
 1st Dial 2nd Dial 3rd Dial

KFJF—National Radio Mfg. Co., 406 N. Hudson St., Oklahoma City, Okla. 261 meters, 1150 kilocycles, 500 watts, class A. Daily ex Sun, 9:40 am-2:15 pm, markets; 6:30-7:30 pm, news, markets. Mon, Thurs, 9 pm, musical. Wed, 7:30 pm, concerts. Fri, Sat, 8:15 pm, musical programs. Sun, 10 am, Bible class; 11 am, church; 2:30 pm, concerts; 7:30 pm, church. Central standard time. Slogan: "Radio Headquarters."
 1st Dial 2nd Dial 3rd Dial

KFJI—Liberty Theater & E. E. Marsh, Astoria, Ore. 246 meters, 1220 kilocycles, 10 watts, class A. Wed, 9-10 pm, organ music. Sun, 12:30-1:30 pm. Sat, 10:30-11 pm. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

KFJM—University of North Dakota, Grand Forks, N. Dak. 278 meters, 1080 kilocycles, 100 watts, class A. Daily ex Sat & Sun, 5 pm, weather, market report. Thurs, 8:45 pm, talks, music. Central standard time. Slogan: "The Educational Center of the State."
 1st Dial 2nd Dial 3rd Dial

KFJR—Ashley Dixon & Son, c/o Ralph Schneeloch Co., 95 Fifth St., Portland, Ore. 263 meters, 1140 kilocycles, 50 watts, class A. Mon, Tues, Wed, Thurs, 7:30-8:45 pm. Tues, Thurs, 9-10:30 pm. Sat, 12:30-1 am; 1:30-3 pm, musical program. Pacific standard time.
 1st Dial 2nd Dial 3rd Dial

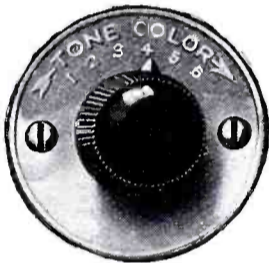
KFJX—Iowa State Teachers' College, Cedar Falls, Iowa. 258 meters, 1163 kilocycles, 50 watts, class A. Educational programs. Schedule irregular. Central standard time.
 1st Dial 2nd Dial 3rd Dial



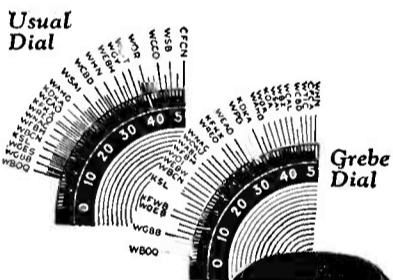
Grebe
Binocular Coils
Reg. U.S. Pat. Off.
and
Low-wave
Extension
Circuits



A B
The high-wave reception range of the Grebe dial (B)—from 550 down to 240 meters—equals the practical tuning range of the usual receiver. The low-wave range of the Grebe dial (A) provides additional reception down to 150 meters.



Grebe "Colortone"



Flexible Unit Control.



"Take the lead and set an example of diligent toil."
—Confucius

Much toil and great diligence have made the Synchronphase worthy of first rank in radio receivers.

Doctor H. M.

Imitation

—the Sincerest Flattery

LAST year Grebe developed the fieldless Binocular Coils and S-L-F (straight line frequency) Condensers.

These Grebe developments have now been adopted on a number of other receivers.

This year Grebe has devised the Low-Wave Extension Circuits, "Colortone," and Flexible Unit Control. It will be interesting to see how soon these, too, are added to other sets.

In buying a Grebe Synchronphase now, you will have advances in radio construction, such as other receivers will probably show next season.

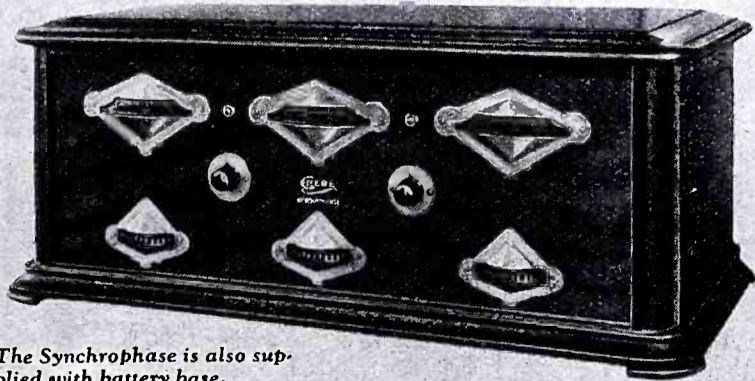
Ask your dealer to demonstrate all these Grebe developments.

A. H. Grebe & Co., Inc., 109 W. 57th St., New York
Factory: Richmond Hill, N. Y.
Western Branch: 443 So. San Pedro St., Los Angeles, Cal.

This company owns and operates stations WAHG and WBOQ; also low-wave rebroadcasting stations, mobile WGMU and marine WRMU.

The GREBE SYNCHROPHASE

TRADE MARK REG. U.S. PAT. OFF.



The Synchronphase is also supplied with battery base.

GREBE RADIO
TRADE MARK
REG. U.S. PAT. OFF.
All Grebe apparatus covered by patents granted and pending.

Tell 'Em You Saw It in the Citizens Radio Call Book

KFJY—Tunwall Radio Co., 13 No. 10th St., Fort Dodge, Iowa. 246 meters, 1220 kilocycles, 50 watts, class A. Daily ex Sun, 5:30 pm, weather & market reports, stories, Sun, 11 am, church services. Central standard time. Slogan: "Fort Dodge, Iowa, where the Tall Corn Grows."
1st Dial 2nd Dial 3rd Dial

KFJZ—W. E. Branch, 400 W. 7th St., Fort Worth, Texas. 254 meters, 1180 kilocycles, 50 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFKA—Colorado State Teachers College, Greeley, Colo. 273 meters, 1100 kilocycles, 100 watts, class A. Wed, 10 am, chapel exercises. (Schedules to be announced.) Mountain time.
1st Dial 2nd Dial 3rd Dial

KFKQ—Conway Radio Laboratories, Box 360, Conway, Ark. 250 meters, 1200 kilocycles, 100 watts, class A.
1st Dial 2nd Dial 3rd Dial

KFKU—University of Kansas, Lawrence, Kansas, 275 meters, 1099 kilocycles, 500 watts, class B. Mon & Thurs, 6:55-8 pm. (Also special broadcasting.) Central standard time. Slogan: "Up at Lawrence on the Kaw."
1st Dial 2nd Dial 3rd Dial

KFKX—Westinghouse Elec. & Mfg. Co., Hastings, Neb., 288.3 meters, 1040 kilocycles, 5000 watts, class B. Daily ex Sun, Sat, 9:30 am, 10:30 am, 12:30 pm, 3 pm, 7 pm, markets. Mon, Wed, Fri, 7-11 pm, musical program. Sat, markets at 9:30, 10:30 am, 12:30 pm, only. Relay of KDKA "dinner program," from 5:15-7 pm, each week day. Central standard time. Slogan: "Empress of the Air" and "Pioneer Radio Repeating Station of the World."
1st Dial 2nd Dial 3rd Dial

KFKZ—F. M. Henry, 107 E. Harrison St., Kirksville, Mo. 226 meters, 1330 kilocycles, 50 watts, class A. Mon, 8-9 pm, dance music. First & third Mous. Thaliam Guild Players present radio plays. Sun, 4-5 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFLR—Korber Wireless Station, The State University of New Mexico, Albuquerque, N. Mex. 254 meters, 1180 kilocycles, 10 watts, class A. Fri, 8-10 pm. Mountain standard time. Slogan: "Sunshine Center of America."
1st Dial 2nd Dial 3rd Dial

KFLU—San Benito Radio Club, San Benito, Texas. 236 meters, 1270 kilocycles, 10 watts, class A. Wed & Sat, 8-9 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFLV—Swedish Evang. Miss. Church, Rockford, Ill. 229 meters, 1310 kilocycles, 200 watts, class A. Fri, 8:30 pm. Sun, 12:30 pm (Swedish); 9:30 pm (English). Central standard time.
1st Dial 2nd Dial 3rd Dial

KFLX—Geo. R. Clough, 1214 40th St., Galveston, Texas. 240 meters, 1250 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFLZ—Atlantic Automobile Co., 3rd & Poplar Sts., Atlantic, Iowa. 273 meters, 1100 kilocycles, 100 watts, class A. Daily ex Sun, 11:50 am-12:20 pm. Tues, Thurs, 8:30-10 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFMB—Christian Churches of Little Rock, Little Rock, Ark. 254 meters, 1180 kilocycles, — watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFMQ—University of Arkansas, Fayetteville, Ark. 299.8 meters, 1000 kilocycles, 750 watts, class B. Mon, 7:30 pm, farmers' night. Tues, 8 pm, musical. Thurs, 8 pm, radio extension lectures. Central standard time. Slogan: "The Voice of the Ozarks."
1st Dial 2nd Dial 3rd Dial

KFMR—Morningside College, Sioux City, Iowa. 261 meters, 1150 kilocycles, 100 watts, class A. Thurs, 9:15-10 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFMT—Dr. Geo. W. Young, 2219 Bryant Ave., North, Minneapolis, Minn. 263 meters, 1140 kilocycles, 100 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFMW—M. G. Sateren, Houghton, Mich. 263 meters, 1130 kilocycles, 50 watts, class A. Sun, 3-4:30 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFMX—Carleton College, Northfield, Minn. 336.9 meters, 890 kilocycles, 500 watts, class B. Daily ex Sun, 10:28-10:30 am, time signals. Tues, 9:30-10 pm, lecture. Wed, 9-10 pm, concert. Fri, 10-11 pm, organ recital. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFNF—Henry Field Seed Co., Shenandoah, Iowa. 263 meters, 1130 kilocycles, 500 watts, class A. Daily ex Sun, 12:15-1:35 pm, 3-4 pm, 7-9 pm, concert. Sun, 10:45 am-12:15 pm, 2:30-8:30 pm, services. Central time. Slogan: "Known For Neighborly Folks."
1st Dial 2nd Dial 3rd Dial

KFOA—Rhodes Dept. Store, 1321 2nd Ave., Seattle, Wash. 454.3 meters, 660 kilocycles, 1000 watts, class B. Daily ex Sat, Sun, 10 am. Mon, Wed, 10 am-10 pm. Tues, Fri, 10 am-11:30 pm. Thurs, 10 am-5:30 pm. Sat, 4-11:30 pm. Pacific standard time. Slogan: "Pacific Northwest Station."
1st Dial 2nd Dial 3rd Dial

KFOB—Burlingame KFOB, Inc., Burlingame, Calif. 226 meters, 1320 kilocycles, 50 watts, class A. Daily, 8-10 pm. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFOB—KFOB, Inc., Burlingame, Calif. 226 meters, 50 watts, class A. Tues & Thurs, 10-11:30 am, 1-2:30 pm, 5:30-7 pm, 8-11 pm. Sat, 1-3 pm, 5:30-7 pm, 9 pm-1 am. Pacific standard time.
KFOJ—Moberly High School, Moberly, Mo. 242 meters, 1240 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFON—Echophone Radio Shop, Long Beach, Calif. 233 meters, 1280 kilocycles, 100 watts, class A. Daily ex Sun, Mon, 10-11 am, 2:30-5 pm, 6-11 pm. Mon, 10-11 am, 6-11 pm. Sun, 2:30-4 pm, 8-9 pm. Pacific time. Slogan: "Where Your Ship Comes In."
1st Dial 2nd Dial 3rd Dial

KFOO—Latter Day Saints University, Salt Lake City, Utah. 236 meters, 1270 kilocycles, 250 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFOR—David City Tire & Elec. Co., David City, Nebr. 226 meters, 1330 kilocycles, 100 watts, class A. Mous, 7-10 pm. Central standard time. Slogan: "The Voice of David City."
1st Dial 2nd Dial 3rd Dial

KFOT—College Hill Radio Club, First & Erie Sts., Wichita, Kan. 231 meters, 1300 kilocycles, 50 watts, class A. Sun, 11-12:30 pm; 7:30-9 pm, church services. Mon, 9-10:30 pm, music. Central standard time. Slogan: "Radiocasting Church."
1st Dial 2nd Dial 3rd Dial

KFOX—Technical High School, Omaha, Nebr. 248 meters, 1210 kilocycles, 100 watts, class A. No regular schedule. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFOY—Beacon Radio Service, 373 Robert St., St. Paul, Minn. 252 meters, 1190 kilocycles, 50 watts, class A. Sun, 3:15-4:15 pm, musical. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFPQ—Oliver S. Garretson, 5118 Maywood Ave., Los Angeles, Calif. 238 meters, 1260 kilocycles, 10 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFPL—C. C. Baxter, Dublin, Texas. 252 meters, 1190 kilocycles, 15 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFPM—The New Furniture Co., Box 628, Greenville, Texas. 242 meters, 1240 kilocycles, 10 watts, class A. Daily ex Sun, 1 pm, Victor and Columbia Records. Tues, 8 pm, music. Wed, Fri, 7:45 pm, music & entertainment. Sun, 11 am, services; 7 pm, musical. Central standard time. Slogan: "Biggest Little Ten Watts on the Air."
1st Dial 2nd Dial 3rd Dial

KFPR—Los Angeles Co. Forestry, Los Angeles, Calif. 231 meters, 1300 kilocycles, 500 watts, class A. Irregular schedule. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFPT—Radio Service Corp. of Utah, Salt Lake City, Utah. 261 meters, 1150 kilocycles, 500 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFPW—St. John's M. E. Church, Box 424, Carterville, Mo. 258 meters, 1160 kilocycles, 20 watts, class A. Tues, Fri, 8-9 pm, popular & classical musical programs. Sun, 1-2 pm, chapel service. Central standard time. Slogan: "Peeping Face With Christ Means Progress."
1st Dial 2nd Dial 3rd Dial

KFPY—Symons Investment Co., Symons Block, Spokane, Wash. 265.3 meters, 1130 kilocycles, 100 watts, class A. Daily ex Tues & Sun, 7-7:45 pm. Wed, 9-11:59 pm, 11-midnight. Sun, 9:45-10:30 am, 9-10 pm. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFQA—The Principia, 5539 Page Ave., St. Louis, Mo. 261 meters, 1150 kilocycles, 5000 watts, class B. Sun & Thurs, 8-9 pm, church services & lectures. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFOB—Searchlight Publishing Co., Fort Worth, Texas. 263 meters, 1140 kilocycles, 1000 watts, class A. Daily ex Sun & Wed, 8:30-9:30 pm, Bible lectures. Tues, Thurs & Sat, 10:45-12 pm, musical. Sun, 10 am-12:30 pm, 4-5 pm, 7:30-9:30 pm, church services. Central standard time. Slogan: "Keep Folks Quoting the Bible—KFOB."
1st Dial 2nd Dial 3rd Dial

KFOC—Kidd Bros. Radio Shop, Taft, Calif. 231 meters, 1300 kilocycles, 100 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFOO—Meier Radio Shop, Russell, Kan. 261 meters, 1150 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFOP—George S. Carson, Jr., 906 College St., Iowa City, Iowa. 224 meters, 1340 kilocycles, 10 watts, class A. Wed, 8-9 pm, musical program. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFOT—Texas National Guard, 36th Signal Co., Denison, Texas. 252 meters, 1190 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFOU—Holy City Broadcasting Station, Holy City, (Alma P. O.) Calif. 217.3 meters, 1380 kilocycles, 100 watts, class A. Daily ex Sun & Mon, 9-10 pm. Sun, 11 am-12 noon. 9-10 pm. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFQW—Photo Radio & Electric Shop, North Bend, Wash. 215.7 meters, 1390 kilocycles, 50 watts, class A. Thurs, 8-9 pm. Sun, 8:45-10 pm. Pacific time. Slogan: "At the Western Entrance of Snoqualmie Pass."
1st Dial 2nd Dial 3rd Dial

KFOZ—Taft Products Co., 5653 De Longpre Ave., Hollywood, Calif. 226 meters, 1330 kilocycles, 250 watts, class A. Tues, Fri, 9-11 pm, musical program. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFRB—Hall Bros. (Rialto Theater), Beeville, Texas. 248 meters, 1210 kilocycles, 250 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFRG—City of Paris Dry Goods Co., Geary & Stockton Sts., San Francisco, Calif. 268 meters, 1120 kilocycles, 50 watts, class A. Daily ex Sun & Mon, 6:30-8 am, exercises. Daily ex Sun, 5:30-6:30 pm, children's hour. Mon & Tues, 6:30-10 pm. Tues & Fri, 6:30-11 pm, concert. Wed, 6:30-12 pm. Sat, 6:30 pm-1 am, dance music. Sun, 6:30-10 pm, 10-12 pm. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFRQ—Curtis-Griffith Radio Sales Co., 1109 8th Ave., Fort Worth, Texas, 246 meters, 1220 kilocycles, 50 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFRU—Stephens College, Broadway, Columbia, Mo. 499.7 meters, 600 kilocycles, 500 watts, class B. Mon, Tues, Thurs, Fri, 6:15 pm, dinner program. Wed, 9 pm, studio program. Fri, 12 midnight, organ & instrumental music. Sun, 7:30 am, sunrise service; 9:20 am, Burral Bible Class; 7:30 pm, church service. Central standard time. Slogan: "Stephens College KFRU, Where Friendliness Is Broadcast Daily."
1st Dial 2nd Dial 3rd Dial

KFRU—Ethereal Radio Co., 115 W. 6th St., Bristow, Okla. 304 meters, 760 kilocycles, 500 watts, class B. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFRW—United Church, Olympia, Wash. 218.8 meters, 1370 kilocycles, 50 watts, class A. Thurs, 9-10 pm. Sun, 11-12:15 pm, 7:30-9 pm. Pacific time. Slogan: "Make the Work a Brotherhood."
1st Dial 2nd Dial 3rd Dial

KFRX—J. G. Klemgard, R. R. 2, Pullman, Wash. 217 meters, 1380 kilocycles, 10 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFRY—New Mexico College of Agriculture and Mechanic Arts, State College, N. Mex. 266 meters, 1130 kilocycles, 50 watts, class A. No regular schedule. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFSG—Echo Park Evangelistic Ass'n, 1100 Glendale Blvd., Los Angeles, Calif. 275 meters, 1090 kilocycles, 500 watts, class A. Tues, Thurs, Fri, Sat, 3:30-4:30 pm. Tues, 6:30-7:30 pm. Wed, 2:30-4:30 pm, 6:30-7:30 pm. Thurs, Fri, Sat, 7:30-11 pm. Sun, 10:30-12:30 pm, 2:30-4:30 pm, 7-9:30 pm. Mon, silent. Pacific time.
1st Dial 2nd Dial 3rd Dial

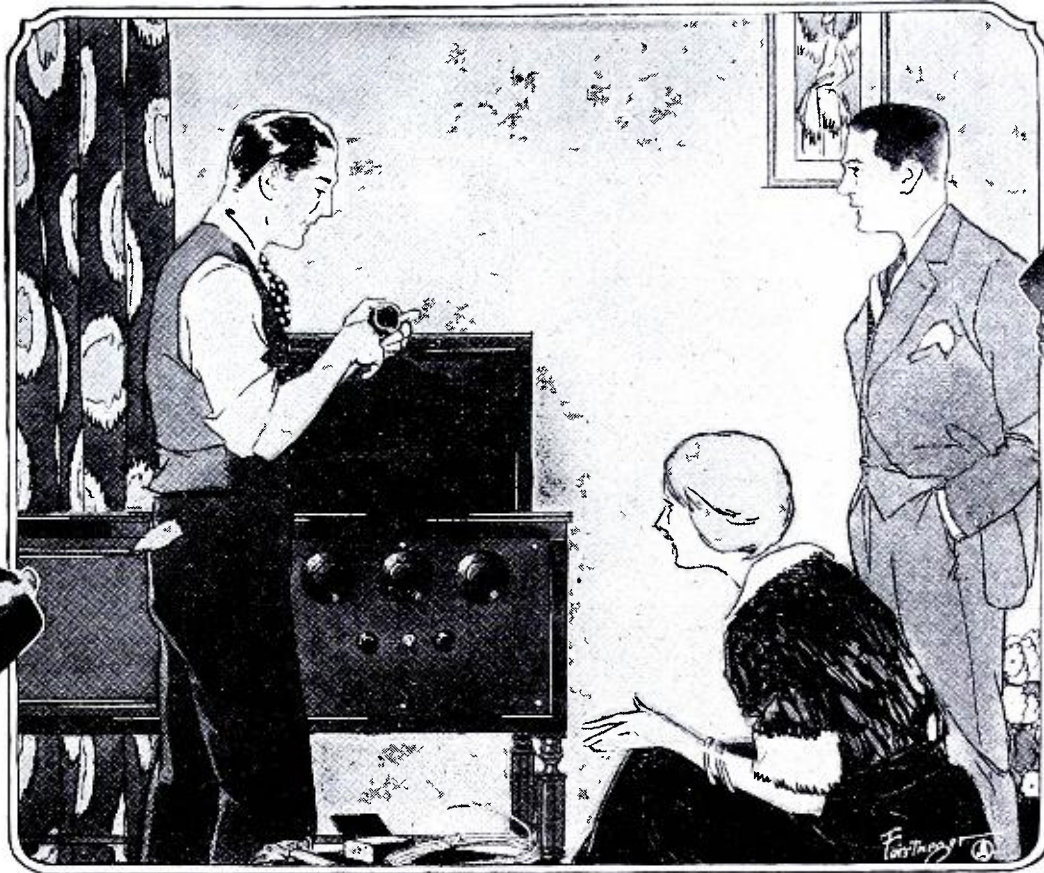
KFSY—Van Blaricom Co., 20 So. Main, Helena, Mont. 248 meters, 1210 kilocycles, 10 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFUJ—Hoppert Plumbing & Heating Co., Breckinridge, Minn. 242 meters, 1240 kilocycles, 50 watts, class A. Daily 10:30 am, weather; 1:30 pm, markets; 5:30 pm, weather. Mon, Wed, Fri, 8-9 pm, musical program. Central standard time. Slogan: "Where the Red River of the North Finds Its Source."
1st Dial 2nd Dial 3rd Dial

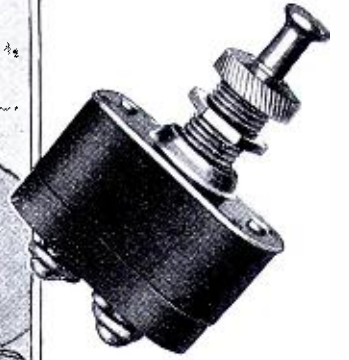
KFUL—Thos. Goggan & Bros. Music Co., Galveston, Texas. 258 meters, 1160 kilocycles, 10 watts, class A. Daily, 10:30 am. Fri, 8 pm. Central standard time. Slogan: "Kant Fool Us Long-horns."
1st Dial 2nd Dial 3rd Dial

KFUO—Concordia Theological Seminary of the Lutheran Church, 8645 S. Jefferson Ave., St. Louis, Mo. 541.1 meters, 500 watts, class B. Mon, 8 pm. Wed, 9:15 pm. Sun, 4 pm, 9:15 pm. Central standard time. Slogan: "Gospel Voice."
1st Dial 2nd Dial 3rd Dial

KFUP—Fitzshimons General Hospital, Denver, Colo. 234 meters, 1280 kilocycles, 50 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial



The new C-H Socket for the UX tubes. Same one piece, double-grip, SILVER plated contacts used in the standard C-H Socket with the ORANGE shell. Heatproof Thermo-plax base. Genuine low-loss construction and attractive appearance.



The original radio switch — with the long life mechanism outlasts the set. Easy to mount, only one hole needed, and adjustable to all panel thickness. Can also be used in new batteryless sets.

In Radio especially— “it’s the little things that count”

A list of some of the prominent radio manufacturers using C-H products

- Acme Apparatus Co.
- American Bosch Magneto Co.
- Astral Radio Corporation
- Boissier Radio Corporation
- Chelsea Radio Co.
- Crosley Radio Corporation
- Dayton Fan & Motor Co.
- Dictagraph Products Co.
- Dubilier Condenser & Radio Corporation
- Electrad, Inc.
- Freed-Eisemann Radio Corp.
- Garod Corporation
- Gillfillan Bros., Inc.
- Allen T. Hamscomb
- Harding Mfg. Co.
- Howard Radio Co.
- The Keyport Laboratories
- King Electric Mfg. Co.
- Kodel Radio Corporation
- LeMor Radio, Inc.
- Magnus Electric & Radio Co.
- Malone-Lemmon Laboratories
- Glenn L. Martin Co.
- Wm. J. Murdock
- Newport Radio Co.
- Phanstiehl Mfg. Co.
- Philadelphia Storage Bat. Co.
- Radio Master Corp. of America
- The Radio Compak Co.
- R. B. Radio Co.
- Robbins Radio Co.
- Signal Electric Co.
- Silver-Marshall Co.
- Simplex Radio Co.
- R. E. Thompson Co., Inc.
- J. S. Timmons
- Workrite Mfg. Co.
- Zenith Radio Co.

WHEN your radio set goes wrong, just as you are comfortably settled before the fireplace expecting to spend a great evening, it is annoying.

And ten to one, it’s only some little wire or part that in itself is insignificant. Really, though, there’s no excuse for such things happening.

GOOD parts of good material and carefully built are insurance against such annoyances.

Cutler-Hammer radio parts are GOOD parts. Both the amateur builder and the set manufacturer can attest that fact. They are designed by radio control experts, backed by 25 years experience, built of the highest quality material and sold at a price you are glad to pay.

Whether you buy or build, insist on C-H radio parts, for it’s these good little parts that count and assure constant, efficient service from your set.

THE CUTLER-HAMMER MFG. COMPANY

Member Radio Section, Associated Manufacturers of Electrical Supplies

MILWAUKEE, WISCONSIN



The closely wound, fine resistance wire is prevented from slipping or wearing out of true by a bronze spring. Thus smooth, quiet control is assured either advancing or decreasing the potential.

There is no jumping, no back lash; and no sticking.

While C-H Rheostats are built to engineers’ specifications, they are designed for the use of the novice. They are built as a unit and are not dismantled for mounting.

Only one hole for mounting. Selfcentering in oversize holes and adjustable to any panel thickness.

CUTLER-HAMMER

Radio Parts for Performance

Tell 'Em You Saw It in the Citizens Radio Call Book

KFUR—Peery's Egyptian Theater, H. W. Peery, Mgr., Ogden, Utah, 224 meters, 1340 kilocycles, 100 watts, class A. Tues, Thurs, Sat, 9:50-11:50 pm, dance music. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFUS—Gospel Radio, 529 28th St., Oakland, Calif. 259 meters, 1290 kilocycles, 50 watts, class A. Tues, 2:30-3:30 pm, educational; 8-9 pm; 6:30-7:30 pm, sacred studio program, Wed & Fri, 8-9 pm, sacred program, Thurs, 4:30-5 pm, educational; 5-5:30 pm, children's program. Sun, 9-9:30 am, S. S. lesson; 3:30-4:30 pm, sacred program. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KFUT—University of Utah, Salt Lake City, Utah, 261 meters, 1150 kilocycles, 100 watts, class A. Tues, Thurs, 4-5 pm. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFUU—Mathewson Motor Co., Inc., & Oakland Times, Oakland, Calif. 220 meters, 1363 kilocycles, 50 watts, class A. Daily ex Sun, 10:45-11:45 am. Mon, Wed, Fri, 6:30-7:30 pm. Tues, 6-10:30 pm. Thurs, Sat, 6:30-11 pm. Sun, 8-9:30 pm. Pacific standard time. Slogan: "The Voice of Automobile Row."
1st Dial 2nd Dial 3rd Dial

KFVD—McWhinnie Elec. Co., San Pedro, Calif. 205.4 meters, 1460 kilocycles, 50 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFVE—Romaine Fielding, Film Corp. of America, 6800 Delmar Blvd., University City, Mo. 240 meters, 1250 kilocycles, 500 watts, class A. Daily ex Sun & Thurs, 9:15 pm, national amusement review, studio entertainers & orchestra music. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFVF—Clarence B. Juneau, 8091 Santa Monica St., Hollywood, Calif. 208 meters, 1440 kilocycles, 10 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFVG—First Methodist Episcopal Ch'ch, 204 S. Penn Ave., Independence, Kan. 236 meters, 1270 kilocycles, 10 watts, class A. Sun, 10:55 am-12:30 pm, & 7:30-9:15 pm, church services. Central standard time. Slogan: "Kansas Folks Very Good."
1st Dial 2nd Dial 3rd Dial

KFVH—Whan Radio Shop, (Herbert Whan), 221 Poyntz St., Manhattan, Kan. 218.8 meters, 1370 kilocycles, 15 watts, class A. Daily ex Sun. Daily ex Sun, 12 m, markets. Central time.
1st Dial 2nd Dial 3rd Dial

KFVI—Headquarters Troop, 56th Cavalry Brigade, 305 Sabine St., Houston, Texas. 240 meters, 1210 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFVN—Carl E. Bagley, Welcome, Minn. 227 meters, 1320 kilocycles, 10 watts, class A. Mon, Tues, Wed, 9-10:30 pm, musical programs. Fri, 8:30-8:50 pm, children's religious hour; 9-10:30 pm, musical program. Sun, 2:30-3:30 pm, Sunday School. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFVR—Moonlight Ranch Broadcasting Station (Eugene Rossi), Route No. 6, Denver, Colo. 244 meters, 1230 kilocycles, 50 watts, class A. Mon, Fri, 10-12 midnight. Tues, Sat, 8-9 pm. Wed, Thurs, 12-1am. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFVS—Hirsch Battery & Radio Co., 312 S. Frederick St., Cape Girardeau, Mo. 224 meters, 1340 kilocycles, 50 watts, class A. Sun, 11 am, church services. Mon, 8 pm, musical program. Thurs, 7 pm, program of old time music. Central standard time. Slogan: "The City of Opportunity."
1st Dial 2nd Dial 3rd Dial

KFWW—Airfan Radio Corp., 402 B St., San Diego, Calif. 245.8 meters, 1220 kilocycles, 500 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFVX—Radio Shop, 1211 So. Main St., Bentonville, Ark. 236 meters, 1270 kilocycles, 10 watts, class A. Central time.
1st Dial 2nd Dial 3rd Dial

KFVY—Radio Supply Co., 413 W. Central Ave., Albuquerque, N. Mex. 250 meters, 1200 kilocycles, 10 watts, class A. Daily ex Sun, 5:30-6:30 pm, news items & music. Tues & Fri, 8-9:30 pm, dance music. Mountain standard time.
1st Dial 2nd Dial 3rd Dial

KFVZ—Glad Tidings Tabernacle, Inc., 1536 Ellis St., San Francisco, Calif. 234 meters, 1280 kilocycles, 50 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFWA—Browning Bros. Co., 2451 Kiesel St., Ogden, Utah. 261 meters, 1149.45 kilocycles, 500 watts, class A. Daily ex Sun, 4-6 pm, studio program. Mon, Fri, 9-10 pm. Wed, Sat, 9-12 pm, dance program. Mountain time. Slogan: "Keeping Friends With All."
1st Dial 2nd Dial 3rd Dial

KFWB—Warner Bros. Motion Picture Studios, Inc., 5806 Sunset Blvd., Hollywood, Calif. 252 meters, 1190 kilocycles, 500 watts, class A. Mon, Tues & Wed, 5-6 pm, Big Brother hour; 8-11 pm, musical. Thurs, Fri & Sat, 8-11 pm, musical. Sun, 9-11 pm, musical. Pacific standard time. Slogan: "Movie-land."
1st Dial 2nd Dial 3rd Dial

KFWC—L. E. Wall, Upland, Calif. 211.1 meters, 1420 kilocycles, 50 watts, class A. Tues, Thurs, Sat, 9-12 pm, musical. Sun, 7-9 pm, church services; 9-12 pm, musical. Pacific standard time. Slogan: "The Home of the Sunkist Orange."
1st Dial 2nd Dial 3rd Dial

KFWD—Arkansas Light & Power Co., Arkadelphia, Ark. 266 meters, 1130 kilocycles, 500 watts, class A. Central time.
1st Dial 2nd Dial 3rd Dial

KFWF—St. Louis Truth Center, 4030 Lindell St., St. Louis, Mo. 214.2 meters, 1400 kilocycles, 250 watts, class A. Churches services Sun, 10:45 am, 7:45 pm. Tues, 8 pm, music. Thurs, sermon, 7:45 pm; 10:30 pm, music. Central standard time. Slogan: "The Voice of Truth."
1st Dial 2nd Dial 3rd Dial

KFWH—F. Wellington Morse, Jr., Chico, Calif. 254 meters, 1180 kilocycles, 100 watts, class A. Daily ex Sun, 6:15-6:30 pm, news & music. Daily, 6:30-7:15 pm, dinner concert. Mon, Wed, Fri, 8-10 pm, Pacific time. Slogan: "Kind Friends We're Here."
1st Dial 2nd Dial 3rd Dial

KFWI—Radio Entertainments (Inc.), 1085 Monarch Bldg., South San Francisco, Calif. 226 meters, 1330 kilocycles, 500 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFWM—Oakland Educational Society, 1520 8th Ave., Oakland, Calif. 106.8 meters, 1450 kilocycles, 250 watts, class A. Mon, Thurs, Sat, 8-9:30 pm. Tues, Wed, & Fri, 2-3 pm. Sun, 9:30-11 am, 1:30-2:30 pm, 6:30-7:30 pm. Pacific standard time. Slogan: "Education and the Bible."
1st Dial 2nd Dial 3rd Dial

KFWO—Major Lawrence Mott, Avalon, Catalina Island, Calif. 340 Claressa Ave., 211.1 meters, 1420 kilocycles, 250 watts, class A. Daily 12:30-1:30 pm, 6:30-7:45 pm. Tues, Fri, Sun, 5-6 pm. Tues, Thurs, 7:45-9 pm. Fri, 7:45-10 pm. Sun, 8:15-9:15 pm. Pacific standard time. Slogan: "Katalina For Wonderful Outings."
1st Dial 2nd Dial 3rd Dial

KFWU—Louisiana College, Pineville, La. 238 meters, 1260 kilocycles, 100 watts, class A. Central time.
1st Dial 2nd Dial 3rd Dial

KFWV—Wilbur Jerman, 385 58th St., So., Portland, Ore. 212.6 meters, 1410 kilocycles, 50 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFXB—Rim of the World Station, Big Bear Lake, Pine Knot, Calif. 202.6 meters, 1840 kilocycles, 500 watts, class A. Daily ex Sun, 5-5:30 pm, news, road bulletins, lectures, music. Pacific standard time. Slogan: "The Rim of the World Station."
1st Dial 2nd Dial 3rd Dial

KFXC—Santa Maria Valley Railroad Co., Santa Maria R. R. Bldg., Santa Maria, Calif. 209.7 meters, 1430 kilocycles, 100 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KFXD—L. H. Strong, East Center St., Logan, Utah. 205.4 meters, 1460 kilocycles, 10 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFXE—Pikes Peak Broadcasting Co., Inc., Colorado Springs National Bank Bldg., Colorado Springs, Colo. 250 meters, 1200 kilocycles, 500 watts, class A. Mon, Tues, Sat, 8:30-10:30 pm, musical program. Thurs, 9:15-10:45 pm, dance program. Sun, 11 am-12:30 pm, 7:30-9 pm, church services. Mountain time. Slogan: "The Pikes Peak Station."
1st Dial 2nd Dial 3rd Dial

KFXH—Bledsoe Radio Co., 2857 Montana St., El Paso, Texas. 242 meters, 1240 kilocycles, 50 watts, class A. Mon, Wed, Fri, 8-10 pm, musical. Sat, 11-12 pm, frolic. Central standard time. Slogan: "The Voice of the Rio Grande."
1st Dial 2nd Dial 3rd Dial

KFXJ—Mountain States Radio Distribution, Inc., 917 14th St., Denver, Colo. (portable). 215.7 meters, 1390 kilocycles, 10 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFXM—Neches Electric Co., 259 Crockett St., Beaumont, Texas. 227 meters, 1320 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFXN—Mary M. Costigan, Flagstaff, Ariz. 205.4 meters, 1460 kilocycles, 50 watts, class A. Mountain time.
1st Dial 2nd Dial 3rd Dial

KFYD—N. Baker, 2nd St., Muscatine, Iowa. 256 meters, 1170 kilocycles, 250 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFYF—Carl's Radio Den (Newcomb Radio Co.), 207 5th St., Oxnard, Calif. 205.4 meters, 1460 kilocycles, 10 watts, class A. Mon, Tues, Thurs & Sat, 5-5:30 pm. Wed, Fri, 5-6 pm. Pacific standard time. Slogan: "The Radio Voice From the Radio Den."
1st Dial 2nd Dial 3rd Dial

KFYJ—Houston Chronicle Publishing Co., Houston, Texas (portable). 238 meters, 1260 kilocycles, 10 watts, class A. Central standard time.
1st Dial 2nd Dial 3rd Dial

KFYR—Hoskins-Meyer, Inc., 200 4th St., Bismarck, N. D. 248 meters, 1210 kilocycles, 10 watts, class A. No regular schedule as yet. Central standard time.
1st Dial 2nd Dial 3rd Dial

KGO—General Elec. Co., 5555 E. 14th St., Oakland, Calif. 361 meters, 830 kilocycles, 3500 watts, class B. Daily ex Sun, 11:30 am, luncheon concert program. Mon, 10:40 am, 3 pm, 5:30-6 pm, 8-10 pm. Daily ex Sat & Sun, 1:30 pm weather reports. Tues, Wed, Thurs, Fri, Sat, 4-5:30 pm. Mon, Wed, Fri, 3 pm. Tues, Thurs, Sat, 8-10 pm. Fri, 5:30-6 pm. Sun, 11 am services. 3:30-5 pm, musical. 7:45 pm, services. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KGTT—Glad Tidings Temple, 1471 Ellis St., San Francisco, Calif. 207 meters, 1750 kilocycles, 50 watts, class A. Mon, Thurs, Sat, 2:30-5 pm, Tues, Wed, Fri, 7:30-9:30 pm. Sun, 2:30-5 pm, 7:30-9:30 pm. Pacific standard time. Slogan: "Knights of Glad Tidings Temple."
1st Dial 2nd Dial 3rd Dial

KGU—Marion A. Mulrony, 236 King St., Honolulu, Hawaii. 270 meters, 1110 kilocycles, 500 watts, class A. Daily ex Sun, 12-1 pm weather, stocks, musical. Mon, Tues, Thurs, Fri, 7:30-9 pm, musical. Tues, 9-10 pm. Sun, 11 am-12 pm, 7:30-9 pm, church services. Two and one-half hours later than Pacific time.
1st Dial 2nd Dial 3rd Dial

KGW—The Morning Oregonian, Portland, Ore. 491.5 meters, 610 kilocycles, 500 watts, class B. Sun, 10:30-12 noon, 7:30-9 pm, church. Mon, Wed, Fri, 7:15 am, 10:30 am, 12:30-1:30 pm, 6-7 pm, 7:15-10:30 pm. Tues, Thurs, 10:30 am, 12:30-1:30 pm, 6-7 pm. Tues, 7:30-12 pm. Thurs, 7:30-8 pm. Sat, 10:30 am, 12:30-1:30 pm, 6-7 pm, 9-12 midnight. Pacific standard time. Slogan: "Keep Growing Wiser."
1st Dial 2nd Dial 3rd Dial

KGV—St. Martin's College, Lacey, Wash. 246 meters, 1220 kilocycles, 50 watts, class A. Tues, Thurs, Sun, 8:30-9:30 pm. Pacific standard time. Slogan: "Out Where the Cedars Meet the Sea."
1st Dial 2nd Dial 3rd Dial

KHJ—Times-Mirror Co., 1st & Broadway, Los Angeles, Calif. 405.2 meters, 740 kilocycles, 500 watts, class B. Pacific time.
1st Dial 2nd Dial 3rd Dial

KHO—Louis Wasmer, Excelsior Motorcycle & Bicycle Co., Seattle, Wash. 273 meters, 1100 kilocycles, 100 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KJBS—Julius Brunton & Sons Co., 1380 Rush St., San Francisco, Calif. 220 meters, 1360 kilocycles, 5 watts, class A. Daily ex Sun, 9-10:45 am, 2-2:30 pm. Mon, 6:30-7:30 pm, 8-10 pm. Wed, 8-10 pm. Fri, 8-9 pm, studio program, 9-11:30 pm. Sun, 5-6:30 pm, studio program. Pacific standard time. Slogan: "Kleen Jokes, Better Songs."
1st Dial 2nd Dial 3rd Dial

KJO—C. O. Gould, 615 E. Main St., Stockton, Calif. 248 meters, 1210 kilocycles, 5 watts, class A. Pacific time.
1st Dial 2nd Dial 3rd Dial

KJR—Northwest Radio Service Co., 614 Terminal Sales Bldg., Seattle, Wash. 384.4 meters, 780 kilocycles, 1000 watts, class B. Daily ex Sat & Sun, 10:30-11:30 am. Daily ex Sun, 1-3 pm, 5-6 pm, 7-10 pm, 10-12 pm, musical programs. Sun, 11 am, church service, 5 pm, concert; 7:15 pm, church service; 9-10:30 pm, concert. Pacific standard time.
1st Dial 2nd Dial 3rd Dial

KJS—Bible Institute of Los Angeles, Inc., 536 S. Hope St., Los Angeles, Calif. 293 meters, 1020 kilocycles, 750 watts, class B. Pacific time.
1st Dial 2nd Dial 3rd Dial

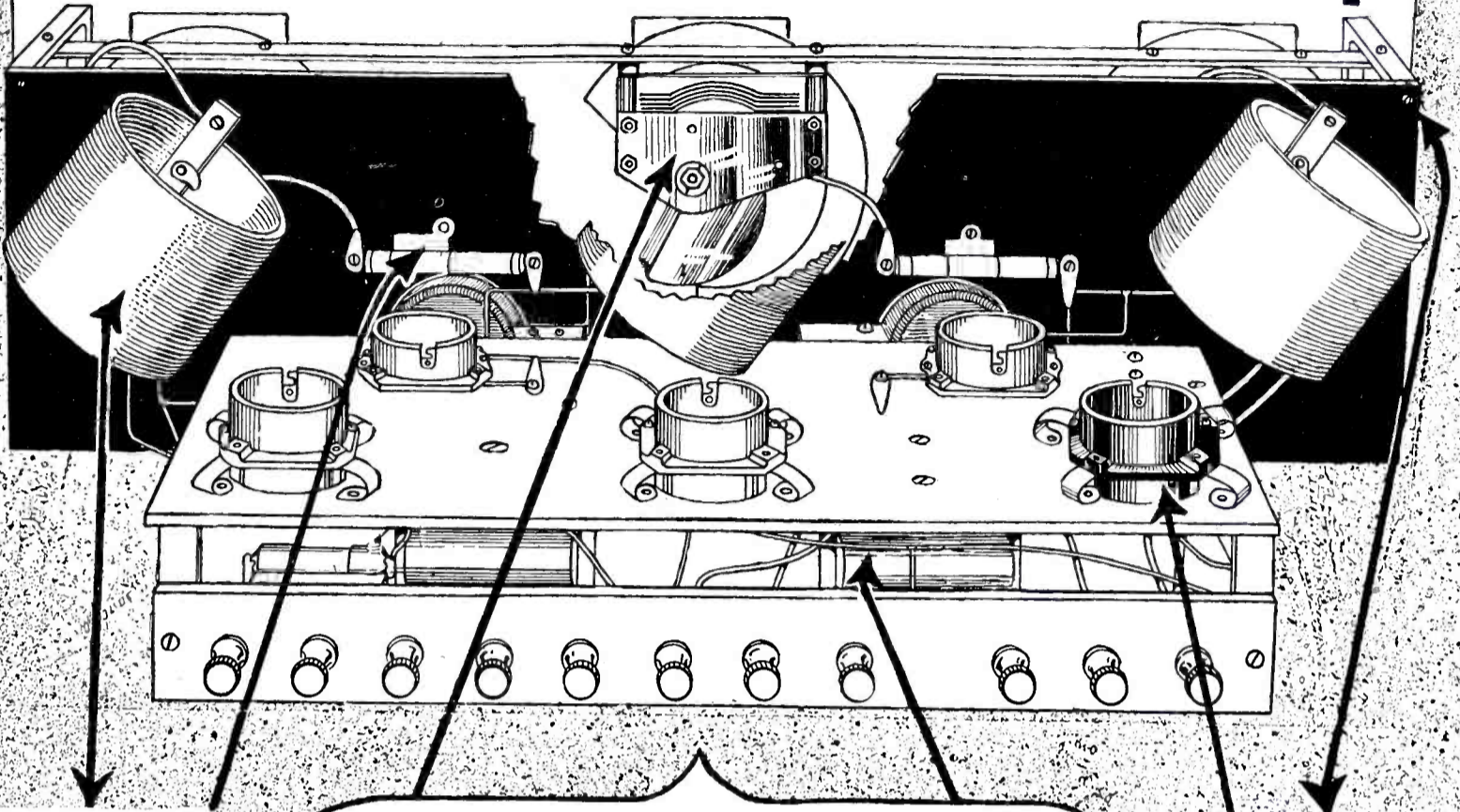
KLS—Warner Bros. Radio Supplies Co., 2201 Telegraph Ave., Oakland, Calif. 250 meters, 1200 kilocycles, 250 watts, class A. Sun, 10-11 am, church service. Pacific standard time. Slogan: "The City of Golden Opportunity."
1st Dial 2nd Dial 3rd Dial

KLX—The Oakland Tribune, Oakland, Calif. 508.2 meters, 598 kilocycles, 500 watts, class B. Mon, Wed, Fri, 4-5 pm, women's hour, 5-5:30 pm, children's broadcast, 6:30-7 pm, orchestra, 7-7:30 pm, news, 8-10:30 pm, musical program. Tues, Thurs, Sat, 7:30-9 pm, news broadcast. Sat, 2-5:30 pm, football broadcasting during season. Pacific standard time. Slogan: "Where Rail and Water Meet."
1st Dial 2nd Dial 3rd Dial

KLDS—Reorganized Church of Jesus Christ of Latter Day Saints, Box 255, Independence, Mo. 440.9 meters, 680 kilocycles, 1000 watts, class B. Sun, 11 am, 6:30 pm, 9 pm. Central standard time.
1st Dial 2nd Dial 3rd Dial

KLZ—Reynolds Radio Co., Shirley-Savoy Hotel, Denver, Colo. 266 meters, 1150 kilocycles, 500 watts, class A. Mon, 3-4 pm, KLZ trio. Tues, 10 pm, music. Wed, Sat, 3-4 pm, 8-12 pm, musical programs. Sun, 5-6 pm, 9 pm, musical programs. Mountain time. Slogan: "Way Out West in Denver, Colo."
1st Dial 2nd Dial 3rd Dial

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KMA—May Seed & Nursery Co., Shenandoah, Iowa. 252 meters, 1190 kilocycles, 500 watts, class A. Daily ex Sun, 11:30-12:30 am, music & farm talks. Mon, Tues, Wed, Fri & Sat, 6-7 pm, music & reports. Thur, 4-5 pm & 6-7 pm, talk. Daily ex Sun, 9-11 pm, music. Sun, 4-6 pm, vesper services. Central standard time.

KMJ—Fresno Bee, Fresno, Calif. 234 meters, 1280 kilocycles, 50 watts, class A. Mon, Wed, Fri, 7:15-9 pm. Pacific time.

KMMJ—M. M. Jackson Co., Clay Center, Nebr. 228 meters, 1310 kilocycles, 500 watts, class A. Central standard time.

KMO—Association Station (Love Electric Co.), Tacoma, Wash. 250 meters, 1190 kilocycles, 10 watts, class A. Pacific time.

KNX—Los Angeles Evening Express, 6116 Hollywood Blvd., Hollywood, Calif. 336.9 meters, 890 kilocycles, 500 watts, class B. Pacific time.

KOA—General Elec. Co., Rock Mountain Broadcasting Station, 1370 Krameria St., Denver, Colo. 322.4 meters, 930 kilocycles, 5 watts, class B. Daily ex Sun, 11:45 am, weather & news reports; 12:15 noon, luncheon musical; 3:15 pm, relaxing exercises. Daily ex Sat & Sun, 6 pm, news & markets; 6:30 pm, dinner concerts. Tues, Thur, Fri, 3:30 pm, 4 & 4:14 pm. Mon, Wed, Fri, 7:30 & 8 pm. Wed & Sat, 10 pm, dance music. Sun, 11 am & 7:45 pm, church services, 4 pm, musical hour. Mountain standard time.

KOB—New Mexico College of Agriculture & Mechanic Arts, State College, N. M. 348.6 meters, 860 kilocycles, 1000 watts, class B. Daily 11:55 am-12 pm, time signals, 9:55-10 pm time signals, 12 noon, weather reports. Mon, Fri, 7:30-8:30 pm, concerts, lectures. Mountain time. Slogan: "The Sunshine State of America."

KOCH—Central High School, Omaha, Neb. 258 meters, 1160 kilocycles, 250 watts, class A. Mon, Tues, Thur & Sat, 8:30-10 pm, musical. Sun, 3-4:30 pm, artist program. Central standard time. Slogan: "The Voice of Central."

KOCW—Oklahoma College for Women, Chickasha, Okla. 252 meters, 1190 kilocycles, 100 watts, class A. Mon, Tues, Thur & Fri, 12-1 pm, educational talk & music. Tues, Fri & Sat, 8-9 pm, musical program. Wed, 10-10:40 am, chapel services, 12-1 pm, musical. Sun, 11 am-12 noon, church services; 2:30-3:30 pm, musical. Central standard time.

KOIL—Mona Motor Oil Radio Station, Monarch Mfg. Co., 1124 6th St., Council Bluffs, Iowa. 278 meters, 1080 kilocycles, 500 watts, class B. Mon, 6 pm-midnight. Tues, Thur, Fri, Sat, 6-9 pm, 11 pm-midnight. Wed, 6-7 pm. Sun, 2-3 am, music; 11 am-noon, church; 1-2 pm, classical music; 7:30-9 pm, 11 pm-midnight, music, orchestra. Central standard time. Slogan: "The World's Largest Grease Spot."

KPO—Hale Brothers & The Chronicle, San Francisco, Calif. 428.3 meters, 700 kilocycles, 1000 watts, class B. Daily ex Sun, 7-8:15 am, health drill; 8-11 pm, music. Daily ex Fri & Sun, 2:30-3:30 pm, matinee. Daily ex Sat & Sun, 5:15-6:15 pm, "Big Brother." Daily, 10:30 am & 6:30 pm, weather forecast & "Ye Towne Crier," etc. Sun, 9:45-10:45 am, church service; 5-10 pm, musical. Pacific standard time. Slogan: "The City By the Golden Gate."

KPPC—Pasadena Presbyterian Church, Colorado & Madison Sts., Pasadena, Calif. 228.9 meters, 1310 kilocycles, 50 watts, class A. Wed, 7:30-9 pm, midweek service. Sun, 10:30 am-12:30 pm, 6:45-9 pm, religious services. Pacific standard time.

KPRC—Houston Post-Dispatch, Houston, Texas. 296.9 meters, 1010 kilocycles, 500 watts, class B. Daily ex Sun, Fri, 10:55 am, time signals; 12 pm, concerts; 5:30 pm, kiddies hour; 7:30-9:30 pm, concert. Wed, 11 pm-midnight, concert. Fri, 12 noon, concert. Sat, 11 pm-midnight. Sun, 10:45 am, 7:30 pm, church services; 9:30 pm, concert. Central standard time. Slogan: "Kotton Port Rail Center."

KPSN—The Pasadena Star-News, 525 E. Colorado St., Pasadena, Calif. 315.6 meters, 950 kilocycles, 1000 watts, class B. Tues, Thur, Sat, 8-9:30 pm, studio concert. Sat, 9:30-10:30 pm, dance orchestra. Sun, 9:30-10:30 am & 6-7 pm, church services; 8:45-9:45 pm, hotel concert. Pacific standard time. Slogan: "Pasadena, California Station KPSN."

KPV—Doubleday Hill Elec. Co., 719 Liberty Ave., Pittsburgh, Pa. 275.2 meters, 1090 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 10:30-11 am, weather report, program; 3-4 pm, program. Sat, 10:30-11 am, program, weather report. Eastern standard time. Slogan: "The Smoky City Station."

KRE—Berkeley Daily Gazette, Berkeley, Calif. 256 meters, 1170 kilocycles, 100 250 watts, class A. Daily ex Sun, 7:30 am, good thought service; 11:15 am, physical exercise for women; 7 pm, current news. Mon, 8-10 pm. Tues, 9-11 pm, musical. Wed, 5-6 pm, children's hour; 9-12 pm, musical. Thurs, 8-11 pm. Fri, 9-12 pm. Sat, 8 pm-1 am, dance programs. Sun, 10-11 am, church; 6:30-7:30 pm, concert; 8:15-10 pm, sacred music concert. Pacific standard time. Slogan: "Looking Through the Golden Gate."

KRE—Berkeley Daily Gazette, Berkeley, Calif. 256 meters, 1170 kilocycles, 100 250 watts, class A. Daily ex Sun, 7:30 am, good thought service; 11:15 am, physical exercise for women; 7 pm, current news. Mon, 8-10 pm. Tues, 9-11 pm, musical. Wed, 5-6 pm, children's hour; 9-12 pm, musical. Thurs, 8-11 pm. Fri, 9-12 pm. Sat, 8 pm-1 am, dance programs. Sun, 10-11 am, church; 6:30-7:30 pm, concert; 8:15-10 pm, sacred music concert. Pacific standard time. Slogan: "Looking Through the Golden Gate."

KRE—Berkeley Daily Gazette, Berkeley, Calif. 256 meters, 1170 kilocycles, 100 250 watts, class A. Daily ex Sun, 7:30 am, good thought service; 11:15 am, physical exercise for women; 7 pm, current news. Mon, 8-10 pm. Tues, 9-11 pm, musical. Wed, 5-6 pm, children's hour; 9-12 pm, musical. Thurs, 8-11 pm. Fri, 9-12 pm. Sat, 8 pm-1 am, dance programs. Sun, 10-11 am, church; 6:30-7:30 pm, concert; 8:15-10 pm, sacred music concert. Pacific standard time. Slogan: "Looking Through the Golden Gate."

KSAC—Kansas State Agricultural College, Manhattan, Kansas. 341 meters, 882 kilocycles, 500 watts, class B. Daily ex Sat & Sun, 9-9:25 am; 9-9:25 am, 9:55-10:25 am, 12:30-1:05 pm, 4:30-5 pm, 6:30-7:30 pm. Sat, 12:35-1:05 pm. Central standard time.

KSD—St. Louis Post-Dispatch, 12th & Olive Sts., St. Louis, Mo. 545.1 meters, 550 kilocycles, 500 watts, class B. Daily ex Sun, 9:40 am-3:40 pm. Sun, 6:15-9:15 pm. Mon, 7-8, 9-11 pm. Tues & Thurs, 6:55-10 pm. Wed, 7-9:15 pm. Fri, 7-11 pm. Sat, 7-10:30 pm. Central standard time.

KSL—Utah Radio Service Corporation, Salt Lake City, Utah. 300 meters, 1000 kilocycles, 1000 watts, class B. Daily ex Sun, 2 pm-12 pm. (Fri, 10 am-12 pm.) Sun, 2-10 pm, classical & religious program. Mountain standard time. Slogan: "The Voice of Western America."

KSO—A. A. Berry Seed Co., Eighth & Logan Sts., Clarinda, Iowa. 241.8 meters, 1240 kilocycles, 500 watts, class A. Daily ex Sat, Sun, 7-9 pm, musical. Daily ex Sun, 12:30 noon. Central standard time.

KTAB—Tenth Ave. Baptist Church, Oakland, Calif. 240 meters, 1250 kilocycles, 1000 watts, class B. Daily ex Sun, 9-30 am, prayer service. Mon, Tues, Thurs, Fri, 8-10 pm, studio program. Sun, 9:45 am-12 noon; 7:45-9 pm, church services; 9:30-11 pm, concert. Pacific time. Slogan: "Knowledge, Truth and Beauty."

KTBI—Bible Institute of Los Angeles, 536 So. Hope St., Los Angeles, Calif. 294 meters, 1020 kilocycles, 750 watts, class B. Mon, Tues, Wed, Thurs, 8 pm, musical studio program. Fri, 7 pm, Sunday school lesson. Sun, 10:45 am, 7:15 pm, church services; 6 pm, vespers. Pacific standard time.

KTNT—Calliophone Co., Muscatine, Iowa. 256 meters, 1170 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 9:30-11 pm, 12-12:30 noon. Sun, 9-10 pm. Central standard time. Slogan: "Calliophone Studio KTNT, First Note in 40 Years."

KTW—First Presbyterian Church, 7th & Spring Sts., Seattle, Wash. 454 meters, 660 kilocycles, 1000 watts, class B. Pacific time.

KUO—San Francisco Examiner, San Francisco, Calif. 434.7 meters, 690 kilocycles, 150 watts, class A. Daily ex Sun, 9 am, 10 am, 12:30 pm, 2 pm, 4 pm, 6:30 pm. Sun, 9 am, 4 pm. Pacific standard time.

KUOM—State University of Montana, Missoula, Mont. 244 meters, 1230 kilocycles, 500 watts, class A. Mon & Thurs, 8 pm, music & popular educational talks. Sun, 9:15 pm, sacred concert & sermon. Mountain standard time.

KUSD—University of South Dakota, Vermillion, S. Dak. 278 meters, 1080 kilocycles, 100 watts, class A. Wed, 8-9 pm. Central standard time.

KTBR—Brown's Radio Shop, 393 1/2 Yamhill St., Portland, Ore. 263 meters, 1140 kilocycles, 50 watts, class A. Pacific time.

KTCL—KTCL Broadcasting Station, New Washington Hotel, Seattle, Wash. 305.9 meters, 980 kilocycles, 1000 watts, class B. Daily ex Sat, Sun, 9:30-10:30 am. Mon, 7-8 pm, 8-9 pm, musical. Tues, Thurs, 12:30-1:30 pm, concert. Tues, 8-9 pm. Wed, 7:30-9:30 pm, musical. Fri, 8-10 pm, musical. Sat, no definite hours. Sun, 1-2 pm, 3-4 pm, 7:50-9:10-10:10 pm. Pacific standard time. Slogan: "Know The Charmed Land."

KTHS—New Arlington Hotel, Hot Springs, Ark. 375 meters, 800 kilocycles, 750 watts, class B. Daily, 9-11:30 pm. Daily ex Sun & Tues, 12:30-1 pm. Sun, 11 am-12:15 pm. Central standard time. Slogan: "Kum To Hot Springs."

KTN—Calliophone Co., Muscatine, Iowa. 256 meters, 1170 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 9:30-11 pm, 12-12:30 noon. Sun, 9-10 pm. Central standard time. Slogan: "Calliophone Studio KTNT, First Note in 40 Years."

KTW—First Presbyterian Church, 7th & Spring Sts., Seattle, Wash. 454 meters, 660 kilocycles, 1000 watts, class B. Pacific time.

KUO—San Francisco Examiner, San Francisco, Calif. 434.7 meters, 690 kilocycles, 150 watts, class A. Daily ex Sun, 9 am, 10 am, 12:30 pm, 2 pm, 4 pm, 6:30 pm. Sun, 9 am, 4 pm. Pacific standard time.

KUOM—State University of Montana, Missoula, Mont. 244 meters, 1230 kilocycles, 500 watts, class A. Mon & Thurs, 8 pm, music & popular educational talks. Sun, 9:15 pm, sacred concert & sermon. Mountain standard time.

KUSD—University of South Dakota, Vermillion, S. Dak. 278 meters, 1080 kilocycles, 100 watts, class A. Wed, 8-9 pm. Central standard time.

KUT—University of Texas, Austin, Tex. 231 meters, 1300 kilocycles, 500 watts, class A. Mon, Wed, 8-9:30 pm. Sun, 11 am-12:15 pm, 7:30-9 pm. Central standard time. Slogan: "Kum to University of Texas."

KVOO—Voice of Oklahoma, Bristow, Okla. 374.8 meters, 800 kilocycles, 500 watts, class B. Central time.

KWCR—H. F. Parr, 1444 Second Ave., E., Cedar Rapids, Iowa. 278 meters, 1080 kilocycles, 500 watts, class A. Mon, 4:15 pm, 9-10 pm, 10:30 pm-12 am. Wed, 4:15 pm, 9-10:30 pm. Fri, 12:01 pm-4:15 pm, 9-10:30 pm. Sat, midnight. Sun, 11 am, church services; 5:15 pm, special service. Central standard time. Slogan: "Voice of Cedar Rapids."

KWG—Portable Wireless Telephone Co., 530 E. Market St., Stockton, Calif. 248 meters, 1210 kilocycles, 50 watts, class A. Pacific time.

KWH—W. G. Patterson, Shreveport, La. 273 meters, 1190 kilocycles, 500 watts, class A. Central standard time.

KWKC—Wilson Duncan Studios, 39th & Main Sts., Kansas City, Mo. 236 meters, 1270 kilocycles, 100 watts, class A. Tues, Wed, Thurs, Fri, 7-9:15 pm. Central standard time. Slogan: "Keep Watching Kansas City."

KWKH—W. K. Henderson Iron Works & Supply Co., Shreveport, La. 261 meters, 1000 watts. Mon, Thurs, 8-9 pm, musical. Tues, Sat, 9-12 pm, dance program. Sun, 9:30-10:30 am, Bible class program; 5-6 pm, musical. Central standard time. Slogan: "Shreveport on the Air—Shreveport Everywhere."

KWSC—The State College of Washington, Pullman, Wash. 348.6 meters, 860 kilocycles, 500 watts, class B. Mon, Wed, Fri, 7:30-9 pm. Pacific standard time.

KWUC—Western Union College, LeMars, Iowa. 252 meters, 1190 kilocycles, 50 watts, class A. Thurs, 9:40 am, chapel service. Fri, 9:30 pm, musical entertainment. Sun, 3 pm, vesper service. Central standard time. Slogan: "Voice of Western Union College."

KWWG—City of Brownsville, 708 10th St., Brownsville, Texas. 278 meters, 1080 kilocycles, 500 watts, class A. Daily ex Sun, 12 noon, 6 pm, weather, news, & music. Mon, Thurs, 8:30 pm-11:59 pm, music. Sun, 2:30 pm, religious service, sermon. Central standard time. Slogan: "Kum to the World's Winter Garden, Where Mexico Meets Uncle Sam."

KVJ—General Petroleum Corp., Yacutaga Beach, Alaska.

KVW—Westinghouse Elec. & Mfg. Co., 500 S. Michigan Ave., Chicago, Ill. 535.4 meters, 560 kilocycles, 3500 watts, class B. Daily every half hour, ex from 2 am-8 am, news, reports, music & readings. Central standard time.

KZKZ—Electrical Supply Co., 109 Plaza Moraga, Manila, P. I. 270 meters, 1110 kilocycles, 100 watts, class A.

KZRO—Far Eastern Radio, Inc., Manila, P. I. 222 meters, 1350 kilocycles, 500 watts, class A.

KZUY—F. Johnson Elser, Manila, P. I. 370 meters, 810 kilocycles, 500 watts, class B.

KZM—Preston D. Allen, 13th & Harrison Sts., Hotel Oakland, Oakland, Calif. 240 meters, 1240 kilocycles, 100 watts, class A. Daily ex Sun, 6-7 pm. Pacific standard time.

NAA—Naval Radio Station, Arlington, Va. 434.5 meters, 690 kilocycles, 560 watts. Daily 10:05 am, 3:45 pm, 10:05 pm. Tues, 7:30 pm. Eastern standard time. Slogan: "Where the Time Signals Originate."

WAAB—Valdemar Jenson, 137 S. St. Patrick St., New Orleans, La. 268 meters, 1120 kilocycles, 100 watts, class A. Central standard time.

WAAC—Tulane University, New Orleans, La. 273 meters, 1100 kilocycles, 100 watts, class A. Central standard time.

WAAD—Ohio Mechanics Institute, Cincinnati, Ohio. 258 meters, 1160 kilocycles, 25 watts, class A. Central standard time.

WAFF—Chicago Daily Drivers Journal, 836 Exchange Ave., Chicago, Ill. 278 meters, 1080 kilocycles, 200 watts, class A. Daily ex Sun & holidays, 8:45 am, markets; 10:30 am, weather; 10:50 am, markets; 11 am, estimated receipts of following day; 12:30 pm, weather; 12:50 pm, markets; 3 pm, markets; 4:30 pm, eastern meat trade conditions. Sat, 12:30 pm, final weather and market reports. Central standard time.

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WAAM—I. R. Nelson Co., Bond St., Newark, N. J. 263 meters, 1140 kilocycles, 500 watts, class A. Daily ex Sat, Sun, 11 am-12 pm, religious. Daily ex Thurs & Sun, 6 pm-11 pm. Thurs, 6-7:30 pm. Eastern standard time. Slogan: "Sunshine Station."

WAAW—Omaha Grain Exchange, 19th & Harney Sts., Omaha, Nebr. 384.4 & 278 meters, 780 kilocycles, 500 watts, class A. Daily ex Sun, 9:30 am-8:30 pm. Sat, 12 noon. Central standard time. Slogan: "Where Agriculture Accumulates Wealth."

WABA—Lake Forest College, Lake Forest, Ill. 227 meters, 1820 kilocycles, 100 watts, class A.

WABB—Harrisburg Sporting Goods Co., Harrisburg, Pa. 266 meters, 1130 kilocycles, 10 watts, class A.

WABC—Asheville Battery Co., Inc., 19 Haywood St., Asheville, N. C. 254 meters, 1180 kilocycles, 20 watts, class A. Tues, Thurs, Sat, 7-9:30 pm. Sun, 11 am, 7:30 pm, church services. Central standard time.

WABI—First Universalist Church, Park St., Bangor, Me. 240 meters, 1280 kilocycles, 100 watts, class A. Sun, 10:30 am-12 pm, morning services; 7:30-9 pm, evening services. Eastern standard time. Slogan: "The Pinetree Wave."

WABL—Connecticut Agricultural College, Storrs, Conn. 275 meters, 1090 kilocycles, 100 watts, class A. Eastern standard time.

WABO—Lake Ave. Baptist Church, Rochester, N. Y. 278 meters, 1080 kilocycles, 100 watts, class A. Eastern standard time.

WABO—Haverford College, Dept. of Engineering, Haverford, Pa. 261 meters, 1150 kilocycles, 1000 watts, class A. Mon, Fri, regularly 11 pm-12:30 am, organ recital. Alt. Monds, 8:30-10 pm, lectures. Fri, 8 pm, varied musical program. 10:15-12 pm, every third Sun, musical program. Eastern standard time. Slogan: "Designed, Built, & Operated by Engineering Students at Haverford College."

WABR—Scott High School, Toledo, O. 263 meters, 1140 kilocycles, 100 watts, class A. Schedule variable. Eastern standard time.

WABW—College of Wooster, Wooster, Ohio. 206.8 meters, 1450 kilocycles, 50 watts, class A. No regular schedule. Eastern standard time.

WABX—Henry B. Joy, Near Mt. Clemens, Mich. 246 meters, 1220 kilocycles, 50 watts, class A. Central standard time.

WABY—John Magaldi, Jr., 815 Kimball St., Philadelphia, Pa. 242 meters, 1240 kilocycles, 50 watts, class A. Eastern standard time.

WABZ—Coliseum Place Baptist Church, 1876 Camp St., New Orleans, La. 275 meters, 1090 kilocycles, 50 watts, class A. Sun, 11 am-12:20 pm, 7:30-9:15 pm, regular church services. Central standard time.

WADC—Allen T. Simmons, (Allen Theater), Portage Hotel, E. Market St., Akron, Ohio. 258 meters, 1160 kilocycles, 500 watts, class A. Daily ex Sun, 11 am-12 noon, 6:30-7:30 pm. Tues & Fri, 8-11 pm. Thurs, 9-11 pm. Sun, 12:30-1:30 pm, 6:30-7:30 pm. Eastern standard time.

WAFD—Albert B. Parfet Co., 1432 Military St., Port Huron, Mich., 275 meters, 1090 kilocycles, 500 watts, class B. Mon, 8 pm-10 pm. Tues, 10 am-11 am, Wed, 8-11 pm. Sat, 12 pm-2 am. Sun, 10:30-11:30 am. Central standard time. Slogan: "Gateway to the Great Lakes."

WAGM—A. G. Miller Furniture & Radio Store, 113 W. Fourth St., Royal Oak, Mich. 226 meters, 1330 kilocycles, 50 watts, class A. Mon, Wed, Fri, 8-10 pm, musical program. Central standard time.

WAHG—A. H. Grebe & Co., Inc., 70 Van Wyck Blvd., Richmond Hill, L. I., N. Y. 315.6 meters, 950 kilocycles, 500 watts, class B. Daily ex Sun, prior to 10 am: 11 am-1:30 pm, 4-6 pm. Mon, Wed, Fri, 7:30 pm, to close. Sat, 12 pm-2 am. Sun, 10 am-1 pm, 7:30-9:30 pm. Eastern standard time. Slogan: "Wait And Hear Grebe."

WAIT—A. H. Waite & Co., Inc., 32 W. St., Taunton, Mass. 229 meters, 1310 kilocycles, 10 watts, class A. No regular schedule, generally Fri, 8-10:30 pm. Eastern standard time.

WAIU—American Insurance Union, Columbus, Ohio. 293.9 meters, 1020 kilocycles, 500 watts, class B. Mon, Wed, Fri, 10-11 am, 12-1 pm, 3-4 pm, 6-7 pm, 8-10 pm. Tues, Thurs, 12-1 pm, 3-4 pm, 6-7 pm. Sat, 12-1 pm, 9-11 pm. Sun, 3-4 pm. Eastern standard time.

WAMD—Hubbard & Co., 12 W. Grant St., Minneapolis, Minn. 244 meters, 1230 kilocycles, 500 watts, class A. Central standard time.

WAPI—Alabama Polytechnic Institute, Auburn, Ala. 248 meters, 1210 kilocycles, 500 watts, class A. Central standard time.

WARC—American Radio & Research Corp., 1 Radio Ave., Medford Hillside, Mass. 261 meters, 1150 kilocycles, 100 watts, class A. Eastern standard time.

WBAA—Purdue University, Dept. of Electrical Engineering, West Lafayette, Ind. 273 meters, 1100 kilocycles, 250 watts, class A. Central standard time.

WBAK—Pennsylvania State Police, 18th & Herr Sts., Harrisburg, Pa. 275 meters, 1090 kilocycles, 500 watts, class A. Daily ex Sun, 10 am-1 pm, 5:45 pm-12 midnight. Special programs, 7:30 pm. Mon, Tues, Wed. Eastern standard time.

WBAO—James Milliken University, Decatur, Ill. 270 meters, 100 kilocycles, 100 watts, class A. Irregular schedule. Central standard time.

WBAP—The Star-Telegram and Record-Telegram, Fort Worth, Texas, 475.9 meters, 630 kilocycles, 1500 watts, class B. Daily ex Sat & Sun, 6 pm, orchestra; 7:30 pm, classical, varied, Hawaiian; 9:30 pm, popular, classical, orchestral & varied. Mon, Wed & Fri, 11 pm, popular music. Sat, 7:30 pm, Sunday school class. Sun, 11 am, church; 12:30 pm, kiddie's hour; 5 pm, sacred; 11 pm, popular. Central standard time.

WBAV—Erner & Hopkins Co., 146 No. Third St., Columbus, Ohio. 293 meters, 1020 kilocycles, 500 watts, class B. Eastern standard time.

WBAX—John H. Stenger, Jr., Box 104, Wilkes-Barre, Pa. 256 meters, 1170 kilocycles, 100 watts, class A. Tues & Thurs, 9-12 pm, varied program. Sun, 6-9 pm, dinner music. Eastern standard time.

WBAY—A. T. & T. Co., New York, N. Y. 492 meters, 610 kilocycles, 500 watts, class B. Eastern standard time.

WBBG—Irving Vermilya, 24 Vermilya Ave., Mattapoisett, Mass. 248 meters, 1210 kilocycles, 500 watts, class A. Eastern standard time.

WBBL—Grace Covenant Presbyterian Church, Richmond, Va. 229 meters, 1310 kilocycles, 100 watts, class A. Sun, 11 am & 7:45 pm. Tues, 8 pm. Eastern standard time. Slogan: "Richmond, Virginia, the Gateway North and South."

WBBM—Atlas Investment Co., 1554 Howard St., Chicago, Ill. 226 meters, 1330 kilocycles, 1500 watts, class B. Mon, 4-7 pm. Tues, Wed, Thurs, Fri, 4-6 pm, 7-12 pm. Sat, 4-6 pm, 8 pm-2 am. Sun, 12:30-2 pm. Central standard time. Slogan: "World's Best Broadcast Medium."

WBBP—Petoskey High School, Petoskey, Mich. 238 meters, 1260 kilocycles, 200 watts, class A. Tues, 9 pm, popular programs. Fri, 8 pm, athletics. Sun, 10:30 am, church service; 3 pm, sacred concert. Central standard time. Slogan: "There's Only One Petoskey."

WBBR—Station WBBR, "The Watchtower," 124 Columbia Heights, Brooklyn, N. Y. 272.6 meters, 1100 kilocycles, 500 watts, class A. Mon, Thurs, Sat, 8-9 pm. Sun, 10-11:30 am, 9-10:30 pm. Eastern standard time. Slogan: "Watchtower."

WBBS—First Baptist Church, 3400 St. Charles St., New Orleans, La. 252 meters, 1190 kilocycles, 50 watts, class A. Central standard time.

WBBW—Ruffner Junior High School, Norfolk, Va. 222 meters, 1350 kilocycles, 50 watts, class A. Mon, 6:45-7:15 pm, boy's program. Wed, 10:30-11:15 am, school assembly. Thurs, 9:30-10:30 pm, musical. Eastern standard time.

WBBY—Washington Light Infantry, 240 King St., Charleston, S. C. 268 meters, 1120 kilocycles, 20 watts, class A. Irregular through week. Sat, 7-12 pm, orchestra, vocal, instrumental & talks. Eastern time. Slogan: "The Seaport of the Southeast."

WBBZ—C. L. Carrell, 36 So. State St., Chicago, Ill. (Portable.) 215.7 meters, 1390 kilocycles, 50 watts, class A. Central standard time.

WBCN—Southdown Economist Station, Foster & McDonnell, 730 W. 65th St., Chicago, Ill. 266 meters, 1130 kilocycles, 500 watts, class A. Daily ex Sun, 10-11 am. Mon, Wed, Sat, 3-5 pm. Daily ex Mon & Sun, 7-8 pm. Daily ex Sat & Sun, 5-5:15 pm. Tues, Wed, Fri & Sat, 10-12 pm. Tues, 12 pm-2:30 am. Thurs, 10 pm-1 am. Sun, 10:30-12 am, church; 4-6 pm, music; 7:45-9:15 pm, church. Central standard time. Slogan: "World's Best Community Newspaper."

WBDC—The Baxter Laundry Co., 747 Fountain St., N. E., Grand Rapids, Mich. 256 meters, 1170 kilocycles, 60 watts, class A. Central standard time.

WBES—Bliss Electrical School, Takoma Park, Washington, D. C. 222.1 meters, 1350 kilocycles, 100 watts, class A. Eastern standard time.

WBNY—Shirley Katz, 145 W. 45th, Tilmor Bldg., New York City, N. Y. 209.7 meters, 1430 kilocycles, 500 watts, class A. Daily ex Sun, 2-12 pm. Sun, 2-10 pm. Eastern standard time. Slogan: "The Heart of New York."

WBOQ—A. H. Grebe & Co., Inc., 70 Van Wyck Blvd., Richmond Hill, L. I., N. Y. 236 meters, 1270 kilocycles, 500 watts, class A. Unlimited schedule. Eastern standard time.

WBR—Pennsylvania State Police, Troop "D," Butler, Pa. 1199 meters, 100 watts, class A. No regular schedule. Eastern standard time.

WBRC—Bell Radio Corp., 1913 Fifth Ave., North, Birmingham, Ala. 248 meters, 1210 kilocycles, 50 watts, class A. Mon, Wed, 8-9:30 pm. Sat, 9-12 pm. Central standard time.

WBRE—Baltimore Radio Exchange, 17 W. Northampton St., Wilkes-Barre, Pa. 231 meters, 1300 kilocycles, 100 watts, class A. Wed, Fri, 8:30 pm-midnight. Sun, 9-midnight, classical. Eastern standard time.

WBS—D. W. May, Inc., 325 Central Ave., Newark, N. J. 252 meters, 1190 kilocycles, 100 watts, class A. Eastern standard time.

WBT—Charlotte Chamber of Commerce, W. Trade & Graham Sts., Coddington Bldg., Charlotte, N. C. 275 meters, 1090 kilocycles, 250 watts, class A.

WBT—Southern Radio Corp., Realty Bldg., Charlotte, N. C. 275 meters, 1090 kilocycles, 250 watts, class A. Eastern standard time.

WBZ—Westinghouse Elec. & Mfg. Co., 625 Page Blvd., East Springfield, Mass. 333.1 meters, 900 kilocycles, 2000 watts, class B. Daily ex Sun, 6:30-10:30 pm, (Thurs, 11 pm). Sun, 10:50 am, 7 pm, 8 pm. Eastern standard time. Slogan: "The Broadcasting Station of New England."

WBZA—Westinghouse Electric & Mfg. Co., Hotel Brunswick, Boston, Mass. 242 meters, 1240 kilocycles, 250 watts, class A. Eastern standard time.

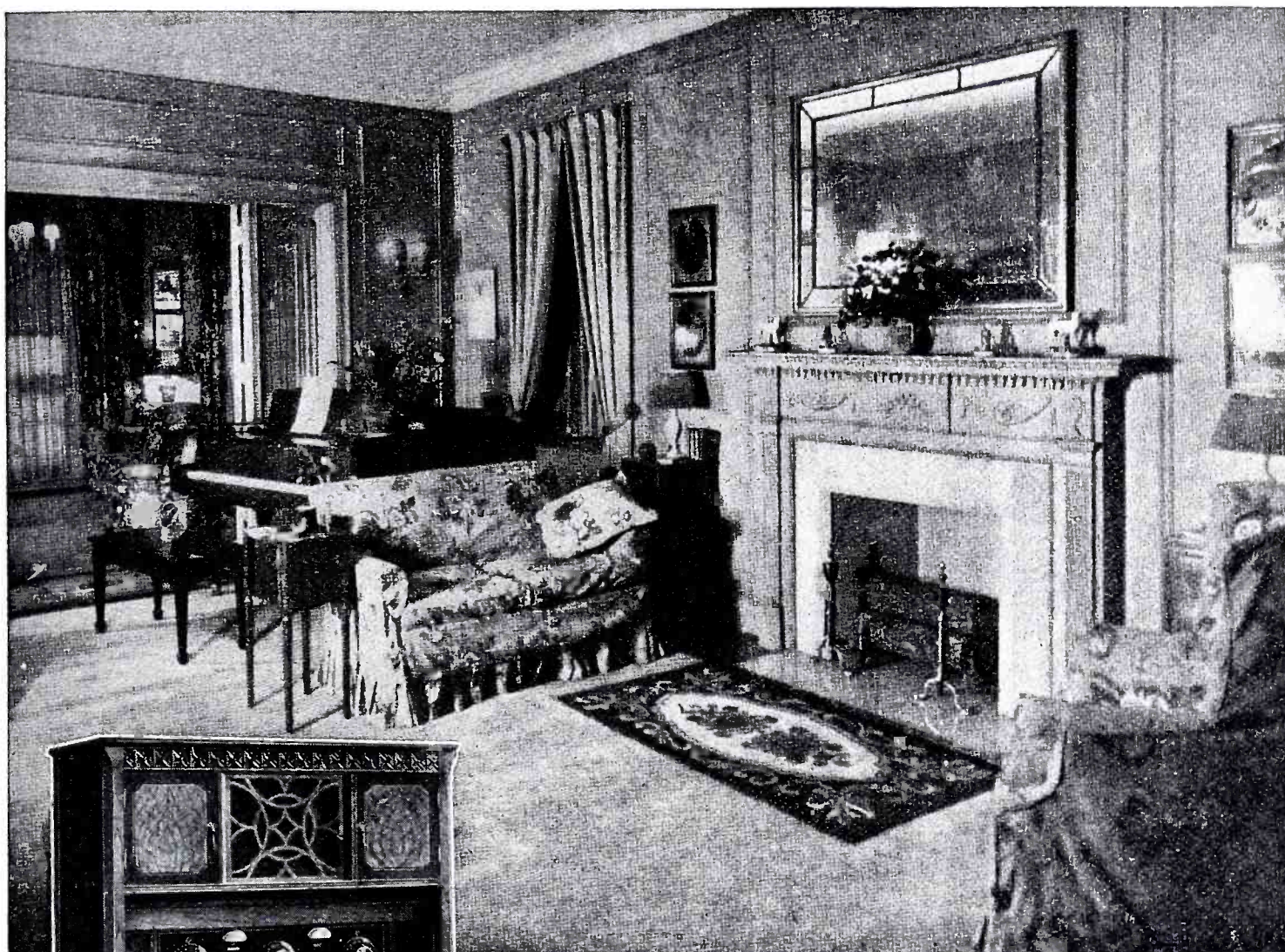
WCAC—Connecticut Agricultural College, Storrs, Conn. 275 meters, 1090 kilocycles, 500 watts, class A. Mon, Wed, Fri, 7:20-8:20 pm, farm lectures & music. Eastern standard time. Slogan: "Voice From the Nutmeg State."

WCAD—St. Lawrence University, Canton, N. Y. 263 meters, 1140 kilocycles, 250 watts, class A. Daily ex Sun, 11 am-11:15 am. Wed, 8-11 pm. Thurs, 7:30 pm-12:30 am, rebroadcasting of WGY. Eastern standard time. Slogan: "The Voice of the North Country."

WCAE—The Pittsburgh Press and the Kaufman & Baer Co., Pittsburgh, Pa. 461.3 meters, 650 kilocycles, 500 watts, class B. Mon, Wed, Fri, 10:45 am, 3 pm, 4:30 pm, 6:30-10:30 pm. Mon, 2:45 pm, news. Tues, Thurs, Sat, 12:30 pm, 3 pm, 4:30 pm, 6:30-11 pm. Sun, 10:45 am, 3:45 pm, 7:20 pm & 9:15 pm. Eastern standard time. Slogan: "Where Prosperity Begins."

WCAJ—Nebraska Wesleyan University, University Place, Nebr. 254 meters, 1180 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 4:30 pm, radio forecasts, weather, news. Thurs, followed by afternoon matinee program. Wed, 9 pm, music, lectures. Central standard time.

WCAL—St. Olaf College, Northfield, Minn. 336.9 meters, 890 kilocycles, 500 watts, class B. Daily ex Sun & Thurs, 9:45 am, chapel service. Mon, Fri, Sat, 8:30 pm, music, lecture, book talk. Thurs, 9 pm, music, lecture. Sun, 8:30 am, Norwegian church service; 9 pm, sacred music, sermon. Central standard time. Slogan: "The College on the Hill."



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WCAO—Metropolitan Club, 842 N. Howard St., Baltimore, Md. 275 meters, 1090 kilocycles, 100 watts, class A. Mon. Wed. Fri. 6:45-11:30 pm. Sun. 3-7:30 pm. Eastern standard time. Slogan: "Better Broadcasting for Baltimoreans."

1st Dial 2nd Dial 3rd Dial

WCAP—Chesapeake & Potomac Tel. Co., 725 13th St., N. W., Washington, D. C. 469 meters, 500 watts, class B. Mon. 6-11 pm. Wed. 7-12 pm. Fri. 6-12 pm. Sun. 11 am, service; 4 pm, service; 7:30-10:15 pm, concert. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCAR—Southern Radio Corp. of Texas, 101 W. Pecan St., San Antonio, Texas. 263 meters, 1140 kilocycles, 6000 watts, class A. Daily ex Sun, 11 am, stock reports; 3 pm, late stock reports & news items; 8-10 pm, musical program. Central standard time. Slogan: "Down in Sunny San Antonio."

1st Dial 2nd Dial 3rd Dial

WCAT—South Dakota State School of Mines, Rapid City, S. Dak. 240 meters, 1240 kilocycles, 50 watts, class A. Mountain time.

1st Dial 2nd Dial 3rd Dial

WCAU—Universal Broadcasting Co., Hotel Pennsylvania, 39th & Chestnut Sts., Philadelphia, Pa. 277.6 meters, 1080 kilocycles, 500 watts, class A. Mon. 8-12 pm, musical. Tues. 7:30-12 pm, musical. Wed. 6:45-8 pm, dinner dance music; 8-11 pm, studio features. Thurs. 6:30-7:30 pm, dinner dance music; 7:30-8 pm, recital; 8 pm-1 am, musical. Fri. 7:45-11:45 pm, musical. Sun. 5:20-6:30 pm, church; 6:30-8:30, concert; 8:30-9 pm, light opera. Eastern standard time. Slogan: "Where Cheer Awaits U."

1st Dial 2nd Dial 3rd Dial

WCAX—University of Vermont, Burlington, Vt. 252 meters, 1190 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCBA—Queen City Radiophone Station WCBA, 1015 Allen St., Allentown, Pa. 254 meters, 1180 kilocycles, 45 watts, class A. Wed & Fri, 8:15-11 pm, musical program. Sat, 9:30-11 pm, dance program. Sun, 10 am, 5:30 pm, 7 pm, church service. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCBD—Wilbur Glenn Voliva, Shiloh Park, Zion, Ill. 344.6 meters, 870 kilocycles, 5000 watts, class B. Tues, Thurs, 8-10:30 pm, concert. Wed, 12:30-1 pm, organ concert. Thurs, 2:30-3:45 pm, sacred music & address. Sun, 9-10:45 am, Bible school; 2:30-6 pm, service. Central standard time. Slogan: "Where God Rules Man Prospers."

1st Dial 2nd Dial 3rd Dial

WCBE—Thalt Bros. Radio Co., New Orleans, La. 263 meters, 1140 kilocycles, 5 watts, class A. Daily ex Sun, 10:30-11:30 am. Sun, 12:30-2 pm. Central standard time. Slogan: "Second Post U. S. A."

1st Dial 2nd Dial 3rd Dial

WCBH—University of Mississippi, University P. O., Miss. 242 meters, 1240 kilocycles, 50 watts, class A. Mon, 6:30 pm. Tues, 7 pm. Fri, 7 pm. Central standard time. Slogan: "The Voice of 'Ole Miss.'"

1st Dial 2nd Dial 3rd Dial

WCBK—E. Richard Hall, St. Petersburg, Fla. 266 meters, 1130 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCBM—Hotel Chateau, Baltimore, Md. 229 meters, 1310 kilocycles, 50 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCBO—First Baptist Church, Nashville, Tenn. 236 meters, 1270 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WCBR—C. H. Messter (Portable), 42 Doyle Ave., Providence, R. I. 205.4 meters, 1460 kilocycles, 30 watts, class A. Irregular schedule. Eastern time.

1st Dial 2nd Dial 3rd Dial

WCBT—Clark University, Worcester, Mass. 238 meters, 1260 kilocycles, 250 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCBX—The Radio Shop, Newark, N. J. 233 meters, 1290 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCCO—Gold Medal Station, St. Paul & Minneapolis, Minn. 416.4 meters, 720 kilocycles, 5000 watts, class B. Daily ex Fri & Sun, 9:30 am, 9:35 am, 9:45 am, 10:30 am, 11:30 am, 12 noon, 1:30 pm & 2 pm, news, markets, weather, noon concert & woman's hour. Mon, 2:30-10 pm. Tues, 3-10 pm. Wed, 2:30-11:30 pm. Thurs, 3-10:05 pm. Fri & Sat, 6:15-10:05 pm. Sat, 2:30 pm. Sun, 10:50 am, 1:45-9:15 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WCLO—C. E. Whitmore, Camp Lake, Wis. 231 meters, 1300 kilocycles, 50 watts, class A. Sun, 11 am, church services; 3 pm, musical. Mon, 9-12 pm, concert. Other week days irregular programs. Central standard time. Slogan: "The Playground of the Lake Region."

1st Dial 2nd Dial 3rd Dial

WCLS—Boston Store, 301 Jecerson St., Joliet, Ill. 214.2 meters, 1400 kilocycles, 150 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WCSH—Henry P. Rines, Congress Square Hotel, Portland, Maine. 256.3 meters, 1170 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCSSO—Wittenberg College, Springfield, Ohio. 248 meters, 1210 kilocycles, 100 watts, class A. Irregular schedule. Central standard time.

1st Dial 2nd Dial 3rd Dial

WCWS—Charles W. Selen (Portable), 69 Exchange St., Providence, R. I. 209.7 meters, 1430 kilocycles, 100 watts, class B. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WCX—Detroit Free Press and Jewett Radio & Phone Co., Detroit, Mich. 516.9 meters, 581 kilocycles, 5000 watts, class B. Daily ex Sun, 4-4:30 pm, 6-7 pm. Mon, Wed, Thurs, 8-9 pm. Tues, 10 pm-2 am. Fri, 9-10 pm, 10-11 pm. Sun, 10:15 am, church services; 3-4 pm, organ recital. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WDAD—Dad's Auto Accessories & Radio Store, 160-164 Eighth Ave., North, Nashville, Tenn. 226 meters, 1323 kilocycles, 150 watts, class A. Daily ex Sat, 3:30-5 pm, musical (Sun, sacred program). Daily ex Sun, 8-10 pm, musical. Central standard time. Slogan: "Where Dollars Are Doubled."

1st Dial 2nd Dial 3rd Dial

WDAE—Tampa Times, Tampa, Fla. 273 meters, 1100 kilocycles, 250 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WDAF—The Kansas City Star, Kansas City, Mo. 365.6 meters, 820 kilocycles, 1000 watts, class B. Mon, Wed, Fri, 10:45-11 am, 6-7 pm, 8-10 pm, 11:45 pm-1 am, Nighthawk frolic. Tues, Thurs, Sat, 3:30-4:30 pm, musical matinee; 6-7 pm, talks & music; 11:45 pm-1 am, Nighthawk frolic. Central standard time. Slogan: "Enemies of Sleep." Nighthawk slogan.

1st Dial 2nd Dial 3rd Dial

WDBY—Radio Equipment Corporation, 119 Broadway, Fargo, N. Dak. 261 meters, 1150 kilocycles, 50 watts, class A. Daily ex Tues, Thurs & Sat, 7:30 pm, musical program. Mon, 10 am, markets; 11 am, markets; 12:30 pm, markets; 1 pm, Blue Valley Radio Farm School; 1:10 pm, markets; 2 pm, markets, & 5 pm, musical program. Sun, 10:30 am, church services; 4 pm, musical program; 7:30 pm, church. Central standard time.

1st Dial 2nd Dial 3rd Dial

WDBC—Kirk, Johnson & Co., Lancaster, Pa. 258 meters, 1160 kilocycles, 50 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WDBE—Gilham-Schoen Elec. Co., 35 Cone St., Atlanta, Ga. 275 meters, 1080 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WDBJ—Richardson-Wayland Elec. Corp., 106 Church Ave., S. W., Roanoke, Va. 229 meters, 1310 kilocycles, 50 watts, class A. Daily ex Sun, 12-1 pm & 5:30-6:30 pm. (Wed & Sat, 12:30-1:30 pm.) Wed & Sat, 9-11 pm. Sun, 8-9 pm. Eastern standard time. Slogan: "The Little Station With the Long Reach."

1st Dial 2nd Dial 3rd Dial

WDBK—M. F. Broz Furniture, Hardware & Radio Store, 13918 Union & Kinsman Sts., Cleveland, Ohio. 227 meters, 1320 kilocycles, 100 watts, class A. Tues & Fri, 8:30-11:30 pm. Eastern standard time. Slogan: "Broz-casting from Cleveland."

1st Dial 2nd Dial 3rd Dial

WDBO—Rollin College, Inc., Box 344, Winter Park, Fla. 240 meters, 1250 kilocycles, 500 watts, class A. Daily ex Sun, 7:30 pm, markets; 9 pm, musical program. Sun, 10:30 am, church services. Eastern standard time. Slogan: "Way Down By Orlando in the City of Happy Homes."

1st Dial 2nd Dial 3rd Dial

WDBR—Tremont Temple Baptist Ch'ch, 82 Tremont St., Boston, Mass. 261 meters, 1150 kilocycles, 100 watts, class A. Sun, 10:30 am-12 noon, 6:30-9 pm. Fri, 7:30-9 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WDBS—The S. M. K. Radio Corp., 39 E. Third St., Dayton, Ohio. 275 meters, 1090 kilocycles, 5 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WDBY—North Shore Congregational Church, 1011 Wilson Ave., Chicago, Ill. 258 meters, 1160 kilocycles, 500 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WDBZ—Ulster County Council, Boy Scouts of America, Kingston, N. Y. 1st Dial 2nd Dial 3rd Dial

WDCH—Dartmouth College, Hanover, N. H. 256 meters, 1170 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WDDO—Chattanooga Radio Co., Inc., 615 Market St., Chattanooga, Tenn. 256 meters, 1170 kilocycles, 500 watts, class A. Mon, Wed, Fri, 6:30-10 pm. Alt. Tues, 9-9:30 pm, bridge games broadcast. Sun, 7:30-9:15 pm, church services. Central standard time. Slogan: "Wonderful Dynamo of Dixie."

1st Dial 2nd Dial 3rd Dial

WDZ—James L. Bush, Tuacola, Ill. 278 meters, 1080 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEAF—American Telephone & Telegraph Co., 195 Broadway, New York, N. Y. 491.5 meters, 610 kilocycles, 5000 watts, class B. Daily ex Sun, 6:45-7:45 am, 6 pm-12 midnight. Daily ex Sun, 4-5 pm. Mon, Wed, Fri, 10:45 am-12 noon. Tues, Thurs, 11 am-12 noon. Sat, 1:45-5 pm. Sun, 2-5:30 pm, 7:20-10:15 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEAN—Hotel Lassen, The Rigby-Gray Hotel Co., S. Market St., Wichita, Kan. 268 meters, 1120 kilocycles, 50 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEAI—School of Electric Engineering, Cornell University, Ithaca, N. Y. 254 meters, 1180 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEAM—Borough of North Plainfield, North Plainfield, N. J. 261 meters, 1150 kilocycles, 250 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEAN—The Shepard Stores, Westminster St., Providence, R. I. 270 meters, 1110 kilocycles, 500 watts, class B. Daily ex Sun, 12-1 am, 4-5 pm, musical program; 6:30 pm, dinner dance; 8 pm, concert. Tues & Thurs, 10 am, home service talk. Wed, 9:30, dance program. Sun, 10:30 am, or 11 am, church services; 1:30 & 4 pm, concert program. Eastern standard time. Slogan: "We Entertain A Nation."

1st Dial 2nd Dial 3rd Dial

WEAO—Ohio State University, Columbus, Ohio. 293.9 meters, 1020 kilocycles, 500 watts, class B. Daily ex Sun & holidays, 9:45 am, weather, market reports, agricultural bulletin; 11 am, market reports and music; 1 pm, markets, music; 4 pm, markets. Tues, 9 pm, lectures, music. Wed, 4:10 pm, story hour for shut-ins; 8 pm, lectures, music. Thurs, 8 pm, lectures, music. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEAR—The Goodyear Tire & Rubber Co., 2026 Union Trust Bldg., Cleveland, Ohio. 389.4 meters, 770 kilocycles, 1000 watts, class B. Daily ex Sun, 11 am-12:15 pm, weather, markets. Daily ex Sat & Sun, 3:30-4 pm, weather markets. Mon, Wed & Sat, 7-8 pm, musical. Tues, Thurs, & Fri, 7-11 pm, musical. Sun, 3:30-5 pm, musical; 7-10 pm, musical. Eastern standard time. Slogan: "Goodyear Tires—WEAR."

1st Dial 2nd Dial 3rd Dial

WEAU—Davidson Bros. Co., Sioux City, Iowa. 275 meters, 1090 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEAY—Iris Theater, 612 Travis St., Houston, Texas. 270 meters, 1110 kilocycles, 500 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEBA—The Electric Shop, 181 Church St., New Brunswick, N. J. 238 meters, 1290 kilocycles, 15 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEBC—Walter C. Bridges, 1011 N. 21st St., Superior, Wis. 242 meters, 1240 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEBD—Electrical Equipment & Service Co., Anderson, Ind. 248 meters, 1220 kilocycles, 15 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEBE—Roy W. Waller, 310 Wall St., Cambridge, Ohio. 234 meters, 1280 kilocycles, 10 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial



“These Eveready Batteries are the correct size for your set. With average use they will last you a year or longer”

“YOU have been one of the many who use ‘B’ batteries that are too small in capacity for their receivers. That is not economical. It makes you buy ‘B’ batteries twice as often as necessary. Fit the right size Evereadys to your set and add a ‘C’ battery,* if you haven’t one, and you’ll get the maximum of service at the minimum of cost.”

The life of your Eveready “B” Battery depends on its capacity in relation to your set and how much you listen in. We know, through a careful investigation, that the average year-round use of a set is

two hours a day. Taking that average we have proved over and over that on sets of one to three tubes the No. 772 Eveready “B” Battery used with a “C” battery will last a year or longer. On sets of four and five tubes, the larger Heavy Duty Eveready Batteries used with a “C” battery will last eight months or more.

Here is the secret of the utmost “B” battery satisfaction and economy:

With sets of from 1 to 3 tubes, use Eveready No. 772. With sets of 4 or more tubes, use either the Heavy Duty No. 770, or the even longer-lived Eveready Layerbilt No. 486.

We have prepared for your individual use a new booklet, “Choosing and Using the Right Radio Batteries,” which we will be glad to send you upon request. This booklet also tells about the proper battery equipment for use with the new power tubes.

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LEFT—Eveready Layerbilt “B” Battery No. 486, 45 volts, for maximum economy on four, five or more tubes.
 RIGHT—Eveready DryCell Radio “A” Battery, 1½ volts. The battery built especially for dry cell tubes.

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| WJAR—Providence | WGR—Buffalo | WWJ—Detroit |
| WEEI—Boston | WCAE—Pittsburgh | WOC—Davenport |
| WTAG—Worcester | | KSD—St. Louis |
| | | wcco—Minneapolis, St. Paul |

*NOTE: In addition to the increased life which an Eveready “C” Battery gives to your “B” batteries, it will add a quality of reception unobtainable without it.

WEBH—Edgewater Beach Hotel, Chicago Herald & Examiner, 5300 Sheridan Rd., Chicago, Ill. 370 meters, 810 kilocycles, 1000 watts, class B. Daily ex Sun, Mon, 7-8 pm, 9-10 pm, 11 pm-1 am (Sat, 11 pm-2 am). Sun, 10:40 am-12 noon, church services; 5-6 pm, 7-9 pm, musical program. Central standard time. Slogan: "Where Everybody's Happy."

1st Dial 2nd Dial 3rd Dial

WEBJ—Third Avenue Railway System, 130th St. & Third Ave., New York, N. Y. 273 meters, 1100 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEBK—Grand Rapids Radio Co., Hotel Rowe, Grand Rapids, Mich. 242 meters, 1240 kilocycles, 1000 watts, class B. Mon, 10 am, weather; 8 pm, presentation. Tues, 10 am, weather; 8 pm, musical. Wed, 10 am, 8-9 pm, musical. Thurs, 10 am, weather, silent night. Fri & Sat, 10 am, weather; 8 pm, concert. Central standard time. Slogan: "The Furniture Capital of America."

1st Dial 2nd Dial 3rd Dial

WEBL—Radio Corp. of America, Woolworth Bldg., New York, N. Y. (Portable). 226 meters, 1330 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEBM—Radio Corp. of America, Woolworth Bldg., New York, N. Y. (Portable). 226 meters, 1330 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEBQ—Tate Radio Co., Harrisburg, Ill. 226 meters, 1330 kilocycles, 10 watts, class A. Daily ex Sun, 7:15-7:30 pm, local news, markets. Wed, 8:15-9:15 pm. Sun, 7:30-8:30 pm, church services. Central standard time. Slogan: "Blue Bird Station."

1st Dial 2nd Dial 3rd Dial

WEBR—H. H. Howell, Bramson Bldg., Buffalo, N. Y. 244 meters, 1230 kilocycles, 100 watts, class A. Mon, Wed, Fri & Sat, 6:15-7:30 pm; 7:45-8:30 pm, bed time stories; 8:30-11:30 pm, musical program. Tues & Thurs, 6:15-7:30 pm. Sun, 12:30 pm, musical program. Eastern standard time. Slogan: "We Extend Buffalo's Regards."

1st Dial 2nd Dial 3rd Dial

WEBT—The Dayton Co-operative Industrial High School, Dayton, Ohio. 256.4 meters, 1170 kilocycles, 5 watts, class A. Irregular schedule. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEBW—Beloit College, Beloit, Wis. 268 meters, 1120 kilocycles, 500 watts, class A. Sun, 4:30-5:30 pm. Tues, 8-9:30 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEBZ—Savannah Radio Corp., Savannah, Ga. 263 meters, 1280 kilocycles, 50 watts, class A. Mon, Wed, Fri, 8:30 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WEEL—Edison Elec. Illuminating Co., 39 Boylston St., Boston, Mass. 348.6 meters, 860 kilocycle, 500 watts, class B. Daily ex Sun, 6:45 am, health exercises. Daily ex Sat, Sun, 2 pm, 6:45 pm. Tues, Wed, Thurs, Fri, 7:30-8 pm, musical. Sun, 10:50 am, church services; 2:30 pm, 7:20-9:15 pm, musical. Eastern standard time. Slogan: "The Friendly Voice."

1st Dial 2nd Dial 3rd Dial

WEHS—Evanston Township High School, Evanston, Ill. 202.7 meters, 1480 kilocycles, 20 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEMC—Emanuel Missionary College, Berrien Springs, Mich. 285.5 meters, 1050 kilocycles, 1500 watts, class B. Mon, Wed, 8:15-9:30 pm. Fri, 8-9 pm. Sun, 11-12 am. Central standard time. Slogan: "The Radio Lighthouse."

1st Dial 2nd Dial 3rd Dial

WENR—All-American Radio Corp., 4201 W. Belmont Ave., Chicago, Ill. 266 meters, 1130 kilocycles, 1000 watts, class A. Daily ex Sun, Mon, 6-7 pm, dinner concert; 8-10 pm, musical. Wed, Fri, Sat, 12 midnight-2 am, popular music. Sun, 2-4 pm, classical; 9:30-11:30 pm, popular music. Central standard time.

1st Dial 2nd Dial 3rd Dial

WEW—St. Louis University, University Station, St. Louis, Mo. 248 meters, 1210 kilocycles, 100 watts, class A. Daily ex Sun, 9-10 am, 2-5 pm, government report. Tues, 7 pm, literary reading. Thurs, 7 pm, music, lectures. Sun, 2 pm, difficulties in religion answered; 7:15 pm, lecture. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFAA—Dalla News & Journal, Dallas, Texas. 475.9 meters, 630 kilocycles, 500 watts, class B. Daily 10:30-10:55 am, weather, news, markets; 12:30-1 pm, lectures; 2:30-3 pm, 3:30-4 pm, 4:30-5 pm, 5:30-6 pm, 6:30-7:30 pm, 8:30-9:30 pm. Wed, silent after 1 pm. Tue, Thurs & Sat, 11-12 pm. Sun, 6-7 pm; Bible class, 9:30-11 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFAM—St. Cloud Daily Times, St. Cloud, Minn. 273 meters, 1100 kilocycles, 10 watts, class A. No definite days to broadcast, but most programs are broadcasted on Mon, 8-10 pm. Central standard time. Slogan: "The Granite City of the World."

1st Dial 2nd Dial 3rd Dial

WFAV—Dept. of Elec. Engineering, University of Nebraska, Lincoln, Neb. 275 meters, 1090 kilocycles, 500 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFBC—First Baptist Church, Knoxville, Tenn. 250 meters, 1200 kilocycles, 50 watts, class A. Sun, 10:30 am, 7:30 pm, church services; 4 pm, concert sacred music. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFBD—Gethsemane Baptist Church, Philadelphia, Pa. 234 meters, 1280 kilocycles, 5 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WFBE—Van de Walle Music & Radio Co., 208 W. 2nd St., Seymour, Ind. 226 meters, 1330 kilocycles, 20 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFBG—Wm. F. Gable Co., Altoona, Pa. 277.8 meters, 1080 kilocycles, 100 watts, class A. Mon & Tues, 11:45 am, organ, 3:30 pm, 6:30 pm & 8:30 pm. Mon, 7:30 pm, Uncle Walt. Wed, 12:15 pm, 3:30-6:30 pm & 8:30 pm. Fri, 11:45 am, 3:30-6:30 pm, 7 pm, 7:30 pm, 8:30 pm & 11:15 pm. Sat, 11:45 am, 3:30 pm, 6:30 pm, 7:30 pm & 9:15 pm. Sun, 11 am, church, 3 pm, chapel, 6 pm, dinner music, 7:30 pm, church, 9:15 pm & 11:15 pm. Eastern standard time. Slogan: "The Original Gateway to the West."

1st Dial 2nd Dial 3rd Dial

WFBH—Concourse Radio Corp., Hotel Majestic, 72nd St. & Central Park West, New York City, N. Y. 272.6 meters, 1010 kilocycles, 500 watts, class A. Daily, 11:30 pm. Mon, Tues & Fri, 2-7 pm. Wed, Thur & Sat, 2-8 pm. Sun, 5-8. Eastern standard time. Slogan: "Voice of Central Park."

1st Dial 2nd Dial 3rd Dial

WFBJ—Galvin Radio Supply Co., 516 Broadway, Camden, N. J. 236 meters, 1300 kilocycles, 500 watts, class A. Mon, Wed, Fri, 9 pm-12 midnight. Eastern standard time. Slogan: "Camden, the City of Opportunity."

1st Dial 2nd Dial 3rd Dial

WFBK—St. John's University, Collegeville, Minn. 286 meters, 1270 kilocycles, 50 watts, class A. Sun, 7-7:30 pm. Central standard time. Slogan: "In the Heart of the Landscape Paradise."

1st Dial 2nd Dial 3rd Dial

WFBK—Dartmouth College, Hanover, N. H. 256 meters, 1172 kilocycle, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WFBL—The Onondaga Hotel, Syracuse, N. Y. 252 meters, 1190 kilocycles, 100 watts, class A. Mon, Wed, Fri, 3-4, 6:15-8 pm. Tues, Thur, Sat, 6:15-8 pm, 10:30-11:30 pm (Sat, 1 am). Sun, 5-6, 6:15-7:15, 7:30-8:30 pm. Eastern standard time. Slogan: "When Feeling Blue, Listen."

1st Dial 2nd Dial 3rd Dial

WFBM—Merchants Heat & Light Co., Indianapolis, Ind. 268 meters, 1120 kilocycles, 250 watts, class A. Daily ex Sat & Sun, 6 pm-12 pm. Sun, 10:30 am-9 pm. Central standard time. Slogan: "The Good Will Station."

1st Dial 2nd Dial 3rd Dial

WFBR—Fifth Infantry Maryland National Guards, Hoffman & Bolton Sta., Baltimore, Md. 254 meters, 1180 kilocycles, 100 watts, class A. Daily ex Sun, 1-2 pm, dance music. Tues, Thur & Sat, 7:30-12 pm, general programs. Sun, 2-5 pm. Central standard time. Slogan: "Home of the Star Spangled Banner."

1st Dial 2nd Dial 3rd Dial

WFBZ—Knox College, Galesburg, Ill. 254 meters, 1180 kilocycles, 20 watt, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFDF—Frank D. Fallain, 321 1st Ave., Flint, Mich. (station at Police Bldg.). 234.1 meters, 1280 kilocycles, 100 watts, class A. Mon, Wed & Fri, 8 pm (also special broadcasts). Central standard time. Slogan: "The Vehicle City."

1st Dial 2nd Dial 3rd Dial

WFI—Strawbridge & Clothier, Philadelphia, Pa. 394.5 meters, 760 kilocycles, 500 watts, class B. Mon, Wed & Fri, 10:15 am-10:40 am, market reports, recital & Betty Crocker; 1 pm, 1:50 pm & 3 pm, S. & C. tea room ensemble, market reports & recital; 6:30-7:30 pm, concert programs. Tues, Thur & Sat, 10:15 am, market reports; 1 pm-3 pm, S. & C. tea room ensemble, market reports & studio recital; 6:30-7:30 pm, concert & dance orchestra; 8-11 pm, musical. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WFKB—Francis K. Bridgman, 4536 Woodlawn Ave., Chicago, Ill. 217.3 meters, 1380 kilocycles, 500 watts, class A. Daily ex Sun, Mon, 7-10 pm, classical & semi-classical music. Wed & Sat, children's stories. Central standard time.

1st Dial 2nd Dial 3rd Dial

WFRL—Flatbush Radio Laboratories, 1421 E. 10th St., Brooklyn, N. Y. 205.4 meters, 1460 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGAL—Lancaster Elec. Sup. & Const. Co., Lancaster, Pa. 248 meters, 1210 kilocycles, 10 watts, class A. Mon, Wed, Fri, 5:45-6:15 pm, dinner concert. Wed, 11:15-1 am, organ concert. Eastern standard time. Slogan: "World's Gardens at Lancaster."

1st Dial 2nd Dial 3rd Dial

WGAQ—W. G. Patterson, Shreveport, La. 263 meters, 1140 kilocycles, 150 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WGBB—Harry H. Carman, 217 Bedell St., Freeport, N. Y. 244 meters, 1230 kilocycles, 100 watts, class A. Mon, Wed, Fri, 8-11 pm, musical program. Sun, 10:40 am, church services, Freeport M. E. Church. Eastern standard time. Slogan: "The Voice of the Sunrise Trail."

1st Dial 2nd Dial 3rd Dial

WGBC—First Baptist Church, Memphis, Tenn. 278 meters, 1130 kilocycles, 10 watts, class A. Sun, 9:55 am & 7:30 pm, church service. Central standard time.

1st Dial 2nd Dial 3rd Dial

WGBF—The Finks Furniture Co., 307 Upper 7th St., Evansville, Ind. 236 meters, 1270 kilocycles, 100 watts, class A. Daily ex Sun, 7:15 am, family morning worship service; 12:10 pm, news, markets, weather, etc. Tues & Fri, 8-9:30 pm, musical program. Fri, 11-12 pm, midnight program. Sun, irregular schedule. Central standard time. Slogan: "The Gateway to the South."

1st Dial 2nd Dial 3rd Dial

WGBG—Breitenbach's Radio Shop, Thrifton, Va. 226 meters, 1330 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBI—Frank S. Megargee, 608 Linden St., Scranton, Pa. 240 meters, 1250 kilocycles, 10 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBK—Laurence W. Campbell, Johnstown, Pa. 248 meters, 1210 kilocycles, 5 watts, class A. Daily ex Sun, 5-6:30 pm. Sat, 8:45-11:45 pm. Sun, 3-5 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBM—Theodore N. Saaty, 92 Dover St., Providence, R. I. 234 meters, 1280 kilocycles, 100 watts, class A. Mon, Fri, 10-12 pm. Wed, 7-10 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBP—M. L. Price Music Co., Tampa, Fla. 1st Dial 2nd Dial 3rd Dial

WGBQ—Stout Institute, Menominee, Wis. 234 meters, 1290 kilocycles, 20 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WGBR—Geo. S. Ives, 731 W. 5th St., Marshfield, Wis. 229 meters, 1310 kilocycles, 10 watts, class A. Sun, 2-4 pm, musical. Central standard time. Slogan: "Wisconsin's Greatest and Best Radios."

1st Dial 2nd Dial 3rd Dial

WGBS—Gimbel Brothers, Inc., 33rd St. & Broadway, New York, N. Y. 315.6 meters, 950 kilocycles, 500 watts, class B. Daily ex Sun, 10-11 am; 1:30-2:30 pm; 3-4 pm. Mon, Wed, Fri, 6-7:30 pm. Tues, Thur, Sat, 6-11:30 pm. Sun, 3:30-4:30 pm, 9:30-11:30 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBT—Furman University, Greenville, S. C. 236 meters, 1270 kilocycles, 15 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WGBU—Chamber of Commerce, Fulford-by-the-Sea, Fla. 270 meters, 1139 kilocycles, 500 watts, class A. Mon, Tues, Thur, Fri, 12-1 pm, 6:30-7:30 pm, 11 pm-2 am. Wed & Sat, 12:1 pm, 6:30-7:30 pm, 10 pm-1 am. Sun, 9:30-11 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGBW—Valley Theatre, 100 Erie St., Spring Valley, Ill. 256 meters, 1170 kilocycles, 10 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WGBX—University of Maine, Orono, Maine. 252 meters, 1190 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WGCP—Grand Central Palace & Clover Gardens, Lexington Ave. at 46th St., New York City. D. W. May, outlet, Newark, N. J. 252 meters, 1190 kilocycles, 500 watts, class A. Daily ex Sun, 3-5:30 pm. Mon, Thur & Sat, 6-12 pm. Tues, Wed, Fri, 7-8:30 pm. Sun, 7-9:30 pm. Eastern standard time. Slogan: "The Four Leaf Clover Station."

1st Dial 2nd Dial 3rd Dial

WGES—Coyne Electrical School, Inc., 1300 W. Harrison St., Chicago, Ill. 250 meters, 1200 kilocycles, 500 watts, class A. Mon, 5-7 pm, pipe organ musical. Tues, Wed, Thur, Fri & Sat, 5-7 pm, semi-classical; 8-9 pm, 11-1 am, musical. Sun, 10:15-12 am, 5-7:40 pm, 11-12 pm, religious pipe organ music. Central standard time. Slogan: "World's Greatest Electrical School."

1st Dial 2nd Dial 3rd Dial

WGRB—The George H. Bowles Developments, Clearwater, Fla. 266 meters, 1120 kilocycles, 500 watts, class A. Daily ex Sun, 6-7 pm, 8:30-10 pm, 11:45 pm-1 am, musical programs. Eastern standard time. Slogan: "WGRB Inviting the World to the Springtime City."

1st Dial 2nd Dial 3rd Dial

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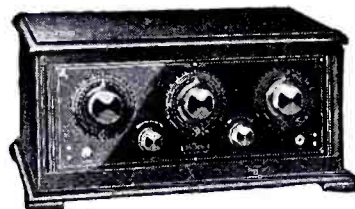
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Tell 'Em You Saw It in the Citizens Radio Call Book

WGHP—George Harrison Phelps, Ins., 110 Rowena St., Detroit, Mich., 270 meters, 1110 kilocycles, 1500 watts, class B. Mon, Tues, Wed, 8-10 pm, musical. Thur, 10-12 pm, the Midnight Mariners aboard the "Skiyard." Fri, 10-12 pm, popular program. Eastern standard time.

WGI—American Radio & Researer Corp., Medford Hillside, Mass., 261 meters, 1150 kilocycles, 100 watts, class A. Eastern standard time.

WGMU—A. H. Grebe & Co., Inc., Richmond Hill, L. I., N. Y. (portable), 236 meters, 1270 kilocycles, 100 watts, class A. Unlimited schedule. Eastern standard time.

WGN—The Chicago Tribune, Drake Hotel, 140 E. Walton Pl., Chicago, Ill., 802.8 meters, 810 kilocycles, 1000 watts, class B. Daily ex Sun, 11:57 am, 12:40-3:30 pm, 5:30-5:57 pm, 6-7:30 pm, 8:30-11:30 pm. Tues & Thur, 12:30 pm, farm talks. Sun, 12-1 pm, 1-5 pm, 9-10 pm. Central standard time.

WGO—Illinois Radio Corp. of America, 608 S. Dearborn St., Chicago, Ill. 1000 watts. Central standard time.

WGR—Federal Telephone Mfg. Co., Hotel Statler, Buffalo, N. Y. 319 meters, 940 kilocycles, 750 watts, class B. Mon, Wed, Fri, 12:45 pm, 2:30, 6:30 pm, musical program; 9-11 pm, concert; 11 pm-1 am, dance program. Tues, Thur, 12:45, 2:30, 6:30 pm, musical program; 8-11 pm, joint broadcasting. Sat, 12:45, 2:30 pm, musical program. Sun, 3 pm, 7-45 pm, church services; 9:15 pm, joint broadcasting. Eastern standard time. Slogan: "Key City of Industry."

WGST—Georgia School of Technology, Atlanta, Ga., 270 meters, 1110 kilocycles, 500 watts, class A. Mon, 9-10 pm, "Tech Nite" program. Thur, 7-8 pm, "Artist Series" program. Central standard time. Slogan: "The Southern Technical School With the National Reputation."

WGY—General Electric Co., 1 River Road, Schenectady, N. Y. 379.5 meters, 790 kilocycles, 5000 watts, class B. Daily ex Sun, 11:55 am, 12:30 pm, 12:45 pm, 12:40 pm, 6 pm, 6:10 pm, 6:15 pm. Mon, Tues, Thur, Fri, 2 pm, Tues & Thur, 2:30 pm. Mon, Tues, Thur, 6:30-7 pm. Thur, 11:30 pm. Fri, 7 pm. Wed, 6:30 pm. Fri, 6:30 pm, 10:30 pm. Mon, 7:15 pm. Wed, Fri, 7 pm. Sat, 9:30 pm. Sun, 10:30-12 am, 5 pm, 7 pm, 7:30-8:45 pm & 8:15 pm. Eastern time.

WHA—University of Wisconsin, Madison, Wis. 535.4 meters, 560 kilocycles, 750 watts, class B. Mon, Fri, 7:45-9 pm, musical & educational talks. Wed, 9-10 pm, musical & educational talks. Central standard time.

WHAD—Marquette University, Milwaukee, Wis. 275 meters, 1090 kilocycles, 500 watts, class A. Daily ex Sun, 11 am-11:30 am, 4-5 pm, 6-7 pm. Mon, 8-10 pm. Tues, Thur, 8-9:30 pm. Wed, 10:30 pm-12:30 am. Fri, 8:30-10:30 pm. Sun, 8:15-5:15 pm. Central standard time. Slogan: "The Voice of Wisconsin."

WHAM—Eastman School of Music, Rochester, N. Y. 278 meters, 1080 kilocycles, 100 watts, class A. Daily ex Sun, 3:30-4 pm, 5-5:45 pm, 7-7:40 pm. Sun, 3:15 pm, chapel service. Eastern time.

WHAP—Wm. H. Taylor Finance Corp., 393 7th Ave., New York City, N. Y. 240 meters, 1250 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 6-11 pm. Sun, 2:30-3:30 pm. Eastern standard time. Slogan: "The Station for Public Service."

WHAR—F. P. Cooke Sons, The Hotel Seaside, Atlantic City, N. J. 275 meters, 1090 kilocycles, 500 watts, class B. Daily ex Sun & Wed, 2 pm & 7:30-9 pm. Tues, Fri, 11:15-12 midnight. Sun, 10:45 am-12:15 pm, 7:50-9 pm, 11:15 pm-12 midnight. Eastern standard time. Slogan: "Pioneer Broadcasting Station of Atlantic City."

WHAS—Courier-Journal & Louisville Times, Louisville, Ky. 400 meters, 750 kilocycles, 500 watts, class B. Daily ex Sun, 1-2 pm, 4-5 pm, 7:30-9 pm, concert programs. Sun, 11 am, church service; 4 pm, vesper service. Central standard time. Slogan: "Old Kentucky Home."

WHAV—Wilmington Electrical Specialty Co., Inc., Wilmington, Del. 266 meters, 1160 kilocycles, 100 watts, class A. Irregular schedule. Eastern standard time.

WHAZ—Rensselaer Polytechnic Institute, Troy, N. Y. 379.5 meters, 790 kilocycles, 500 watts, class B. Mon, 9-11:30 pm. Second Mon of each month a special transcontinental and transatlantic test program from 12 midnight-1:30 Tues am. Eastern standard time.

WHB—Sweeney Automotive & Electrical School, Kansas City, Mo. 365.6 meters, 820 kilocycles, 500 watts, class B. Mon, Wed, Fri, 8:25 am-3 pm, markets; 2-3 pm, music; 7-8 pm, educational. Tues, Thur, 8:25 am-3 pm, markets; 2-3 pm, 7-7:45 pm & 8-10 pm, musical. Sat, 8:25 am-1:25 pm, markets. Sun, 9:40 am-10:45 am, 11 am-12:15 pm, 8-9:15 pm, services; 11:15 pm-1 am, organ concert. Central standard time. Slogan: "The Heart of America."

WHBA—Shaffer Music House, Oil City, Pa. 250 meters, 1200 kilocycles, 20 watts, class A. Schedule irregular. Eastern time.

WHBB—Hebal's Store, 328 McCulloch St., Stevens Point, Wis. 240 meters, 1249 kilocycles, 50 watts, class A. Central standard time.

WHBC—Rev. E. P. Braham, 627 McKinley Ave., Canton, Ohio. 256 meters, 1810 kilocycles, 20 watts, class A. Mon, 8 pm, lecture sermon. Eastern time. Slogan: "Dispel Ignorance."

WHBD—Chas. W. Howard, 110 Chilli-cothe St., Bellefontaine, Ohio (portable), 222 meters, 1350 kilocycles, 20 watts, class A. Eastern standard time.

WHBF—Beardsley Spec. Co., Inc., 217 18th St., Rock Island, Ill. 222 meters, 1350 kilocycles, 100 watts, class A. Mon, Wed, Sat, 7-9 pm. Sat, 2-4 pm. Central standard time.

WHBG—John S. Skane, 1810 N. 4th St., Harrisburg, Pa. 230.6 meters, 1300 kilocycles, 20 watts, class A. Tues, 9:30-11:30 pm, Thur, 9:30-12 pm. Sun, 9:15-10:30 pm, religious program. Eastern standard time. Slogan: "Where Harrisburg Broadcasts Gladness."

WHBH—Culver Military Academy, Culver, Ind. 222.1 meters, 1350 kilocycles, 100 watts, class A. Mon, 8:3-9:30 pm, musical, vocal & instrumental. Sat, 7:15-7:45 pm, jazz orchestra. Central standard time.

WHBJ—The Lauer Auto Co., 2315 S. Calhoun St., Ft. Wayne, Ind. 234.4 meters, 1280 kilocycles, 50 watts, class A. Mon, Tues, Wed, Thur, 6 pm, chimes concert. Mon, 1-2 pm, musical. Tues & Fri, 8-12 pm, musical. Wed, 3-4 pm, musical. Sun, church services. Central standard time.

WHBK—Franklin St. Garage, Inc., 3 McKenzie Ave., Ellsworth, Maine. 231 meters, 1300 kilocycles, 10 watts, class A. Eastern standard time.

WHBL—James H. Slusser, 1214 Erie Ave., Logansport, Ind. 215.7 meters, 1360 kilocycles, 50 watts, class A. Central standard time.

WHBM—O. L. Carrell, 1506 N. American Bldg., 36 S. State St., Chicago, Ill. (portable), 233 meters, 1290 kilocycles, 20 watts, class A. Central standard time.

WHBN—First Ave. Methodist Church, 1st Ave. & 5th St., St. Petersburg, Fla. 238 meters, 1260 kilocycles, 10 watts, class A. Eastern standard time.

WHBP—Johnstown Automobile Co., 101 Main St., Johnstown, Pa. 256 meters, 1170 kilocycles, 100 watts, class A. Wed, 9 pm. Sat, 10 pm. Eastern standard time. Slogan: "The Voice of the Friendly City."

WHBO—Men's Fellowship Class of St. John's M. E. Church, S. Bellevue & Peabody Aves., Memphis, Tenn. 233 meters, 1290 kilocycles, 50 watts, class A. Wed, 8-9:30 pm, musical program. Sun, 9:45-10:45 am, services. Men's Fellowship class; 11 am, church service; 7:30 pm, church service. Central standard time. Slogan: "We Have Best Quartet."

WHBR—United Engineering Laboratories, 1745 Reading Rd., P. O. Box 618, Cincinnati, Ohio. 215.7 meters, 1390 kilocycles, 300 watts, class A. Mon, 8-10 pm, 11 pm-12:30 am. Wed, 9:30-12 pm. Thur, 2-4 pm, 10-12 pm. Sat, 8:30-10:30 am, 2-4 pm, 6-8 pm. Sun, 2-4 pm, 8-10:30 pm. Central standard time. Slogan: "That's Us."

WHBU—Riviera Theater & Bing's Clothing, 1002 Meridian St., Anderson, Ind. 218.8 meters, 1370 kilocycles, 10 watts, class A. Daily ex Sun, 9-9:30 am, 12-12:30 pm. Wed, Fri, Sun, 7-9 pm. Central standard time. Slogan: "The Home of Chief Anderson."

WHBW—D. R. Kienzle, 4916 Chestnut St., Philadelphia, Pa. 215 meters, 1390 kilocycles, 100 watts, class A. Wed, pm. Eastern standard time.

WHBY—St. Norbert's College, College Ave., West De Pere, Wis. 250 meters, 1200 kilocycles, 50 watts, class A. Central standard time.

WHDI—Wm. Hood Dunwoody Industrial Institute, 818 Superior Blvd., Minneapolis, Minn. 278 meters, 1070 kilocycles, 500 watts, class A. Mon, 8-9 pm, educational. Wed, 9-10 pm, popular music. Fri, 9-10 pm, classical music. Central standard time.

WHEC—Hickson Elec. Co., 36 South Ave., Rochester, N. Y. 258 meters, 1160 kilocycles, 100 watts, class A. Daily ex Sun, 5:30-6 pm, twilight program, 6:30-7 pm, dinner concert. Sat, 10:30-12 pm, dance music. Eastern standard time.

WHK—The Radiovox Co., 1025 Boliver St., Cleveland, Ohio. 273 meters, 1100 kilocycles, 250 watts, class A. Daily ex Sun, 6:30-7:30 pm. Sun, 10:30 am, church; 6:15-7:15 pm, 7:15-9 pm, church, 9-9:30 pm. Eastern standard time. Slogan: "Cleveland, the Convention City."

WHN—Geo. Schubel, Loew's State Theater Bldg., 1540 Broadway, New York, N. Y. 361.2 meters, 830 kilocycles, 500 watts, class B. Mon, Wed, Fri, 2:15-5:30 pm, 6 pm-12:30 am. Tues, Thur, 12:30-1 pm, 3:15-4:30 pm, 6:30 pm-12:30 am. Sun, 12:30-1 pm, 2-4:30 pm, 6:30 pm-12:30 am. Sun, 12:30-1 pm, 2-4:30 pm, 5-5:30 pm, 7:30-9:45 pm, 10:15-11:15 pm, 12-12:30 am. Eastern standard time. Slogan: "The Voice of the Great White Way."

WHO—Bankers Life Co., 6th & Grand Sts., Des Moines, Iowa. 526 meters, 570 kilocycles, 5000 watts, class B. Daily ex Sun, 7-8 am, 9-10:30 am, 11:30 am-12:30 pm, 2-4 pm, 7:30-9 pm, 11-12 pm, news reports, talks & musical programs. Sun, 10:45 am-1:30 pm, church services; 4-6 pm, 7:30-9 pm, 11 pm-midnight, musical programs. Central standard time. Slogan: "W.H.O. (WHIO) Bankers Life Co., Des Moines, Iowa."

WHT—Radiophone Broadcasting Corp., Wrigley Bldg., 410 N. Michigan Blvd., Chicago, Ill. 238 & 400 meters, 1240 & 750 kilocycles, 2500 watts, class B. Sun, 12 noon-3:45 pm, 5:30-11:30 pm. Daily ex Sun, 10 am-2 pm, 6-7:30 pm. Daily ex Sun & Mon, 7:45 pm-1 am. Central standard time. Slogan: "Write Home Tonight."

WIAD—Howard R. Miller, 6318 N. Park Ave., Philadelphia, Pa. 250 meters, 1199 kilocycles, 100 watts, class A. Tues, Fri, 9 pm. Eastern standard time.

WIAS—Home Elec. Co., Burlington, Iowa. 254 meters, 1180 kilocycles, 100 watts, class A. Tues, 8-9 pm. Thur, 7-8 pm. Sat, 10:30-11 pm. Sun, 10:30 am, church. Central standard time. Slogan: "Burlington, on the Mississippi."

WIBA—The Capital Times and The Studio Station, 511 State St., Madison, Wis. 236 meters, 1270 kilocycles, 100 watts, class A. Mon, Wed, Fri, 8:45 pm, musical. Sat, 12 midnight, Cuckoo Club music. Central standard time. Slogan: "The Four Lakes City."

WIBG—L. M. Tate Post, No. 39, Veterans of Foreign Wars, 434 2nd Ave. N., St. Petersburg, Fla. 222 meters, 1350 kilocycles, 100 watts, class A. Mon, Wed, 8-10:30 pm. Sat, 8-9 pm, 10:30-12 pm. Eastern standard time.

WIBD—X. L. Radio Service, 223 Van Buren St., Joliet, Ill. 200 meters, 1500 kilocycles, 50 watts, class A. Central standard time.

WIBG—St. Paul's Protestant Episcopal Church, Elkins Park, Philadelphia, Pa. 222 meters, 1350 kilocycles, 50 watts, class A. Sun, 10:45 am, 3:45 pm. Eastern standard time.

WIBH—Elite Radio Stores (Moriarty), 55 Hillman St., New Bedford, Mass. 210 meters, 1430 kilocycles, 30 watts, class A. Daily ex Sun, 12-1:30 pm. Eastern standard time. Slogan: "The Voice of New Bedford."

WIBI—Frederick B. Zittrell, Jr., 369 Amity St., Flushing, L. I., N. Y. 218.8 meters, 1370 kilocycles, 5 watts, class A. Eastern standard time.

WIBJ—O. L. Carrell, 1506 N. American Bldg., Chicago, Ill. (portable), 215.7 meters, 1390 kilocycles, 50 watts, class A. Central standard time.

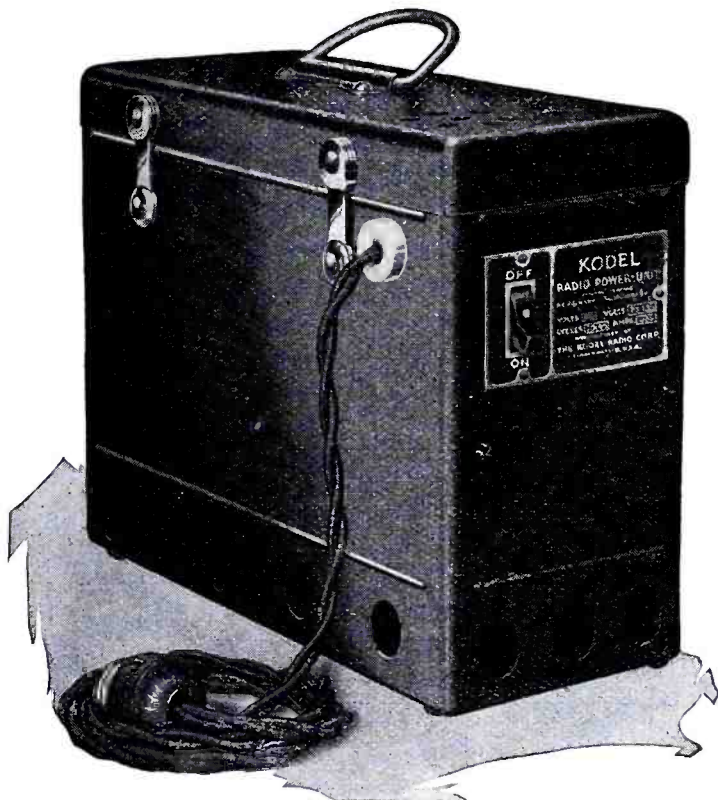
WIBK—University of the City of Toledo, Cor. 11th & Illinois Sts., Toledo, Ohio. 205 meters, 1460 kilocycles, 100 watts, class A. Eastern standard time.

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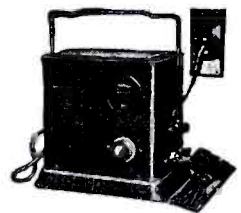
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WIBM—Billy Maine, 36 W. Randolph St., Chicago, Ill. (portable). 215.7 meters, 1390 kilocycles, 10 watts, class A. Daily ex Sun, 8:45-9:45 pm. Central standard time. Slogan: "The Gypsy Station."

1st Dial 2nd Dial 3rd Dial

WIBO—Nelson Brothers Bond & Mortgage Co., 6310 Broadway, Chicago, Ill. 226 meters, 1330 kilocycles, 1000 watts, class B. Daily 2-4 pm. Daily ex Mon. 6-8 pm, music. Wed, 10 pm-12 midnight. Fri, 10 pm-12 midnight. Tues & Thur, 12 pm-3 am, midnight jam-boree. Sun, 10-12 pm, musical. Central standard time. Slogan: "Chicago's Uptown Radio Station."

1st Dial 2nd Dial 3rd Dial

WIBP—First Presbyterian Church, 10th & 23rd Ave., Meridian, Miss. 209.7 meters, 1430 kilocycles, 5 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WIBR—Tri-State Radio Co., Thurman A. Owings, Mgr., Weirton, W. Va. 246 meters, 1220 kilocycles, 50 watts, class B. Fri, 8-11 am. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WJBQ—Bucknell University, Lewisburg, Pa. 211.1 meters, 1420 kilocycles, 100 watts, class A. Schedule not arranged. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WIBS—New Jersey National Guard, 57th Infantry Brigade, 921 Edgewood Road, Elizabeth, N. J. (portable). 202.6 meters, 1480 kilocycles, 10 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WIBT—Orlando Edgar Miller, New York, N. Y. (portable). 211.1 meters, 1420 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WIBU—The Electric Farm, R. F. D. No. 3, Poynette, Wis. 222 meters, 1350 kilocycles, 20 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WIBW—Dr. L. L. Dill, Roselaun Addition, Logansport, Ind. 220 meters, 1360 kilocycles, 100 watts, class A. Daily ex Sun, 4:15 pm, markets. Tues & Sat, 6-7 pm, organ recital. Thurs, 9-10 pm, religious concert. Fri, 7-10 pm, high school basketball. Sun, 10:45 am-12 noon; 7-9 pm. Central standard time. Slogan: "WIBW on the Banks of the Wabash."

1st Dial 2nd Dial 3rd Dial

WIBX—Grid-Leak, Inc., 236 Genesee St., Utica, N. Y. 205.4 meters, 1460 kilocycles, 150 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WIBZ—Powell Elec. Co., 811 Adams Ave., Montgomery, Ala. 231 meters, 1300 kilocycles, 10 watts, class A. Tues, & Fri, 8-11 pm, regular program. Central standard time.

1st Dial 2nd Dial 3rd Dial

WIL—St. Louis Star & Benson Radio Co., St. Louis, Mo. 273 meters, 1099 kilocycles, 250 watts, class A. Tues, Thurs, & Sat, 4-5 pm. Thurs, 8-12 pm. Sat, 10-12 pm. Central standard time. Slogan: "Watch It Lead."

1st Dial 2nd Dial 3rd Dial

WIP—Gimbel Bros., Philadelphia, Pa. 509 meters, 590 kilocycles, 500 watts, class B. Daily ex Sun, Mon & Fri, 6:45-7:30 am, 10-11 am, 1-2 pm, 3-4:30 pm, 6-7:30 pm. Tues, Thurs, Sat, 8 pm-12 midnight. Mon, Fri, 6:45-7:30 am, 1-2 pm, 3-4:30 pm, 6-7:30 pm. Sun, 10:45 am-12:30 pm, 4-5 pm. Alt. Sun, 7:45-9:15 pm, 4-6 pm, 10-12 pm. Eastern standard time. Slogan: "Watch Its Progress."

1st Dial 2nd Dial 3rd Dial

WJAD—Jackson's Radio Eng. Laboratories, Waco, Texas, 352 meters, 850 kilocycles, 500 watts, class B. Mon & Fri, 8:30-10 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJAG—The Norfolk Daily News, Norfolk, Nebr. 270 meters, 1110 kilocycles, 200 watts, class A. Daily ex Sun, 12:15-1:15 pm. Central standard time. Slogan: "The World's Greatest Country Daily."

1st Dial 2nd Dial 3rd Dial

WJAK—"The Radio Parson," Greentown, Ind. 254 meters, 1180 kilocycles, 100 watts, class A. Tues, Thurs, Sat, 12 noon-1 pm, chapel services. Sat, Bible school lesson at 5 pm. Central standard time. Slogan: "One of Indiana's Most Beautiful Little Cities, and the Home of the First Automobile."

1st Dial 2nd Dial 3rd Dial

WJAM—D. M. Perham, 322 Third Ave., W. Cedar Rapids, Iowa. 268 meters, 1120 kilocycles, 100 watts, class A. Tues, Thurs & Sat, 7-10 pm. Sun, 4 pm, vesper service. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJAR—The Outlet Co., 174 Weybosset St., Providence, R. I. 305.9 meters, 980 kilocycles, 500 watts, class B. Daily ex Sun, 1:05 pm, musical; 1:30, weather reports. Mon, 8 pm, 9 pm & 10 pm, musical program & grand opera. Wed, 7:30 pm, music. Tues, 7:30, 8:30 & pm, musical. Thurs, 8, 9 & 10 pm, music & entertainment. Fri, 7:30 pm, 7:45 pm, 8:20, 8:30, 9 & 11 pm, music & entertainment. Sun, 7:20 & 9:15 pm. Eastern standard time. Slogan: "The Southern Gateway of New England."

1st Dial 2nd Dial 3rd Dial

WJAS—Pittsburgh Radio Supply House, 963 Liberty Ave., Pittsburgh, Pa. 275 meters, 1090 kilocycles, 500 watts, class A. Daily ex Sun, 7-8 pm, 8-11 pm. Sun, 2 pm. Eastern standard time. Slogan: "World's Jolliest Aerial Station."

1st Dial 2nd Dial 3rd Dial

WJAX—Municipal Radio Broadcasting Station, Jacksonville, Fla. 336.9 meters, 1000 kilocycles, Eastern standard time. Slogan: "The Voice of Florida."

1st Dial 2nd Dial 3rd Dial

WJAZ—Zenith Radio Corp., 310 S. Michigan Ave., Chicago, Ill. (portable). 322.4 meters, 930 kilocycles, 1500 watts, class B. Thurs, 10 pm-midnight, musical entertainment. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBA—D. H. Lentz, Jr., 301 Whitley Ave., Joliet, Ill. 206.8 meters, 1450 kilocycles, 50 watts, class A. Tues, 8-11 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBB—Radio Service Co., 1922 Central Ave., St. Petersburg, Fla. 254 meters, 1450 kilocycles, 10 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WJBC—Hummer Furniture Co., Second & Joliet Sts., La Salle, Ill. 234 meters, 1180 kilocycles, 100 watts, class A. Daily ex Sun, 12:30-1:30 pm. Mon, 8-10 pm, music. Thurs, 6:15-7:15 pm, musical. Central standard time. Slogan: "Better Homes Station."

1st Dial 2nd Dial 3rd Dial

WJBG—Interstate Radio, Inc., 7 W. 4th St., Charlotte, N. C. 224 meters, 1340 kilocycles, 10 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBI—Robert S. Johnson, 63 Broad St., Red Bank, N. J. 218.8 meters, 1370 kilocycles, 250 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WJBK—Ernest F. Goodwin, Ypsilanti, Mich. 233 meters, 1290 kilocycles, 10 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBL—Wm. Gushard Dry Goods Co., 301 N. Water St., Decatur, Ill. 270 meters, 1110 kilocycles, 500 watts, class A. Mon, Wed & Sat, 9:30-11 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBN—St. John's Ev. Lutheran Church, 108 E. Exchange St., Sycamore, Ill. 256 meters, 1170 kilocycles, 10 watts, class A. Mon, 8-10 pm. Sun, 7-7:30 am, 1-1:40 pm, 7:45-9 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WJBP—Seneca Vocational School, 787 Seneca St., Buffalo, N. Y. 218.8 meters, 1270 kilocycles, 50 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WJD—Denison University, Dept. of Physics, Granville, Ohio. 217.3 meters, 1380 kilocycles, 50 watts, class A. Wed, 7:30-9 pm, musical program. Eastern standard time. Slogan: "The College on the Hill."

1st Dial 2nd Dial 3rd Dial

WJJD—Loyal Order of Moose, Mooseheart, Ill. 370.2 meters, 810 kilocycles, 1000 watts, class B. Daily ex Mon & Sun, 4 pm-6 pm-8 pm, 10 pm-12 midnight, musical & talks. Sun, 7:45 am, Catholic Church; 9:40 am, Protestant Church; 3 pm, musical. Central standard time. Slogan: "Call of the Moose."

1st Dial 2nd Dial 3rd Dial

WJR—Jewett Radio & Phonograph Co. & Detroit Pres Press, 516.9 meters, 580 kilocycles, 5000 watts, class B. Daily ex Sun, 7-8 pm, 9-10 pm. Mon, Wed, Sat, 11:30 pm-1 am. Thur, Sat, 10-11 pm. Eastern standard time. Slogan: "Where Joy Reigns."

1st Dial 2nd Dial 3rd Dial

WJY—Radio Corporation of America, 33 W. 42nd St., New York, N. Y. 405.2 meters, 740 kilocycles, 5000 watts, class B. Tues, Thurs, Fri, 7:30-11:30 pm. Sun, 8:15-10:30 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WJZ—Radio Corporation of America, 33 W. 42nd St., New York, N. Y. 454.3 meters, 660 kilocycles, 50 watts, class B. Daily ex Sun, 10 am-11:30 pm., miscellaneous program. Sun, 9 am-10:30 pm, children's hour, church services & classical music. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WKAF—Kesselman-O'Driscoll Hotel Antlers Station, Hotel Antlers, Milwaukee, Wis. 261 meters, 1050 kilocycles, 500-5000 watts, class A. Mon, Wed, Fri, 10-11 pm, studio program. Tues, Thur, Sat, 8:30-10 pm, 11:30 pm-1 am, dance program. Sun, 4-6 pm, studio program. Central standard time. Slogan: "Wisconsin's Only Super Power Station."

1st Dial 2nd Dial 3rd Dial

WKAO—Radio Corp. of Porto Rico, San Juan, Porto Rico. 340.7 meters, 880 kilocycles, 500 watts, class B. Wed, 8-10 pm. Thur, 8-9:30 pm. Fri, 9-10:30 pm. Local time (one hour earlier than E. S. T.). Slogan: "The Island of Enchantment."

1st Dial 2nd Dial 3rd Dial

WKAR—Michigan Agricultural College, East Lansing, Mich. 285.5 meters, 1050 kilocycles, 1000 watts, class B. Daily ex Sat & Sun, 7:15-8 pm, radio school, farm lectures. Mon, Wed, 8-9 pm, dance program. Fri, 8-9 pm, educational program by state government department. Weather reports broadcasted at noon each day ex Sun. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WKAV—Laconia Radio Club, 480 Main St., Laconia, N. H. 224 meters, 1340 kilocycles, 50 watts, class A. Fri, pm. Sun, 10:30 am, 6:30 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WKBB—Sanders Bros., 607 Jefferson St., Joliet, Ill. 214.2 meters, 1400 kilocycles, 100 watts, class A. Wed, 6-8:30 pm, dinner program. Thur, 8:30-12 pm, good time program. Sun, 3-5 pm, classical; 8:30-12 pm, frolics. Central standard time.

1st Dial 2nd Dial 3rd Dial

WKBE—K. & B. Electric Co., 59 Emerald Ave., Webster, Mas. 231 meters, 1300 kilocycles, 100 watts, class A. Mon, 8-11:30 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WKBK—Miss Shirley Katz, 52nd & Broadway, New York, N. Y. 209.7 meters, 1430 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WKRC—The Kodel Radio Corp., Cincinnati, Ohio. 325.9 meters, 920 kilocycles & 422.3 meters, 920 kilocycles, 1000 watts, class B. Sun, 6:45-7:30 pm, religious; 10-12 pm, musical. Mon, Wed, 6-7, dance music; 8-10 pm, 12 midnight, frolic. Tues, Thur, Sat, 10-12 pm, dance & classical music. Central standard time.

1st Dial 2nd Dial 3rd Dial

WLAL—First Christian Church, 9th & Boulder Sts., Tulsa, Okla. 250 meters, 1200 kilocycles, 100 watts, class A. Wed, 9:30 pm. Sat, 7:3 pm. Sun, 7:30 pm, church. Central standard time.

1st Dial 2nd Dial 3rd Dial

WLAP—W. V. Jordan, 306 W. Breckenridge St., Louisville, Ky. 275 meters, 1090 kilocycles, 20 watts, class A. Thur, Fri, 9:20-10 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WLBL—Wisconsin Dept. of Markets, Stevens Point, Wis. 278 meters, 1080 kilocycles, 500 watts, class A. Daily 8:45 am-11:45 am, weather, markets; 12:30-1:45 pm, weather, markets; 8 pm, musical program every Tues. Sat, 8 pm-11:59, musical program. Central standard time. Slogan: "Wisconsin, Land of Beautiful Lakes."

1st Dial 2nd Dial 3rd Dial

WLIB—Liberty Magazine, Drake Hotel, Chicago, Ill. 302.8 meters, 1500 watts, class B. Daily ex Sun & Mon, 7-8 pm, 9-10 pm & 11-12 pm. Sun, 4.5 pm. Central standard time. Slogan: "Liberty, a Weekly for Everybody."

1st Dial 2nd Dial 3rd Dial

WLIT—Lit Bros., Philadelphia, Pa. 394.5 meters, 760 kilocycles, 500 watts, class B. Daily ex Sun, 12-1 pm, 4:30-5 pm. Mon, 7:30-11:30 pm. Tues, Thur & Sat, 7:30-8 pm. Wed, 7:30-10:30 pm. Fri, 7:30 pm-1 am. Sun, 2-4 pm, 6:30-7:3, 7:30-9 pm (alternate Sun). Eastern standard time. Slogan: "The Quaker City Siren."

1st Dial 2nd Dial 3rd Dial

WLS—Sears, Roebuck & Co., 925 Homan Ave., Chicago, Ill. 345 meters, 870 kilocycles, 5000 watts, class B. Daily ex Sun, 9 am, 11 am, 12 pm, 2 pm, weather, markets. Mon, 6-7 pm, dinner hour program. Tues, Thur, 6:15-7:55 pm, musical entertainment. Wed, Fri, 6:15-11 pm, entertainment. Sat, 7-12 pm. Sun, 6-7:55 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WLTS—Lane Technical High School, 1225 Sedgwick St., Chicago, Ill. 258 meters, 1160 kilocycles, 100 watts, class A. Fri, 1-2 pm. Central time.

1st Dial 2nd Dial 3rd Dial

WLW—The Crosley Radio Corp., 3401 Colerain Ave., Cincinnati, Ohio. 422.3 meters, 710 kilocycles, 5000 watts, class B. Daily ex Sat & Sun, 7:30 am, health exercises; 8 am, morning worship, auspices of Y.M.C.A. Mon, 10:45 am-12:15 pm. Fri, 10:45 am-1:30 pm, Wed, 10:45 am-12 pm. Thur, 10:45 am-12:15 pm. Fri, 10:45 am-1:30 pm, silent night. Sat, 10:45 am-10:30 pm. Sun, 9:30 am. S. S.; 10:45 am, weather, markets; 11 am & 7:30 pm, church services; 3 pm, organ music; 8:30 pm, concert. Central time.

1st Dial 2nd Dial 3rd Dial

WLWL—Missionary Society of St. Paul the Apostle, 425 W. 59th St., New York, N. Y. 288.3 meters, 1040 kilocycles, 5000 watts, class B. Mon, Thur, 9 pm, music, talks & songs. Tues, Fri, 11 am, shopping talks. Sun, 8 pm, Paulist choristers, sermon, benediction. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMAC—Clive B. Meredith, Cazenovia, N. Y. 275.2 meters, 1090 kilocycles, 200 watts, class A. No definite schedule. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMAF—Round Hills Radio Corp., South Dartmouth, Mass. 440.9 meters, 680 kilocycles, 1000 watts, class B. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

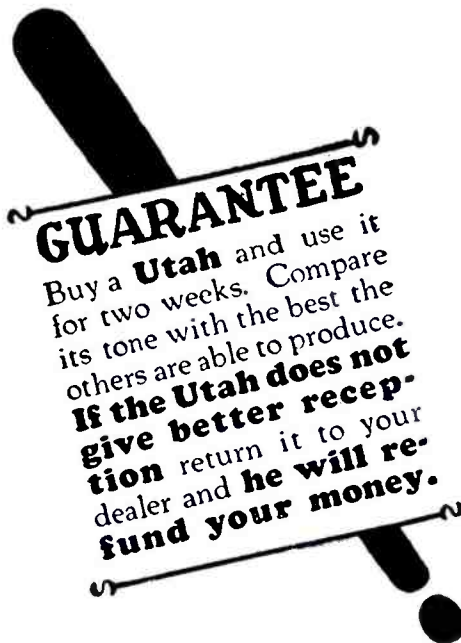
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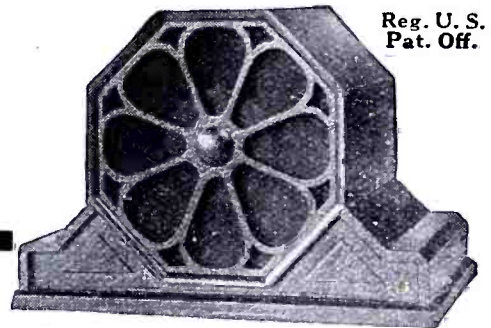


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Tell 'Em You Saw It in the Citizens Radio Call Book

WMAK—Norton Laboratories, Inc., Lockport, N. Y. 266 meters, 1130 kilocycles, 500 watts, class A. Daily ex Sun, 7:15 pm, daily news items. Mon, 7:30-10:30 pm, varied programs. Wed, 7:30-12 midnight, Fri & Sat 7:30-11 pm, varied programs. Sun, 10:25-11:50 am and 7:30-9 pm, church services. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMAL—M. A. Leese Optical Co., 712 11th St., Washington, D. C. 212.6 meters, 1410 kilocycles, 15 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMAN—First Baptist Church, Columbus, Ohio. 278 meters, 1080 kilocycles, 50 watts, class A. Sun, 10:30-12 noon, 7:30-9 pm, church services. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMAQ—The Chicago Daily News, 15 N. Wells St., Hotel La Salle, Chicago, Ill. 447.5 meters, 670 kilocycles, 1000 watts, class B. Daily ex Sun, 1-3 pm, 4-7 pm. Daily ex Sun & Mon, 8-10 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WMAY—Kingshighway Presbyterian Church, St. Louis, Mo. 248 meters, 1215 kilocycles, 100 watts, class A. Sun, 11 am-12 pm, 8-9 pm, church services. Central standard time.

1st Dial 2nd Dial 3rd Dial

WMAZ—Mercer University, Macon, Ga. 261 meters, 1150 kilocycles, 500 watts, class A. Mon, Thur, 10-11 pm, musical. Tues & Fri, 8-9 pm, sacred music. Wed, 11-12 pm, musical program. Fri, 9-11 pm, musical. Central standard time. Slogan: "Watch Mercer Attain Zenith."

1st Dial 2nd Dial 3rd Dial

WMBB—American Bond & Mortgage Co., 6201 Cottage Grove Ave., Chicago, Ill. 250 meters, 1200 kilocycles, 500 watts, class B. Daily ex Sun, Mon, 7-8 pm, 9-11 pm, musical. Sun, 3-5 pm, 7:40-9 pm, 9-11 pm. Central standard time. Slogan: "World's Most Beautiful Ballroom."

1st Dial 2nd Dial 3rd Dial

WMBG—Michigan Broadcasting Co. (F. G. Siegel), Hotel Addison, Detroit, Mich. 256 meters, 1170 kilocycles, 100 watts, class A. No definite schedule arranged. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WMBF—The Fleetwood Hotel, Miami Beach, Fla. 284.4 meters, 928 kilocycles, 5 kilowatts, class B. Daily, 7-8:30 pm, 10 pm-1 am, concert music, dance. Fri, midnight-1 am, nut club in studio. Eastern standard time. Slogan: "Down Where It's Always June, Folks—Down Where You'd Like To Be."

1st Dial 2nd Dial 3rd Dial

WMC—Commercial Appeal, Memphis, Tenn. 499.7 meters, 600 kilocycles, 500 watts, class B. Daily ex Sun & Wed, 8:30-9:30 pm. Tues, Fri, 11 pm-midnight. Daily ex Sun & Wed, 7:15 pm, bed-time stories. Sun, 11 am-12:30 pm, church service. Central standard time. Slogan: "WMC, Memphis, Down in Dixie."

1st Dial 2nd Dial 3rd Dial

WMCA—Hotel Mc Alpin, Broadway at 34th St., New York City, N. Y. 340.7 meters, 880 kilocycles, 1500 watts, class B. Daily ex Sun, 6-12 pm, musical. Tues, 11 am, women's hour. Sun, 11 am, church services; 6-11 pm, concert. Eastern standard time. Slogan: "Where the White Way Begins."

1st Dial 2nd Dial 3rd Dial

WMH—The Ainsworth-Gates Radio Co., Cincinnati, O. 326-424 meters, 920-690 kilocycles, 750 watts, class B. Central standard time.

1st Dial 2nd Dial 3rd Dial

WNAB—The Shepard Stores, Winter St., Boston, Mass. 250 meters, 1200 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WNAC—The Shepard Stores, Winter St., Boston, Mass. 280.3 meters, 1070 kilocycles, 500 watts, class B. Daily ex Sun, 10:30-11:30 am, 12:15-2 pm, 4-5 pm, 6-7:30 pm & 8-10 pm. Sun, 11 am, 1:30-4 pm, 6:45-8:30 pm. Eastern time.

1st Dial 2nd Dial 3rd Dial

WNAD—University of Oklahoma, Norman, Okla. 254 meters, 1180 kilocycles, 500 watts, class A. Mon, Tues, Wed, Thur, 12:30-1 pm, music; 3:30-4:30 pm, jazz orchestra; 7:15-8 pm, talks; 10:30-12 pm, music. Sun, 9:15-10:30 pm. Central standard time. Slogan: "The Voice of Soonerland."

1st Dial 2nd Dial 3rd Dial

WNAL—R. J. Rockwell, 5019 Capitol Ave., Omaha, Neb. 258 meters, 1160 kilocycles, 50 watts, class A. Tues, Fri, 7:30-9 pm. Central standard time. Slogan: "Pioneer Station of Omaha."

1st Dial 2nd Dial 3rd Dial

WNAP—Wittenberg College, Springfield, Ohio. 248 meters, 1210 kilocycles, 100 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WNAT—Lening Bros. Co., Spring Garden & 9th St., Philadelphia, Pa. 250 meters, 1200 kilocycles, 100 watts, class A. Wed, 6:50 pm. Eastern standard time. Slogan: "We Never Are Tired."

1st Dial 2nd Dial 3rd Dial

WNAV—Peoples Telephone & Telegraph Co., 313 Commerce Ave., Knoxville, Tenn. 233 meters, 1290 kilocycles, 500 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WNAX—Dakota Radio Apparatus Co., Yankton, S. Dak. 244 meters, 1299 kilocycles, 100 watts, class A. Daily ex Sun, 11:30 am, markets & weather. Tues, Thur, Sat, 5 pm, musical. Central standard time.

1st Dial 2nd Dial 3rd Dial

WNBH—New Bedford Hotel, Pleasant St., New Bedford, Mass. 248 meters, 1210 kilocycles, 250 watts, class A. Mon, Wed, Fri, 6-7 pm, 8-10:15 pm, musical. Sun, 11 am-12:15 pm, 4:30-5:30 pm, church services. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WNJ—Radio Shop of Newark, 85 Lehigh Ave., Newark, N. J. 252 meters, 1290 kilocycles, 150 watts, class A. Daily ex Mon & Thur, 6-6:30 pm, 8:30-12 pm, dance music. Eastern standard time. Slogan: "The Voice of Newark."

1st Dial 2nd Dial 3rd Dial

WNOX—Peoples Tel. & Tel. Co., 313 Commerce St., Knoxville, Tenn., 268 meters, 1120 kilocycles, 500 watts, class A. Mon, Wed, Fri, 8:10 pm. Central standard time. Slogan: "Smoky Mountain Station."

1st Dial 2nd Dial 3rd Dial

WNYC—City of New York, New York, N. Y. 526 meters, 570 kilocycles, 1000 watts, class B. Daily ex Sun, 6-11 pm. Mon, Wed, Fri, 11 am-12:30 pm. Sun, irregular. Eastern standard time. Slogan: "Municipal Broadcasting Station of the City of New York."

1st Dial 2nd Dial 3rd Dial

WOAI—Southern Equip. Co., San Antonio, Texas. 394.6 meters, 760 kilocycles, 1500 watts, class B. Mon, Wed & Fri, 3 pm, musical concert. Tues, Wed & Fri, 8:30-9:30 pm. Sun, 7:45-8:45 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WOAN—The Vaughan School of Music, Lawrenceburg, Tenn. 282.8 meters, 1060 kilocycles, 500 watts, class B. Daily ex Sun, 9-10 pm, musical. Central standard time. Slogan: "Watch Our Annual Normal."

1st Dial 2nd Dial 3rd Dial

WOAW—The Voice of the Woodmen of the World Life Insurance Association, Headquarters' Bldg., Omaha, Neb. 526 meters, 570 kilocycles, 1000 watts, class B. Mon, Tues, Thur & Fri, 6-7:30 pm, dinner hour program, orchestra, miscellaneous music; 9-11 pm, deluxe programs, musical features. Daily ex Sun, 8:15, 8:55, 10:30 am, 12:30, 1:45 & 4 pm, market reports. Sat, regular programs till 7:30 pm. Additional programs under the Omaha Chamber of Commerce. Sun, 9 am, 6 & 9 pm, religious services. Central standard time. Slogan: "The Fraternal Station at Omaha."

1st Dial 2nd Dial 3rd Dial

WOAX—Franklin J. Wolff, The Monument Pottery Co., Trenton, N. J. 240 meters, 1250 kilocycles, 500 watts, class A. Daily ex Sun, 10:05-12:45 pm, music, weather forecast, police reports, crop reports for New Jersey. Sun, 9:30-11:30 pm, Monument Pottery Co. orchestra. Eastern standard time. Slogan: "The Voice from Trenton."

1st Dial 2nd Dial 3rd Dial

WOC—The Palmer School of Chiropractic, Davenport, Iowa. 483.6 meters, 620 kilocycles, 5000 watts, class B. Mon, silent after 6 pm. Tues, 7:30-9 pm, 9-10 pm, musical. Wed, 9-10 pm, musical. Thur, 7-10 pm, 11-12 pm, dance orchestra. Fri, 8-9 pm, musical program. Sat, 9-10 pm, musical; 11-12 pm, dance orchestra. Central standard time. Slogan: "Where the West Begins—and in the State Where the Tall Corn Grows."

1st Dial 2nd Dial 3rd Dial

WOCL—Hotel Jamestown, Jamestown, N. Y. 275 meters, 1090 kilocycles, 30 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WODA—James K. O'Dea Radio & Victrola Shop, Paterson, N. J. 224 meters, 1340 kilocycles, 500 watts, class B. Daily ex Sun, 12-1 pm, 4:30-7 pm. Mon, Tues, Fri, 8-11 pm. Wed, Sat, 8-10 pm. Thur, 8 pm-2 am, the Silk City Night-Owls on parade. Eastern standard time. Slogan: "Voice of the Silk City."

1st Dial 2nd Dial 3rd Dial

WOI—Elec. Engineering Dept., Iowa State College, Ames, Iowa. 270 meters, 1110 kilocycles, 750 watts, class B. Daily ex Sun, 9:30 am, weather markets; 10:15 am, weather & markets; 12:30 pm, chimes, weather, markets & educational talks; 9:30 pm, weather. Mon & Thur, 7:30 pm, educational talks, program. Sun, 10:45 am, chimes; 11 am, college chapel. Central standard time.

1st Dial 2nd Dial 3rd Dial

WOK—Neutrowound Radio Mfg. Co., 1721 Prairie Ave., Chicago, Ill. 217.3 meters, 1380 kilocycles, 1500 watts, class B. Daily ex Sun & Mon, 10 pm-1 am. Fri, 5-7 pm, Capitol Theatre organ. Sun, 6:30-8:30 pm. Central standard time.

1st Dial 2nd Dial 3rd Dial

WOKO—Otto Baur, Dyckman Radio Shop, 138 Dyckman St., New York City, N. Y. 233 meters, 1290 kilocycles, 50 watts, class A. Mon, Thur, Sat, 7-12 pm. Tues & Fri, 7-12 pm, non-regular. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WOO—John Wanamaker, Philadelphia, Pa. 508.2 meters, 590 kilocycles, 500 watts, class B. Daily ex Sun, 11 am, music; 11:30 weather; 11:55 am, time signals; 2 noon, music; 4:40 pm, news reports; 4:45 pm, musical; 9:55, time signals; 10:02 pm, weather report. Mon, Wed, Fri, 7:30-11 pm, concerts. Sun, 10:45 am or 7:45 pm, 2:15 pm, Sunday School musical program; 6 pm, organ recital. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WOO—Unity School of Christianity, 917 Tracy Ave., Kansas City, Mo. 278 meters, 1080 kilocycles, 1000 watts, class A. Tues, 8-9:30 pm, devotional musical program. Thur, 7-8 pm, educational; 8-10 pm, musical. Sat, 8-10 pm, classical music; 10-11 pm, special radio healing service. Sun, 11 am-12:30 pm, morning service; 7-9:30 pm, evening service. Central standard time.

1st Dial 2nd Dial 3rd Dial

WOR—L. Bamberger & Co., 46 Bank St., Newark, N. J. 405.2 meters, 740 kilocycles, 500 watts, class B. Mon, 3:45 pm, 5:15-12 pm. Tues & Thur, 5:15-7:30 pm. Wed, 5:15-11 pm. Fri, 5:15-6:30 pm. Sat, 3 pm, 6:30-12 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WORD—Watch Tower Radio (Peoples Pulpit Assn., Brooklyn, N. Y.), Webster Hotel, Chicago, Ill. 275 meters, 1090 kilocycles, 5000 watts, class B. Tues, Wed, Fri, 7-8 pm, 9-10 pm, 11-12 pm. Thur & Sat, 8-10 pm. Sun, 10-11 am, 7-8 pm & 9-10:30 pm. Central standard time. Slogan: "The Watch Tower."

1st Dial 2nd Dial 3rd Dial

WOS—Missouri State Marketing Bureau, Board of Agriculture, Jefferson City, Mo. 440.9 meters, 880 kilocycles, 500 watts, class B. Daily ex Sun, 9-10-11-12 am, 1-2-3-5 pms (Sat ams only). Mon, Wed & Fri, 8-11 pm. Sun, 9-10 am, 7:30-9:30 pm. Central standard time. Slogan: "Watch Our State."

1st Dial 2nd Dial 3rd Dial

WOWL—Owl Battery Co., 901 Carondelet St., New Orleans, La. 270 meters, 1110 kilocycles, 10 watts, class A. Daily ex Sun, 11:30 am-12:30 pm, musical; 4:30-6:30 pm, musical and features. Tues & Fri, 8:30-10:30 pm, novelty. Sun, 7:45-9 pm, church services. Central standard time. Slogan: "Where Owl Batteries Are Made."

1st Dial 2nd Dial 3rd Dial

WOWO—The Main Auto Supply Co., 215 W. Main St., Fort Wayne, Ind. 227 meters, 1320 kilocycles, 500 watts, class B. Mon & Wed, 8-12 pm, concert. Tues, Wed, Thur & Fri, 12-1 pm, musical. Sun, 10-12 am, church services. Central standard time. Slogan: "The Voice of the Middle West."

1st Dial 2nd Dial 3rd Dial

WPAJ—Doolittle Radio Corp., 115 Crown St., New Haven, Conn., 268 meters, 1120 kilocycles, 100 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WPAK—North Dakota Agricultural College, Fargo, N. Dak. 275 meters, 1090 kilocycles, 50 watts, class A. Mon, Wed & Fri, 7:30 pm during school terms. Central standard time.

1st Dial 2nd Dial 3rd Dial

WPDO—The Northwood Station, Hiram L. Turner, 121 Norwood Ave., Buffalo, N. Y. 205.4 meters, 1460 kilocycles, 50 watts, class A. Wed & Sat, 8-11 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WPG—Municipality of Atlantic City, Atlantic City, N. J. 299.8 meters, 1000 kilocycles, 1000 watts, class B. Tues, Thur & Sat, 1:30 pm, 6:45 pm. Mon, Thur, 4:30 pm. Mon & Thur, 6:30 pm. Mon, Tues, Thur & Sat, 7-11 pm. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WPRC—Wilson Printing & Radio Co., 1740 5th St., Harrisburg, Pa. 215.6 meters, 1390 kilocycles, 100 watts, class A. Mon, Wed & Fri, 9-11:30 pm. Eastern standard time. Slogan: "The Capital City of the Keystone State."

1st Dial 2nd Dial 3rd Dial

WPSC—Pennsylvania State College, Dept. of Elec. Engineering, State College, Pa. 261 meters, 1150 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WQAA—Horace A. Beale, Jr., Perkerson, Pa. 220 meters, 1360 kilocycles, 500 watts, class A. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WQAC—Gish Radio Service, 108 E. 8th St., Amarillo, Texas. 234 meters, 1280 kilocycles, 100 watts, class A. Irregular schedule. Central standard time.

1st Dial 2nd Dial 3rd Dial

WQAE—Moore Radio News Station, 41 Main St., Springfield, Vt. 246 meters, 1212 kilocycles, 50 watts, class A. Sun, 10:30 am, church services. Eastern standard time.

1st Dial 2nd Dial 3rd Dial

WQAF—The Sandusky Register, Sandusky, Ohio. 240 meters, 1250 kilocycles, 5 watts, class A. Central standard time.

1st Dial 2nd Dial 3rd Dial

WQAM—Electrical Co., 42 N. W. 4th St., Miami, Fla. 263 meters, 1120 kilocycles, 100 watts, class A. Daily ex Sun, 6-6:30 pm, 8:15-9:30 pm, 10:30-12:30 pm. Sun, 7:30-9 pm. Eastern standard time. Slogan: "The Most Southern Radiocasting Station in U. S."

1st Dial 2nd Dial 3rd Dial



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WOAN—Scranton Times, 222 Spruce St., Scranton, Pa. 250 meters, 1200 kilocycles, 100 watts, class A. Daily ex Sun, 12:30-1 pm, 4:30-5 pm. Tues, Fri, 8-10:30 pm. Sat, 10:30-12 pm. Eastern standard time. Slogan: "The Voice of the Anthracite."

WQAO—Calvary Baptist Church, 123 W. 57th St., New York, N. Y. 361 meters, 833 kilocycles, 500 watts, class B. Wed, 8-9 pm, mid-week evening services. Sun, 11 am-12:30 pm, church services; 3-4:30 pm, Bible study class; 7:45-9:30 pm, evening services. Eastern standard time.

WQJ—Calumet Baking Powder & Rainbo Gardens Station, Clark & Lawrence, Chicago, Ill. 447.5 meters, 670 kilocycles, 500 watts, class B. Mon, 11 am-12 noon, 3-4 pm, 7-8 pm. Tues, Wed, Thurs, Fri, 11 am-12 noon, 3-4 pm, 10 pm-2 am. Sat, 11 am-12 noon, 3-4 pm, 7-8 pm, 10 pm-3 am. Central standard time. Slogan: "Work Quick Jerry."

WRAF—The Radio Club, Inc., 719 Michigan Ave., La Porte, Ind. 224 meters, 1340 kilocycles, 100 watts, class A. Sun, Mon, Thurs, 8:30 pm. Central standard time. Slogan: "The Voice of the Maple City."

WRAK—Economy Light Co., 1105 Ludington St., Escanaba, Mich. 256 meters, 1170 kilocycles, 100 watts, class A. Mon, Fri, 8:30 pm. Eastern standard time. Slogan: "The Gateway to Cloverland."

WRAM—Lombard College, Galesburg, Ill. 244 meters, 1230 kilocycles, 100 watts, class A. Mon, 7 pm, bed time stories; 8 pm, educational; 9-11 pm, musical. Central standard time.

WRAV—Antioch College, Yellow Springs, Ohio. 263 meters, 1140 kilocycles, 100 watts, class A. Wed, 8 pm, 9 pm, music & educational. Sun, 7 pm. Central standard time.

WRWA—Avenue Radio & Electric Shop, 460 Schuylkill Ave., Reading, Pa. 238 meters, 1260 kilocycles, 10 watts, class A. Thurs, 10 pm. Eastern standard time.

WRAX—Flexon's Garage, Gloucester City, N. Y. 268 meters, 1120 kilocycles, 500 watts, class A. Eastern standard time.

WRBC—Immanuel Lutheran Church, Valparaiso, Ind. 278 meters, 1080 kilocycles, 500 watts, class A. Sun, 7:30 pm, church service. Mon, 7:30 pm, diversified program. Central standard time. Slogan: "World Redeemed By Christ."

WRC—Radio Corporation of America, 3308 14th St., N. W., Washington, D. C. 468.5 meters, 640 kilocycles, 500 watts, class B. Mon, Wed, Fri, 10 am-6:30 pm. Tues, 10 pm-1 am. Thurs, 10 am-12:30 am. Sat, 12 noon-1 am. Eastern standard time. Slogan: "Voice of the Capital."

WRCO—Wynne Radio Co., Raleigh, N. C. 252 meters, 1190 kilocycles, 100 watts, class A. Wed, 9-10 pm. Sun, 11 am. Irregular programs at present. Eastern standard time.

WREC—Wooten's Radio & Elec. Co., Coldwater, Miss. 254 meters, 1180 kilocycles, 10 watts, class A. Sat, 9:30-10:30 pm. Sun, 4-5 pm. Central standard time. Slogan: "The Most Powerful 10-Watt Station in the World."

WREO—The Reo Motor Car Co., Lansing, Mich. 285.5 meters, 1050 kilocycles, 500 watts, class B. Daily ex Sun, 6-7 pm, 10 pm. Tues, Thurs, 8:15-10 pm. Sat, 10-12 midnight. Sun, 10 am, chimes; 10:30 am & 7:30 pm, church. Eastern standard time. Slogan: "Watch Reo."

WRHM—Rosedal Hospital, Inc., Nicolet & 44th St., Minneapolis, Minn. 252 meters, 1190 kilocycles, 50 watts, class A. Thurs, 9-11 pm, music. Sun, 1:30-2:30 pm, children's hour; 2:30-4:30 pm, music; 9:15-10:30 pm. Central standard time.

WRK—Doron Bros. Elec. Co., Hamilton, Ohio. 270 meters, 1110 kilocycles, 200 watts, class A. Fri, 8:15 pm, music, lectures. Sun, 10:15 am, 7:30 pm, church services. Central standard time. Slogan: "The Oldest Station in Existence."

WRL—Union College, Schenectady, N. Y. 360 meters, 833 kilocycles, 500 watts. Eastern standard time.

WRM—University of Illinois, Urbana, Ill. 273 meters, 1100 kilocycles, 500 watts, class A. No definite schedule. Musical concert broadcasted once a week, no definite time selected. Central standard time.

WRMU—A. H. Grebe & Co., Inc., Motor Yacht "Mu I," New York, N. Y. (Portable). 236 meters, 1270 kilocycles, 100 watts, class A. Unlimited schedule. Eastern standard time.

WRNY—Experimenter Publ. Co., Madison Ave. & 45th St., New York, N. Y. 258.5 meters, 1160 kilocycles, 500 watts, class A. Daily ex-Sun, 12 noon-2:30 pm, 7 pm-12:30 am. Sun, 2:45-6 pm, 8:15-10:30 pm. Eastern standard time. Slogan: "The Radio News Magazine Station."

WRST—Radiotel Mfg. Co., Inc., 5 First Ave., Bay Shore, N. Y. 215.7 meters, 1390 kilocycles, 150 watts, class A. Daily ex Sun, 12-1 pm. Mon, Tues, Fri, 8-11:30 pm, concert. Sun, 11 am-12 noon, church services; 4-6 pm, musical concert. Eastern standard time. Slogan: "Radiotel of the Sunrise Trail."

WRVA—Larus & Brothers Co., Inc., Richmond, Va. 256 meters, 1170 kilocycles, 1000 watts, class B. Mon, Wed, Fri, 8:15-11 pm. Eastern standard time.

WRW—Tarrytown Radio Research Laboratory, Tarrytown, N. Y. 272.6 meters, 1100 kilocycles, 500 watts, class A. Mon, 7-8 pm, children's period; 9-11:30 pm, entertainment & orchestra. Tues, Thurs, Fri, Sat, 9-11:30 pm, entertainment, talk, orchestra. Wed, 10-11:30 pm, entertainment, orchestra. Sun, 8-9 pm, services; 10:30-11:30 pm, musical. Eastern standard time. Slogan: "Everything in Radio."

WSAC—Clemson Agricultural College, Clemson College, S. C. 336.9 meters, 890 kilocycles, 500 watts, class B. Eastern standard time.

WSAI—The U. S. Playing Card Co., Cincinnati, Ohio. 325.9 meters, 920 kilocycles, 5 watts, class B. Mon, 8-12:30 pm. Tues, 5:30-10 pm; 12-12:30 pm. Wed, 7:30-12 pm. Thurs, 6:30-10 pm. Sat, 7-10 pm, 12 pm-1:30 am. Sun, 3-4:30 pm, 7:45-10:15 pm. Central standard time. Slogan: "The Gateway to Dixie."

WSAJ—Grove City College, Grove City, Pa. 229 meters, 1310 kilocycles, 250 watts, class A. Irregular schedule. Eastern standard time.

WSAN—Allentown Call Publ. Co., Inc., Allentown, Pa. 229 meters, 1310 kilocycles, 100 watts, class A. Tues, Thurs & Sat, 8:15 pm, musical. Eastern standard time. Slogan: "We Serve Allentown Nationally."

WSAP—The City Temple, New York, N. Y. 263 meters, 1140 kilocycles, 250 watts, class A. Eastern standard time.

WSAR—Doughty & Welch Elec. Co., 46 No. Main St., Fall River, Mass. 254 meters, 1180 kilocycles, 100 watts, class A. Daily ex Sun, 12-1 pm. Sun, 10:30-12 noon. Eastern standard time.

WSAU—Camp Marienfeld (Robt. V. Howard), Chesham, N. H. 229 meters, 1310 kilocycles, 10 watts, class A. Daily, 1-2 pm, 7-9 pm. Eastern standard time. Slogan: "Where the White Mountains Begin."

WSAX—Zenith Radio Corp., 332 So. Michigan Ave., Chicago, Ill. 268 meters, 1120 kilocycles, 100 watts, class A. (Portable.) Central standard time.

WSAZ—Chase Elec. Shop, Pomeroy, Ohio. 244 meters, 1230 kilocycles, 50 watts, class A. Sat, 2 pm. Sun, 10:30 am, 2:30 pm. Eastern standard time.

WSB—The Atlanta Journal, c/o Biltmore Hotel, Atlanta, Ga. 428.3 meters, 700 kilocycles, 1000 watts, class B. Daily ex Sun, 12-1 pm, music, weather; 2:30 pm, reports; 5 pm, 8-9 pm (ex Wed), 10:45-12 pm, concerts. Sun, 5-6 pm; 7:30-9:15 pm, church services. Central standard time. Slogan: "The Voice of the South."

WSBC—World Battery Co., 1219 So. Wabash Ave., Chicago, Ill. 209.7 meters, 1480 kilocycles, 1000 watts, class A. Central standard time.

WSBF—Stix, Baer & Fuller, 6th & Washington Ave., St. Louis, Mo. 273 meters, 1100 kilocycles, 250 watts, class A. Mon, 3-4 pm, 7:30-9 pm, 12 pm-1 am, musical, talks. Tues, 12 noon-1 pm, 3-4 pm, 8-9 pm, music; 11-12 pm, Theater Night Owls. Wed, Fri, 12 noon-1 pm; 3-4 pm, music; 11 pm-1 am, hotel dance. Sat, noon-1 pm, 3-4 pm, music. Central standard time.

WSBT—South Bend Tribune, South Bend, Ind. 275 meters, 1090 kilocycles, 250 watts, class A. Mon, Wed & Fri, 7-9:30 pm. Central standard time. Slogan: "Listening to the Hoosier State."

WSDA—The City Temple, New York City, N. Y. 263 meters, 1140 kilocycles, 250 watts, class A. Thurs, 7:45-9:30 pm. Sat, 10:45 am-1 pm. Sun, 7:30-9:30 pm. Eastern standard time.

WSKC—Worlds Star Knitting Co., Bay City, Mich. 261 meters, 1150 kilocycles, 500 watts, class A. Mon, Wed, 8-11 pm, musical. Sat, 11 pm-1 am, club program. Eastern standard time. Slogan: "Where the Summer Trails Begin."

WSM—The National Life & Accident Ins. Co., Inc., Seventh Ave. N. & Union St., Nashville, Tenn. 282.8 meters, 1060 kilocycles, 1000 watts, class B. Mon, Wed, Fri, Sat, 6:30 pm, dinner music; 7 pm, bedtime stories. Mon, 7-30 pm, community program. Mon, Wed, Sat, 10 pm, studio concert. Sun, 10:30 am, 7:30 pm, church services. Central standard time. Slogan: "We Shield Millions."

WSME—Saenger Amusement Co. and Maison Blanche Co., 1401 Tulane Ave., New Orleans. 319 meters, 940 kilocycles, 500 watts, class B. Daily ex Sun, 12:30-1:30 pm, 6:30-7:30 pm, 8:30-10:30 pm, entertainment. Central standard time. Slogan: "America's Most Interesting City."

WSMH—The Shattuck Music House, 207 Washington St., N., Owosso, Mich. 240 meters, 1250 kilocycles, 20 watts, class A. Wed, 8 pm, vocal & instrumental music. Sat, 10 pm, popular music. Sun, 10 am, church services. Eastern standard time.

WSMK—The S. M. K. Radio Corp., 812 Gibbons Hotel, Dayton, Ohio. 275.2 meters, 1090 kilocycles, 500 watts, class A. Daily 12 noon-1 pm, dinner music. Daily ex Sun, 4-4:30 pm, news, reports. Daily ex Sun & Wed, 6-7 pm, dinner concert; 8-10:30 pm, studio concert. Sat, "Dum Lora Club," midnite frolic. Central standard time. Slogan: "The Home of Aviation."

WSOE—School of Engineering of Milwaukee, 415 Marshall St., Milwaukee, Wis. 246 meters, 1219 kilocycles, 500 watts, class A. Daily ex Sat & Sun, 5:30-6:30 pm, Twilight Hour; 9-11 pm, Sat, 2 pm, markets & weather; 9-11 pm, review. Sun, 7:30-8:30 pm, services. Central standard time. Slogan: "In the Land of the Sky Blue Waters."

WSRO—Radio Co. (Harry W. Fahrlander), 409 High St., Hamilton, Ohio. 252 meters, 1190 kilocycles, 100 watts, class A. Tues & Fri, 8-10 pm. Sun, 2-4 pm. Central standard time. Slogan: "We Sell Radio Only."

WSUI—State University of Iowa, Capitol & Washington Sts., Iowa City, Iowa. 483.6 meters, 620 kilocycles, 500 watts, class B. Mon, Tues, & Thurs, 12:30 noon, education lecture & music. Wed, 9 am, high school assembly program; 12:30 noon, Fri, 12:30 noon, musical program. Mon, Wed & Sat, 7:30 pm, musical program. Sun, 9:15 pm, familiar hymns. Central standard time. Slogan: "The Voice of Old Gold."

WSY—Alabama Polytechnic Institute, Auburn, Ala. 250 meters, 1200 kilocycles, 500 watts, class A. Central standard time.

WTAB—Fall River Herald Publ. Co., 231 Pocasset St., Fall River, Mass. 266 meters, 1130 kilocycles, 100 watts, class A. Daily ex Sun, 6:15 pm, organ recital. Mon, Thurs, 10:45 am, home economics hour. Tues & Thurs, 7:30 pm, musical program. Eastern standard time.

WTAC—Penn Traffic Co., Washington St., Johnstown, Pa. 267.8 meters, 1430 kilocycles, 100 watts, class A. Mon & Fri, 7:30-10 pm. Eastern standard time.

WTAD—Robt. E. Compton, 412 Wabash Ave., Carthage, Ill. 236 meters, 1270 kilocycles, 50 watts, class A. Central standard time.

WTAG—Worcester Telegram Publ. Co., 52 Front St., Worcester, Mass. 268 meters, 1120 kilocycles, 500 watts, Daily ex Sun, 10:30 am-2 pm, 4-5 pm. Mon, Wed & Fri, 7:15 pm. Tues, Thurs & Sat, 5:15 pm. "The Twinkle-Twinkle Story Teller." Daily ex Sat, 8 pm. Eastern standard time. Slogan: "The Voice From the Heart of the Commonwealth."

WTAL—Toledo Radio & Elec. Co., 316 Jackson St., Toledo, Ohio. 252 meters, 1190 kilocycles, 10 watts, class A. Daily ex Sun, 7:30-8 pm. Eastern standard time. Slogan: "Up in Ohio."

WTAM—Willard Storage Battery Co., 246 E. 131st St., Cleveland, Ohio. 389.4 meters, 770 kilocycles, 3500 watts, class B. Daily ex Sun, 12:15-1:30 pm, 6-7 pm. Mon, Wed, Sat, 8-12 pm. Eastern standard time. Slogan: "The Voice of the Storage Battery."

WTAP—Cambridge Radio & Elec. Co., Cambridge, Ill. 242 meters, 1240 kilocycles, 100 watts, class A. Central standard time.

There is a TRIMM Quality Reproducer for Every Set



TRIMM Home Speaker

Known since the day of its introduction as the biggest value in Radio. A full size genuine Trimm speaker of latest "goose neck" type. Full, round, velvety tone. Fine volume, has real pep and kick. The 12-inch horn and tone chamber of genuine Volconite, perfectly matched with a Trimm unit, fixed laboratory adjustment. Guaranteed for life. The Trimm Homespeaker outperforms speakers selling at double its price. Used by thousands, with sets of every type and size, it is also adapted to the set of few tubes, as the "B" Battery potential for satisfactory reproduction with Homespeaker is extremely low..... **\$10.00**



TRIMM Entertainer

One of the most popular of all Trimm Speakers. Embodies the well known features of Trimm design, in a speaker of good size and at a money-saving price. Gives tremendous volume of fine, rich, smooth tone, fidelity of reproduction and an entire absence of "blasting" or harsh overtones. This speaker has never been matched at its price. The large Volconite horn and tone chamber stands almost 20 inches high. Volume is easily and instantly regulated by the accessible adjustment. Carries the Trimm Lifetime guarantee. A thoroughly dependable and satisfactory speaker of fine construction, sold at the very moderate price of..... **\$17.50**

EVERY professional user of radio knows that no receiving set can possibly be better than the reproducing instrument used in connection with it. The reasons that led the MacMillan Arctic Expedition, with the world to choose from, to select and use Trimm reproducer equipment are the very reasons why you should insist upon Trimm Reproducers in the purchase of new equipment, or should replace your present speakers and phones with Trimm precision instruments.

There IS a Difference in Speakers

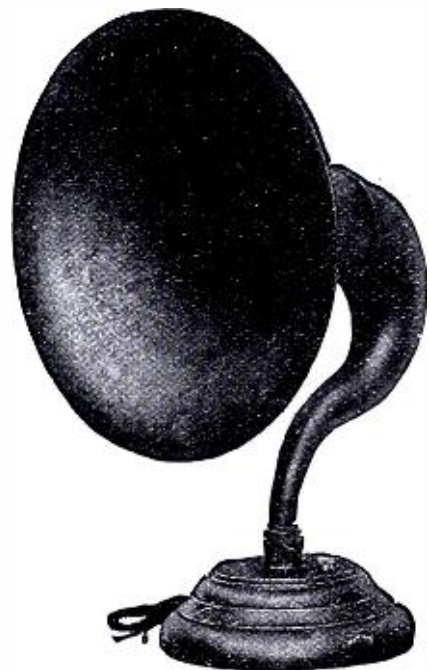
Give the same thoughtful care to the selection of your speaker as you expect to give to the selection of the set. The final result in satisfactory Radio reception depends upon the speaker. It's the speaker you hear—it's the speaker which will largely determine whether Radio will mean to you ever increasing enjoyment—or disappointment. There is a Trimm Quality Reproducer exactly designed to give maximum performance with the set you now have or propose buying.

Each Built for a Purpose

Trimm Quality Reproducers are the product of an organization devoted entirely to the manufacture of speakers and reproducers—and nothing else. Produced by specialists, tens of thousands of users endorse the statement that Trimm Reproducers DO give results in purity of tone, fidelity of reproduction, volume, utter absence of distortion, harsh overtones or "blasting," entirely unmatched elsewhere. There is a Trimm Reproducer for every purpose and for every set. Every Trimm Reproducer carries a lifetime guarantee. Trimm prices are no higher than you would pay for instruments of ordinary quality.



Tell 'Em You Saw It in the Citizens Radio Call Book



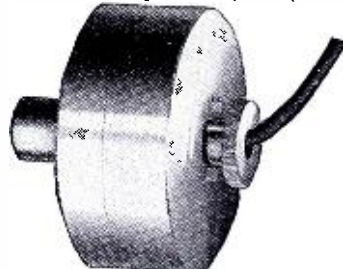
TRIMM Concert

Thousands say this is the one perfect radio speaker. Trimm Concert is designed for the present-day radio user who wants absolutely the best. The entire scale of musical tone is reproduced with such perfect fidelity, and complete preservation of the original tonal values that you can, with real enjoyment listen to an evening's program without tiring. Horn and tone chamber of genuine Volconite, perfectly matched with the reproducer, extra large, gives a full, rounded tone, with never a trace of distortion. The exclusive Trimm adjustment permits instant regulation of volume to any degree without forcing either set or speaker. Truly radio's finest reproducing instrument **\$25.00**



TRIMM Headsets

A good set of head phones is indispensable to the full enjoyment of radio. For years Trimm Phones have been standard. Those interested in DX, or distance, will especially appreciate the Trimm Professional, selected and used by the MacMillan Arctic Expedition. Highest quality of construction, Bi-polar type, magnets of forged tungsten steel, full 3000 ohms. Guaranteed for life, at **\$5.50**
Also Trimm Dependable, at \$4.40.



TRIMM Phonodapters

Makes a loud speaker of any phonograph. Trimm Giant Unit gives greatest volume and tone. So light it requires no stand-ard; has famous Trimm Ad-justment. Extra large, at **\$10.00** each
Trimm LITTLE WONDER, a low-priced unit but with tremendous kick and volume, sells complete with adapters for any phonograph, at \$4.50.

WTAQ—S. H. Van Gordon & Son, Osseo, Wis. 254 meters, 1180 kilocycles, 100 watts, class A. Daily ex Sun, 10:30 am, 12:15 pm, 6:15 pm, weather, markets; 6:30 pm, code, Tues, 8 pm. Fri & Sun, 7:30 pm. Central standard time. Slogan: "The Voice of the Wilderness." 1st Dial 2nd Dial 3rd Dial

WTAR—Reliance Elec. Co., Inc., 519 W. 21st Ave., Norfolk, Va. 261 meters, 1150 kilocycles, 100 watts, class A. Daily ex Sun, 6 pm, weather, markets & news. Eastern standard time. Slogan: "Down in Old Virginia." 1st Dial 2nd Dial 3rd Dial

WTAW—Agricultural & Mechanical College of Texas, College Station, Texas. 270 meters, 1110 kilocycles, 500 watts, class A. Wed & Fri, 8-9 pm, Sun, 11 am. Central standard time. 1st Dial 2nd Dial 3rd Dial

WTAX—Williams Hardware Co., 115 S. Vermillion St., Streator, Ill. 231 meters, 13,000 kilocycles, 50 watts, class A. Thurs, 8-12 pm. Central standard time. 1st Dial 2nd Dial 3rd Dial

WWGL—Radio Eng. Corp., 8501 124th St., Richmond Hill, N. Y. 212.6 meters, 1410 kilocycles, 500 watts, class A. Eastern standard time. 1st Dial 2nd Dial 3rd Dial

WTAZ—Thomas J. McGuire, Lambertville, N. J. 261 meters, 1150 kilocycle, 15 watts, class A. Mon, 8-10 pm, musical. Eastern standard time. 1st Dial 2nd Dial 3rd Dial

WTMS—Flint Senior High School, Crapo St., Flint, Mich. 218 meters, 1370 kilocycles, 250 watts, class A. Central standard time. 1st Dial 2nd Dial 3rd Dial

WTIC—The Travelers Insurance Co., 700 Main St., Hartford, Conn. 475.9 meters, 630 kilocycles, 500 watts, class B. Mon, Wed, Thurs, 6:30-8:30 pm. Tues, Fri, 6:30-10 & 12 pm, 11 am-1 pm. Wed, 10-11 pm. Eastern standard time. Slogan: "The Insurance City." 1st Dial 2nd Dial 3rd Dial

WWAO—Wright & Wright, Inc., 2215 N. Broad St., Philadelphia, Pa. 250 meters, 1260 kilocycles, 250 watts, class A. Mon, 7-12 pm, varied. Thurs, 7 pm-1 am, varied. Sun, 9:30-12 pm, classical. Eastern standard time. Slogan: "Penn City Station." 1st Dial 2nd Dial 3rd Dial

WWAE—Electric Park (L. J. Crowley), Plainfield, Ill. 242 meters, 1240 kilocycles, 5000 watts, class A. Daily ex Sun, 12:30-1:30 pm, 9-12 midnight. Sun, 10:50-12:15 am, church; 3:30-4:30 pm, musical. Central standard time. 1st Dial 2nd Dial 3rd Dial

WWAO—Michigan College of Mines, Houghton, Mich. 263 meters, 1140 kilocycles, 250 watts, class A. Daily ex Sun, 12-12:30 pm. Wed, 8-10 pm. Central standard time. 1st Dial 2nd Dial 3rd Dial

WWI—Ford Motor Co., Dearborn, Mich. 266 meters, 1130 kilocycles, 500 watts, class A. Wed, 8-9:30 pm. Eastern standard time. 1st Dial 2nd Dial 3rd Dial

WWJ—The Detroit News, Detroit, Mich. 352.7 meters, 850 kilocycles, 1000 watts, class B. Sun, 10:30 am, church services; 2 pm, orchestra concert; 7:20-10:15 pm, varied musical program. Mon, Wed, Fri, 7:30-8:30 am, setting-up exercises. Daily ex Sun & Sat, 9:30 am, dinner menu; 10:25 am, weather; 11:55 am, time signals; 12 noon, concert; 3 pm, concert; 6 pm, dinner concert; 8-11 pm, varied musical program. Eastern standard time. 1st Dial 2nd Dial 3rd Dial

WWL—Loyola University, New Orleans, La. 275 meters, 1090 kilocycles, 100 watts, class A. Sat, 7:30-8:30 pm. Central standard time. 1st Dial 2nd Dial 3rd Dial

Telephone Broadcasting Stations Listed by States

State, City, Call

Alabama:
Auburn, WAPI, WSY
Birmingham, WRRC
Montgomery, WIBZ

Alaska:
Fort St. Michael, WXT
Juneau, WFIU
Nushagak, KIJ
Yacutaga Beach, KYJ

Arizona:
Flagstaff, KFXV
Phoenix, KFAD, KFCB
Tucson, KFDH

Arkansas:
Arkadelphia, KFWD
Bentonville, KFVX
Conway, KFKO
Fayetteville, KFMO
Hot Springs, KTHS
Little Rock, KFMB

California:
Avalon, KFOW
Bakersfield, KDZB
Berkeley, KRE
Big Bear Lake, KFXB
Burlingame, KFQH
Chico, KFVH
Fresno, KMJ
Hollywood, KFOZ, KFVF,
KFWB, KNX
Holy City, KFQU
Long Beach, KFON
Los Angeles, KFI, KFPG,
KFPR, KFSG, HHL, KJS
Oakland, KFUS, KFWM, KGO,
KLS, KIX, KTAB, KZM
Oxnard, KFYP
Pasadena, KPPC, KPSN
Sacramento, KFBK, KFVC
San Diego, KDPT, KFBC,
KFVV
San Francisco, KFRC, KRUC,
KFVZ, KFWI, KGTT,
KJBS, KPO, PUO
San Jose, KFAF
San Leandro, KFUU
San Pedro, KFVD
Santa Ana, KFAW
Santa Maria, KFXC
Stockton, KJQ, KWG
Taft, KFQC
Upland, KFVC

Colorado:
Boulder, KFAJ
Colorado Springs, KFXF
Denver, KFAF, KFDL, KFPL,
KFUP, KFVR, KLZ, KOA,
KFJX
Greeley, KFKA
Gunnison, KFHA
Trinidad, KFBS

Connecticut:
Hartford, WTIC
New Haven, WDRG, WPAJ
Storrs, WABL, WCAC

Delaware:
Wilmington, WHAV
District of Columbia:
Washington, WBES, WOAP,
WMAL, WRC

Florida:
Clearwater, WGHB
Fulford-by-the-Sea, WGBU
Miami, WQAM
Miami Beach, WMBF
St. Petersburg, WCBK, WHBN,
WIBC, WJBB
Tampa, WDAE, WCBP
Winter Park, WDBO

Georgia:
Atlanta, WDBE, WGST, WSB
Macon, WMAZ
Savannah, WEBZ

Hawaii:
Honolulu, KGU

Idaho:
Boise, KFAU, KFDD
Kellogg, KFEY
Moscow, KFAN

State, City, Call

Illinois:
Batavia, WORD
Cambridge, WTAP
Carthage, WTAD
Chicago, KYW, WAAF, WRRM,
WBBZ, WBCN, WDBY,
WEBL, WENR, WFKB,
WGES, WGN, WGO, WHBM,
WHT, WIBJ, WIBL, WIBM,
WIBO, WJAZ, WLIR, WLS,
WLTS, WMAO, WMBR,
WOK, WOJ, WSAX, WSBC

Decatur, WBAO, WJBL
Evanston, WEHS
Galesburg, WFBZ, WRAM
Harrisburg, WEBQ
Joliet, WCLS, WIDB, WJBA,
WKBB
Lake Forest, WABA
La Salle, WJBC
Monmouth, WBBU
Mooseheart, WJJD
Plainfield, WVAE
Rockford, KFIV
Rock Island, WHBF
Spring Valley, WGBW
Streator, WTAX
Sycamore, WJBN
Tuscola, WDJ
Urbana, WRM
Zion, WCBQ

Indiana:
Anderson, WEBD, WHBU
Culver, WHBI
Evansville, WGBF
Fort Wayne, WHBJ, WOWO
Greentown, WJAK
Indianapolis, WFBM
LaPorte, WRAF
Logansport, WHBL, WIBW
Seymour, WFBE
South Bend, WSBT
Valparaiso, WRBC
West Lafayette, WBA

Iowa:
Amos, WOI
Atlantic, KFLZ
Boone, KFGQ
Burlington, WIAS
Cedar Falls, KFJX
Cedar Rapids, KFLP, WJAM,
WKAA
Clarinda, KSO
Council Bluffs, KOIL
Davenport, WOC
Des Moines, WHO
Fort Dodge, KFJY
Iowa City, KFQP, WSUI
Lamoni, KFVY
LeMars, KFCY
Marshalltown, KFJB
Muscatine, KFVY, KTNT
Oskaloosa, KFHL
Shenandoah, KFNF, KMA
Sioux City, KFMR, WEAU

Kansas:
Independence, KFVG
Junction City, KFJC
Lawrence, KFVU
Manhattan, KFVH, KSAC
Russell, KFQO
Wichita, KFH, KFOT, WEAH

Kentucky:
Louisville, WHAS, WLAP

Louisiana:
Baton Rouge, KFVC
New Orleans, WAAB, WAAC,
WABZ, WBBS, WCBE,
WOWL, WSMU, WWL
Pineville, KFVU
Shreveport, KFVX, KWH,
WGAQ

Maine:
Bangor, WABI
Ellsworth, WHBK
Orono, WGBX
Portland, WCSH

Maryland:
Baltimore, WCAO, WCBM,
WFBR

Massachusetts:
Boston, WBZA, WDBR,
WEEL, WNAB, WNAO

State, City, Call

Fall River, WSAR, WTAB
Mattapoisett, WBBG
Medford Hillside, WARC, WGI
New Bedford, WIBH, WNBH
South Dartmouth, WMAF
Springfield, WIZ
Taunton, WAIT
Webster, WKBE
Worcester, WCRT, WCTS,
WTAG

Michigan:
Bay City, WSKC
Berrien Springs, WEMC
Dearborn, WWI
Detroit, WCX, WDYC, WGHP,
WJR, WMBC, WWJ
East Lansing, WKAR
Escanaba, WRAC
Flint, WFDF, WTMS
Grand Rapids, WDBC, WEBK
Houghton, WWAO
Houston, KFMW
Lansing, WREO
Mt. Clemens, WABX
Owosso, WSMH
Petoskey, WBBP
Port Huron, WAED
Royal Oak, WAGM
Ypsilanti, WJBK

Minnesota:
Breckenridge, KFJH
Collegeville, WFBJ
Minneapolis, KFDZ, KEMT,
WAMD, WCCO, WHDI,
WRIM
Northfield, KFMX, WCAL
St. Cloud, WFAM
St. Paul, KFOY, WCCO
Welcome, KFVN

Mississippi:
Coldwater, WREC
Meridian, WBIP
University, WCBH

Missouri:
Cape Girardeau, KFVS
Carterville, KFVW
Columbia, KFVU
Independence, KLDS
Jefferson City, WOS
Kansas City, KWKC, WDAF,
WIB, WOQ
Kirksville, KFVZ
Moberly, KFVY, KFOJ
St. Louis, KFOA, KFVU,
KFVE, KFWE, KSD, WFW,
WIL, WMAF, WPE, WSBF

Montana:
Havre, KFBB
Helena, KFCC, KFSY
Missoula, KUOM

Nebraska:
David City, KFOR
Hastings, KFVX
Lincoln, KFAB, WFAV
Norfolk, WJAG
Oak, KFVQ
Omaha, KFVZ, KFOX, KUPR,
WAAW, WNAL, WOAW
University Place, WCAJ

New Hampshire:
Chesham, WSAU
Hanover, WDCH, WFBK
Laconia, WKAV

New Jersey:
Atlantic City, WHAR, WPG
Camden, WFBI
Elizabeth, WBS
Gloucester City, WRAX
Lambertville, WTAX
Newark, WAAM, WBS, WCBX,
WGCP, WNJ, WOR
New Brunswick, WEBA
North Plainfield, WEAM
Paterson, WODA
Red Bank, WJBI
Salem, WDBQ
Trenton, WOAX

New Mexico:
Albuquerque, KFVY, KFVY
State College, KFVY, KOB

New York:
Bay Shore, WRST
Brooklyn, WBBR, WFRL,
WHAP

State, City, Call

Buffalo, WEBR, WGR, WJBP,
WMAK, WPDQ
Canton, WCAD
Cazenovia, WMAC
Flushing, WBI
Freeport, WGBR
Ithaca, WEAI
Jamestown, WOCL
Kingston, WDBZ
Lockport, WMAK
New York City, WRAY, WRNY,
WDBX, WFAF, WFBJ,
WBL, WBRM, WFBH,
WFBM, WGBS, WGMU,
WHN, WIBT, WJY, WJZ,
WKBC, WLWI, WMCA,
WNYC, WQAO, WRMU,
WRNY, WSAP, WSDA
Richmond Hill, WAHG, WBOQ,
WGMU, WWGL
Rochester, WABO, WHAM,
WHEC
Schenectady, WGY, WRL
Syracuse, WFBL
Tarrytown, WRW
Troy, WHAZ
Utica, WIBX

North Carolina:
Asheville, WABC
Charlotte, WBT, WJRG
Raleigh, WFBQ

North Dakota:
Agricultural College, WPAK
Bismarck, KFVY
Devils Lake, KDLR
Fargo, WDAY
Grand Forks, KFJM

Ohio:
Akron, WADC
Bellefontaine, WHBD
Cambridge, WEBE
Canton, WHRC
Cincinnati, WAAD, WHBR,
WKRC, WLW, WMH,
WSAI
Cleveland, KDPM, WDBK,
WEAR, WHK, WTAM
Columbus, WAIU, WBAV
WEO, WMAN
Dayton, WDRS, WEBT, WSMK
Granville, WJD
Hamilton, WRK, WSRQ
Newark, WBBR
Pomeroy, WSAZ
Sandusky, WQAF
Springfield, WCSO, WANP
Toledo, WARR, WIRK, WTAL
Wooster, WABW
Yellow Springs, WRAV

Oklahoma:
Bristow, KFVU, KVOO
Chickasha, KOCW
Norman, WNAD
Oklahoma City, KFJF
Tulsa, WLAL

Oregon:
Astoria, KFJI
Corvallis, KFVJ
Hood River, KQP
Portland, KFEC, KFIE, KFJR,
KFVW, KGW, KQP, KTRB

Pennsylvania:
Allentown, WCBR, WSAW
Altoona, WFBG
Arnold, WCBU
Butler, WBR
East Pittsburgh, KDKA
Grove City, WSAJ
Harrisburg, WABB, WBAK,
WHBG, WPRC
Haverford, WABQ
Johnstown, WGBK, WHBP,
WTAC
Lancaster, WDBC, WGAL
Lewistown, WJBO
Oil City, WBSA
Parkersburg, WQAA
Philadelphia, WABY, WCAU,
WFBD, WFI, WHBW,
WIAD, WJBG, WIP, WLIT,
WNAT, WOO, WWAD
Pittsburgh, KQV, WCAE,
WJAS
Pottsville, WDS

State, City, Call

Reading, WRAW
Scranton, WGBI, WQAN
State College, WPSC
Wilkes-Barre, WBAX, WBRE

Porto Rico:
San Juan, WKAQ

Philippine Islands:
Manila, KZKZ, KZRO, KZUY

Rhode Island:
Cranston, WDFW, WKAP
Providence, WGBR, WCWS,
WEAN, WGBM, WJAR

South Carolina:
Charleston, WBBY
Clemson College, WSAC
Greenville, WGBT

South Dakota:
Brookings, KFDY
Rapid City, WCAT
Vermillion, KUSD
Yankton, WNAX

Tennessee:
Chattanooga, WDDO
Knoxville, WFBC, WNAV,
WNOX
Laurensburg, WOAN
Memphis, WGBL, WHRQ,
WMC
Nashville, WCBQ, WDAD,
WSM

Texas:
Amarillo, WDAG, WQAC
Austin, KUT
Beaumont, KFDM, KFXM
Beville, KFRB
Brownsville, KWWG
College Station, WTAW
Dallas, WFAA
Denison, KFOT
Duhlin, KFPL
El Paso, WDAH, KFXH
Fort Worth, KFJZ, KFQB,
KFRO, WBAP
Galveston, KFLX, KFUL
Greenville, KFPM
Houston, KFVI, KPRC, WEAY,
WSAV, KFJY
San Antonio, WCAR, WOAI
San Benito, KFVU
Waco, WJAD

Utah:
Logan, KFVY
Ogden, KFUR, KFWA
Salt Lake City, KDYL, KFOO,
KFPT, KFUT, KSL

Vermont:
Burlington, WCAV
Springfield, WQAE

Virginia:
Arlington, NAA
Norfolk, WBBW, WTAR
Richmond, WBBL, WRVA
Thrifton, WGBG

Washington:
Everett, KFBL
Lacey, KGY
North Bend, KFVW
Olympia, KFRW
Pullman, KFVX, KWSC
Seattle, KFOA, KHQ, KJR,
KTCL, KTW
Spokane, KFVU, KFPY
Tacoma, KMO
Walla Walla, KFCE
Yakima, KFVQ

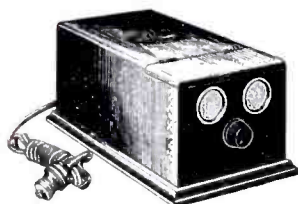
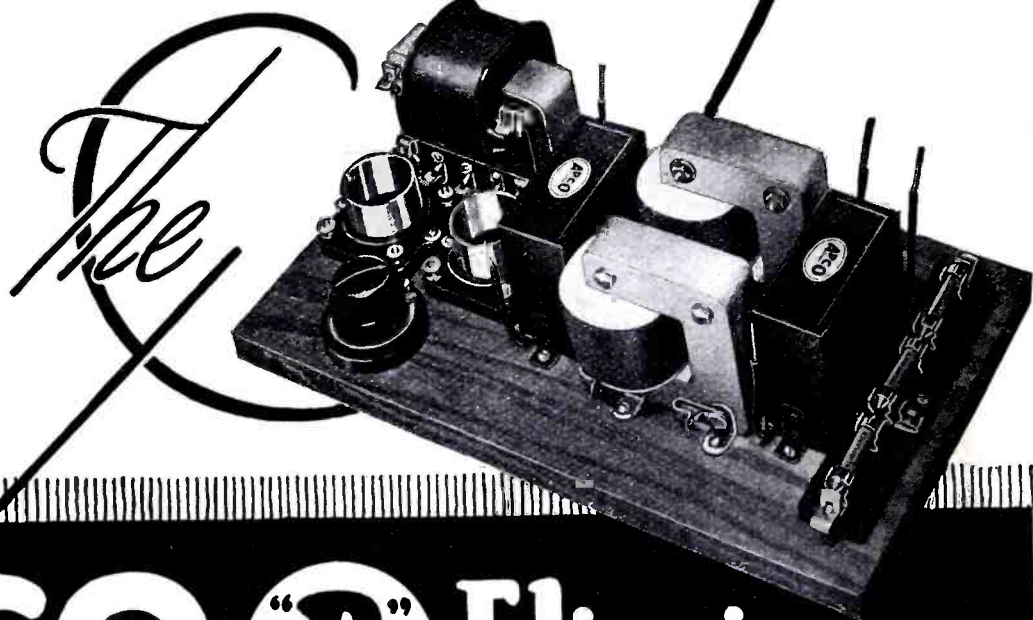
West Virginia:
Weirton, WBBR

Wisconsin:
Beloit, WEBW
Camp Lake, WOLO
Fond du Lac, KFVZ
Madison, WHA, WIBA
Marshfield, WGBR
Menominee, WGBQ
Milwaukee, WHAD, WKAF,
WSOE
Osseo, WTAQ
Poynette, WIBU
Stevens Point, WHBB, WLBI
Superior, WBBW
West De Pere, WHBY

Wyoming:
Laramie, KFBW

Modernize Your Radio with

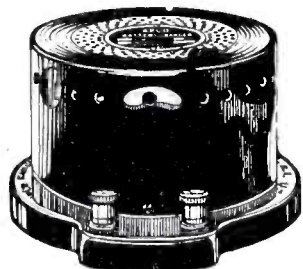
The Apco Manufacturing Company has gained a name in the radio field only equaled by its reputation as a long successful manufacturer of automotive accessories. Dependability is the watchword at the Apco plant—and a force of highly trained workers builds it into every piece of merchandise sold.



Rectodyne

APCO "B" Eliminator

In Knockdown Form



"A" Battery Charger
No. 77



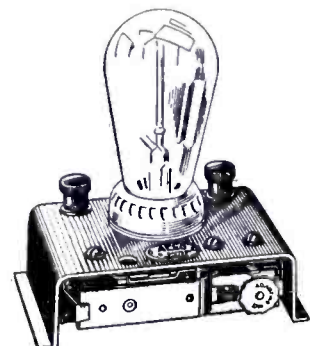
"A" Battery Charger
No. 79

NO need to buy a new set to get the latest feature of the newest models. The APCO "B" Eliminator in knock-down form (called the APCO "B" Kit) gives you a steady flow of "B" current direct from lamp socket with no "hum". You can wire this device yourself in an hour. Price, \$30.00. If you prefer the APCO "B" Eliminator enclosed in a handsome cabinet, get the APCO Rectodyne. It comes ready to plug into lamp socket and lends to the appearance as well as efficiency of your radio outfit. Price, \$44.00.

"A" Battery Charger, No. 77, \$18.50

"A" Battery Charger, No. 79, 12.50

"B" Battery Charger, No. 89, 4.00



"B" Battery Charger

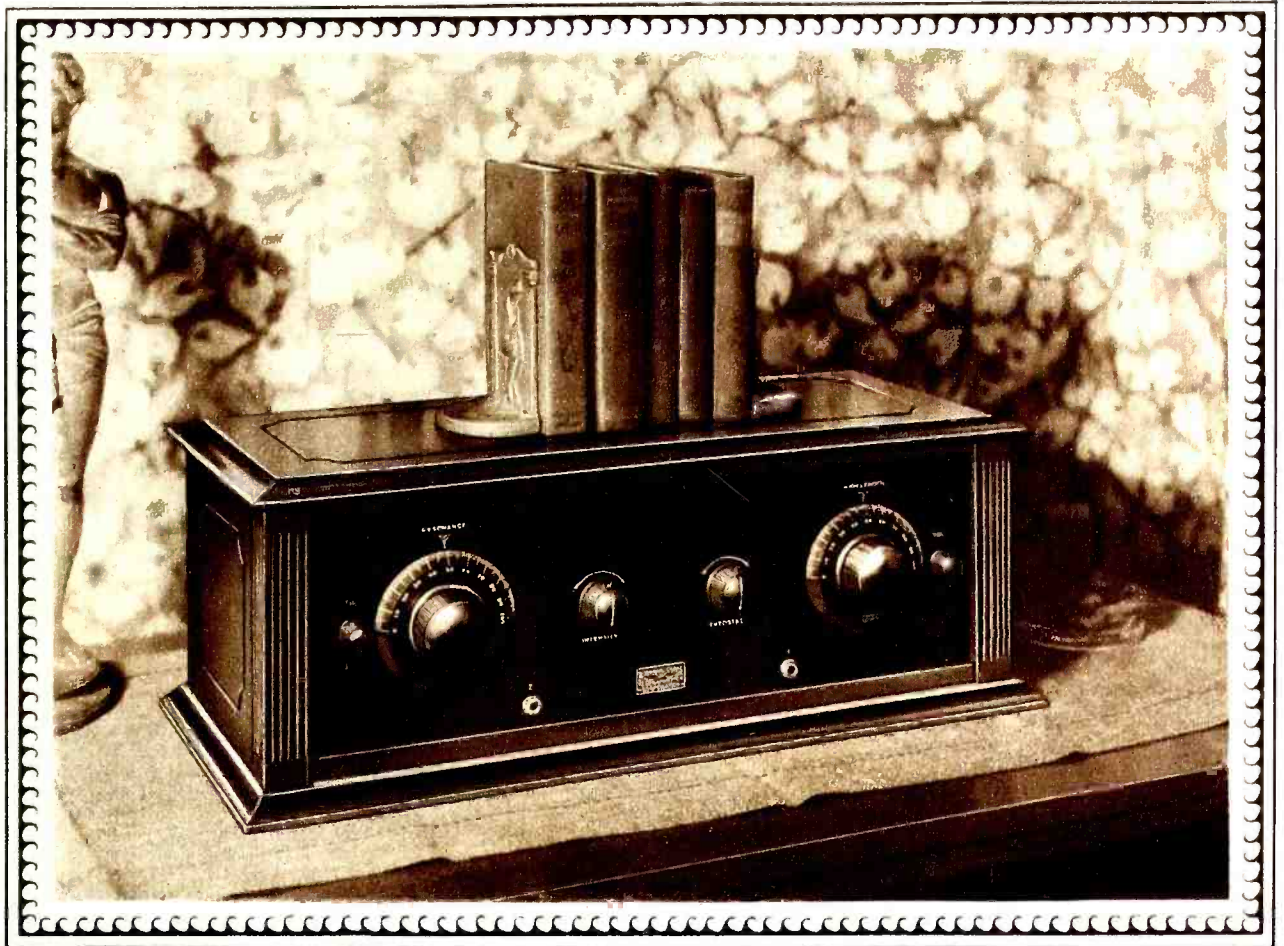
A post card giving your name and address will bring you a catalog and descriptive folders of APCO Radio Products.

APCO MANUFACTURING COMPANY

1226 Eddy Street, Providence, Rhode Island

Tell 'Em You Saw It in the Citizens Radio Call Book

Anouncing
the
**BROWNING-DRAKE
RECEIVER**



THE B-D JUNIOR

5 tubes with new type sockets; power tube may be used; mahogany finish cabinet. List price, without tubes and batteries, \$95.

IN the quest for a set that would give selectivity and distance, and still be economical and simple in design, Frederick H. Drake and Glenn H. Browning, both doing research work at Harvard University, set to work mathematically to see just how much could be developed by a tuned radio frequency transformer.

It was found that with the aid of a special primary to minimize capacity coupling, radio frequency amounting to over 90% of the maximum could be obtained. The transformer thus made gave more radio frequency amplification *than any other set on the market.*

The resultant receiver, known as the Browning-Drake Receiver, has been so successful in getting extreme distance with exacting selectivity and unusual volume that it is now presented to the public in three cabinet models. Each of these is built complete by the Browning-Drake Corporation at their Brighton plant.

The Browning-Drake Receiver will convince any radio skeptic. His skepticism will turn to wonder upon hearing Browning-Drake performance. For distance Browning-Drake has no equal, yet it is priced extremely low. The Browning-Drake Receiver during the Trans-Atlantic tests earlier in the year received several European stations. Owners of Browning-Drake Receivers have found it surprisingly easy to get the Pacific Coast.

The Browning-Drake Receiver is so simple in construction that servicing is reduced to a minimum. All Browning-Drake models are encased in beautifully finished mahogany cabinets.

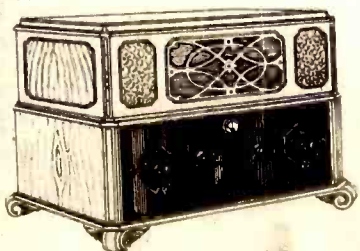
Some Territory Open to
Distributors

Address Dept. CR

BROWNING-DRAKE CORP.

353 Washington Street
Brighton, Mass.

BROWNING-DRAKE



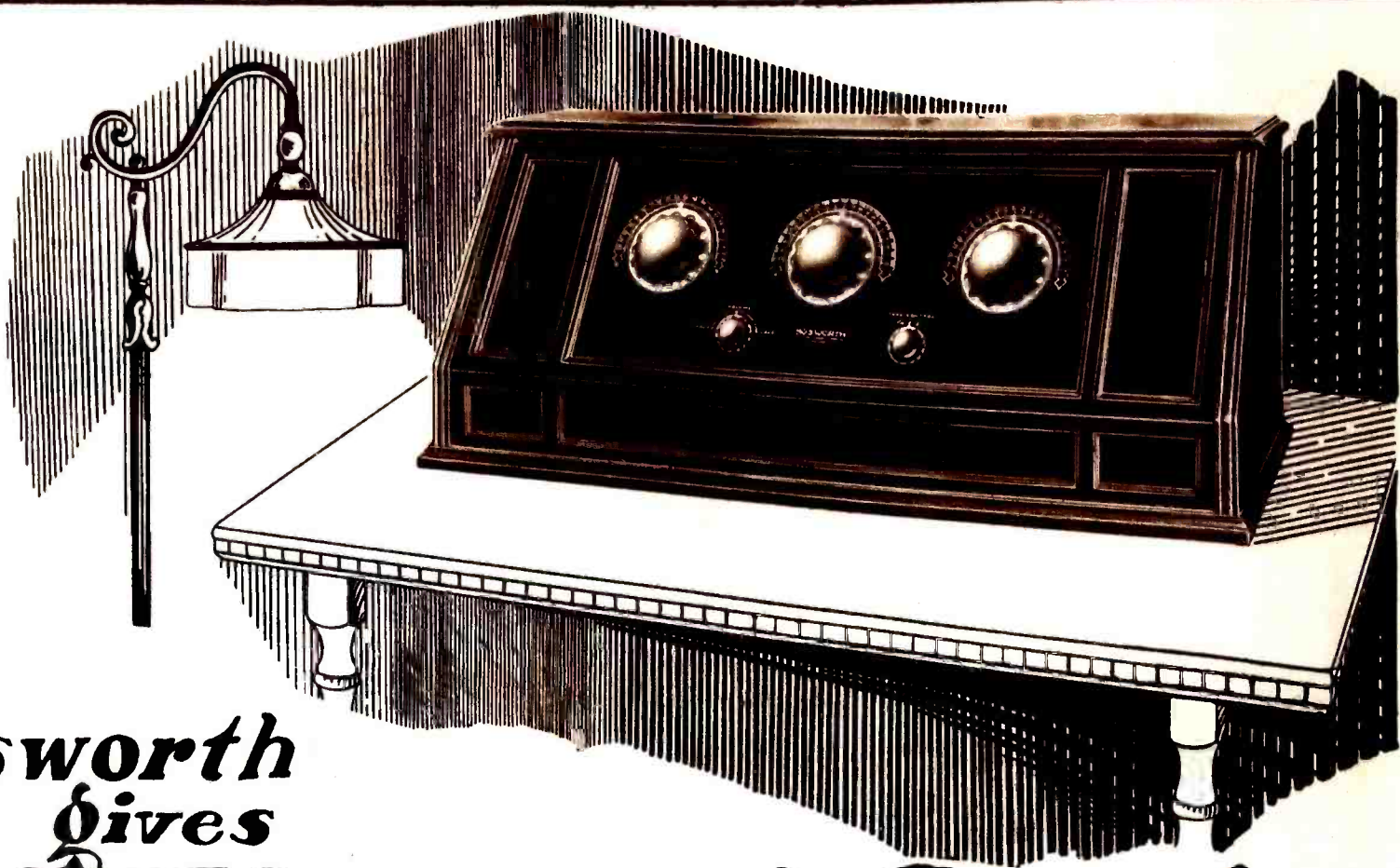
THE B-D SENIOR

6 tubes with new type sockets; built-in-loud-speaker; battery compartments. List price, without tubes or batteries, \$185.

THE B-D STANDARD

5 tubes with standard sockets; provides for power tube; mahogany cabinet with battery compartments at either end. List price, without tubes and batteries, \$130.





Bosworth gives Value and Service

The BOSWORTH measures up to every understanding of the word "Value."

Because value implies full worth for the money, you expect—and get—, in the BOSWORTH, a receiver which has the necessary volume, tone quality, reliability, ease of operation, selectivity, appearance, quality of parts, and workmanship, to a greater *degree* than in the average set.

Its price is your surest guarantee that this is true.

Service is an essential component of value.

The eagerness of the BOSWORTH itself to permanently perform and please is strengthened by the dealer's guarantee that the installation in your home will be properly made according to factory recommendations, and that you will receive cheerful, faithful service after the sale is completed.

Before you buy any set—investigate BOSWORTH value and service; the two vital factors which safeguard your investment, and assure you of increased pleasure and enjoyment from radio.

Exclusive territory to jobbers. Protection for dealers. Newspaper advertising assistance. Write for discounts and details.

BOSWORTH

A I R S E T

Five tubes. General Radio sockets, condensers and transformers. Wave coverage down to 50 or 100 meters.

LIST PRICE
\$155.00



WEST OF ROCKIES
\$165.00

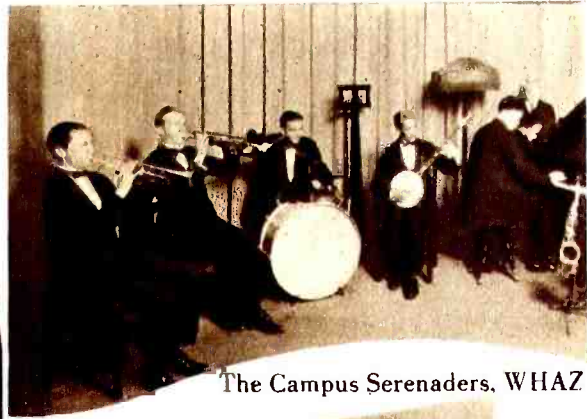
THE BOSWORTH ELECTRIC MANUFACTURING CO.
NORWOOD, CINCINNATI, OHIO



Joseph M. Barnett, WOR



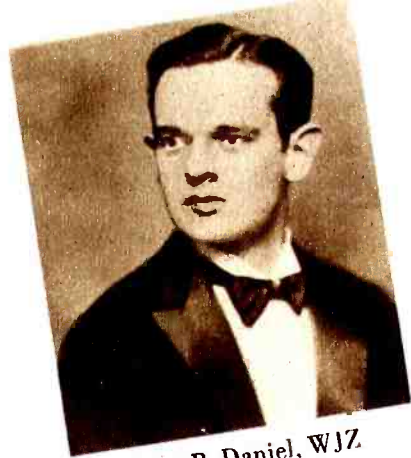
Peter MacArthur, WOC



The Campus Serenaders, WHAZ



M. A. Rigg, Jr., WGR



John B. Daniel, WJZ



Rasmussen's Harmony Kings, WGBR



Helen G. Hatfield
WSBF



Frank Blatchford
CHNC



Mary E. Vögt, WOO



Helen Nugent, WSAI



Judith C. Waller
WMAQ



J. Lewis
Reid
WJZ



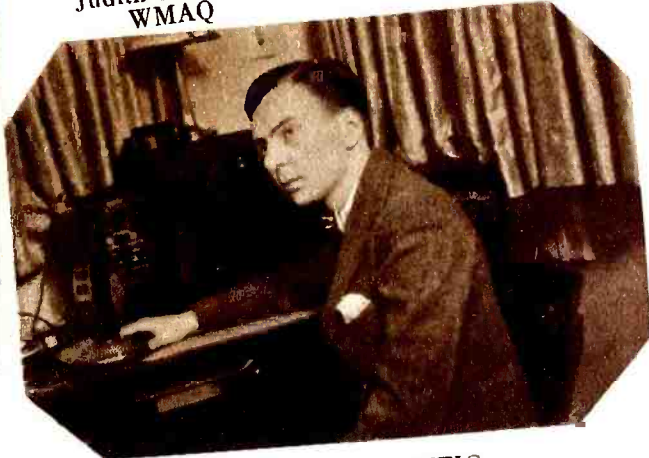
Maurice Wetzel
WEBK



Dr. Gardner MacWhorter, WJAZ



Belle Bart, WGBS



Walter Johnson, WTIC



Bernice, WGHP



Paul Johnson, WCCO



Uncle Wip, WIP



Doris Claire Secord
WOAW



Marie Winters, WBBM



Jerry Sullivan
WQJ



Edgar Thompson Steel
Works Quartet, KDKA



Howard I.
Milholland,
KGO



Eunice La Reeve, WBCN



N. Dean Cole, WHO



Rose Mountain, WGY



Harry E. Ehrhart and
Margaret Keenan, WLIT



Marian Duell McDade
KDKA



Harrie Bohlke, KFAE



Harry A. Zook, Jr., WBCN



Evangeline Boettger, WOC



Thelma Halverson, WCCO



Herman E. Duensing, KFPW



Sam Pickard, KSAC



Keith McLeod, WJZ



Milton J. Cross, WJZ



Ernest E. Chappell
WFBL



Mrs. Carl R. Gray
WOAW



Marie Tully, WENR



Prof.
Leander B.
Murdock
WRAM



G. F. Houston, WEAR



F. M. Henry, KFKZ



Hon. J. L. Perron
CKAC



G. C. Arnoux, KTHS



Town Crier, KNX



Vincent H. Percy, WEAR



O. E. Becker, WGR



Tom V. Nealon, WOAN



Leo Fitzpatrick, WJR



Godfrey Ludlow, WJZ



Harry (Dream Daddy) Davis
KYW



Uncle Bob, KYW



"Magnolene Mike," KFDM



Edward Rice, WGY



Fred Smith, WLW



Charles Wellman
KFVB



Merle "Big Boy"
Yagle
WBCN



Helen M. White, WGR



Eugene Roberts
WLIT



Chas. B. Popenoe
WJZ



Emil Heimberger's Hotel Trio, WTIC



Yewell M. Cornelius
WOAN



Frank Oliver, WGY



Al Carney, WHT



George Bayles, KFAE



Hanford Billings, WTIC



Trixy Ann Troy, WHAD



Roy E. Davis, WRRO



Edith May Miller, WOAW



L. E. Heatwole, WOAN



A. W. (Sen) Kaney
KYW



Marjory Garrigus Smith
WLW



Joaquim Agusty
WKAQ



Finney Briggs, WBCN



Billy Knight, WIL



John Stamford, WGES



J. Van de Walle
WFBE



Lester S. Crowl, WCSO



Staff of WSMH



Arthur Comby
WWAD



F. Stirling, CFXC



Mabel Swint Ewer
WFI



Freeman H. Talbot
KOA



Janet Rae, KFAE



Mabel Pelliter, WCCO



Phillips Carlin, WEAJ



Clair Morrison, KPO



Alwyn E. W. Bach, WBZ



C. W. Howard, WWBD



Mrs. Lulu May
McSpadden
WDAG



Al Bottini, WOCL



Pat Barnes, WHT



Miss Georgene Faulkner
WMAQ



Beatrice Hoel, WOAW



Grace Clave Raine
WSAI



Dr. Harry Cloud, KFDM

Helene Kessing
WSAI



J. B. and Dell Lampe, WMBB



R. H. Combs, CHNC



Joe Giesen, WEAJ



Marie Kelly
WEBH



Wilfred Manton, CKFC



Kolin Hager, WGY



Beatrice Teller
WMBB



H. W. Arlin, KDKA



W. E. Branch, WBAP



George Dewey Hay
WLS



Annae K.
Blotky
KPO



Ralph C. Hodgkinson
WKAR



Floyd H. Walters, WJZ



Richard Pavey
WSAI



Aunt Jane, WOC



Wilma Colemeyer, WFBE



Herbert Schatz
WSAI



Stanley W. Barnett
WOC



Russell Pratt and Frederick Daw
WMAQ



Ollie Yettru, WGY



Frank W. Elliott
KYW



Helen Spring
WGY



Clyde Hager, WMBB



Arthur Zellner, WHBY



Dolores Aquirine
WHN



Harrison Wall Johnson
WCCO



Norman Arnold
WNAC



The Melodique Trio, WLIT



W. M. Johnson, Jr.
WBES



Lorena Combs. CHNC



Magnolia Petroleum Co. Refinery Band
KFDM



Barbara Bess Wellman
KDKA



Julius Boxhorn, WGY



Inez
White
WRAM



Hazel Harned, KFDM



Paul N.
Pearce
WEMC



Rasaline Greene, WGY



Mabel
King
KDKA



Charles E. Weir, WIP



Elsie Yoerg, WCCO



George T.
Jones
WDBK



Kathryn Reece Haun
WI.W



The Ethereal Quartette, KFRU



Rita McFawn, WMBB



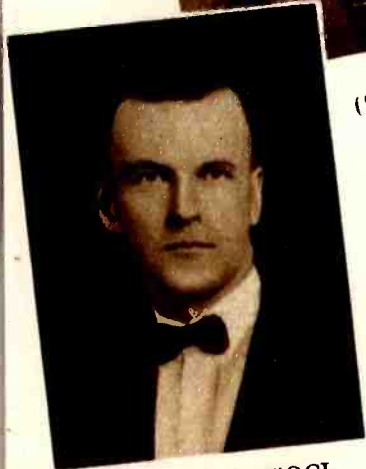
Harold A.
(Shorty) Fall
KYW



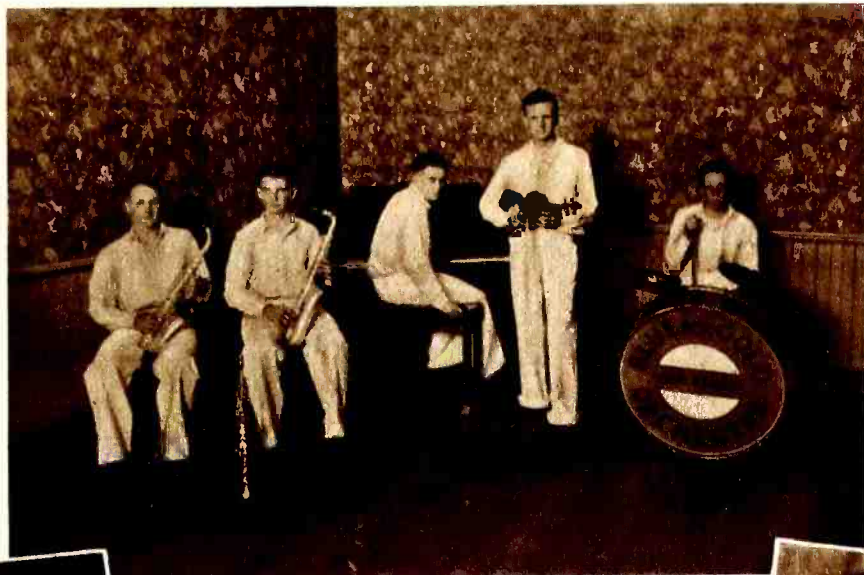
Harry G. Keiper and his Movieland Orchestra
KFWB



Harry Daniels
WOOW



Charles Clark, WOCL



George Byrne Blue & Gold Orchestra, WSMH



Ida Bailey Allen, WMCA



Virgil L. Cathcart
WOC



J. D. Wallace, WCBH



Robert D.
Boniel
WEBH



Laura
Gaudet
WTIC



R. H. G. Matthews
WJAZ



Carey O. Pickard, WMAZ



Mrs.
Anna J.
Peterson
KYW



Iris Ruth Pavey, KOA



Miss
Vivette
Gorman
KYW



E. A. Riddell, CFXC



Edwin J. McEnelly and his Singing Orchestra
WBZ



Howard Martin, KOIL



Midnight Ramblers, WQAE



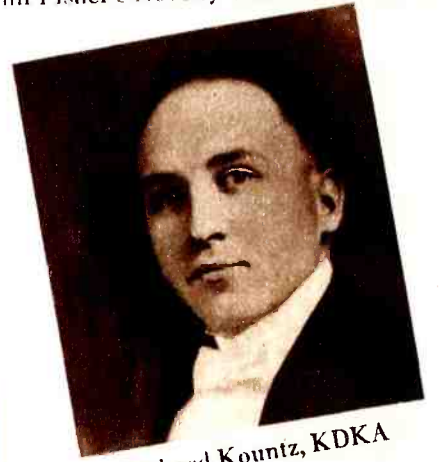
J. Spencer Riley, KLX



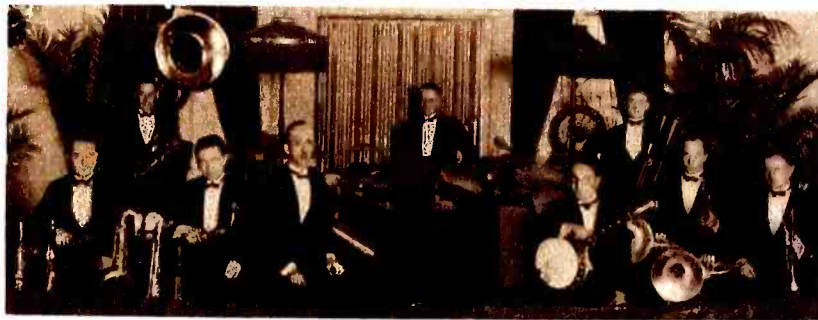
Phil Fisher's Novelty Californians, KFWA



Franklin W. Pierce, WOC



Richard Kountz, KDKA



Bennings Orchestra, WHAD



Wanda Goll
KYW



Hazel O'Neil, WMBB



Frances St. George, KFWB



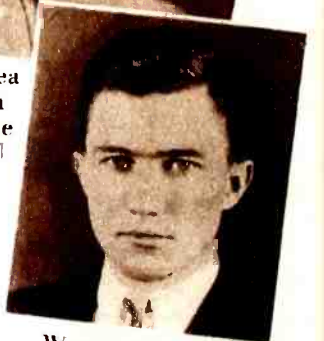
Eleanor Duncan, CFXC



Dorothea Brown
Osborne
KFUU



Wm. R. Fisher, KFUU



Warren Newman
WABQ



Kathleen Stewart, WEAJ



Boston Evening American Orchestra, WNAC



Keith Vaudeville Orchestra, WWAD

Standard Bearers of an Ideal

BACK of every Ferguson Receiver—since the pioneer days of broadcasting—stands the Ferguson Ideal: "Fewer but Better" Receivers. Each is a precision-built Standard Bearer of this Ideal.

The owner of a Ferguson feels that well-founded pride of ownership which comes only with the possession of a true musical instrument of graceful dignity and charm, that will be a welcome addition to any home for years to come.

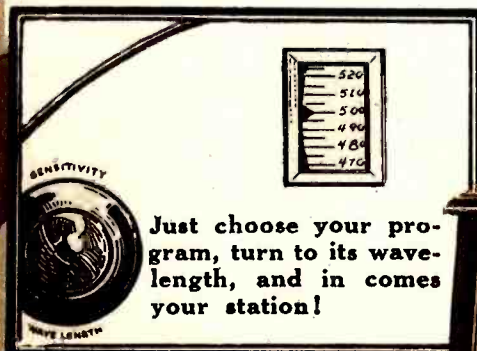
You can always count on a Ferguson. Hear one in a comparative test with others and you'll learn why it has been acclaimed "The Gold Standard of Radio Receivers."

There could be no more fitting testimony of the true worth of Ferguson Receivers than the well-balanced growth of the Ferguson business; the ever-increasing number of Ferguson enthusiasts.

*Go to the nearest Authorized Ferguson Dealer,
hear a comparative demonstration and let
your ears be the judge, or write us*

J. B. FERGUSON, Inc.
41 East 42nd Street - New York, N. Y.

*One Tuning Control—
Calibrated in Meters!*



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J.B.
The Gold Standard of Radio Receivers

TELETONE CABINET SPEAKER



\$32.50

Ready to listen

Beautifully finished in Walnut, it stands 15 inches high and is only 3 1/4 inches deep.

Makes Any Radio Receiver Sound Better

TELETONE represents an entirely new principle in sound wave conduction and amplification. Its clear, full-toned resonance, the result of exclusive design and all wood construction, transforms any receiving set into an instrument of quality.

Interior of seasoned spruce—the same wood used in the finest violins. Exterior of walnut—beautifully finished and artistic in the extreme.

Compact in form. Handsome in appearance. Amazing in performance. Reproduces clearly every note, either vocal or instrumental, with purity of tone, satisfying volume and freedom from distortion.

Fill in and mail coupon below, for illustrated booklet and the name of your nearest Teletone dealer, who will gladly demonstrate the vast superiority of Teletone over all other types of loud speakers.

TELETONE CORPORATION
449 West 42nd St.
New York City

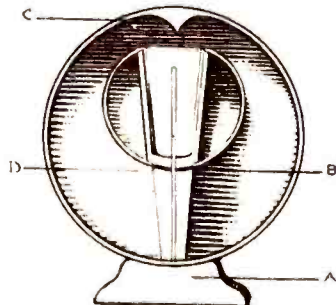
Teletone Corporation,
449 West 42nd St.,
New York.

Please send me, without obligation on my part, Teletone booklet and the name of your nearest dealer.

Name.....

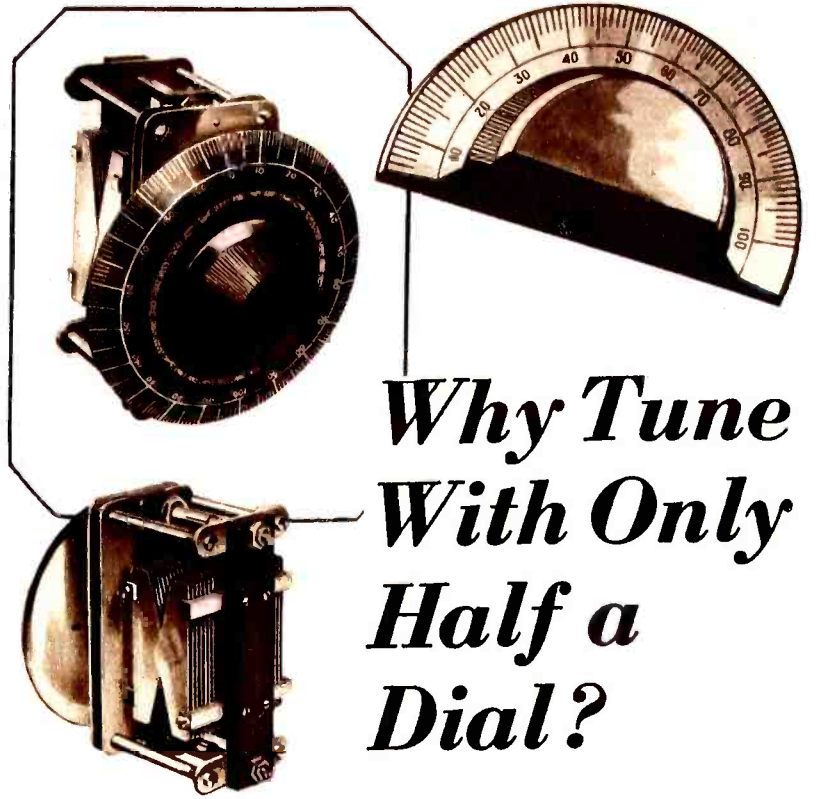
Address.....

TELETONE Principle



Based on Structure of Throat and Mouth

Note that a sound-wave coming from the sound producing unit "A" (the human vocal chords) is amplified through the orifice "B" (the human larynx) until it reaches the conducting area "C" (the back of the throat), whence it is again conducted to the point of greatest amplification "D" (the correctly formed and opened mouth of the singer).



Why Tune With Only Half a Dial?

UNIQUE design of Wade Condensers spreads stations over our entire 360 degree dial. The Wade is a complete tuning unit built with specially designed vernier dial. This means twice as much space between stations for close tuning adjustment; even wider separation of stations than the rotor plate types of straight line frequency condensers using standard 180 degree dials. None of the annoyance of overlapping stations and jumbled reception. The Wade Condenser gives the lowest minimum capacity and wider tuning range. Covers the whole broadcast range and down below 200 meters.

No Body Capacity Effects

A separately grounded frame insulated from both sets of plates shields the condenser from all body capacity effects — an important feature, exclusively in Wade Condensers.

Wade Tuning Unit Including Condenser and Dial

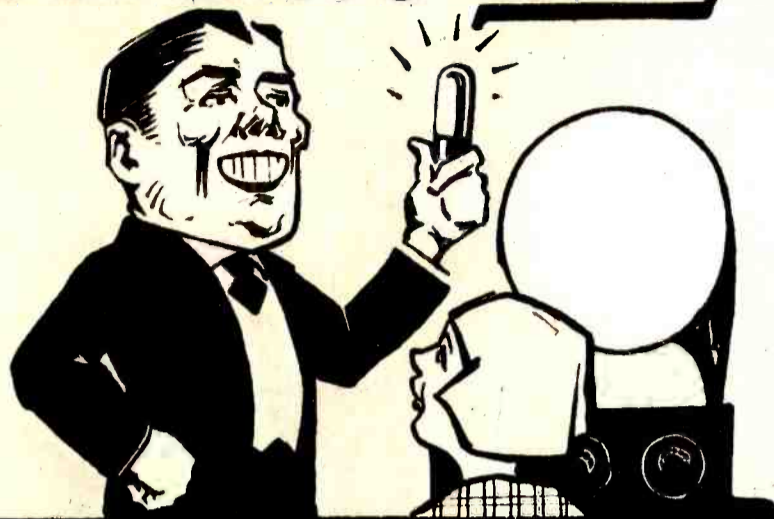
The Wade Tuning Unit consists of a Wade Condenser geared to a four-inch 360 degree vernier dial of 16 to 1 ratio. Finest possible control with no backlash. Prices below are for the complete unit.

Capacity .000125 mfd.	\$6.00
Capacity .00025 mfd.	6.25
Capacity .00035 mfd.	6.35
Capacity .0005 mfd.	6.50

THE VIKING TOOL AND MACHINE CO.
Incorporated
745-R 65th Street Brooklyn, N. Y.



now we'll have clear music



MMAGNATRONS in your set will give sweet purity of tone—clear and complete rendition of all the wealth of overtones. Music and speech come from the loudspeaker of the Magnatron equipped set with rich fidelity and generous volume, recreating in your home the actual performance itself, whether it be ten or a thousand miles away.

Magnatrons are the product of the oldest exclusive makers of vacuum tubes. That, in a large measure, explains their excellence.

There's a Magnatron for every purpose. The DC-201A, the DC-199 (large or small base), the DC-120 (for super volume), and the Rex (for B eliminators), all list for only \$2.50 each.

Write for your FREE copy of "Pot Pourri"—a snappy review of mirth and music to Dept. N

CONNWEY ELECTRIC LABORATORIES

Magnatron Bldg., Hoboken, N. J.

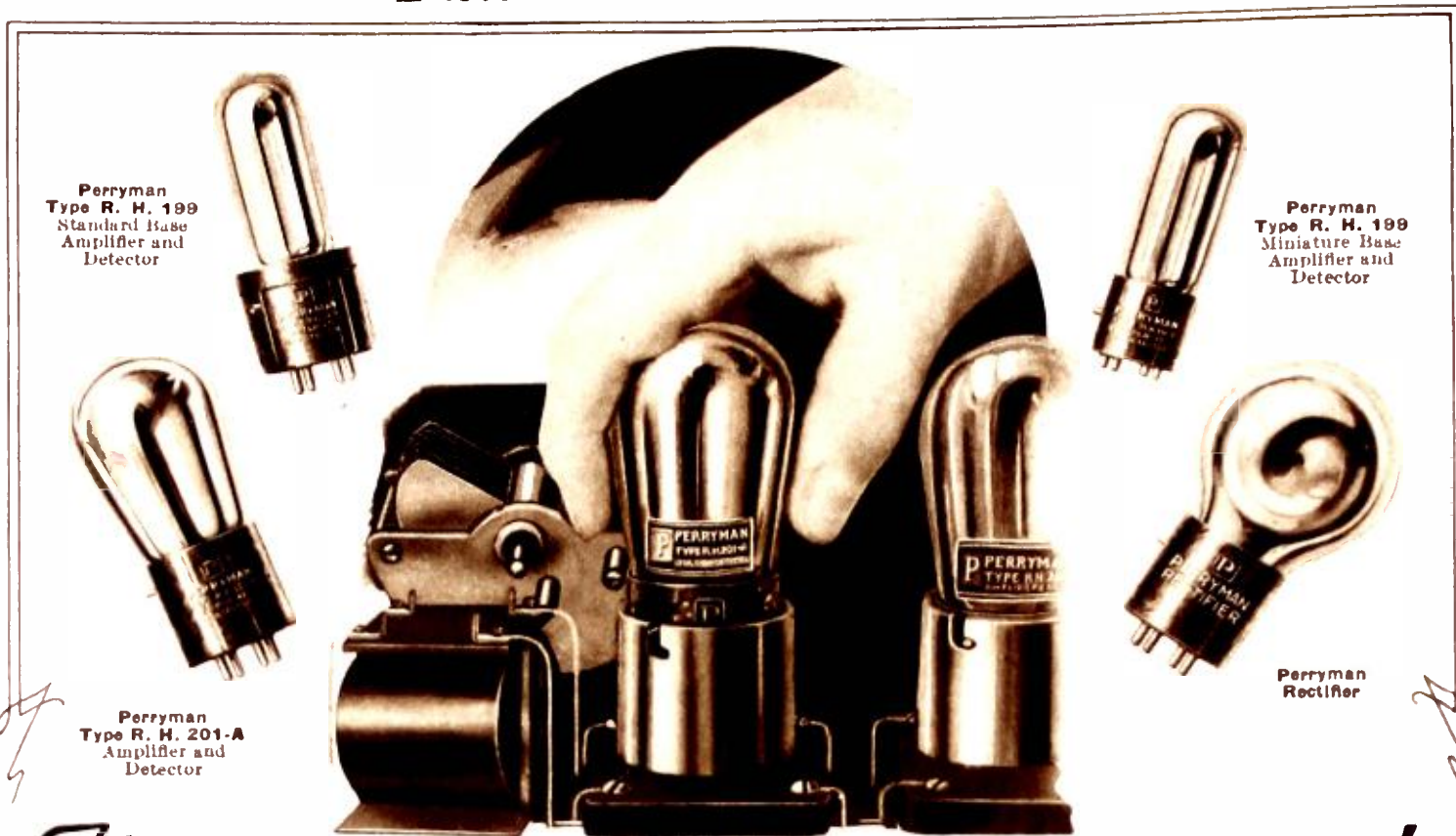
*Complete factory stock for Pacific Coast carried at Pacific Radio Labs
256 So. Los Angeles St.,
Los Angeles, Calif.*



MAGNATRONS

PERRYMAN P RADIO TUBES

"Distance without Distortion"



This is the Only Test That Counts!

Put Perryman Tubes in your set. That's the only test that counts.

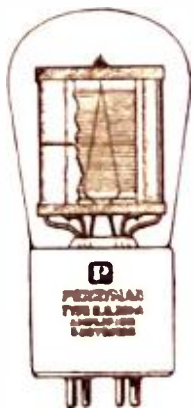
You'll be delighted with the smooth, natural tone quality which they deliver.

You'll be surprised at their sensitive and accurate detection.

Perryman Tubes embody simple, sensible improvements that make them give better results and last longer.

Hear them at your dealer's.

Dealers: Write for name and address of nearest Perryman Distributor



Clear Glass Demonstrating Tube, showing internal construction of Perryman Type R. H. 201-A

The filament, plate and grid are held in permanent parallel alignment at the point of greatest efficiency by two bridges, top and bottom. You can't shake them apart. Notice the spring catch which holds the filament in position and allows for expansion and contraction with changing heat conditions. You can see at a glance that this tube will deliver the best results obtainable for the longest possible period of time.

Perryman Type R. H. 201-A

Perryman Type R. H. 199 (Standard and Miniature Base)

Perryman Rectifier

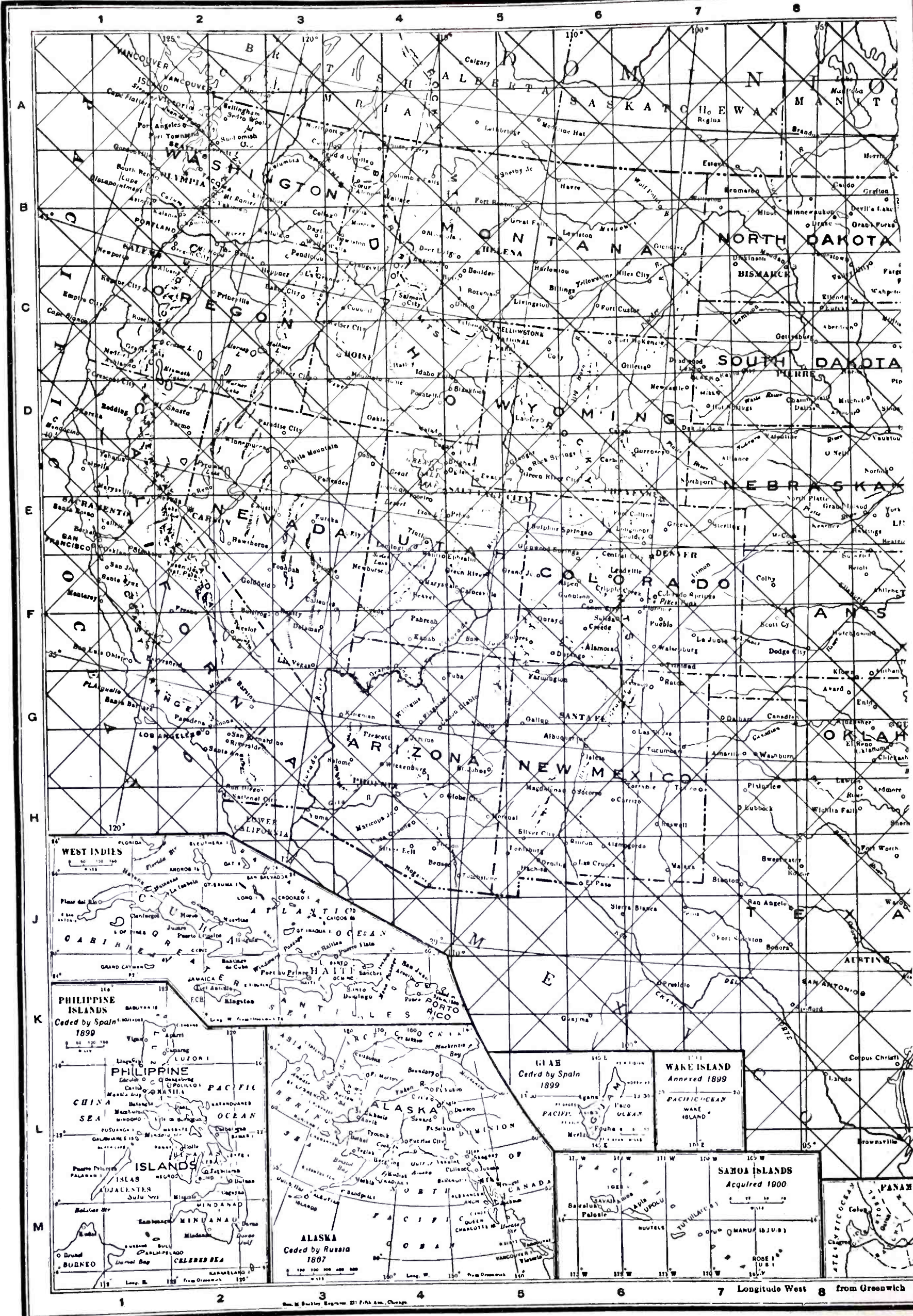
\$2.50 EACH

PERRYMAN P ELECTRIC CO., INC.
 LABORATORIES AND PLANT NORTH BERGEN, N. J. SALES AND EXECUTIVE OFFICES 33 W. 60th ST., N. Y. C.

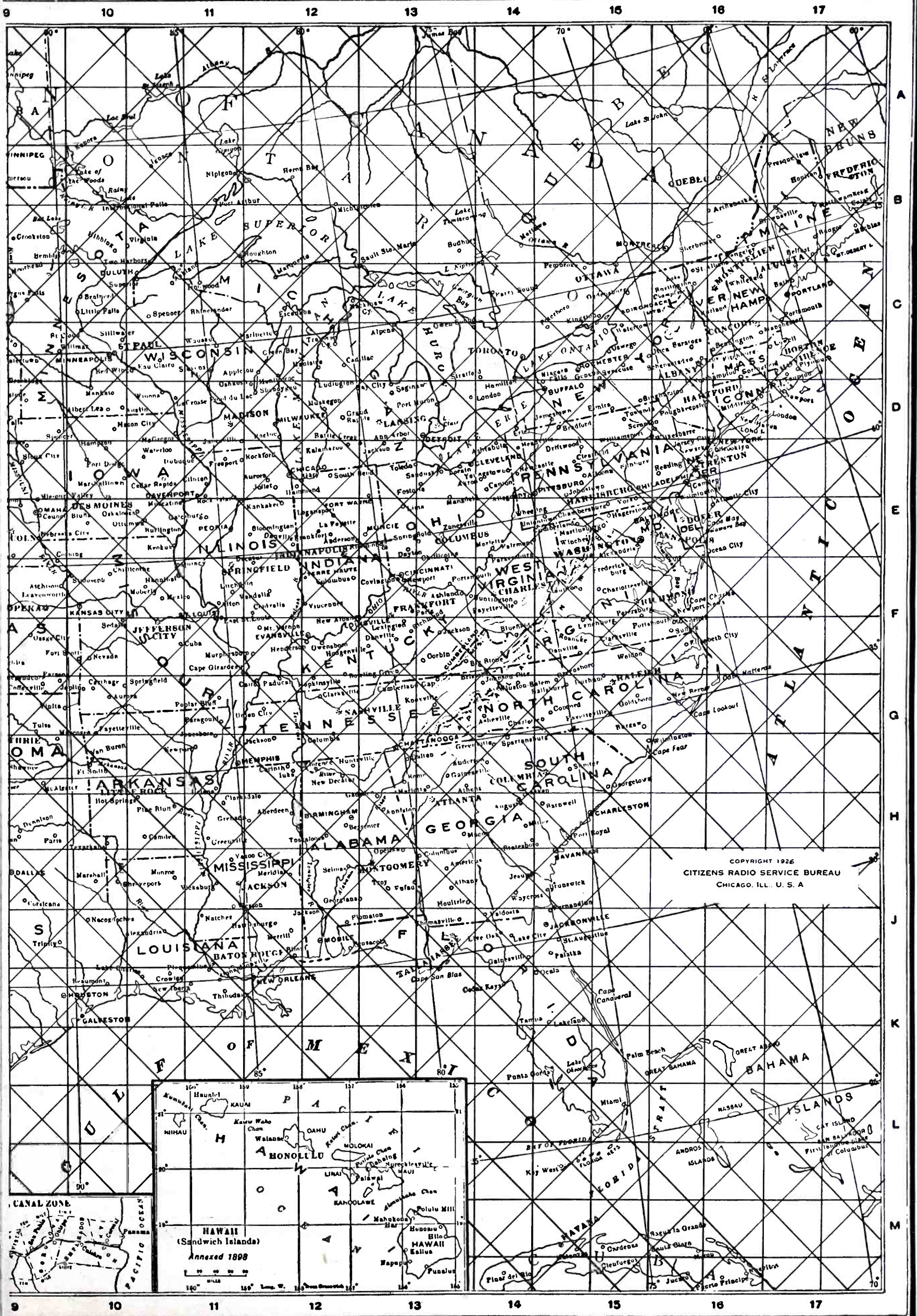
Foreign Radio Broadcasting Stations

	Call	Wave-length, meters	Power, watts		Call	Wave-length, meters	Power, watts
AUSTRIA				LATVIA			
Bregenz: Projected (relay).....				Riga: Projected.....			2000
Graz: Oesterrichischer Radioverkehrs Gesellschaft.....		404	500				
Innsbruck: Projected (relay).....				LITHUANIA			
Klagenfurt: Projected (relay).....				Kovno: Lithuanian Sales Corporation.....			5
Linz: Projected (relay).....				Under construction.....			
Salzburg: Projected (relay).....				NETHERLANDS			
Vienna: Oesterrichischer Radioverkehrs Gesellschaft.....	ORV	530	2000	Amsterdam: W. Bosman.....	PX9	1050	60
BELGIUM				Vas Dias Press office.....	PCFF	1950	100
Brussels: Radio Belgique Co.....		265	1600	Bloemendaal: Church.....		340	100
CZECHOSLOVAKIA				Hilversum: Nederlandsche Seintoellen Fabriek.....	HDO	1050	1000
Bratislava: Projected (relay).....			500	Hilversum Draadloze Omroep.....	HDO	1050	1000
Brunz:.....	OKB	1800	1000	NORWAY			
Projected, to replace above station.....	OKB	1800	1000	Oslo.....	OSLO	340-500	
Prague-Strasnice:.....	OKP	550	500	POLAND			
Projected, to replace above station.....	OKP	513	5000	Warsaw: Polskie Tow. Radio techniczne (Marconi).....		385	300
Kosice: Projected.....			500	PORTUGAL			
Ushorod: Projected (relay).....			500	Lisbon: Grandes Armazens de Chiado.....	PIAA	320	
DENMARK				RUSSIA			
Hjorring: Relay.....		1250		Baku: Under construction.....			2000
Lyngby: Danish State Telegraph System.....	OXE	2400	2500	Chiva: Under construction.....			2000
Danish Government.....		775	500	Elliset: Under construction.....			2000
Odense: Relay.....		950	1000	Erivan: Under construction.....			2000
Ryvang: Ministry of War.....		1150	1000	Tiflis: Under construction.....			2000
Yorck:.....		308		Voronezh: Under construction.....			2000
FINLAND				Moscow: Popov.....		1010	
Helsingfors: Civil Guards of Finland.....		300	250	Trade Union.....		450	
Youths' Society.....		420	1000	Lubovitch.....		365	
Skatudden: Military station.....		300	250	Union of Soviet Workers.....		675	
Tammerfors: Nuorem Voiman Liiton Radioyhdistys.....	3NB	300	250	Comintern.....		1450	12000
FRANCE				Comintern (under construction).....		1450	50000
Abbeville:.....		900		Leningrad.....			
Agen.....	2BD	318	250	Kiev.....			
Bordeaux: Lafayette Station.....				SPAIN			
Dijon.....	FND	900		Alcoy.....			
Grenoble: Ministere des P.T.T.....		840	150	Barcelona: Radio Barcelona-Hotel Solon.....	EAJI	325	1500
Issy-sur-Moulineaux: Ministry of Posts.....	YA	1600	500	Bilbao.....			
Lille: Coupleux Freres.....		475	300	Bilbao.....			
Lyon: Ministry of Posts.....	YN	287	2000	Cadiz.....	EAJ3	360	1000
Societe Lyonnaise de Radiophonie.....		186	100	Cadiz.....			100
Montpellier: Societe Languedocienne de T.S.F.....		362-460		Cartagena.....	EBX	1200	
Nice: Ministry of Posts.....		458	2000	Madrid: Under construction.....	EGC	1650-2200	2000
Paris: Ecole Superieure de P.T.T.....	ESP	2650	5000	Under construction.....			
Eiffel Tower, army.....	FL	1780	10000	Radio Iberica.....	RI	392	1500
Radio Electrique.....	SFR	345	500	Radio Madrid.....	PTT	310	1000
Petit Parisien.....	5NG	1780	100	Radio Espana.....	EAJ2	350	
Societe Francais Radioelectrique.....	8AJ	350		San Sebastian: Projected.....			
Pic du Midi.....		274	2000	Seville: Radio Club.....	EAJ5	350	240
Toulouse: Aerodrome.....	MRD	2500	500	Radio Club (under construction).....	EAJ5	350	1000
Tours: Ministry of Posts.....	YG			Valencia: Radio Club (projected).....			1000
GERMANY				Reina Victoria Hotel.....			
Berlin: Konigswusterhausen.....	LP	330-680	5000	Zaragoza: Radio Club (projected).....			
Telfunken Co.....		290-750	2000	SWEDEN			
Vox Haus.....	II	425-505	1500	Boden: Radiotjanst.....	SASE	1350	1000
Magdeburger Platz (under construction).....				Eskestuna: Radio Club (Relay).....	SMUC	243	250
Bremen.....		330		Falun: Radiotjanst.....	SM20	370	400
Breslau: Schlessische Rundfunk.....	GPU	418	1500	Gaffe: Radio Club (Relay).....	SMXF	325	25
Cassel.....		292		Goteborg: Radiotjanst.....	SASB	390	1000
Dresden.....		280		Jonkopings: Jonkopings Rundradiostation.....	SMZD	265	25
Eberswalde.....				Karlsborg: Radiotjanst (Relay).....	SASF	1350	500
Frankfort: Sudwest Deutscher Rundfunk Dienst.....	LP	470	1500	Karlstad: Karlstads Rundradiostation.....	SMXG	221	250
Gleiwitz.....			1500	Malmo: Radiotjanst.....	SASC	270	1500
Hamburg: Nordischer Rundfunk.....	EG	395	1500	Linkoping: Radio Club (Relay).....	SMUV	467	250
Hanover.....		296		Norrkoping: Radio Club (Relay).....	SMVV	260	259
Koenigsburg: Ostmarken Rundfunk.....	LP	463	1500	Stockholm: Radiotjanst.....	SASA	427	1000
Leipzig: Mitteldeutsche Rundfunk.....	MR	454	1500	Sundsvall: Radiotjanst.....	SASD	545	1000
Munster.....		410	1000	Trollhattan: Trollhattans Rundradiostation.....	SMXQ	345	250
Munich: Deutsche Stunde in Bayern.....	WM	485	1500	Varberg: Varberg Radio Club (projected).....			
Norddeich.....	KAV	1800		SWITZERLAND			
Nuremberg: Relay.....		340		Basel: Under construction.....			
Stettin: Relay (projected).....				Berne: Radio Club of Berne (projected).....			
Stuttgart: Suddeutsche Rundfunk.....	OKP	443	1500	Geneva: Soc. Ind. Francaise de T. S. F.....	HBI	1100	300
Waldenburg.....			1500	Geneva: International Esperanto Association (projected).....			
HUNGARY				Cointrin.....	HB1	1100	300
Budapest: Post office.....	MTI	950	250	Kloegg: Swiss Radio Association.....		515	500
Post office.....	HB	950	1100	Kloten.....	HBK	1100	
IRISH FREE STATE				Lausanne: Champ de l'Air.....	HB2	780-1100	500
Cork: Projected.....				Zurich: Zurich University.....	RGZ	515-650	500
Dublin: Projected.....				ITALY			
Milan: Projected, Union Radiofonica Italiana.....		384	1600				
Naples: Projected, Union Radiofonica Italiana.....		392	1600				
Rome: Unione Radiofonica Italiana.....	IRO	425	1600				

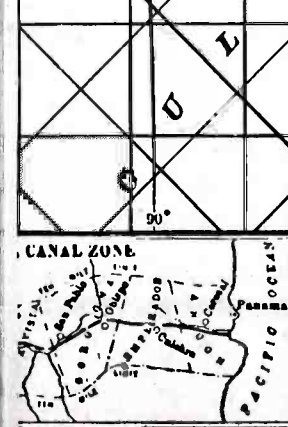
Call	Wave-length, meters	Power, watts	Call	Wave-length, meters	Power, watts
UNITED KINGDOM			Saskatchewan—		
Birmingham: British Broadcasting Co.....	5IT	479	Regina: Canadian National Railways.....	CNRR	420
Bournemouth: British Broadcasting Co.....	6BM	385	G. M. Bell and Leader Publishing Co.....	CKCK	420
Daventry: British Broadcasting Co.....	5XX	1600	Saskatoon: Canadian National Railways.....	CNRS	400
Hull: British Broadcasting Co.....	6KH	335	International Bible Students Association.....	CHUC	400
Leeds-Bradford: British Broadcasting Co.....	2LS	346-310	The Electric Shop.....	CFQC	400
Liverpool: British Broadcasting Co.....	6LV	315			
London: British Broadcasting Co.....	2LO	365	Alberta—		
Manchester: British Broadcasting Co.....	2ZY	378	Calgary: Albertan Publishing Co.....	CHBC	410
Newcastle: British Broadcasting Co.....	5NO	408	Canadian National Railways.....	CNRC	440
Nottingham: British Broadcasting Co.....	5NG	326	W. W. Grant Radio (Ltd.).....	CFCN	440
Plymouth: British Broadcasting Co.....	5PY	338	Calgary Herald.....	CFAC	430
Sheffield: British Broadcasting Co.....	6FL	301	E. Taylor.....	CJCY	420
Stoke-on-Trent: British Broadcasting Co.....	6ST	306	Western Radio Co.....	CHCO	400
Cardiff: British Broadcasting Co.....	5WA	353	G. Melrose Bell.....	CGAC	430
Swansea: British Broadcasting Co.....	5SX	482	H. Birks & Sons.....	CFHC	440
Aberdeen: British Broadcasting Co.....	2BD	495	Riley & McCormick.....	CHCM	440
Dundee: British Broadcasting Co.....	2DE	331	Radio Corporation of Calgary (Ltd.).....	CJCK	316
Edinburgh: British Broadcasting Co.....	2EH	328	P. Burns & Co.....	CKCX	440
Glasgow: British Broadcasting Co.....	5SC	422	Edmonton: Edmonton Journal.....	CJCA	450
Belfast: British Broadcasting Co.....	2BE	435	Canadian National Railways.....	CNRE	450
			Radio Supply Co.....	CFCK	410
			Olds: Percival Wesley Shackleton.....	CJCX	400
YUGOSLAVIA			British Columbia—		
Belgrade: Cie. Generale de T. S. F.....	HFF	1625	Lulu Island: Canadian National Railways.....	CNRV	.....
Rakovitza.....	.....	1650	Nainamo: Sparks Co.....	CFDC	430
Zagreb: Radio Club (under construction).....	.....	.....	Nelson: J. G. Bennett.....	CJBC	400
			New Westminster: Westminster Trust Co.....	CFXC	400
ALASKA			Ocean Falls: Pacific Mills (Ltd.).....	CD	600-1600
Anchorage: Chovin Supply Co.....	KFOD	280	Vancouver: Canadian Westinghouse Co. (Ltd.).....	CHOC	400
Juneau: Alaska Electric Light & Power Co.....	KFIU	226	Canadian National Railways.....	.....	.....
			First Congregational Church.....	CKFC	385
CANADA			Victor W. Odlum.....	CFYC	400
Nova Scotia—			Radio Specialties Co.....	CFQC	450
Glace Bay: Marconi.....	DO	3000	Marconi.....	CFCD	440
Halifax: Marconi.....	CFCF	440	Vancouver Merchants Exchange.....	CNCL	440
Radio Engineers.....	CHAC	400	Daily Province.....	CKCD	410
Eastern Telegraph & Telephone Co.....	CJCS	410	Sprott Shaw Radio Co.....	CJCE	400
New Brunswick—			Victoria: Western Canada Radio Supply Co.....	CHCE	400
Moncton: Canadian National Railways.....	CNRA	313	Centennial Methodist Church.....	CFCL	400
St. John: Jones Electric Co.....	CKCR	400	Victoria City Temple.....	CFCT	410
Maritime Radio Corporation.....	CJCI	400			
Quebec—			COSTA RICA		
Bellevue: Semmelhaak-Dickson (Ltd.).....	CFCQ	450	San Jose: Government (under construction).....	.....	.....
Gouin Dam: Shawaningin Water & Power Co.....	DW	1900			
Iroquois Falls: Abitibi Power & Paper Co.....	DS	1590	CUBA		
Mont Joli: Dr. J. L. P. Landry.....	CJCM	312	Caibarien: Maria J. Alvarez.....	6EV	250
Montreal: University of Montreal.....	CFUC	400	Camaguey: Pedro Nogueros.....	7AZ	225
A. Contiore.....	CJCL	270	Salvador Rionda.....	7SR	350
Northern Electric Co.....	CHYC	410	Central Tuinicu: Frank H. Jones.....	6KW	340
Canadian National Railways.....	CNRM	341	Camajuani: Diego Iborra.....	6YR	200
Bell Telephone Co.....	CKCS	.....	Central Tuinicu: Frank H. Jones.....	6JK	275
La Presse Publishing Co.....	CKAC	430	Ciego de Avila: Eduardo V. Figuerca.....	7BY	235
Depuis Freres.....	CJBC	420	Cienfuegos: Eligio Cobelo Ramirez.....	6JQ	275
Marconi.....	CFCF	440	Jose Ganduxe.....	6BY	300
Quebec: Shawaningin Water & Power Co.....	DX	1900	Habana: Credito y Construcciones Co.....	2HP	295
La Soliel Publishing Co.....	CKCI	295	Julio Power.....	2JP	270
La Cie. d'Evenement.....	CFCJ	410	Antonio A. Ginard.....	2XX	150
Thetford Mines: Shawaningin Water & Power Co.....	DY	1900	Frederick W. Borton.....	2CX	320
Victoriaville: Shawaningin Water & Power Co.....	DV	1900	Alberto S. Bustamente.....	2AB	235
			Cuban Telephone Co.....	PWX	400
Ontario—			Jose Leiro.....	2JL	275
Hamilton: Wilkenson Electric Co. (Ltd.).....	CKLC	400	El Pais.....	2EP	355
Hamilton Spectator.....	CHCS	410	Humberto Giquel.....	2CG	350
Wentworth Radio Supply Co.....	CKOC	410	Bernardo Barrie.....	2BB	255
Jack V. Elliott (Ltd.).....	CFUC	410	Manuel y Guillermo Salas.....	2MG	280
Iroquois Falls: Abitibi Power & Paper Co.....	CFCH	400	Mario Garcia Velez.....	2OK	360
Kingston: Queens University.....	CFRC	450	Oscar Collado Orta.....	2OL	300
Kitchener: The News Record (Ltd.).....	CJCF	295	Salvador de la Torre.....	2RY	170
London: Charles Guy Hunter.....	CFCL	430	Roberto E. Ramirez.....	2TW	230
Free Press Printing Co.....	CJCG	430	Roberto E. Ramirez.....	2UF	265
London Radio Shop.....	CHCO	410	Raoul Karman.....	2RK	310
Radio Supply Co.....	CKQC	410	George A. Lindeaux.....	2PK	195
London Radio Co.....	CFCW	430	Matanzas: Leopoldo T. Figueroa.....	5EV	360
Ottawa: Canadian National Railways.....	CKCH	435	Nueva Gerona: Isle of Pines Telephone Co.....	8JQ	.....
Canadian National Railways.....	CNRO	435	Puerto del Rio: Antonio Sarasola.....	1AZ	275
J. R. Booth, Jr.....	CHXC	400	Sagua la Grande: Santiago Ventura.....	6HS	200
Dr. G. M. Geldert.....	CKCO	400	Santiago: Andres Vinent.....	8FU	225
Markham: Marconi.....	DQ	3300	Alberto Ravelo.....	8BY	250
Sudbury: Laurentide Air Service.....	CFRC	410	Guillermo Polanco.....	8HS	200
Thorold: D. J. Fendell.....	CFKC	295	Ceferino Ramos.....	8IR	190
Toronto: Northern Electric Co.....	CHIC	350	Jose Fernandez Heredia.....	8JQ	130
Simons Agnew & Co.....	CJCN	410			
Metropolitan Motors.....	CHVC	410	MEXICO		
Marconi.....	CHCB	440	Chihuahua: Telephone Company.....	CZF	325
T. Eaton Co.....	CJCD	410	Federal Military Command.....	FAM	490
Canadian National Railways (under construction).....	.....	.....	Guadalajara: Radio Club-Degollado Theatre.....	.....	280
Jarvis Street Baptist Church.....	CJBC	312	Mazatlan: Castulo Llamas.....	CYR	475
Toronto Radio Research Society.....	CHNC	350	Mexico City: Elfrin R. Gomez.....	CYA	300
Canadian National Railways.....	CNRT	400	Jose J. Reynosa (El Buen Tono).....	CYB	275
Bell Telephone Co.....	CFTC	.....	Miguel S. Castro (La High Life).....	CYH	375
Evening Telegram.....	CJSC	430	Raoul Azcarra (Universal Casa del Radio).....	CYL	400
Star Publishing & Printing Co.....	CFCA	400	Martinez y Zatina.....	CYO	425
Canadian Ind. Tel. Co.....	CKCE	450	El Excelsior-Parker.....	CYX	325
Twin Falls: Abitibi Power & Paper Co.....	DT	1590	Department of Education.....	CZE	350
			Monterre: Roberto Reyes.....	CYM	275
Manitoba—			Oaxaca: Federico Zonilla.....	CYF	265
Winnipeg: Manitoba Free Press.....	CJCG	410	Puebla: Augustin del P. Zaenz.....	CYU	312
Canadian National Railways.....	CNRW	450	Tampico: Cipriano Sagaon.....	CYQ	322
Tribune Newspaper Co.....	CJNC	400	Yucatan: Partido Socialista del Suresten.....	CYY	548
Manitoba Telephone System.....	CKY	450			
Radio Engineering Co.....	CKZC	420	PORTO RICO		
			San Juan: Radio Corporation of Porto Rico.....	WKAQ	340



1 2 3 4 5 6 7 Longitude West 8 from Greenwich



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 CITIZENS RADIO SERVICE BUREAU
 CHICAGO, ILL. U. S. A.



SOME REASONS WHY IT'S



The B-T Counterphase-Six

THE B-T COUNTERPHASE-SIX is a combination of the finest parts ever used in a factory-built receiver and the only new circuit of the year.

It excels in every essential feature,—Selectivity, Range, Volume and Tone.

Furnished with Walnut Cabinet, Burnt Walnut panel and dials,—cabinet completely copper-lined and shielded. Price **\$165.00**.

Counterphase 5 or 6-Tube Kits comprise essential B-T parts.

Kit No. 6: 1 TA and 3 TC Torostyles, 2 LD-17 Condensers, 3 M. M. F., 1 Dual and 1 4-ohm Resistance, wires cut to length and the finest 9-color diagrams ever furnished with a radio kit. Price **\$38.00**.

Kit No. 5 contains similar parts for the 5-tube set. Price **\$28.50**.



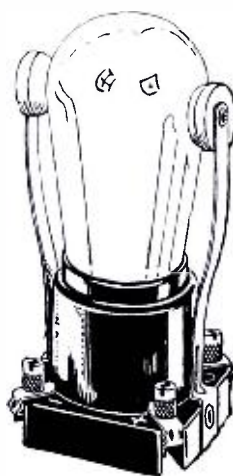
B-T Universal Socket

The only socket that takes present tube bases as well as either large or small UX bases,—without an adapter,—and does it better, at that.

Side contacts that click into place,—no chance for poor contacts.

Direct connections,—no loose screws possible.

The best insurance you can buy, **75c.**



B-T Silent Socket

The Silent Socket stops vibration, like putting your finger on a bell,—it's the only real remedy for microphonic noise.

Put one on your detector, **\$1.25.**

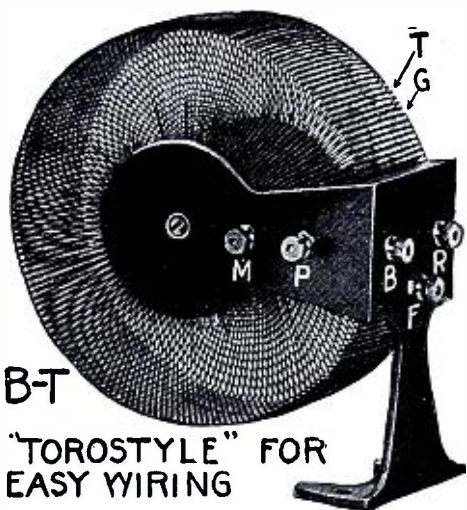


B-T Tuning Control

Efficiency first,—appearance, utility,—everything you can find. The original window dial. 12 to 1 ratio. Reversible erasable disk. Half the scale reads 0 to 100, the other half 100 to 0. The only dial that can be used on either right or left hand condensers. Gold and black, **\$2.50.**

Tell 'Em You Saw It in the Citizens Radio Call Book

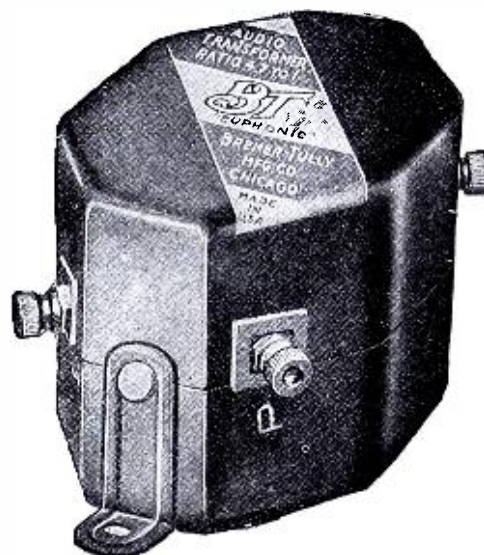
A BREMER-TULLY YEAR



THE B-T AUDIO TRANSFORMER

is an entirely new conception in design and construction.

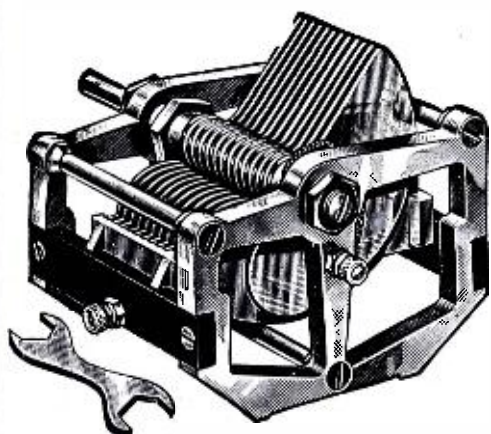
Try the EUPHONIC and you'll understand what 20 years of radio experience means in audio amplification.



Ratio: 2.2 to 1.....\$5.00
4.7 to 1..... 5.75

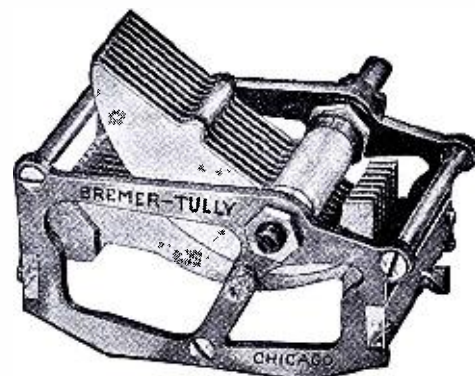
There are many "toroids," but only one B-T Torostyle. Use a B-T patented coil in the patented Counterphase circuit and you'll appreciate the possibilities of a toroid designed by a master of radio frequency.

Three styles, TA Antenna Coupler, TC Intermediate and T-4 for the B-T-Four, the finest 4-tube circuit known. (See Radio Age for January.) Price each, \$4.00.



B-T LIFETIME CONDENSERS

WORLD LEADERS



The Straight Line Wave Length type that went round the world with Lieut.-Commander Schnell in the short wave receiver that made radio history with the U. S. Navy.

Five sizes, \$4.25 to \$6.00.

The same efficient design in Straight Line Frequency type.

.00025\$5.50
.00035 or .0005..... 5.75

Read more about the Counterphase in Radio Broadcast, beginning January; Radio News, On-the-Air, January; Radio Review and Listener's Guide, January; Radio Informer, January; Radio Digest, beginning Nov. 28; Radio Age, January; Popular Mechanics, February; etc. It's *the* circuit.

"Better Tuning" 9th edition contains a wealth of worth-while information, hook-ups and tuning information. Postpaid 10c. Circulars free.

BREMER-TULLY MANUFACTURING CO.
Canal and Harrison Sts. Chicago, Illinois

Tell 'Em You Saw It in the Citizens Radio Call Book

The Counterphase Six

This Receiver Was Constructed and All Illustrations Made in the Laboratory of the Citizens Radio Call Book

NO one questions the popularity of the tuned radio frequency and circuit. The aim of every prospective set builder is: volume, selectivity and quality consistent with the minimum amount of controls.

It is so easy for the average tuned radio frequently set to "flop" into oscillation at the slightest provocation, especially on the lower wavelengths. In our testing laboratory the circuit about to be de-

most promising solution for reasonably satisfactory selectivity.

Considering for a moment the old popular tuned plate regenerative, we recall that if the grid circuit and plate circuit are tuned to the same frequency regeneration and oscillation will occur, due to the inherent characteristic of the tube.

Regeneration acts to overcome resistance or load, particularly in the grid circuit. In a radio frequency tube supplied by one preceding,

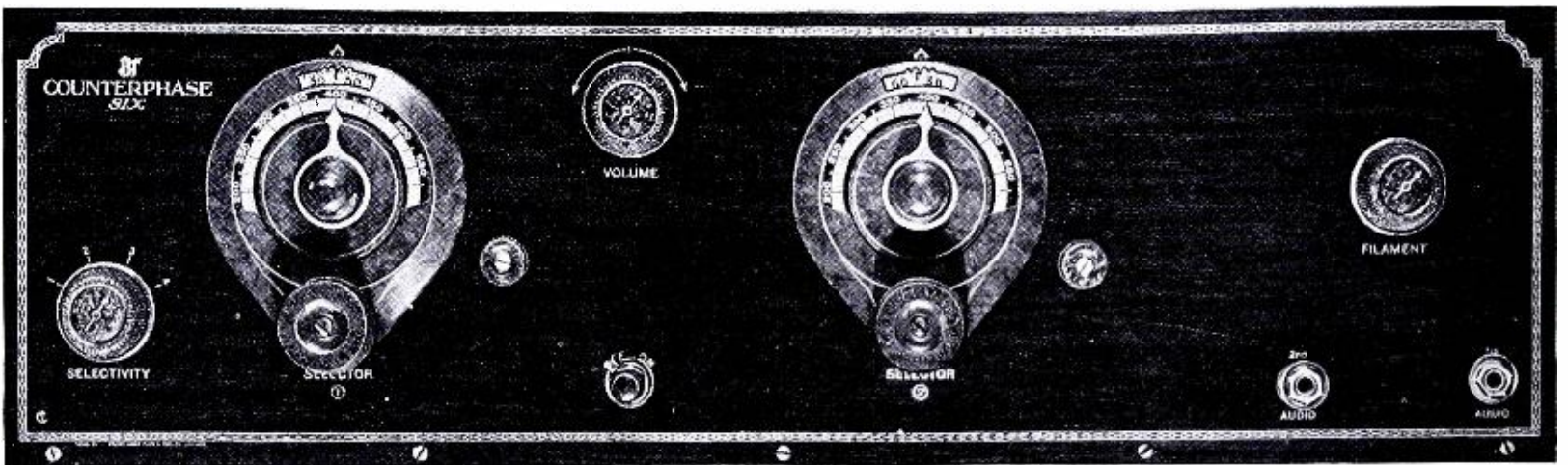


Photo A—Front view of receiver showing metal panel

scribed fulfilled the necessary requirements and will please the most exacting radio experimenter.

Radio frequency amplification, the hope of practically every hook-up enthusiast of the present season, is generally thought of as something

and with another following, when efficient apparatus is used, and all tubes are tuned to the same frequency it requires only a very small plate load or coupling to a resonant circuit to produce oscillation.

To prevent this oscillation it is necessary to control this regenera-

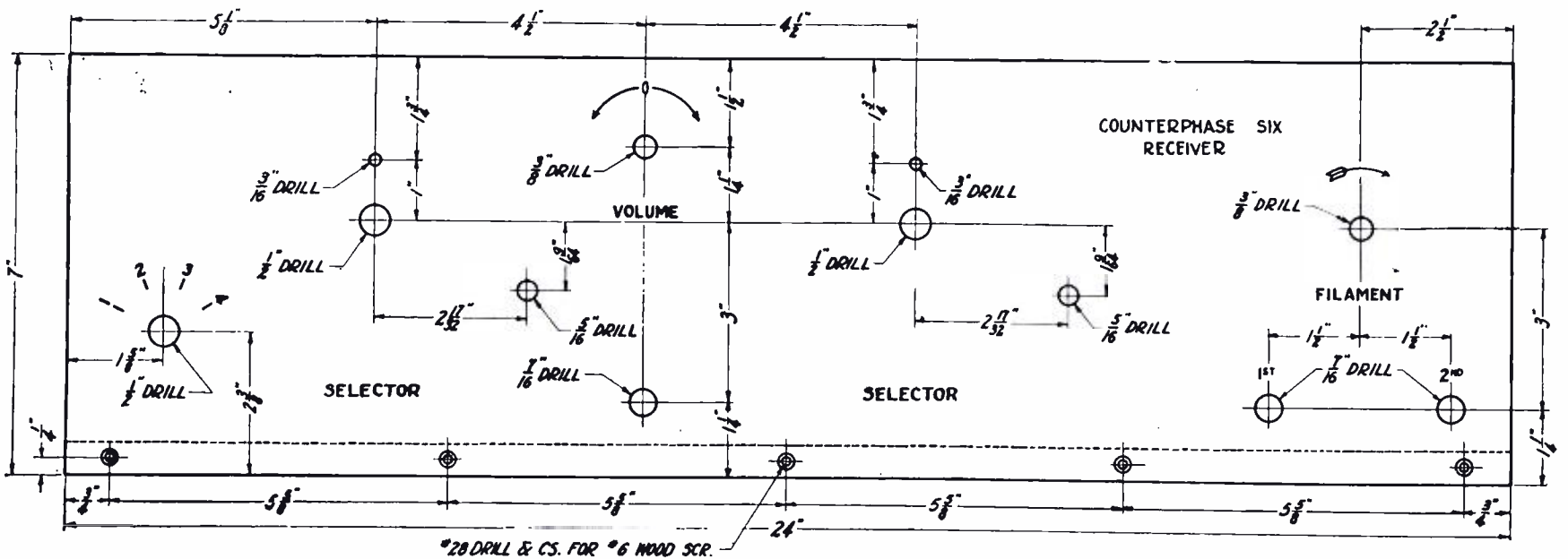


Fig. 1—Panel layout

of recent origin. As a matter of fact, however, it is almost as old as radio, being undoubtedly present in the single tube regenerative detector.

As generally considered, however, R. F. Amplification refers to one or more stages preceding the detector.

In the earlier days of broadcasting when stations were few and interference negligible, the methods used served quite well, these being either tuned impedance coupling or untuned iron core transformer coupling controlled by means of a grid bias potentiometer.

Untuned coupling, however, was doomed by the great increase in the number of stations and the necessity of crowding them into channels separated only by ten kilocycles, leaving tuned R. F. as the

tion action in the tuned R. F. stages, and therein lies a problem for which many remedies have been offered.

Oscillation Control Methods

One of the most simple and common is to add sufficient resistance to prevent the possibility of oscillation. Considering the efforts that have been made to reduce resistance in coils and condensers, and the value attributed to such efforts, the fallacy of again deliberately introducing such losses into a circuit is evident. Were it not for the popular delusions, how much more simple it would be to use high loss coils and condensers in the first place.

Eddy current losses result from placing condensers within the field

of a coil, and this is another method that has been used and probably will be again, even with so-called fieldless coils. These, together with direct resistances, absorption coils, etc., are among the most common of methods referred to as self-neutralizing.

It is evident also that if the plate circuit were slightly detuned the tendency toward oscillation would be reduced. This method has like-

in other words, nearly 3 times as great. The resultant increase in tendency to oscillate on the lower wave lengths has worried circuit designers from the earliest days of radio. It creates the problem that has been fought over, avoided, evaded, neglected or ignored according to the varying degrees of intelligence or intention involved.

Regardless, however, of what last year's arguments may have been

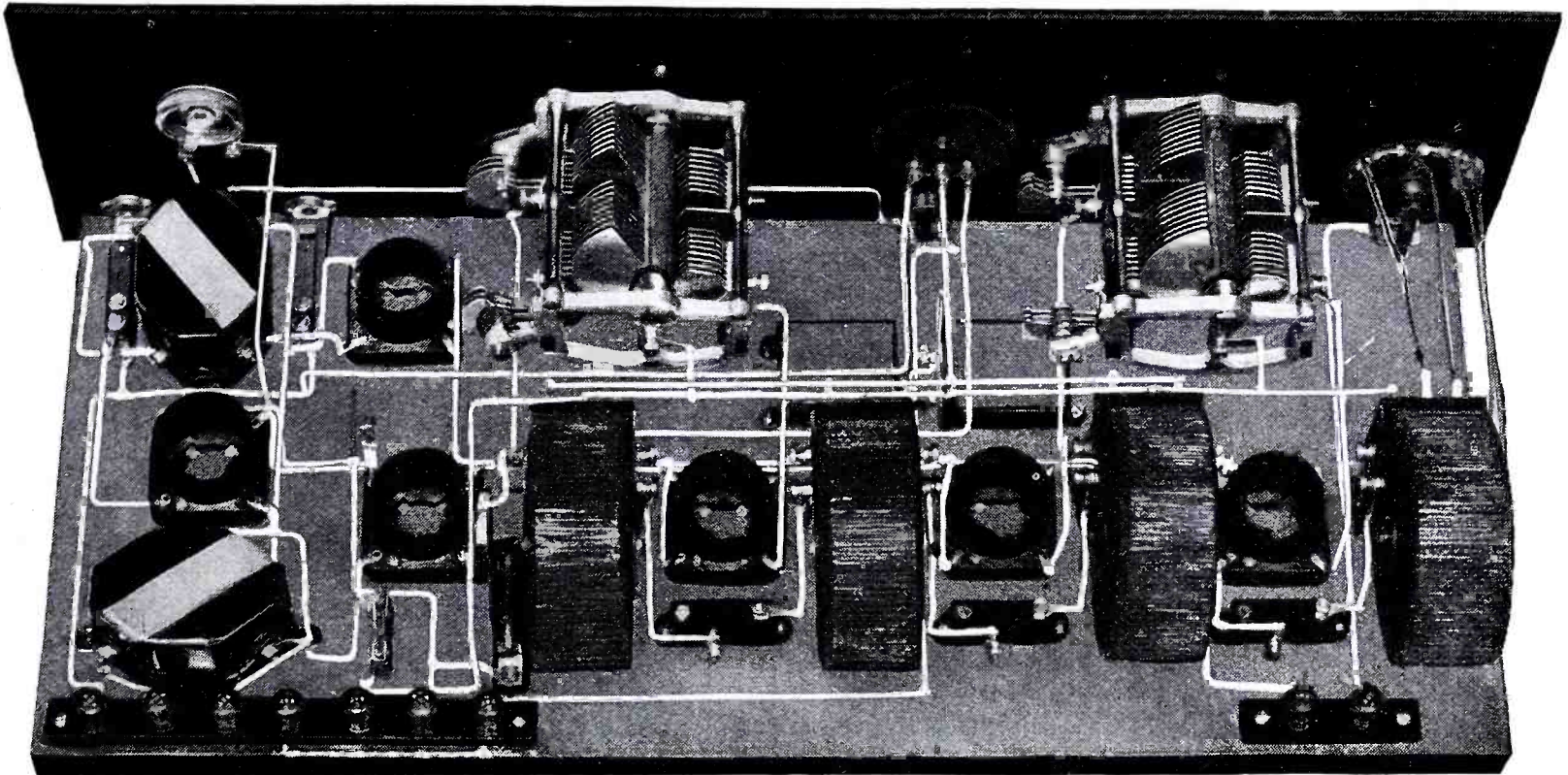


Photo B—Rear view of completed receiver

wise been employed, the detuning being accomplished by reducing the plate load or number of turns in the primary circuit of the transformer, which cuts down the coupling between primary and secondary.

This latter method increases selectivity, but unfortunately the energy

it is now quite generally agreed that when primary to secondary coupling is reduced to the extent that oscillation is prevented the set will be satisfactory on the shorter wave lengths only. Within a narrow broadcast range, of say 200 meters, such set would be accept-

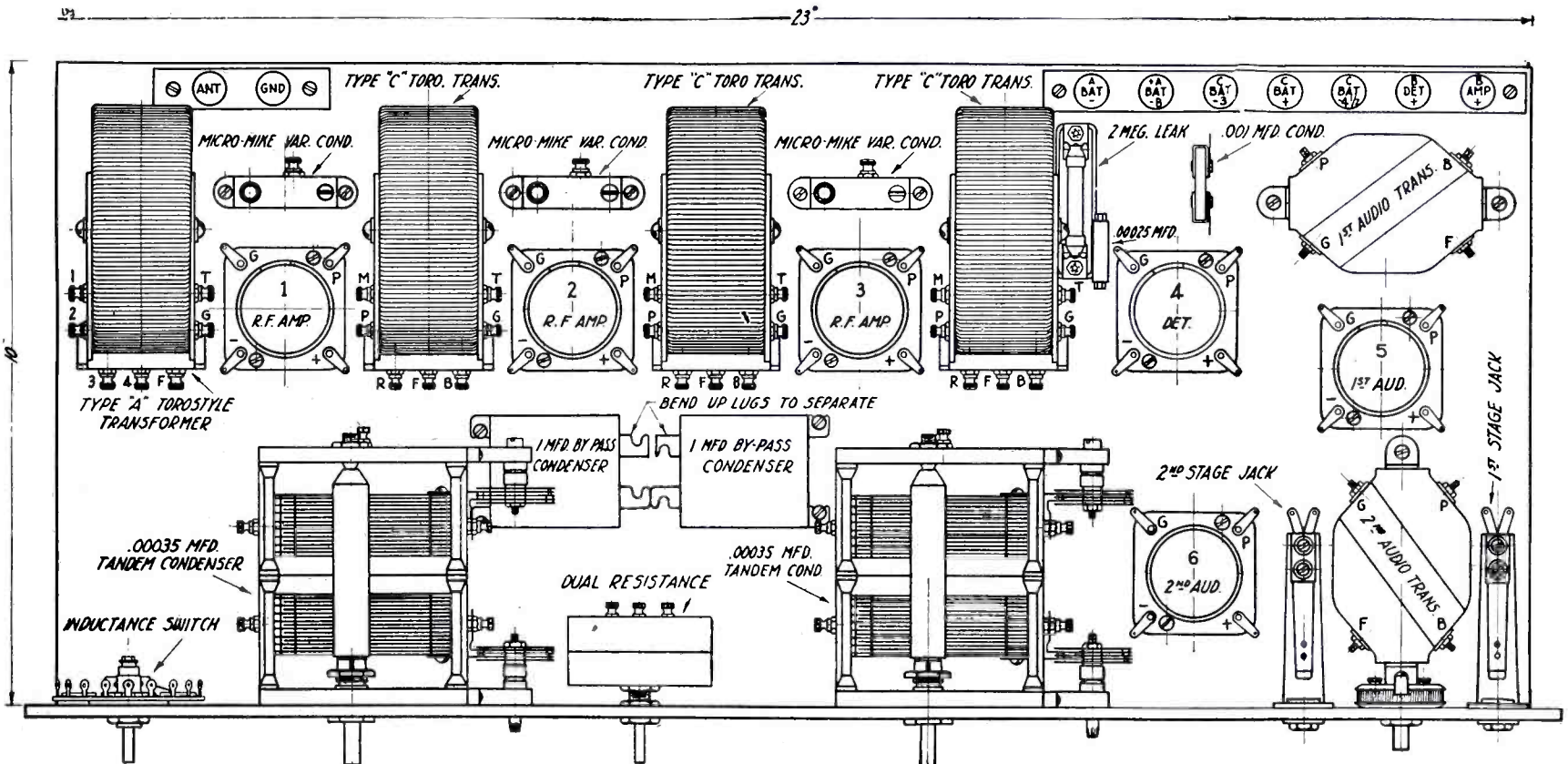


Fig. 2—Baseboard layout

transfer between tubes is thereby reduced and if the coupling is cut down sufficiently to prevent oscillation on the shorter wave lengths this same insufficient coupling results in very unsatisfactory response on the longer waves.

At 550 meters, the upper end of present broadcasting, the frequency per second is only 550,000, but at 200 meters, or the lower limit, the frequency per second reaches the enormous number of 1,500,000—

able, but from 200 to 550 gives a band of 350 meters wide—more than has been handled with satisfaction.

Some difficulty was avoided by the manufacturer of sets and parts which would not reach the lower wave lengths, but this did not solve the problem for the user. When there were no stations assigned at the lower end the omission was not generally noticed, although undoubtedly part of the reason why stations were not assigned was

National's newest contribution to sharp tuning—

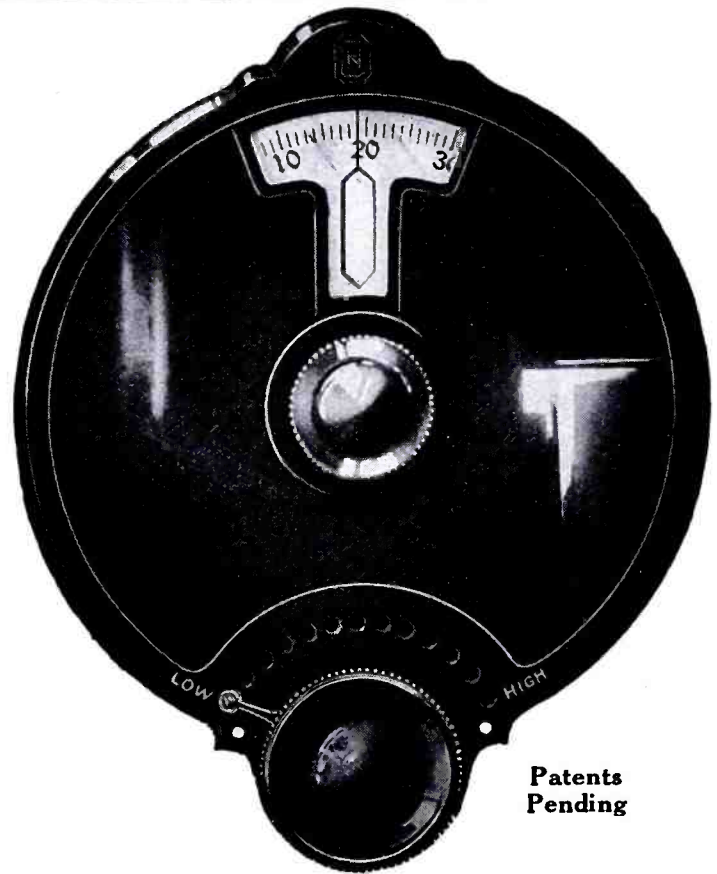
THE NATIONAL Velvet Vernier Dial

Type B.

Positive control—gearless—smooth and noiseless in operation. You control the reduction ratio. Easily mounted on any 1/4-inch shaft of standard condensers.

Absolute control—noiseless operation, razor-sharp adjustment—that's what you want. That's what National has given you in this black bakelite Velvet Vernier—Type B.

Thanks to the exclusive control lever you can adjust the speed ratio as you prefer from 6 to 1 fast, to 20 to 1 slow. A wonderful help in the separation of short-wave sta-



tions. The perfect control for the selective circuit.

The same type of smooth gearless drive that has made the Type A National Velvet Vernier (Patents pending) universally approved by those who have used it. Just as free from back-lash. Just as impossible for back-lash to develop. An added touch of beauty to any panel.

With nickel mountings, \$2.50

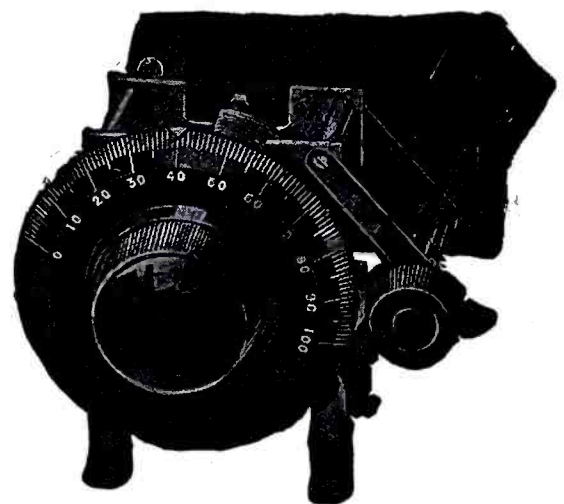
With gold plated mountings, \$3.00



NATIONAL Tuning Unit
Type B D-1

The National Units BD1 and BD2 with the National Velvet Vernier Type A dials, National Condensers and the Browning Drake Transformer

\$22 Per
Pair



NATIONAL Tuning Unit
Type B D-2

NATIONAL CO., Inc.

WILLIAM A. READY, President
Established 1914

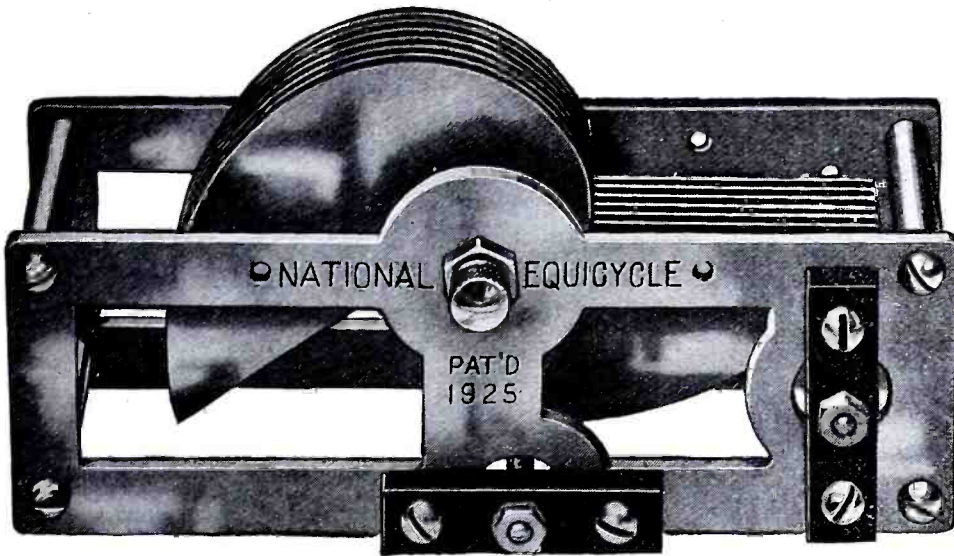
110 Brookline Street



Cambridge, Mass.

Tell 'Em You Saw It in the Citizens Radio Call Book

The National Equicycle Condenser



The latest development in straight line frequency control, as adapted to the National Condenser. A 270° operating arc. Rugged—free from measurable losses. Smooth and positive in operation.

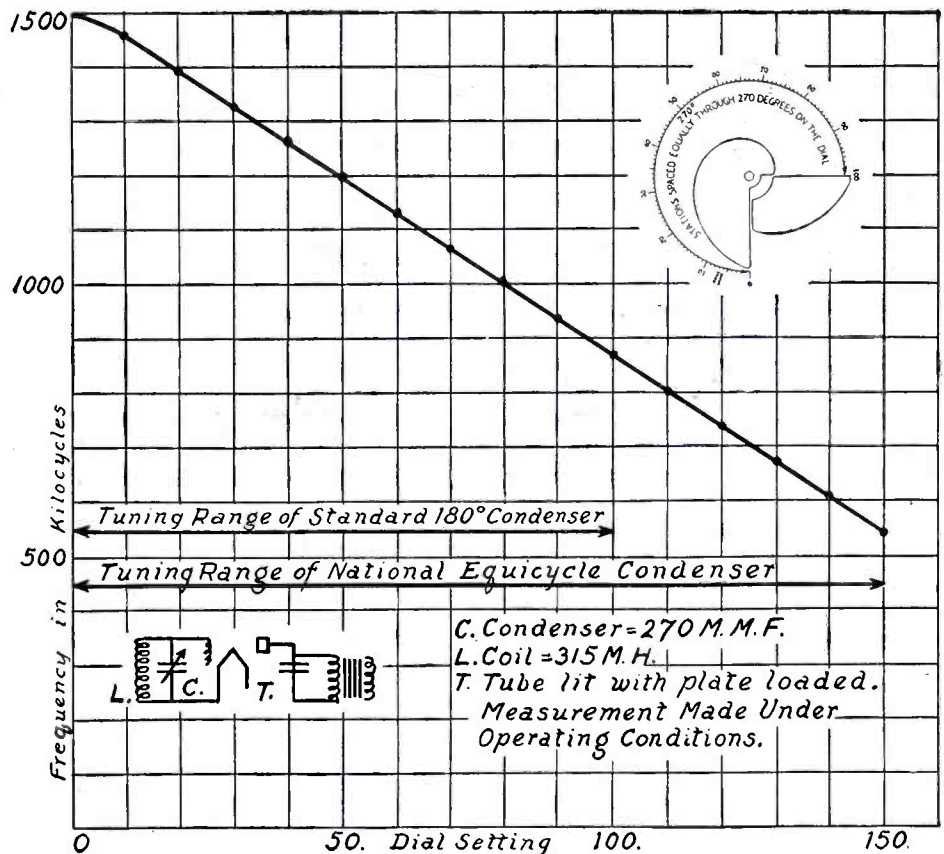
No longer need you listen to the fuzzy mumble-jumble which has been the bane of many a good set on the short wave stations. Never again will you accuse any set of lack of selectivity when the real trouble lies in the crowded condition of the lower end of the 180° condenser.

This new National Equicycle through its patent construction permits the rotor plates to operate through an arc of 270 degrees—gives equal spacing to every station, permits infinitely finer adjustment than ever was possible with the 180 degree arc.

Equip your set with these new condensers. See how easily you tune in on the highest frequencies, and how clear and clean-cut reception becomes on every dial setting.

The mechanical characteristics of the new National Equicycle follows closely that of the National Transmitting Condensers used and approved by Lieut. Fred Schnell (N. R. R. L.), Don Wallace (9ZT), Hatry (Q. S. T.), Gerald Best (Technical Editor of "Radio"), Lieut. Lowell Cooper, U. S. S. Omaha, and others prominent in the American Radio Relay League and the Army and Navy.

All National Condensers are equipped with "Type A" VELVET VERNIER Dials, unless ordered otherwise. Where "Type B" Dials are specified the extension or adapter for the condenser shafts will be supplied without extra charge.



Two sizes:	With Dials	Without Dials
.00025 M.f.d.	\$7.00	\$5.00
.0005 M.f.d.	7.50	7.00

This graph shows the characteristics of the Equicycle Condensers as shown by tests at the Crufts Laboratory at Harvard University by Prof. Field.

NATIONAL CO., Inc.

WILLIAM A. READY, President
Established 1914

110 Brookline Street

Cambridge, Mass.

The Browning Drake Circuit with Impedance Coupled Amplification

This Is a Very Efficient Five-Tube Receiver Producing Excellent Quality

All Illustrations and Construction Data Were Prepared in Our Laboratory

It is a pleasure to build a receiver knowing that the circuit was the result of careful mathematical calculations of which over 90 per cent of the amplification was actually proven in laboratory tests. It is based upon sound principles and is not a "trick" hookup.

This circuit consists of one stage of balanced tuned radio fre-

quency amplification, a regenerative detector and three stages of impedance coupled audio frequency amplification. It is an ideal receiver for any locality due to its selectivity and the wonderful quality of the signals and will not re-radiate. The most important part of any tuned radio frequency trans-

resistance secondary coil. Great signal strength is obtained by balancing the radio frequency amplifying tube and using regeneration on the secondary of the radio frequency transformer. If the regeneration is connected directly to the antenna tuning circuit, stronger signal strength would be obtained, but it would also re-radiate and disturb your neighbor.



Photo A—Front view showing arrangement of apparatus mounted on panel

quency amplification, a regenerative detector and three stages of impedance coupled audio frequency amplification. It is an ideal receiver for any locality due to its selectivity and the wonderful quality of the signals and will not re-radiate.

If it is desired to use an inside aerial, a single wire of only 20 feet in length will be very satisfactory. If an outside aerial can be conveniently installed, 30 feet will produce excellent results. However, the aerial should not be too long as it will broaden the tuning.

The most important part of any tuned radio frequency trans-

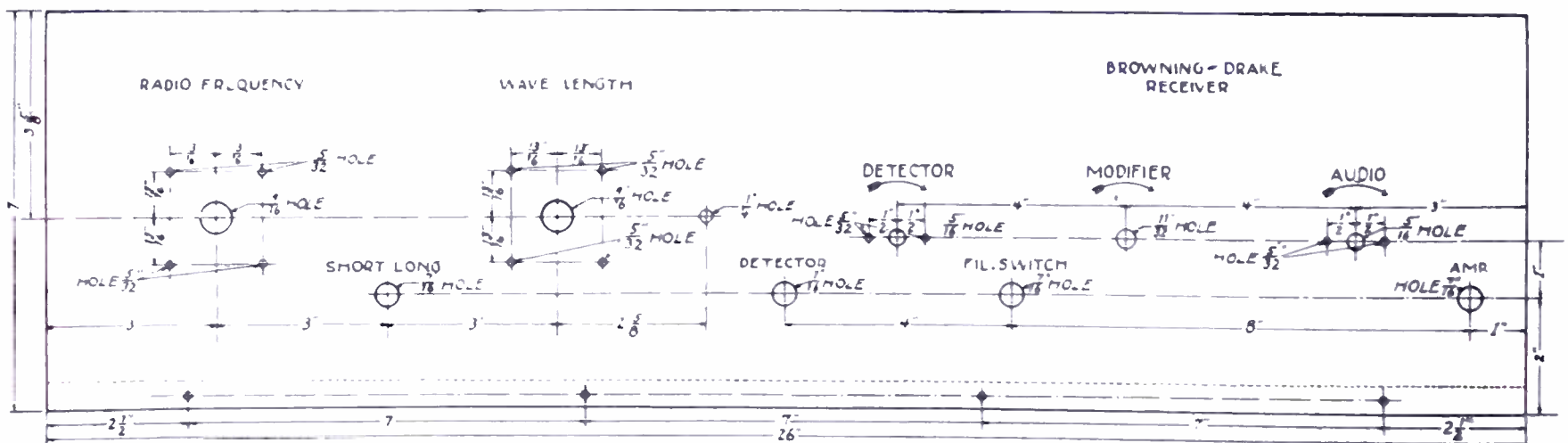


Fig. 1—Panel layout

former is the resistance of the secondary circuit and its relation to the primary. As any capacity between the primary and secondary tends to decrease the efficiency of the tuned radio frequency transformer, the primary winding is closely coupled with a low

Photo A shows a front view of the completed receiver. It will be noticed that there are two major controls for wavelength and a control for regeneration. Of course, the best results and the greatest sensitivity are obtained when the tickler coil is kept just

below the point of oscillation. No one questions the efficiency of regeneration but the volume control must be used with care for clear reception.

A tap is provided on the antenna coil for short or long wavelengths. This is controlled by a switch shown in the lower left hand corner of the panel. For all practical purposes the position of this switch can be best determined by experiment. If the regenerative kit comes with straight line frequency condensers, the tap can be eliminated. A filament switch is provided to turn on all of the tubes.

- 1—National Regenaformer Kit complete with Vernier Dials and Condensers
- 1—General Radio 30 ohm No. 301 Rheostat
- 1—General Radio 10 ohm No. 301 Rheostat
- 4—General Radio No. 156 Sockets
- 1—Dubilier No. 601 .0001 M.F. Condenser
- 1—Culver-Sterns "A" Battery Filament Switch
- 9—XL Marked Binding Posts
- 3—Acme Z2 Impedance Units
- 1—Central Radio Laboratory 500,000 ohm Potentiometer

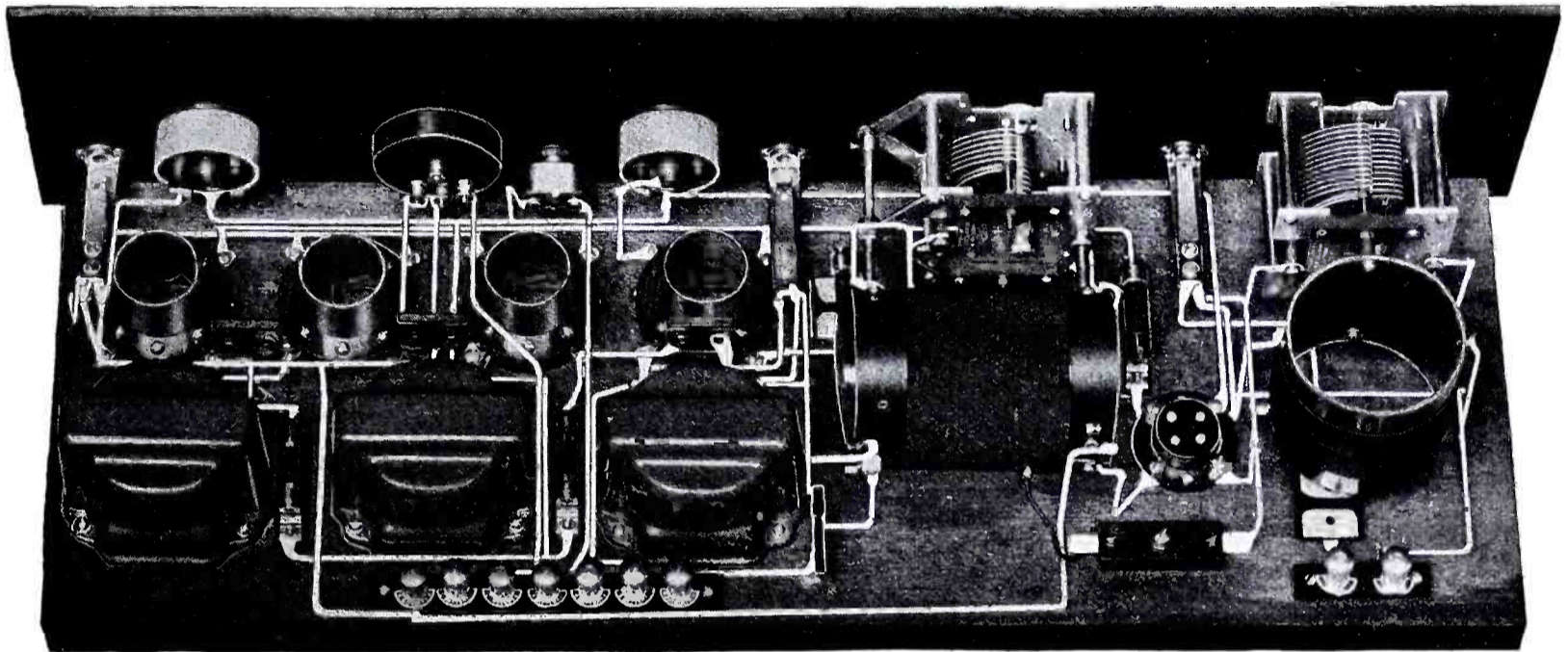


Photo B—Rear view of completed receiver

A jack is placed in the detector circuit if it is desired to use just the radio frequency and the detector tubes. A filament control jack shown on the extreme right end of the front panel lights up the amplifying tubes when the plug is inserted. The filaments of these tubes are controlled by a 10 ohm rheostat marked "audio."

LIST OF PARTS

The following parts or their equivalent will give satisfactory results:

- 1—7"x26"x3/16" Micarta Panel
- 1—2½"x½"x3/16" Micarta Strip
- 1—6"x½"x3/16" Micarta Strip
- 1—25"x9" Wooden Baseboard

- 1—Six volt 199 Amperite
- 1—XL Variodenser Model "N"
- 1—Carter No. 3 Jack Switch
- 1—Carter No. 102A Closed Circuit Jack
- 1—Carter No. 103 Filament Control Jack
- 1—General Radio No. 349 Socket
- 1—Dubilier No. 601 .00025 F. Grid Condenser
- 1—Dubilier No. 601 .002 M.F. Condenser
- 3—Dubilier .005 M.F. Condensers
- 1—Daven 3 Megohm Gridleak
- 2—Daven .05 Megohm Gridleaks
- 2—Daven No. 50 Gridleak Mountings
- 4—Doz. large Kellogg Soldering Lugs

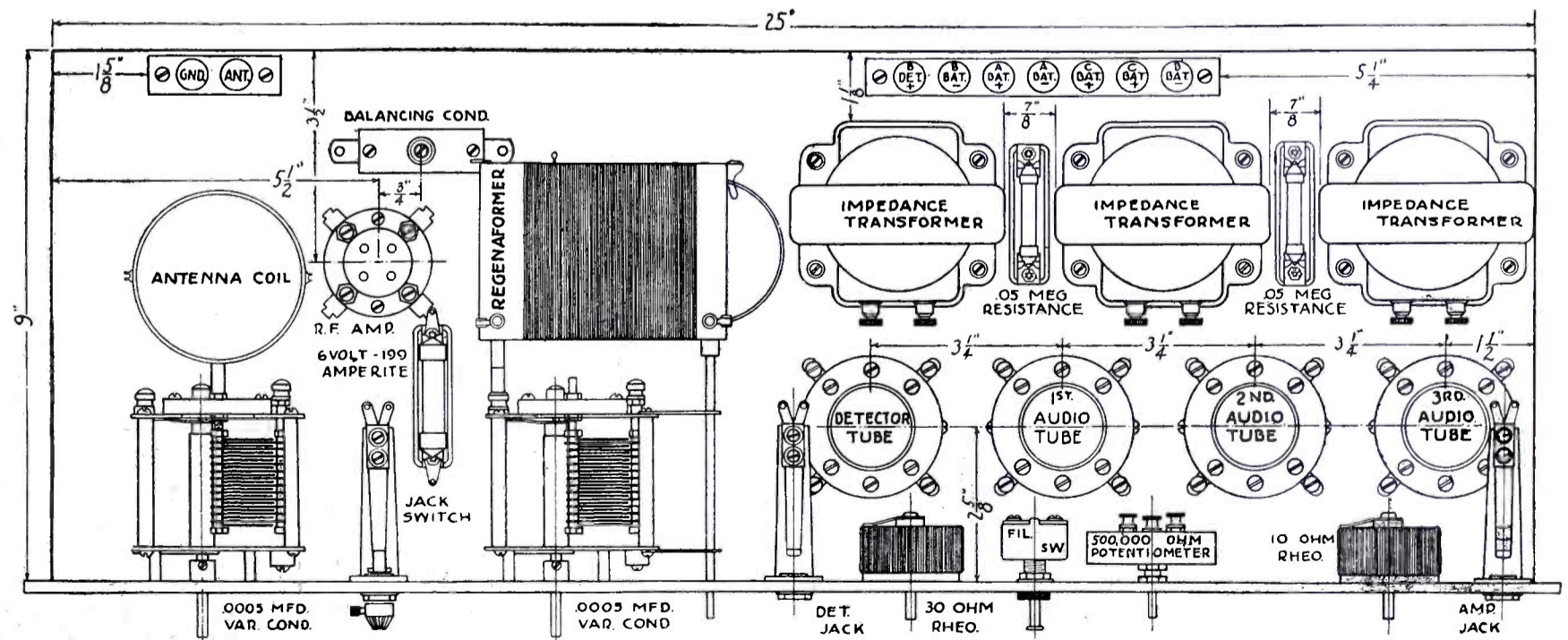


Fig. 2—Baseboard layout showing how to arrange parts

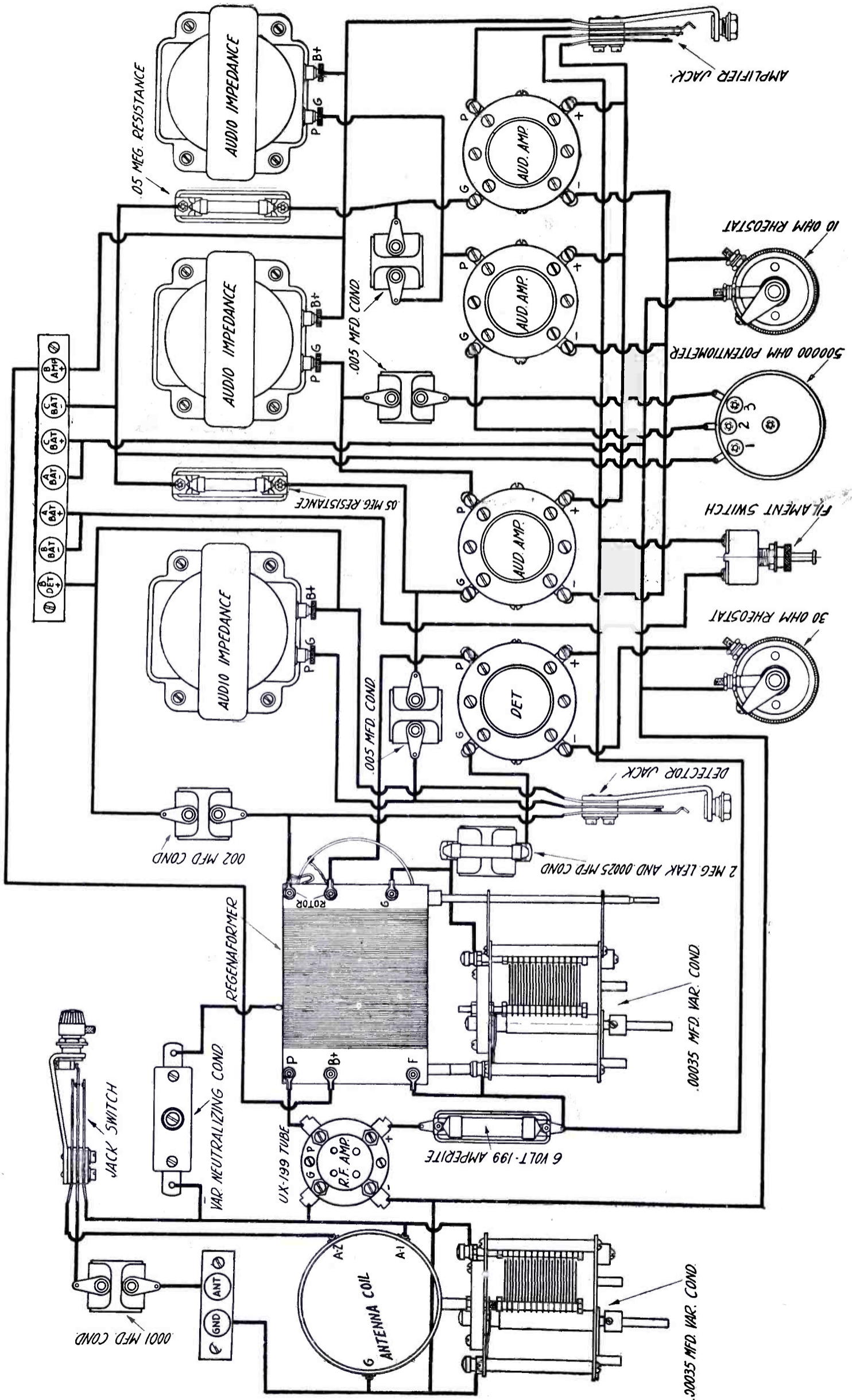


Fig. 3—Graphic illustration showing all connections

- 3—Doz. 5x5/8" Round Head Nickel Plated Wood Screws
- 30—Ft. No. 12 Round Bus Wire
- 1—7"x24" Cabinet
- 1—Package Kester Radio Solder

Photo B is a rear view of the complete receiver. Figure 2 shows the baseboard layout giving all dimensions. We suggest that you follow this carefully as this arrangement of the apparatus is necessary for neat wiring. The drilling and engraving of the panel is shown in Figure 1. These two illustrations should be all that is necessary for properly mounting the different parts.

Figure 3 is a graphic illustration showing every connection in the entire circuit. When you have the wiring completed, check it carefully against this illustration and make absolutely sure every connection is made as specified. Some of the more advanced radio fans do not require the connections shown in this manner, so we are submitting a schematic diagram as illustrated in Fig. 4.

It is rather expensive to burn out five tubes immediately after wiring up the set so we suggest that you connect the "A" battery

At this point the signal that you previously tuned in should be at a minimum. Replace the amperite. If the receiver howls, turn the screw on the variodenser clockwise slightly until the howling disappears.

Whereas there are many excellent types of audio frequency amplifying transformers on the market, it is difficult to obtain uniform amplification at all frequencies.

The impedance units used in this receiver will show no drop in amplification between 60 cycles and 10,000 cycles.

In all tests with this circuit a disc type loud speaker worked the best. Speech and musical sounds are composed essentially of between 50 and 5,000 vibrations per second. There are, of course, frequencies below 50 and above 5,000, but they are not important from the standpoint of quality; that is, if they are eliminated the effect of the naturalness of the sound would be scarcely noticeable.

Most types of amplifiers and loud speakers at present reproduce most efficiently sounds about two octaves above middle "C." Above and below this pitch the response is much less. At 200 and at 5,000 cycles practically no sound will be heard. This difference between

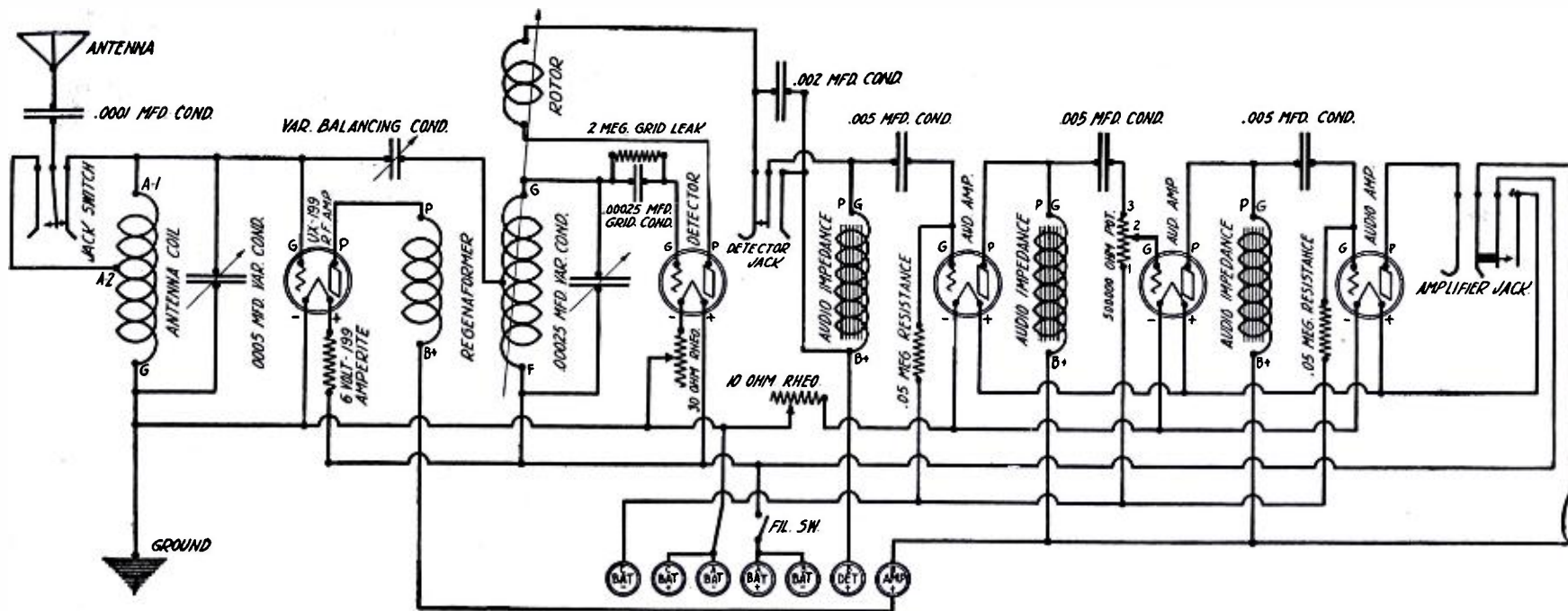


Fig. 4—Schematic diagram

leads to the "B" battery binding posts. Insert the tubes and turn on the rheostats. If the tubes DO NOT light up, then it is safe to connect the "B" batteries to their proper binding posts.

In experimenting with this circuit in our laboratory, we found that 90 "B" battery voltage on the amplifier gave the best results both as to signal strength and quality. A 22½ volt tap should be connected to the positive "B" battery detector binding post. Louder signals will be received if you use more voltage on the detector but 22½ volts is best for the greatest selectivity. If your "B" batteries are fresh and you are delivering 90 volts to the amplifier, use from 3 to 6 volts on the "C" battery. As the "B" battery runs down, decrease the "C" battery correspondingly. Never use "B" batteries that show a voltage reading of less than 50 per cent of their rated value. The position of the rheostats is not critical and the best value of the resistance to use can be found by experiment.

It will be noticed that a UX199 tube is used for the stage of tuned radio frequency amplification. This is necessary for the best results, as it is easier to balance and neutralize this type of tube. A six volt 199 amperite is connected in the positive filament lead of this tube eliminating the necessity of a separate rheostat. The detector tube is controlled separately by a 30 ohm rheostat.

If you want this circuit to work properly, be very careful when you neutralize the radio frequency tube. Insert the phone plug in the detector jack with the radio frequency tube in its socket. Tune in a strong signal placing the tickler coil just below the point of oscillation. Remove the amperite from its mounting. Take a long-handled screw driver and turn the set screw on the variodenser counter clockwise as far as it will go. Now, turn the screw clockwise until a "pluck" is heard in the head telephones.

the efficiency at about 1,000 cycles and other points above and below is responsible for the harsh or "tinny" quality so frequently experienced in the average receiver.

The impedance coupled amplifier is so nearly uniform in efficiency throughout the audible range of frequencies that all of the notes from the lowest qualities of the human voice and of musical instruments are preserved. Good quality depends not only upon the amplifier but also the loud speaker used.

This amplifier is capable of handling, practically without distortion, all of the frequencies necessary for the accurate reproduction of sound. The maximum possible volume of such undistorted sound will, however, depend upon the capacity of the vacuum tubes as well as the impedance units. When an attempt is made to increase the output beyond that which the amplifier is designed to deliver, it will not be a faithful reproduction of the original sound and a rasping effect will result.

Here is where the volume control is used to advantage. This consists of a 500,000-ohm Central Radio Laboratory potentiometer with the middle point connected to grid of the second amplifying tube. The different stages do not employ separate jacks, as the modifier can be varied to totally eliminate the strongest signal without detuning the receiver. This controls the desired amount of signal strength at all times and prevents the overloading of the tubes.

The results with this five-tube circuit will be surprising both as to distance and quality. The stations will always be found in the same place provided their wavelength does not change. The volume control is very handy as you can decrease the strength of the signals by decreasing the tickler coupler but it is suggested that you leave the volume control in the best position for the wavelength that you are receiving and use the modifier for varying the strength of the signals.

*Build a set that's
designed for 1926
conditions*



MAR-CO
R.F. **RADIO PRODUCTS** KIT

No. 2
for the
**Marcodyne
Circuit**

sign to fit different types of tubes. Thus, whether you use 199's, 201-A's or UX199 and 120, you will be enabled to get the *most* out of that particular type of tube.

Put yourself a year ahead

All in all, the *Marcodyne* principle, built with the essential parts in the MAR-CO kit, points the way to the kind of set design 1926 conditions demand.

The kit, containing the essential MAR-CO parts, is only \$25.00. A majority of the other necessary items you probably have on hand. Thus, for a comparatively small expenditure of time and money, you may own a set which is easily a full season ahead of current

practice in set design.

Ask your dealer for additional information about this kit. If he has not yet stocked it, he can get it for you without delay.

Manufactured by

Martin Copeland Co.
Providence, Rhode Island

Branch Offices in
New York, Chicago, Boston and
San Francisco

Jobbers in all important cities

THE trend in radio design, among set builders who know conditions, is along very definite lines.

The ideal set combines extreme selectivity, with plenty of power, plenty of "responsiveness". And these qualities should be obtained, not by the expensive method of using more, and still more, tubes. Rather, they should come thru such efficient arrangements that the number of tubes, and consequently the up-keep cost, is *lessened*.

To meet these 1926 needs, the *Marcodyne* circuit was devised. It combines—*successfully*—tuned radio frequency amplification with regeneration.

Described in this issue

In this issue, there is an article

describing experiments with the *Marcodyne* circuit, as built with specially designed MAR-CO parts. Be sure to read it thoroly.

In this set, four tubes are made to produce plenty of power, sufficient for local stations without the use of an aerial.

The selectivity is remarkable, and yet, with the use of the new MAR-CO dials, tuning is ridiculously simple.

Excellent tone quality, and precision design are naturally to be expected from the use of MAR-CO parts. But this efficiency is materially increased by special plate coil de-

Kit of the essential MAR-CO precision instruments, with simplified picture-diagram and complete instructions for the *Marcodyne* 1926 circuit, \$25.00, at your dealer's.

The Marcodyne Receiver

Here Is a Circuit That Is Extremely Selective and Works Equally Well on Small or Large Tubes

This Receiver Was Constructed and All Illustrations Made in the Laboratory of the Citizens Radio Call Book

This article will describe a radio circuit which tunes sharply in comparison with the best known hook-ups of the present day. The technical reasons for its efficiency are simple. Loose coupling is used in the radio frequency transformer and the natural resistance of this instrument is kept low. Peculiar as it may seem, these simple features are enough to make the Marcodyne circuit a radical change from previous hook-ups both in design and performance.

an apparent increase in resistance and a decrease in signal strength except on the short wave lengths. In fact the common complaint of those attempting to use dry cell tubes in the ordinary radio frequency set is a lack of volume. Conversely, a circuit arranged to work well on dry cell tubes suffers 100% or more increase in plate current with a change to UV 201A's. Coupling and capacity are immediately increased to a point where radio frequency oscillations are almost un-

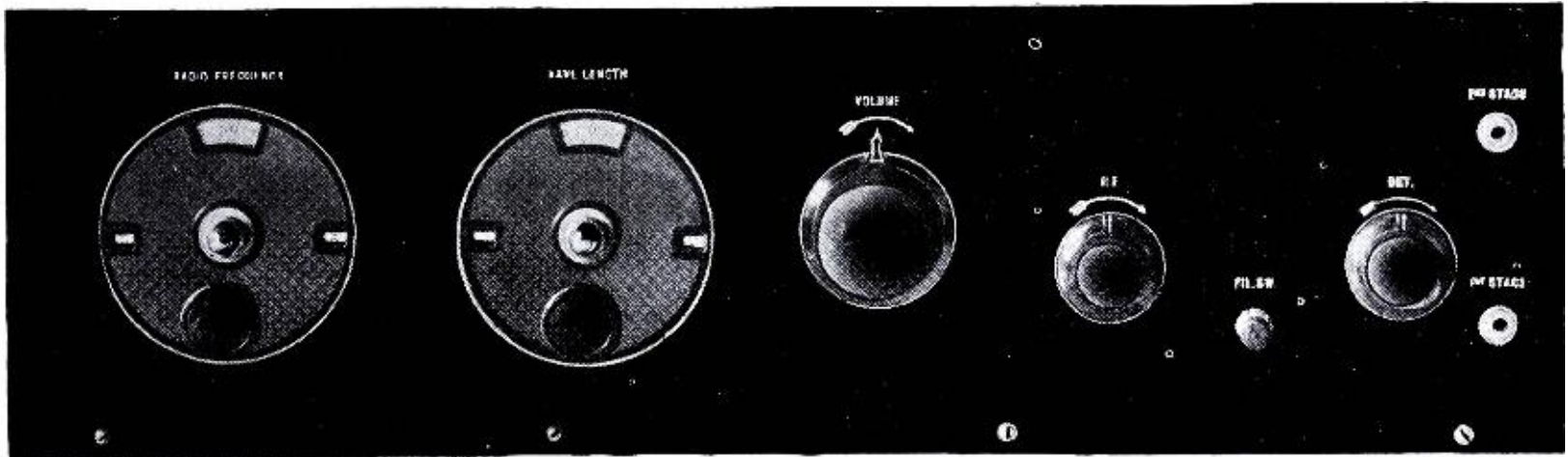


Photo A. Panel showing arrangement of dials

The idea of building a radio frequency transformer with separate primary windings for use with dry-cell or storage battery tubes is the outstanding constructional change. Hundreds of thousands of sets have been built in which no change of this kind is possible. In the future this principle will be generally applied as soon as the benefits resulting from its application have become generally known.

A brief description of the theory involved will be of general interest. Dry cell tubes pass approximately half the plate current of the storage battery types under normal operating conditions. As the plate current from either style passes through the primary winding of a radio frequency transformer it affects the couplings between primary and secondary and the output of the combination. A 50% reduction in plate or primary current caused by the installation of dry cell tubes in a set designed for the storage battery type reduces both coupling and output. Capacity feedback is also reduced causing

controllable particularly on the short waves. Consideration of these familiar facts makes it evident that a radio frequency transformer cannot operate to full efficiency with any tube passing more or less plate current than the one it was designed for which is exactly the case. To expect efficiency after upsetting the correct plate current to primary ratio by a change in tubes is to invite disappointment.

No departure should be made from the dimensions furnished herewith for the general assembly. The distances between coils must be accurately held, the number of turns, size of wire and size of tubing must be correct. Choice of apparatus is left entirely to the discretion of the builder who can probably use much material that he already has on hand. The efficiency of this circuit is due to the scientific design of the radio frequency transformer, the wiring and the mechanical disposition of the parts. We wish to emphasize that there is nothing freakish about it and that anyone can build it and expect good results.

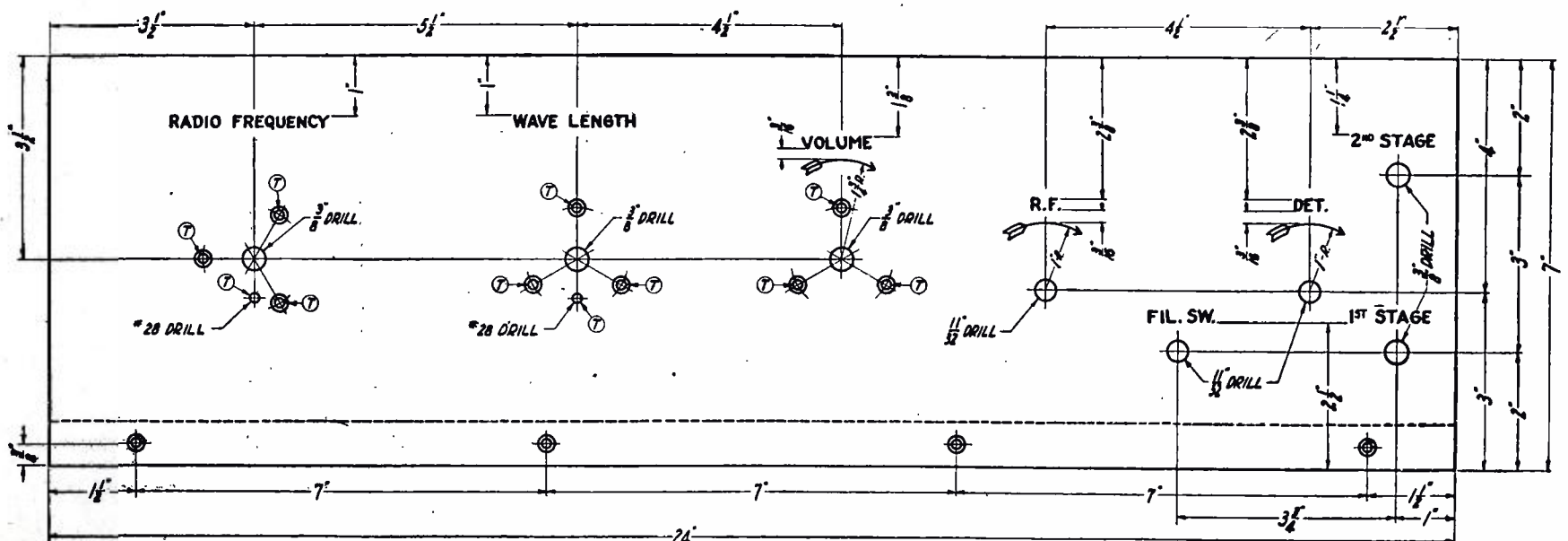


Figure 1. Panel Layout

One exception is made to the substitution of any apparatus as specified. The first stage of audio frequency amplification must contain a low ratio instrument. This eliminates the necessity for a choke coil in the detector plate circuit.

The wiring diagram shows connections for straight UV-199 or UV-201A tubes. UX tubes can be used with the proper sockets. We do not recommend the use of adapters if it can possibly be

List of Parts

These parts or their equivalent will give satisfactory results:

- 1 Radion Panel, 24"x7"x3/16"
- 1 Marco Radio Frequency Kit No. 2
- 2 Frost No. 656 25-ohm Rheostats
- 1 Frost No. 608 Battery Switch

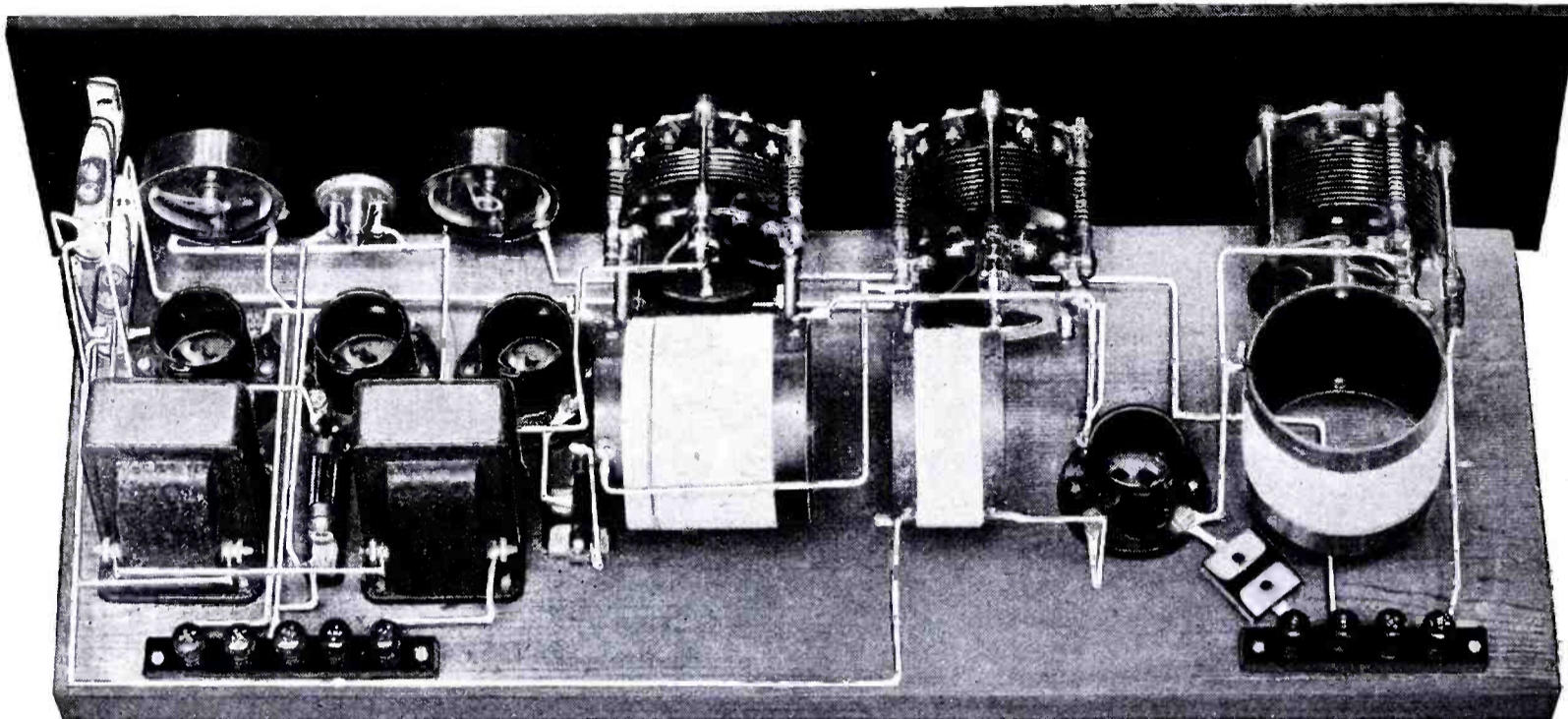


Photo B. Rear view of completed receiver

avoided. We advise having all tubes tested before attempting to use them in this circuit. Most dealers have tube testing outfits and will be glad to do this for you. Do not ask that they be matched.

Details of the coil windings are shown on the diagram. The plate coil of the radio frequency tube which is the smallest coil in the picture requires a special winding according to the type of tube to be used. All other coils are the same for any tube. We do not recommend other tubes than the UV-UX199 or UV-UX201A in the radio frequency socket. Follow the diagram closely in regard to the spacing of the coils and all other details of their construction. Coils may be mounted on the baseboard or on the condensers. Place them as far toward the rear of the set as the depth of the cabinet will allow.

- 1 Frost No. 234 Jack
- 1 Frost No. 224 Jack
- 1 Daven 1/2 Ampere resistor
- 1 Daven No. 50 Mounting
- 1 Daven 5 Megohm Grid Leak
- 1 Dubilier .00025 Grid Condenser
- 1 Dubilier .0001 Fixed Condenser
- 4 Naald No. 400 Sockets
- 9 Eby Marked Binding Posts
- 2 Rauland Lyric R500 Transformers
- 1 8 1/2"x23" Wooden Baseboard
- 1 Package Kester Solder
- Wood Screws, Lugs, Wire, etc.

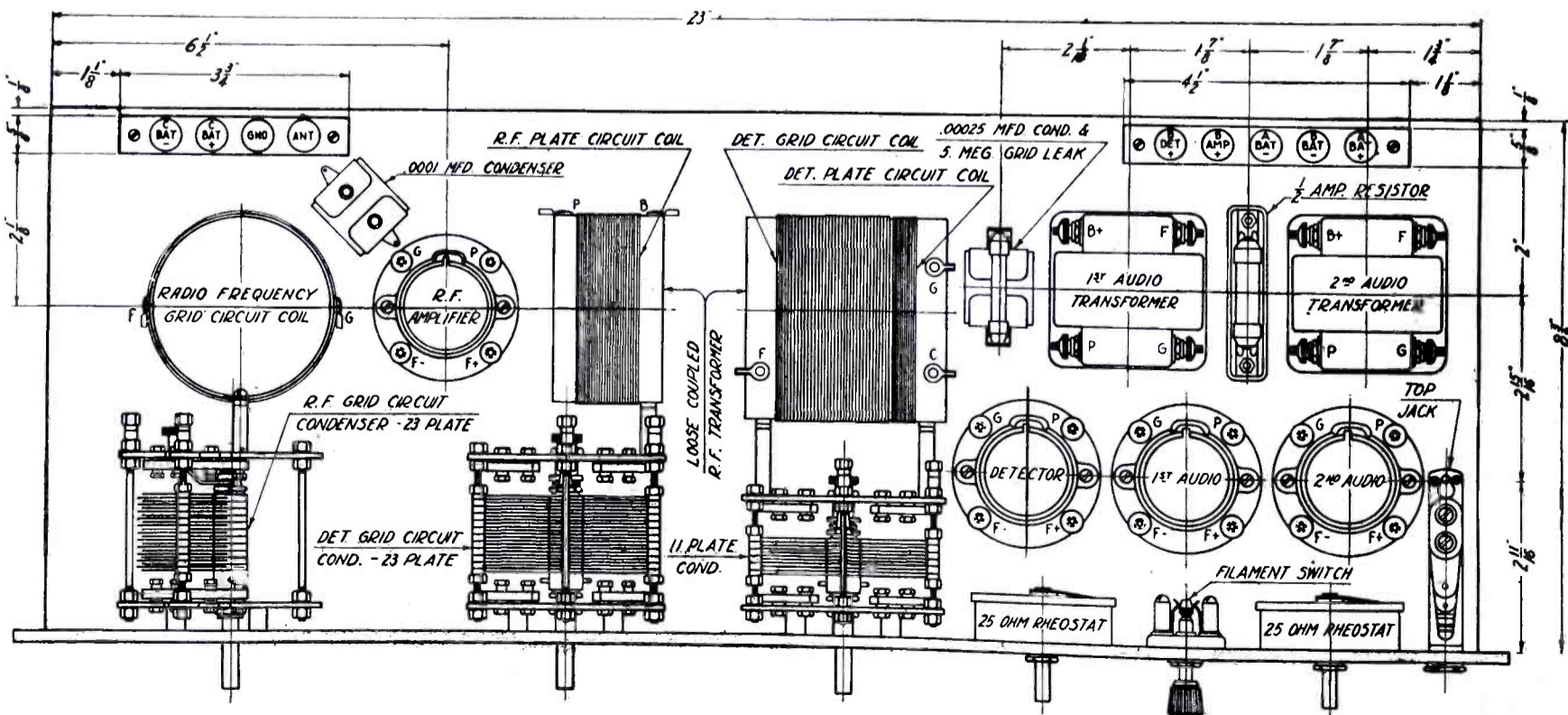


Figure 2. Baseboard Layout

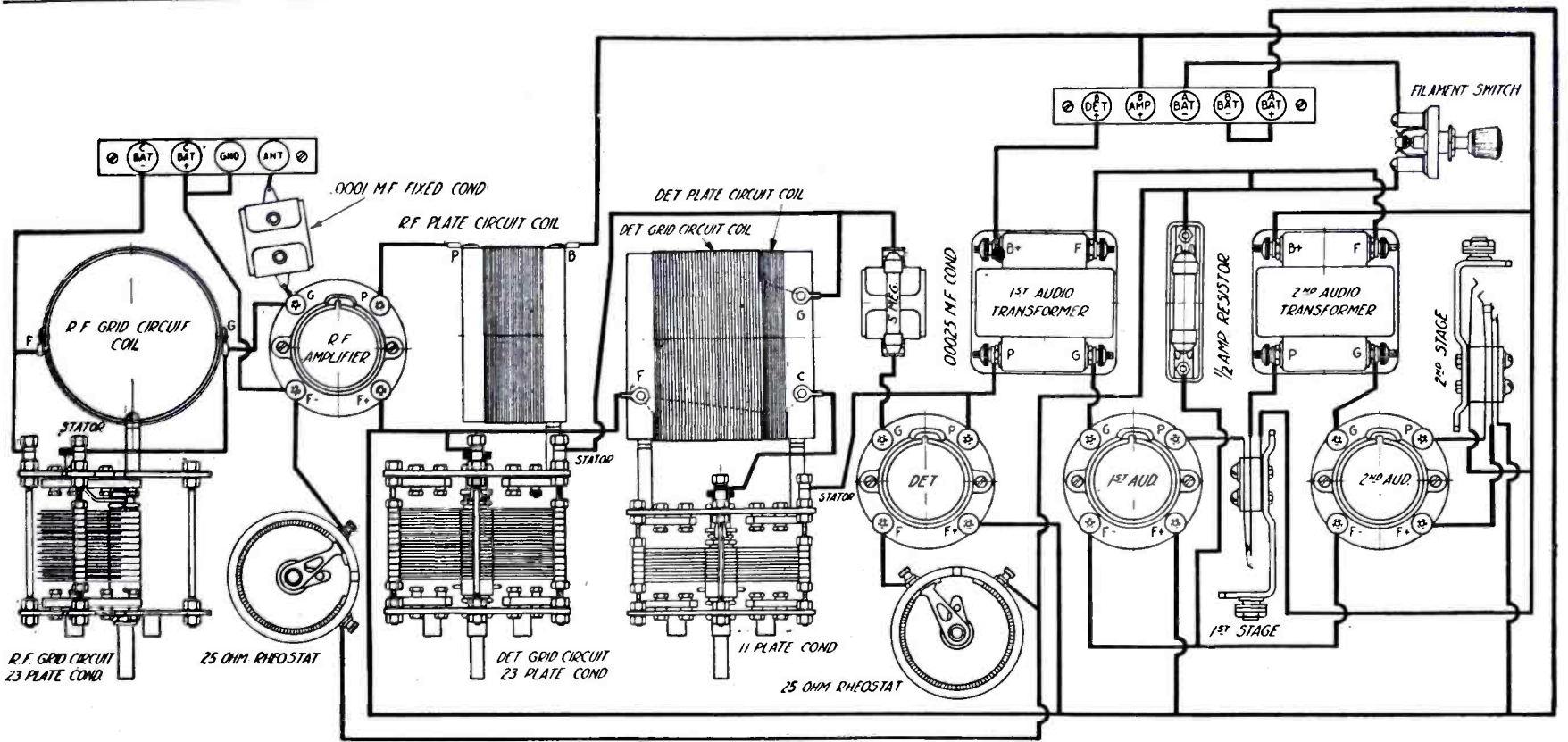


Figure 3. Graphic Illustration

The Marcodyne circuit will work on any conceivable kind of an aerial, long or short, inside or out. Nevertheless there is a certain type of an aerial for every location which can be considered the best. The length of the aerial affects the selectivity of the set, the sensitivity at the end of the dial scales, and the calibration of the dials. With an aerial from ten to twenty feet long the circuit is extremely selective and sensitive to the lower broadcasting wavelengths. Tuning may become critical but it should always be possible to stop excessive squealing by turning down the radio frequency tube. When this does not produce the desired stability increase the C battery voltage or decrease the plate voltage on the radio frequency tube until oscillation is entirely under the control of the .00025 variable condenser. The detector circuits should oscillate under normal conditions with this condenser one-third to half-way meshed. When oscillations occur with this condenser at zero setting turn down the radio frequency tube until the desired control is secured. Once the set is properly balanced for the lower end of the dials, no change in connections is necessary for operation throughout the 230-550 meter range. The longer wave-lengths will be received more clearly at a distance with an increase in the length of the aerial but there will be a slight decrease in selectivity and a change in the setting of the first dial. For general reception in congested districts, we recommend an inside or outside aerial 30

to 40 feet long with a short ground connection if possible. Where the utmost selectivity is not required, increasing the length of the aerial to 75 or 100 feet will aid in the reception of the middle to long wave lengths. In many cases satisfactory reception may be had by simply attaching a ground wire to the antenna binding post.

After the assembly has been completed test the filament lines before adding the plate battery voltage. Complete the plate battery connections carefully to avoid burnt-out tubes from improper connections. Be sure that the A, B and C batteries are in accordance with the specifications on the circular accompanying the tubes. Select a time for the first test when the nearest powerful broadcasting station is in operation. Set the tuning condenser dials at approximately the same position from 20 to 50 and turn the knob on the .00025 condenser until the plates are about half meshed. Vary the tuning dials until a whistle is heard then set them at the point where the whistle seems loudest. Then turn the .00025 condenser towards its zero setting and slightly readjust the tuning dials for clear reception. The .00025 condenser is the main oscillation control. At any time when adjustment of this condenser will not stop the whistles and clear up the signal turn down the radio frequency rheostat. The other rheostats are not critical and do not require careful setting.

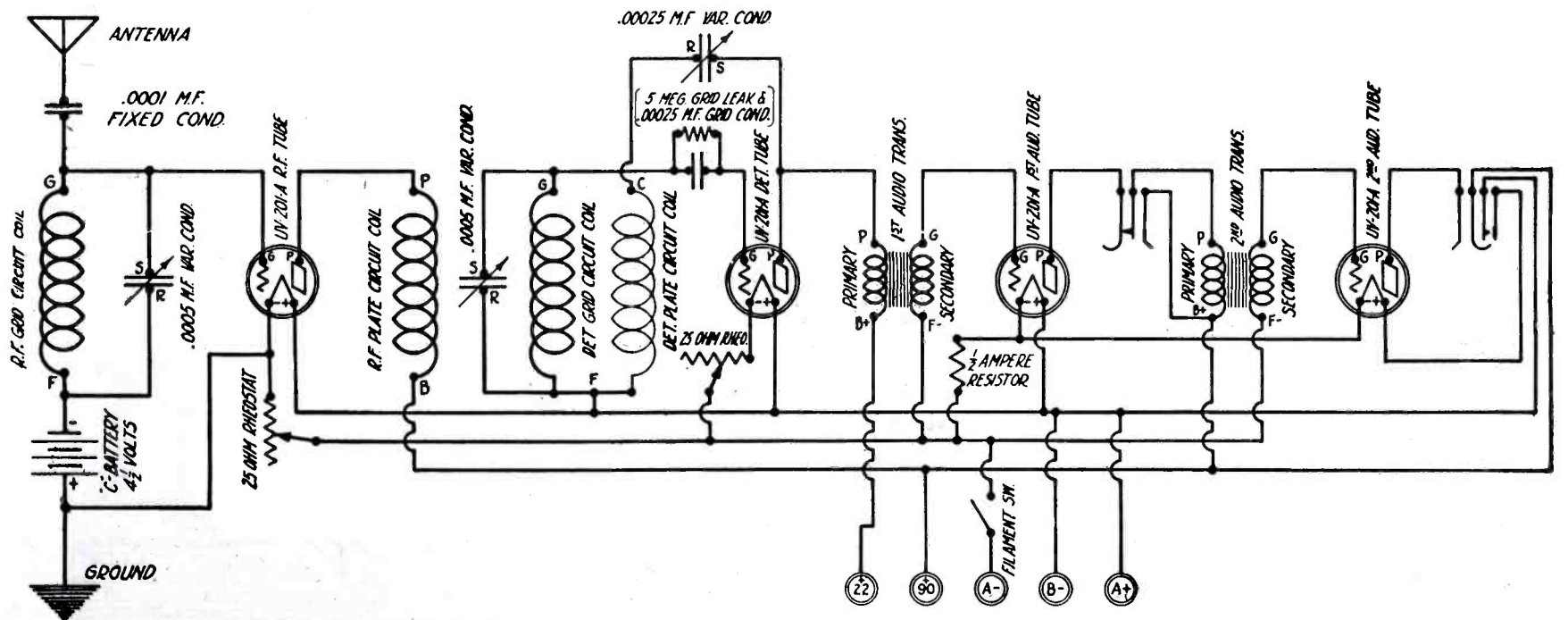


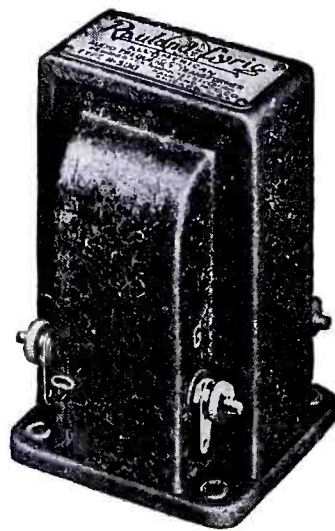
Figure 4. Schematic Diagram



When a Finer Transformer Is Made It Will Bear This Name-Plate

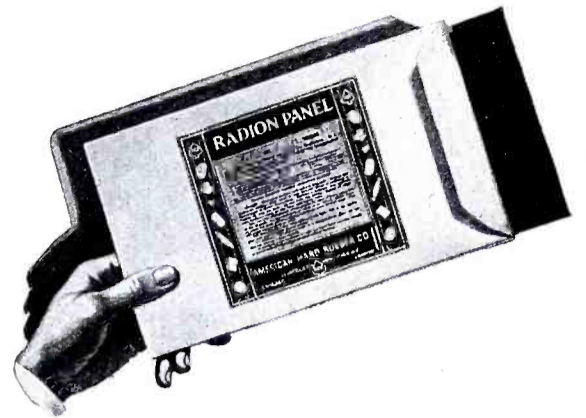
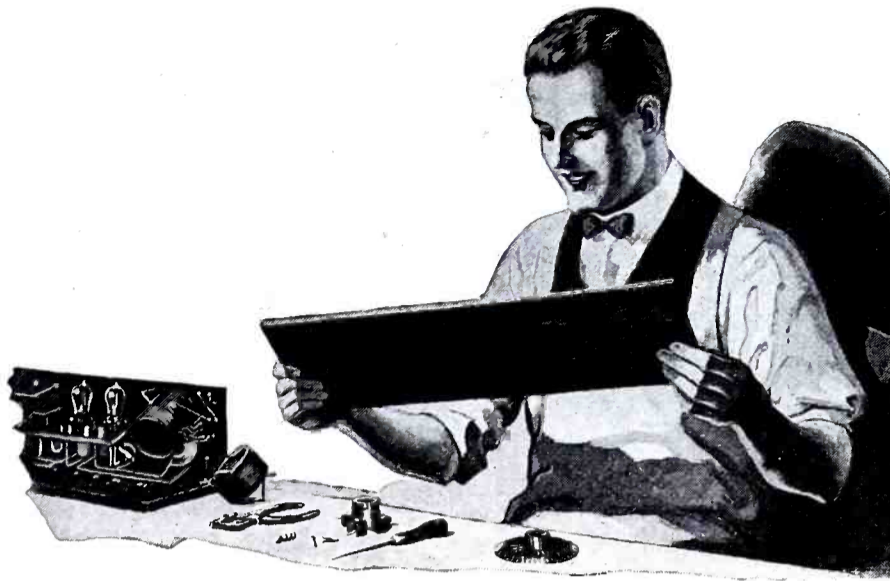
Radio moves rapidly. Perhaps some time there may be seen a *better* transformer than what we now know as Rauland-Lyric. It may sell at \$9, or \$10, or \$15, or \$7. But the careful observer of the past year's developments will entertain not a moment's doubt of one thing: when the better transformer comes it will come beneath the famous Rauland-Lyric name-plate. Behind this as a pledge rests the entire organization and resources of the All-American Radio Corporation

Rauland-Lyric is easily obtainable from better-class dealers everywhere. The price is nine dollars. Descriptive circular with technical data may be had on request to All-American Radio Corporation, 4201 Belmont Avenue, Chicago



Rauland-Lyric tone quality is now available in a complete receiver: the new All-American Model R (a five-tube tuned-radio-frequency set) now being shown. If your preferred dealer does not display it, send to us for descriptive booklet

Tell 'Em You Saw It in the Citizens Radio Call Book



RADION PANELS

You can get a Radion Panel in the exact size you want for your set. There are many stock sizes and two kinds, Black and Mahogany. Be sure you get the genuine Radion—look for the stamp on the envelope and the name on the panel.

Use the radio insulation that most effectively protects the circuit

IN building any radio set, the insulating material plays a most important part in protecting the circuit against leaks and losses.

By adopting Radion, you go far toward insuring efficient reception. It is the *only* insulation that was designed by engineers exclusively for radio purposes.

Authoritative, impartial tests indicate that Radion Panels possess insulating values superior to any other panel made. The high-polished satin-like finish prevents moisture from gathering to form leakage paths and cause leakage noise.

That beautiful finish also adds to the appearance of your set. And Radion Panels are easy to cut, drill and saw. They do not chip. No special tools needed.

Radion Sockets, Dials, Insulators, Tubing, etc. play a part of equal importance with Radion Panels in keeping down losses to the minimum. They have the same high-resistant characteristics.

Ask your dealer to show you the complete line of Radion low-loss parts, or send to us for catalog.

Free Booklet

"Building Your Own Set", a practical, comprehensive booklet mailed free on request.

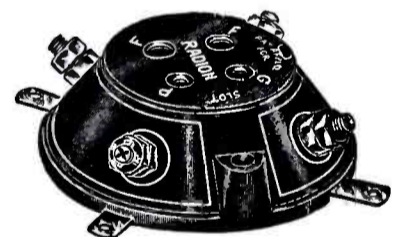
AMERICAN HARD RUBBER COMPANY
 Dept. RS1, 11 Mercer Street New York City
 Chicago Office: Conway Building
 Pacific Coast Agent: Goodyear Rubber Co., San Francisco, Portland

RADION
The Supreme Insulation

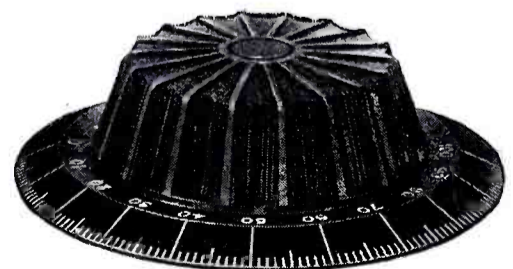
Made to order for radio purposes exclusively



No. 2 Radion Socket for new UX tubes, with collar adapter for old type tubes.

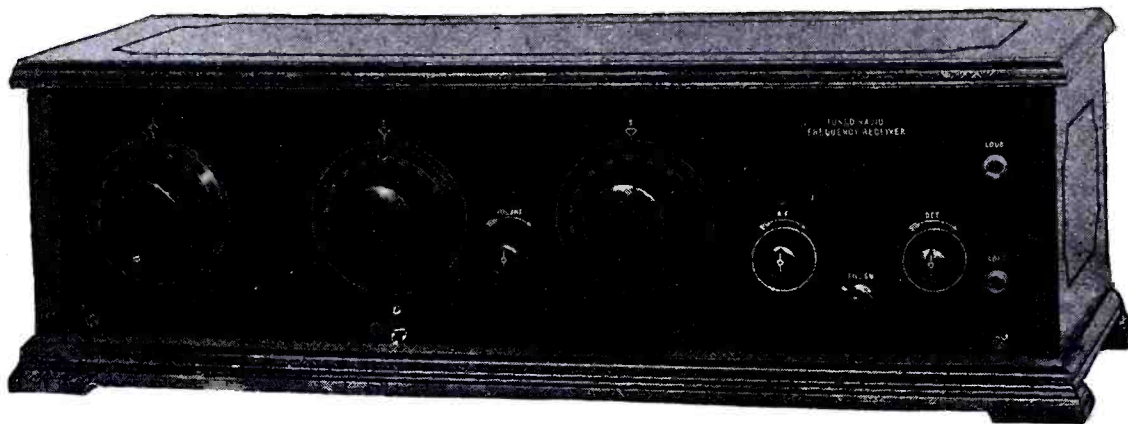


No. 4 Radion Socket for new UX tubes exclusively.



No. 10 4-inch Radion Dial built to conform to the fingers, helping you to get close tuning. May be used for single mounting condensers. Nine other styles of Radion Dials in several sizes to meet all requirements.

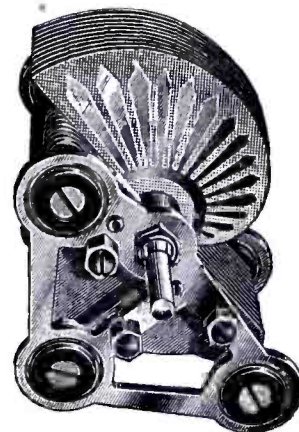
Tell 'Em You Saw It in the Citizens Radio Call Book



Heath Condensers, Dials and Sockets Used in This Receiver

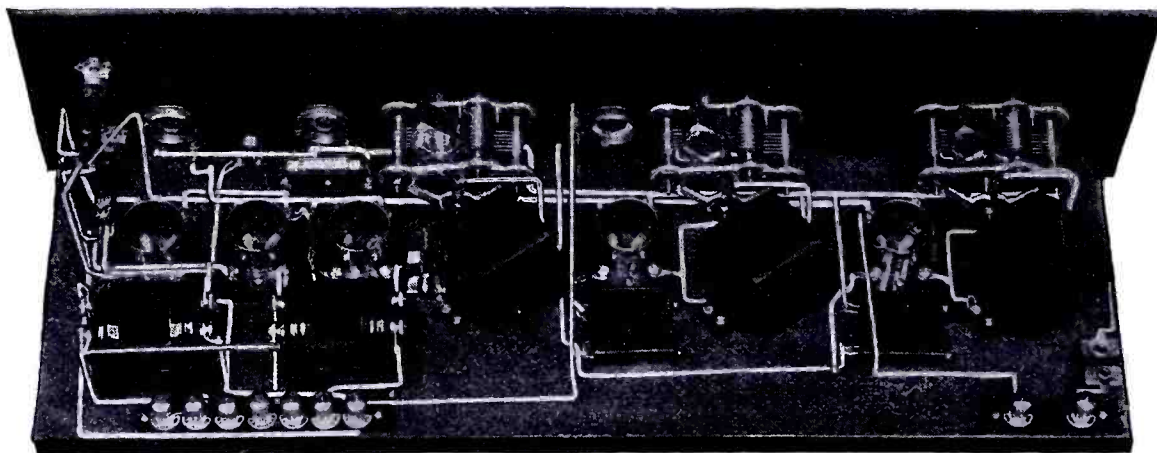
WHEN the expert engineers of the Citizen's Radio Call Book designed this highly efficient 5-Tube Tuned Radio Frequency Receiver, they knew results would depend upon the **MAKE** of *Condensers* and *sockets* used. So to make efficient results *sure*, they specified Heath Condensers, Dials and Sockets.

When you build this set, or any other set that calls for high-grade parts, use Heath products and eliminate all uncertainty as to satisfactory results.



Great Britain Patents No. 224603, Nov. 17, 1924. U. S. PATENTS PENDING.

HEATH RADIO & ELECTRIC MFG. COMPANY
210 First Street
Newark, N. J.



Tell 'Em You Saw It in the Citizens Radio Call Book

An Efficient Five Tube Tuned Radio Frequency Receiver

This Receiver Was Designed and All Illustrations Made in Our Laboratory

IN offering this circuit to our readers and prospective builders, we first wish to say that no receiver is any better than the parts it contains. Accordingly, we have selected high grade apparatus that will give gratifying results and also be easy to mount.

The condensers are of the straight line frequency type and have

baseboard and should be mounted at a 35 degree angle, the centers of which are $6\frac{1}{2}$ inches apart. This is shown in the baseboard layout, Figure 2.

A 200,000 ohm resistance is connected in series with the low potential end of the primary coil on the two stages of radio frequency amplification. On the lower wavelengths, there is less

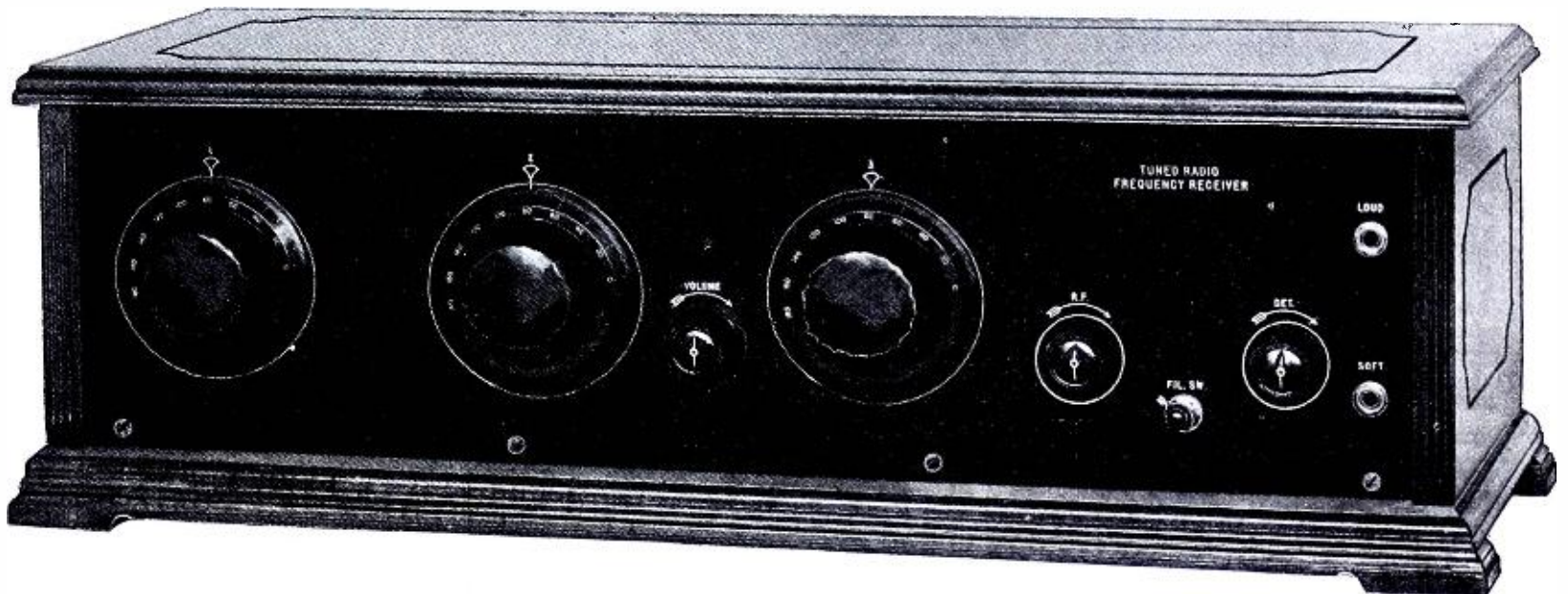


Photo A—Front view of completed receiver showing arrangement of apparatus mounted on the panel

a capacity of .00035 MF covering the entire range of broadcasting wavelengths. The plates are stamped to absolute flatness and tempered to prevent warping.

The tuned radio frequency transformers are of the low resistance type and have a low distributed capacity. The wires are "spaced wound" and adjacent coils are parallel, air insulated and

capacity on interstage coupling and therefore it is necessary to decrease the "B" battery potential to keep the circuit from oscillating. On the high wavelengths, where there is an increase of interstage coupling the "B" battery potential is accordingly increased. This keeps the radio frequency part of the receiver always working at maximum efficiency.

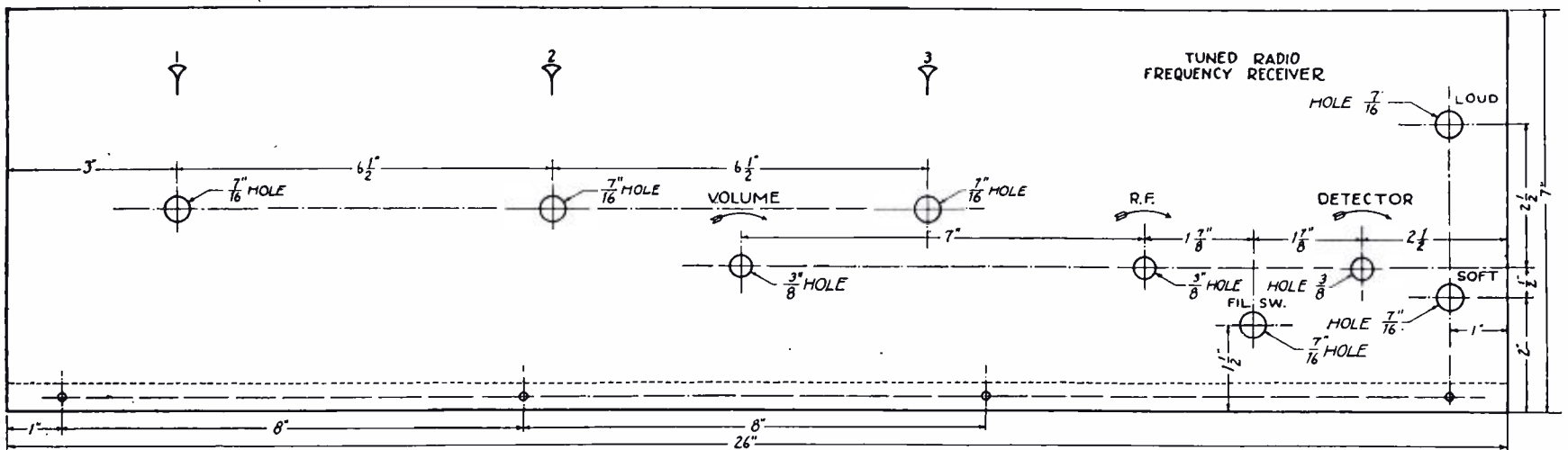


Figure 1. Panel layout with suggested engraving

so separated that while capacity is reduced to a minimum, inductance is maintained at a high point of efficiency. These coils are very uniform both in inductance and distributive capacity. Anti-capacity cement is used only where the wire is crossed. Green double silk covered wire provides high insulation and gives a fine appearance to the coil. The dielectric losses are very small as the primary is suspended inside of the secondary coil with only three small pieces of bakelite. They are easily secured to the

It will be noticed that two .5 MF bypath condensers are used on the primaries of the two stages of radio frequency amplification. This arrangement of condensers bypasses the high "B" potential in the radio frequency circuit and helps to keep the potential even when the 200,000 ohm resistance is varied; thus efficiently preventing oscillation. As shown in Photo A, these fixed condensers are placed in the vicinity of the radio frequency transformers to make the leads as short as possible.

Two stages of audio frequency amplification is connected to the output of the detector circuit. These transformers are of a very high grade make producing wonderful quality. The curve on these transformers show a very slight drop in amplification between 400 and 3,500 cycles. In other words, the low notes will be reproduced with the same clarity as the high notes.

Figure 1 shows the panel layout with the suggested engraving.

- 1—3"x½" Bakelite Strip
- 3—Heath 4" Radiant Dials
- 3—Heath .00035 S. L. F. Variable Condensers
- 5—Heath Sockets
- 3—Benjamin Tuned Radio Frequency Transformers
- 2—Dubilier No. 656 .5 MF Condensers
- 1—Dubilier No. 601 .00025 Grid Condenser

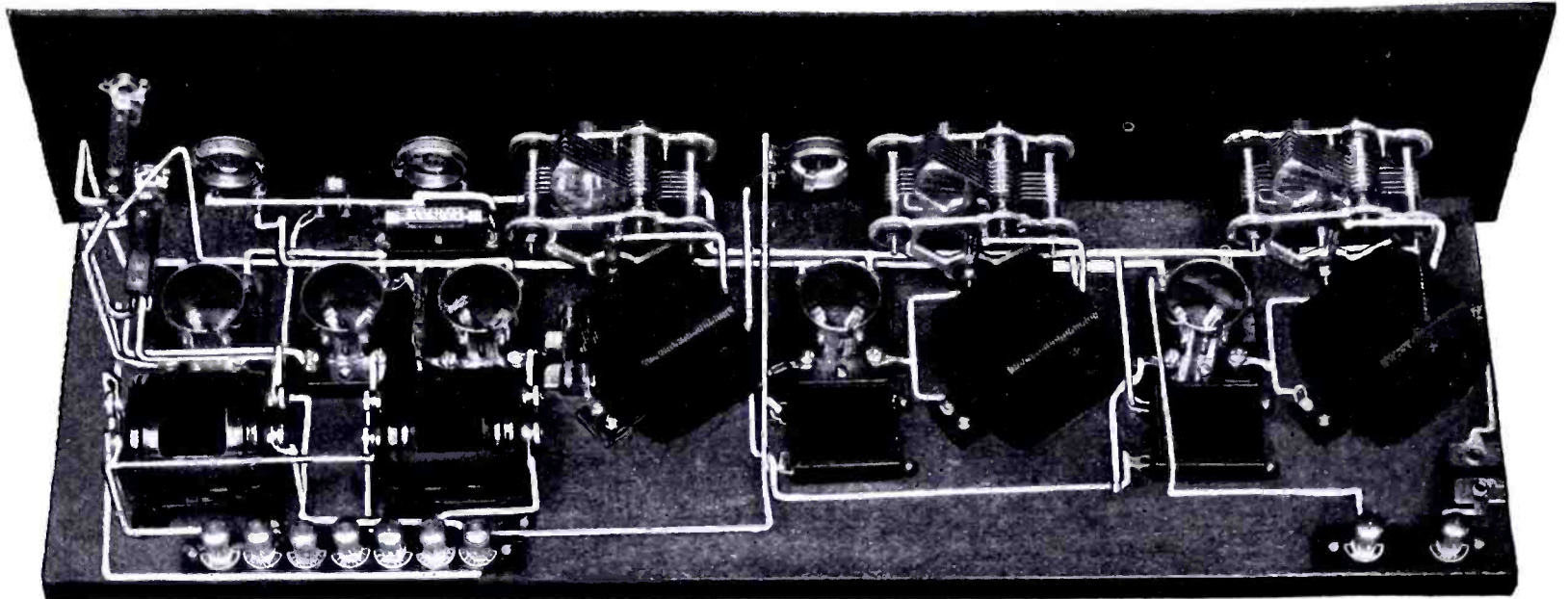


Photo B—Rear view. Notice the neat arrangement of parts

If you do not care to drill and engrave this panel yourself, it can be obtained from the Radio Panel and Parts Company.

Photo B is a rear view of the completed receiver. Take particular notice of the neat arrangement and then refer to Figure 2 for the baseboard layout and the actual distance between each unit. Follow Figure 2 carefully in order to get the best arrangement for wiring.

Figure 3 is a graphic illustration showing every connection in

- 1—Dubilier .002 Fixed Condenser
- 1—Dubilier .00025 MF Fixed Condenser
- 9—Marked XL Binding Posts
- 1—Dubilier 2 Megohm Grid Leak
- 1—Brack Resistor Type 2B with Mounting
- 2—Karas Harmonik Audio Frequency Transformers
- 1—Carter 10-ohm Rheostat
- 1—Carter 25-ohm Rheostat

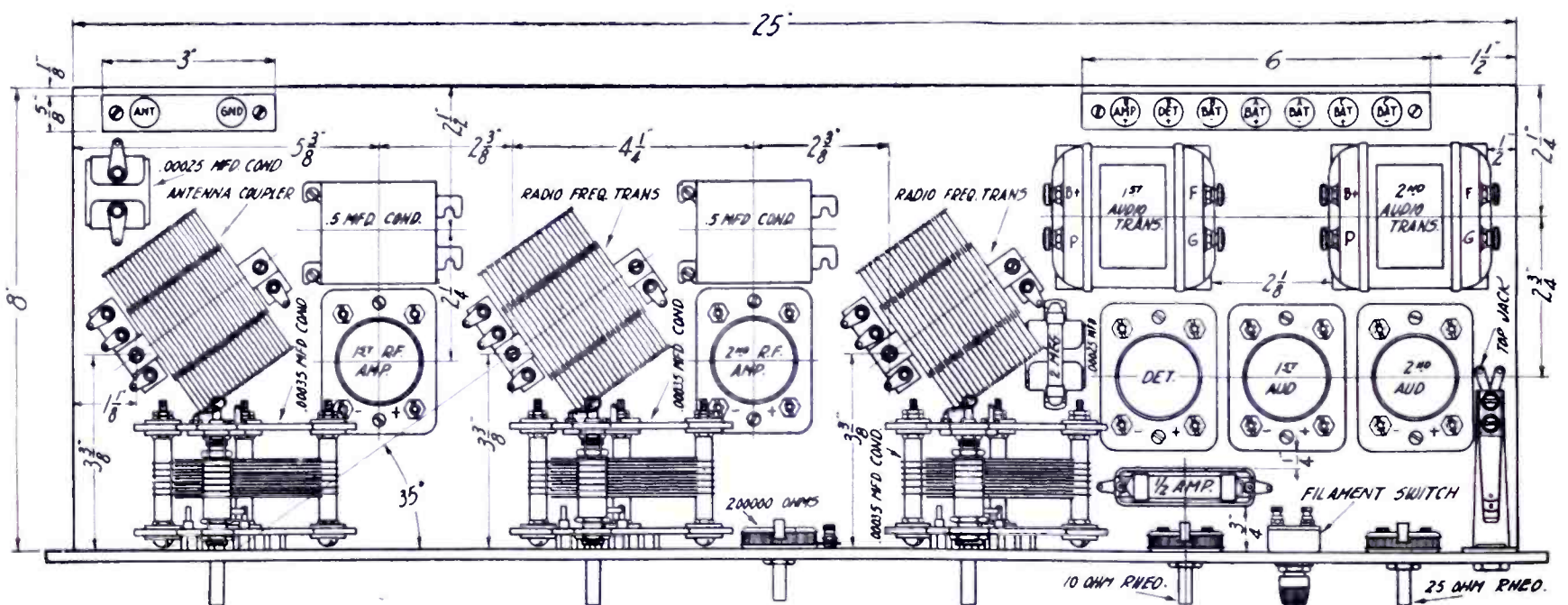


Fig. 2. Baseboard layout. Mount apparatus as indicated for neat wiring

the entire receiver. For the more advanced radio fans, we are also showing these same connections in schematic diagram form as shown in Figure 4.

LIST OF PARTS

- These parts or their equivalent will give satisfactory results:
- 1—7"x26" Radio Panel & Parts Drilled and Engraved Panel
- 1—8"x25" Wooden Baseboard
- 1—6"x½" Bakelite Strip

- 1—Carter Filament Switch
- 1—Carter CL 200,000-ohm Variable Resistance
- 1—Package Kester Radio Solder
- 1—Carter No. 102A Jack
- 1—Carter No. 103 Jack
- Lugs, Wire, Screws, etc.

In experimenting with this circuit in our testing laboratory, we

were able to bring in a number of distant stations on the first test. The quality of the signals is excellent and you will find the volume control very handy in this respect.

This receiver will give very efficient results in congested districts and can be operated in the immediate vicinity of any power-

"trick" hookup. An aerial 40 feet in length will give very satisfactory results.

The settings of the rheostats are not critical. We suggest that you use UV201A tubes throughout. Care should be taken not to burn the filament too high.

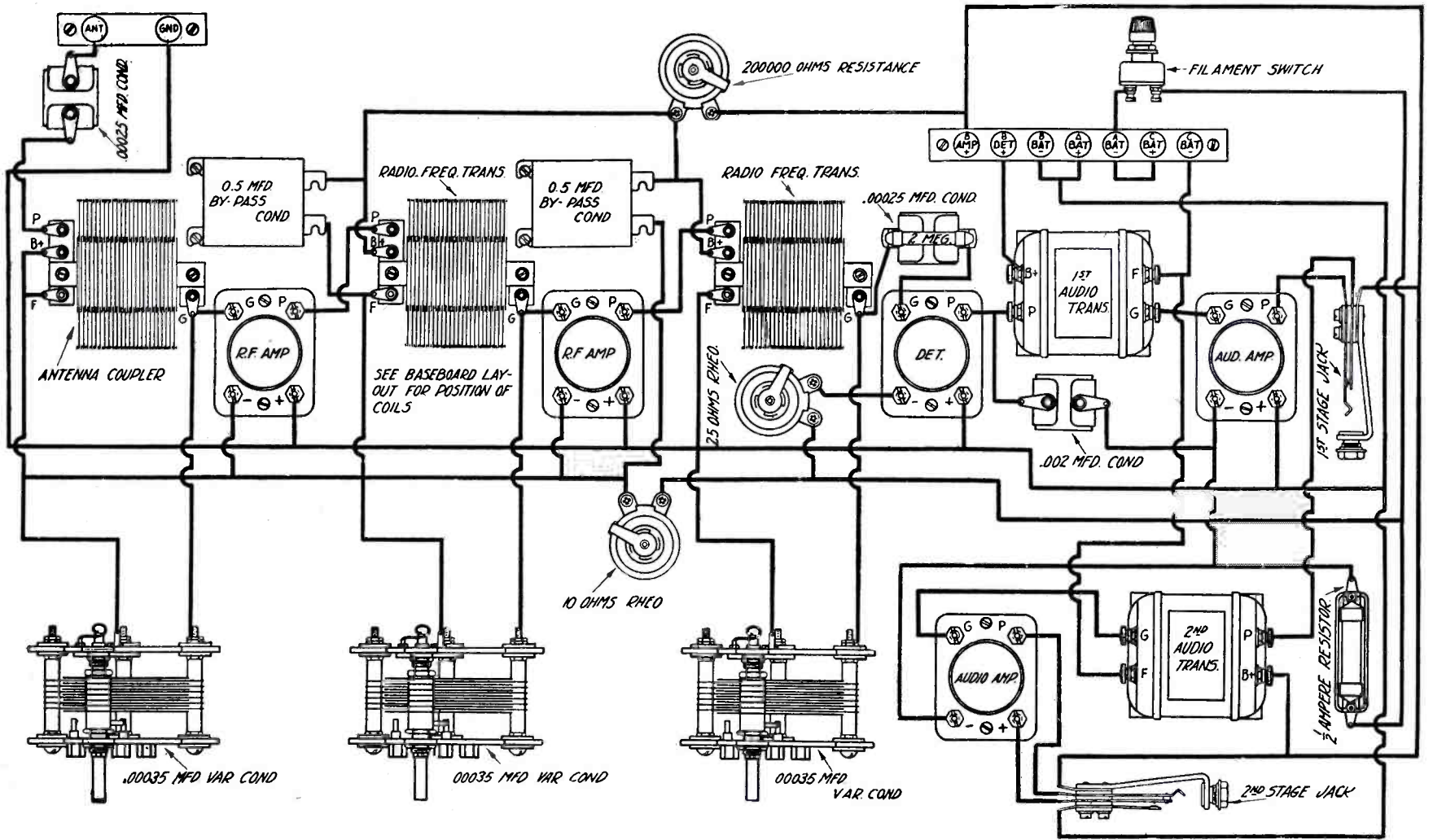


Figure 3. Graphic illustration. After wiring is completed check carefully against this diagram

ful broadcasting station. Sharp tuning is possible and once the receiver has been "logged" the same stations will always be found at the same dial settings provided the wavelength does not change.

This is a simple tuned radio frequency receiver and is not a

The interstage coupling between coils has been kept to a minimum and it will be difficult to make this circuit oscillate provided the volume control is properly used. As this receiver has been designed to prevent all losses, full volume can be obtained on distant stations with real selectivity.

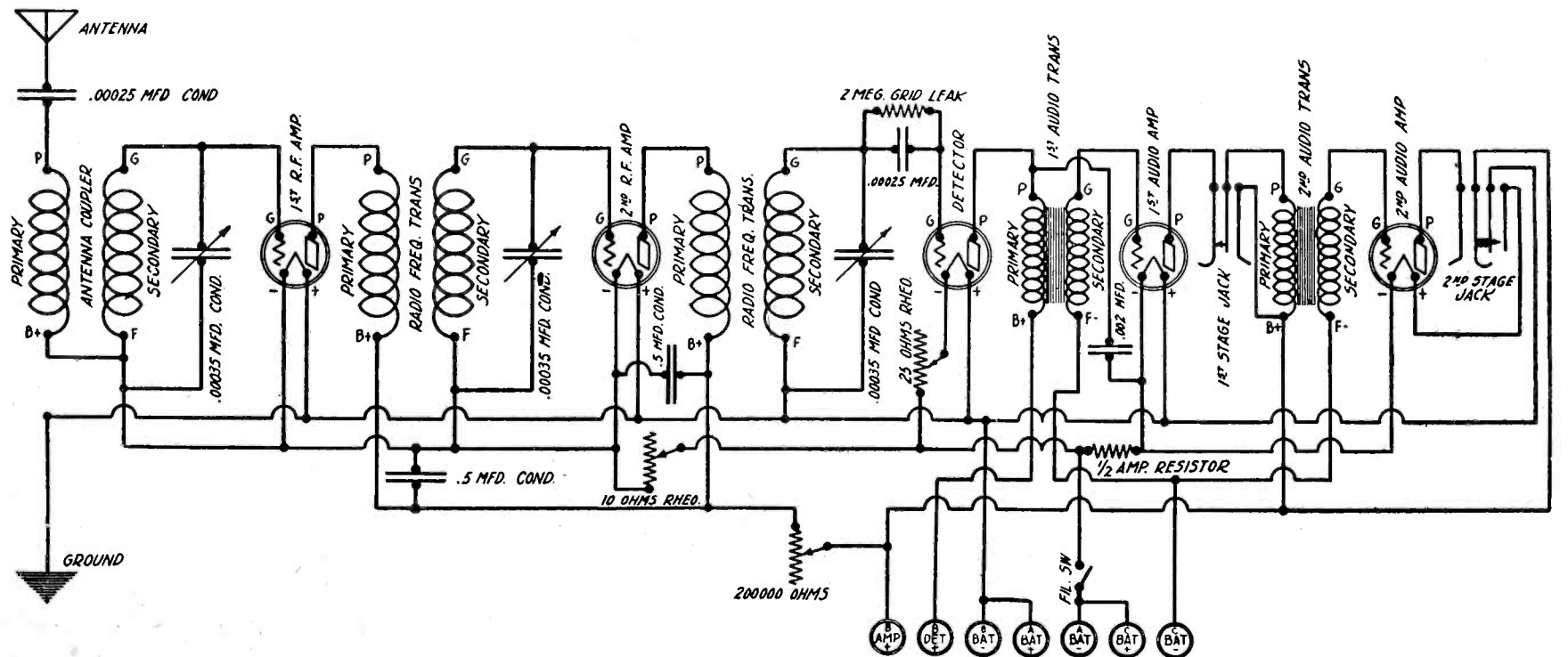


Figure 4. Schematic wiring diagram

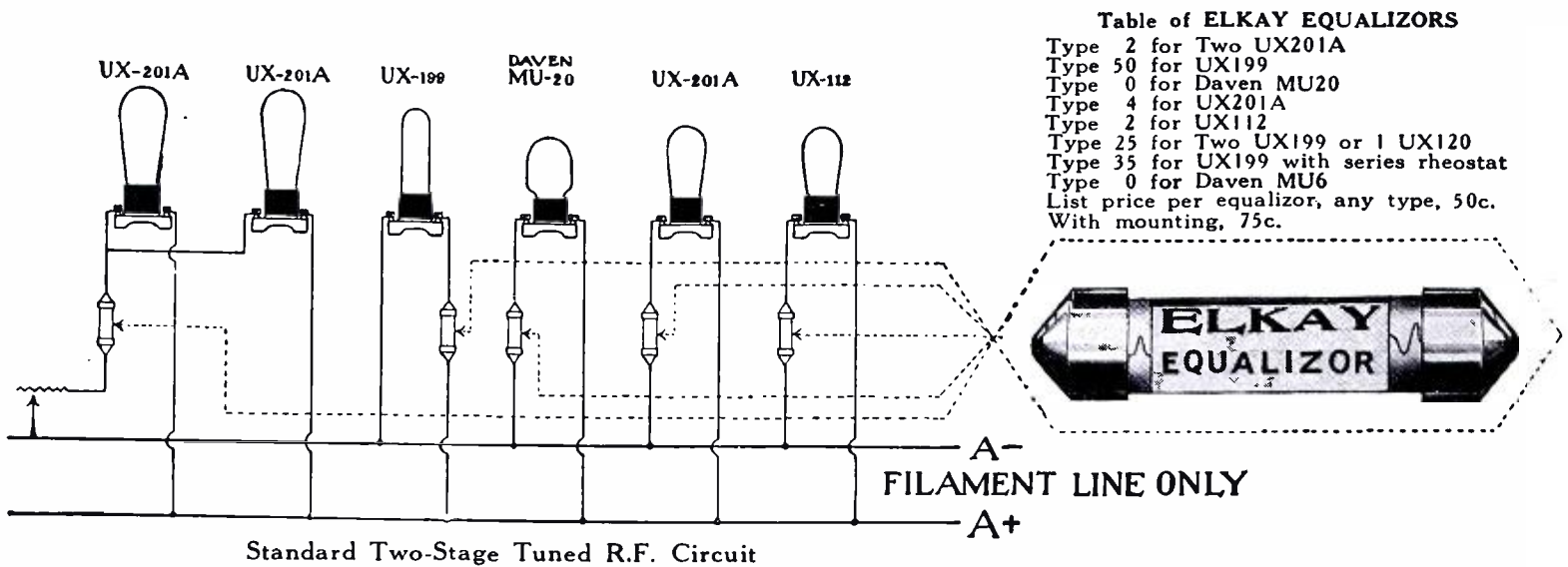


Table of ELKAY EQUALIZORS
 Type 2 for Two UX201A
 Type 50 for UX199
 Type 0 for Daven MU20
 Type 4 for UX201A
 Type 2 for UX112
 Type 25 for Two UX199 or 1 UX120
 Type 35 for UX199 with series rheostat
 Type 0 for Daven MU6
 List price per equalizer, any type, 50c.
 With mounting, 75c.

Use Any Combination of Tubes
 with the
Elkay Tube Equalizer System
 WITH FULL TUBE PROTECTION

IN the 6 tube circuit above, note the wide diversity of tube types and voltages. Under the Elkay Tube Equalizer System such a circuit will operate smoothly and at the very maximum of tone quality, volume and selectivity.

The Radio Corp. UX tubes go far toward standardizing tube mountings. They do not, however, provide for tubes of different voltages. With a definite, standardized input voltage, by inserting Elkay Equalizers in the negative or positive lead (according to the characteristics of the circuit position) a system is born that permits reduction of each tube to proper working voltage.

As the Radio Corp. and practically all other tube manufacturers have adopted a 6-volt source as standard, the Elkay Tube Equalizer System is designed to work on this input.

There is an Elkay Equalizer for use individually with every tube made. There are also Equalizers to control two tubes from the same source—a particular advantage for two stages of R.F. or two stages of Audio where both tubes operate together continuously. Obviously, where, with automatic filament jack, one of the tubes is turned off individual Equalizer should be used.

With the new UX 112 tube, taking .5 ampere at 5 volts, the Elkay Tube Equalizer System proves especially effective. Type 2 Elkay Equalizer equalizes it when used singly in the last stage, and type 4/3 equalizes it when used in cascade with a UX 201A tube.

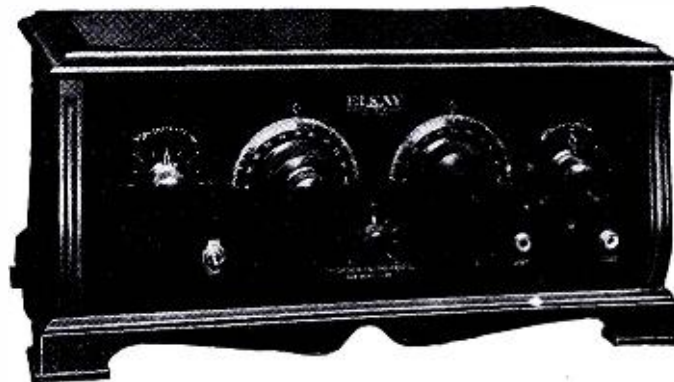
Set manufacturers are turning to resistance coupling because of the wonderful purity of tone, and many types of tubes have appeared for this purpose. The Elkay Tube Equalizer supplies an Equalizer which equalizes these tubes singly or in cascade at 6 volts.

Engineers have long employed resistors in detector and audio stages because these stages are not critical, but they have hesitated about R.F. circuits. We shall be glad to show how Elkay Equalizers may be used with great success in the R.F. stages, with either potentiometer or series rheostat. Another thing, it is well known that, with UX 199 tubes in the R.F. circuit, it is not sufficient to limit the upper value of current to normal value. With a Type 35 Elkay Equalizer in series with a rheostat an adjustment 20% above and below normal may be had.

Write for further details.

**ELKAY
5-Tube
SUPER
SELECTOR**

with
**Resistance
Coupling**



Equipped
with the
**ELKAY
TUBE
EQUALIZER
SYSTEM**

Uses any type of tube without change of wiring. Operates on dry cells or storage battery. Circuit contains one stage of R.F., detector, one stage of transformer coupling, and two of resistance coupling.

Has control for selectivity; also for oscillation. Low wave lengths can be brought in as easily and as smoothly as high. Patented ELKAY CLARIFIER clears up muffled signals to full brilliancy. Exact logging.

This circuit is the result of four years' development work. The tone is superb and it separates conflicting stations with "needle-point" accuracy.

Handsome, two-tone mahogany cabinet, beautifully designed and appointed. Price \$80. With 4 tubes, not resistance coupled, \$70. 5-tube kit, \$65. 4-tube kit, \$60. If not at your dealer's, write us. Set of blue prints for either set, \$1.

To the Trade: Write for Exclusive Franchise

The Langbein-Kaufman Radio Company, Dept. C, 511 Chapel Street, New Haven, Conn.

An L+K Product



Tell 'Em You Saw It in the Citizens Radio Call Book

A Super Using the Universal Automatic Filament Control System

This System Will Never Allow the Receiver to Become Obsolete Due to Development of New and Better Tubes

This Receiver Was Designed and All Illustrations Made in Our Laboratory

THE introduction of the UX and CX tubes is a definite step towards standardizing on tube mountings and has been brought out with the idea that this mounting will render quick change and adaptation of the newer tubes without tearing out the present parts and equipment.

lead depending upon the circumstances of each tube or a cascade of tubes.

This problem is merely what voltage should be adopted as standard. Practical conditions have controlled this in the past and of necessity we have been compelled to use either 1½, 2, 4,

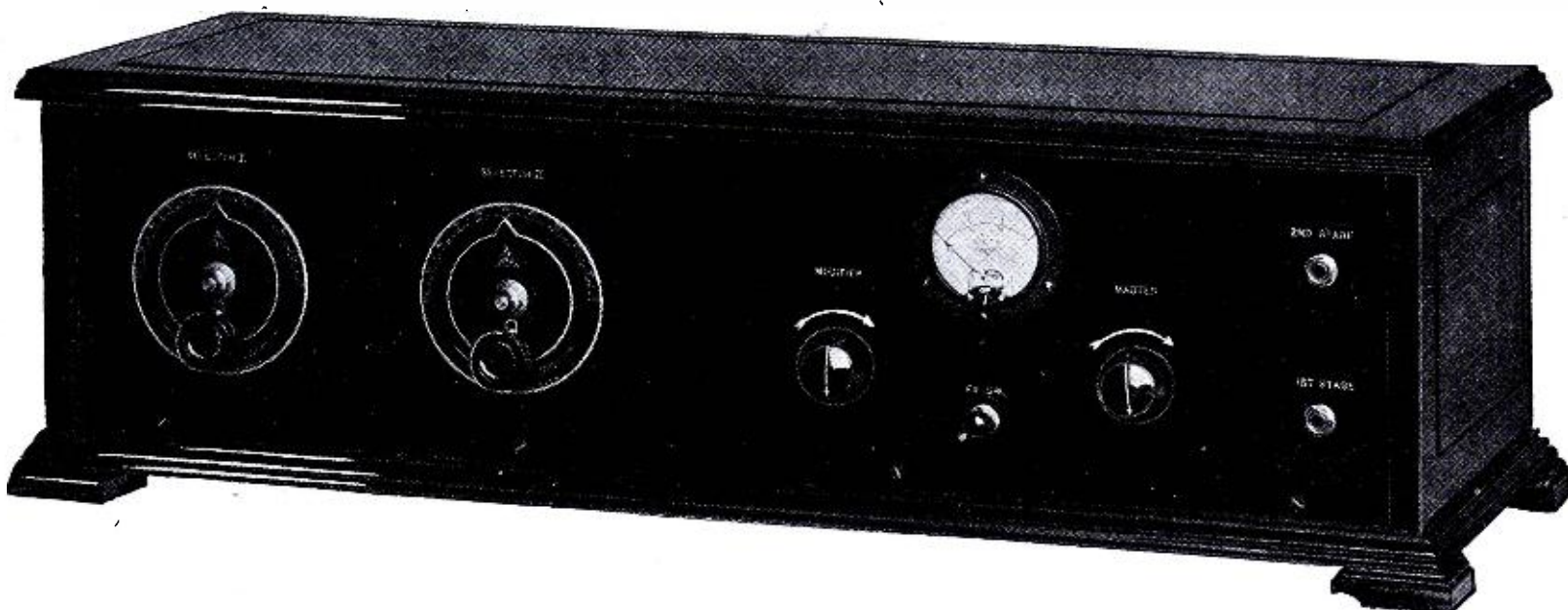


Photo A. Front View of Receiver

This fundamental step forward, however, neglected to consider that the filament currents and voltages may be different in the future than at present. As a matter of fact there is already quite a chaos in present receiving sets regarding the proper applied voltages.

or 6 volts which are the only voltages obtainable from primary or secondary cells. The 6-volt storage battery has been the leader in sources of supply and practically 90% of all A battery current is from this source. Therefore, in the design of tubes, the manufacturers have adopted the six-volt as a filament source

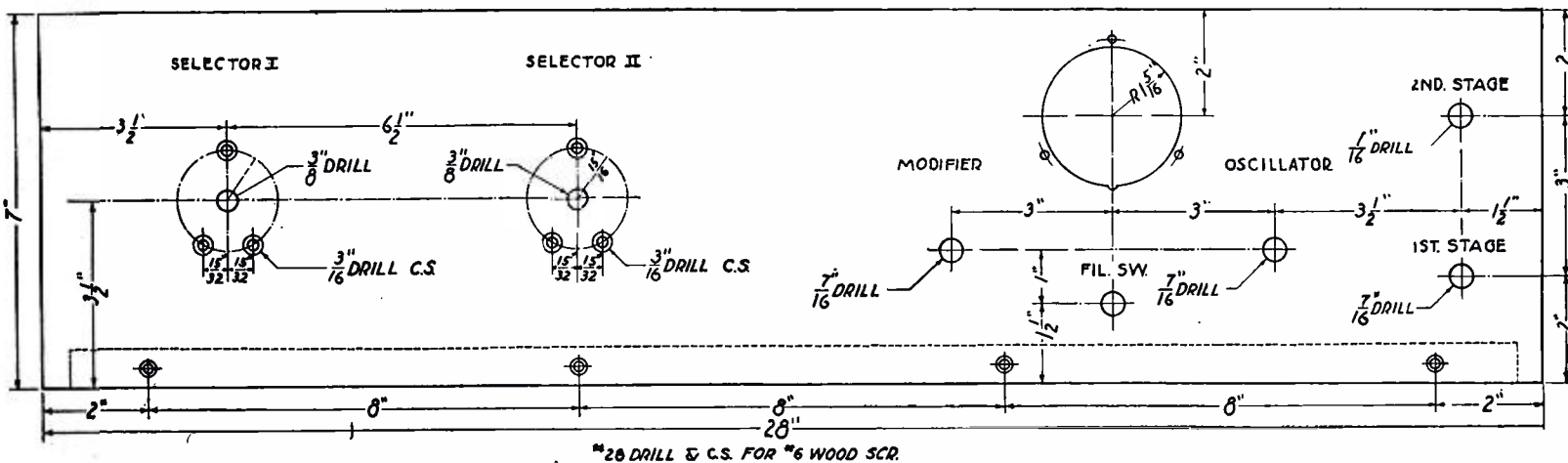


Figure 1. Panel Layout

If we will standardize on a definite input voltage for filament currents, it is perfectly possible to design a system of resistors which will automatically reduce the voltage of each particular tube in question to a desirable working value. This can be accomplished by placing a resistor in the negative or positive

and have made a workable voltage something below this value so as to permit a control in the filament current if required for the specific use for which it is intended.

Take the average superheterodyne, there was a time that all tubes were controlled with a master rheostat but this was found

rather unsatisfactory, so instead we find a lot of circuits now that require one rheostat for the oscillator, one for the two detectors, another for the intermediate stages and still another for the audio. This means four rheostats or knobs on the panel. Now remember that there are some other knobs usually required such as potentiometers, neutralizing or regenerative midget condensers, volume and selectivity controls and numerous specialties featured by various manufacturers.

The same holds true of tuned radio frequency sets. One rheo-

are made of a metal that has an increasing resistance as the flow of current increases. As a result, these units are designed to operate for a certain current flow. If too much is passed through the resistance increases thereby causing a drop of potential or flow of current in the circuit. In this way the control is automatic. But then there is an additional feature, if the current is too strong, for example if the "B" batteries were connected to the filament battery binding posts or because of a short circuit, the resistance of the wire in the control cartridge rises so high

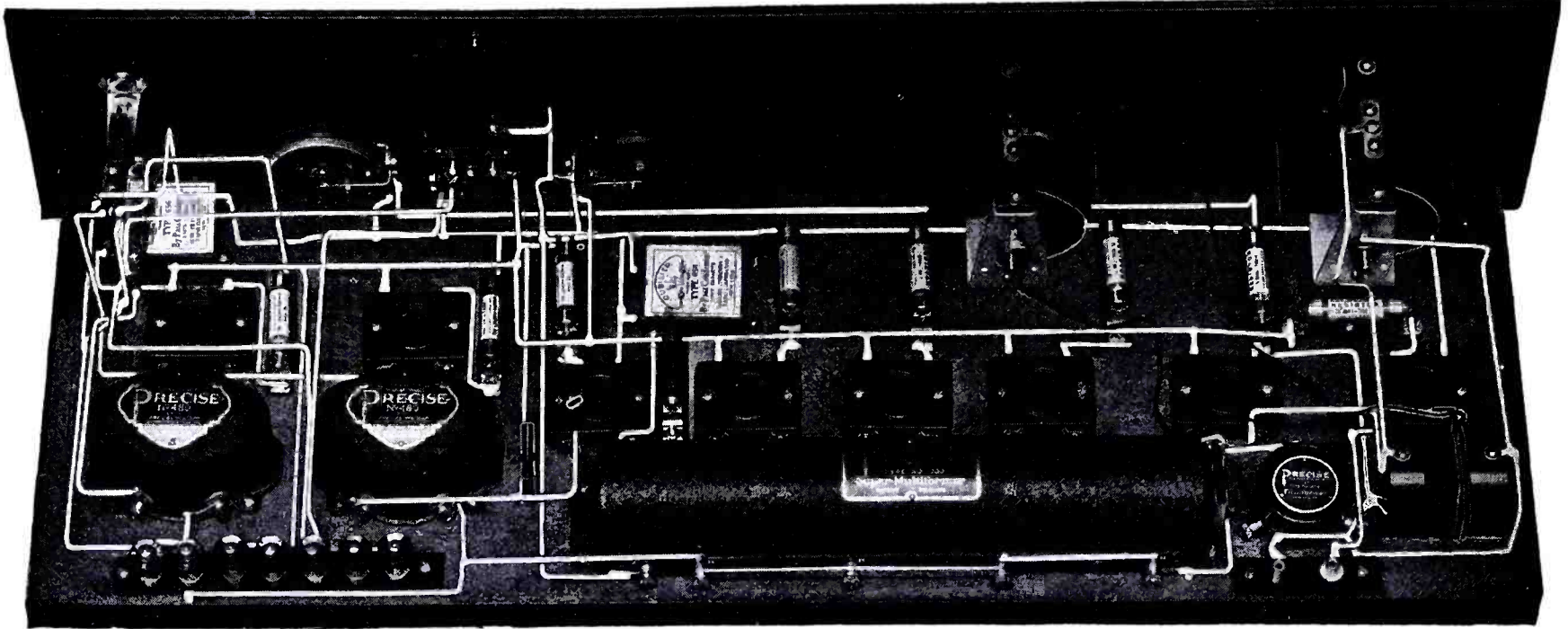


Photo B. Rear View of Completed Receiver

stat is commonly used for the radio stages, another for the detector and a third for the audio. Then of course the usually pet assortment of neutralizing or special regenerative controls.

Obviously it will be pretty difficult to separate the fan from those special circuit hobbies which necessitate the various special

that the wire fuses and blows out, thus saving the price of the tube.

Perhaps this itemizes sufficient argument in favor of automatic filament control, but there is still another advantage that is of the utmost importance for present-day conditions. The

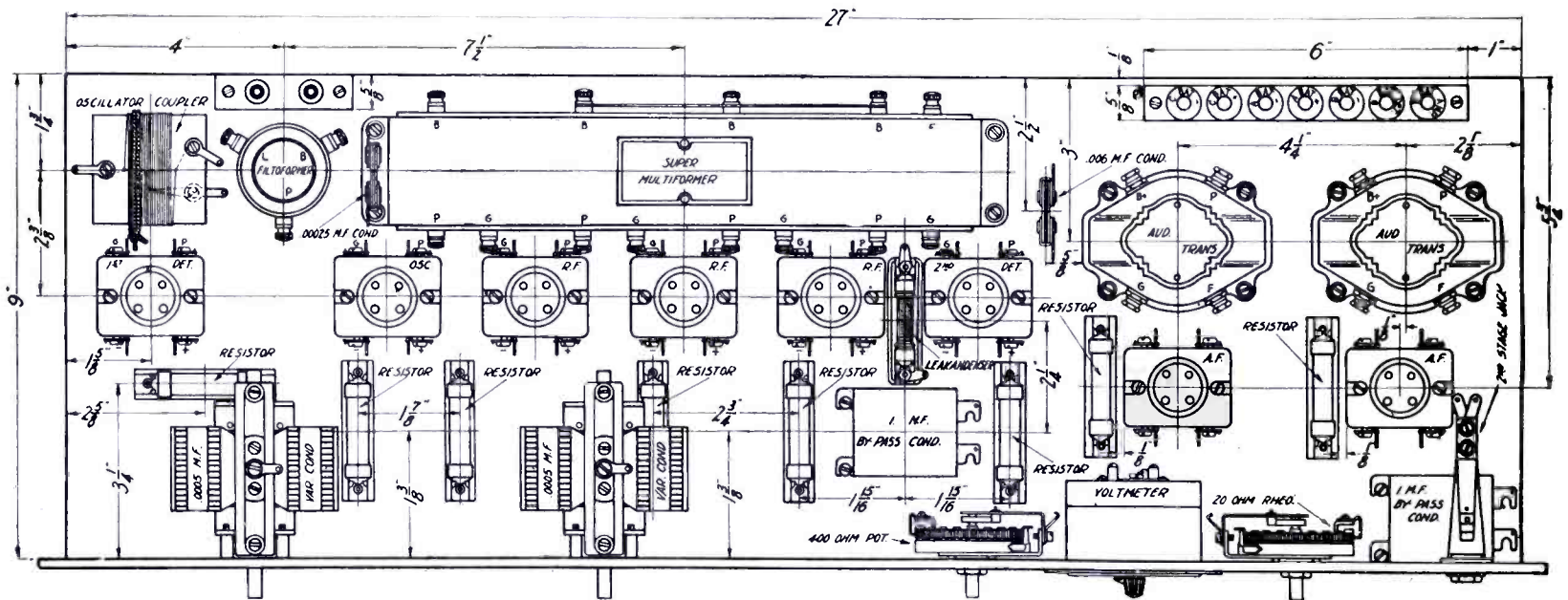


Figure 2. Baseboard Layout

controls. But there is no question or doubt that we can discard a lot of these unnecessary rheostats.

The vacuum tube of today is no longer the delicate and critical piece of apparatus of the days gone by. We all recall how the rheostats were made with vernier control and even with them how careful we had to be in adjusting the knob. As the old storage battery ran down the knob had to be wiggled around a little more so as to keep the station coming in just right. But that is all a thing of the past.

There are available a number of filament control units that do more than just furnish an approximate filament adjustment. They

Elkay Resistors are furnished with mountings. When these mountings are fastened in a set the Resistor unit can be removed or replaced at will. Let us assume that the fan, for economy's sake, starts out with dry cell tubes, then after using the set a few months he decides to invest in a storage battery and wants to use the standard A type of tubes. The chances are that this would be impossible without altering the rheostat, but with an automatic filament control system, all he has to do is to get a set of Elkay Resistors for the A type tubes and he is all set, without further difficulties. Here lately, a power tube is being used in the last audio stage, with the average rheostat where

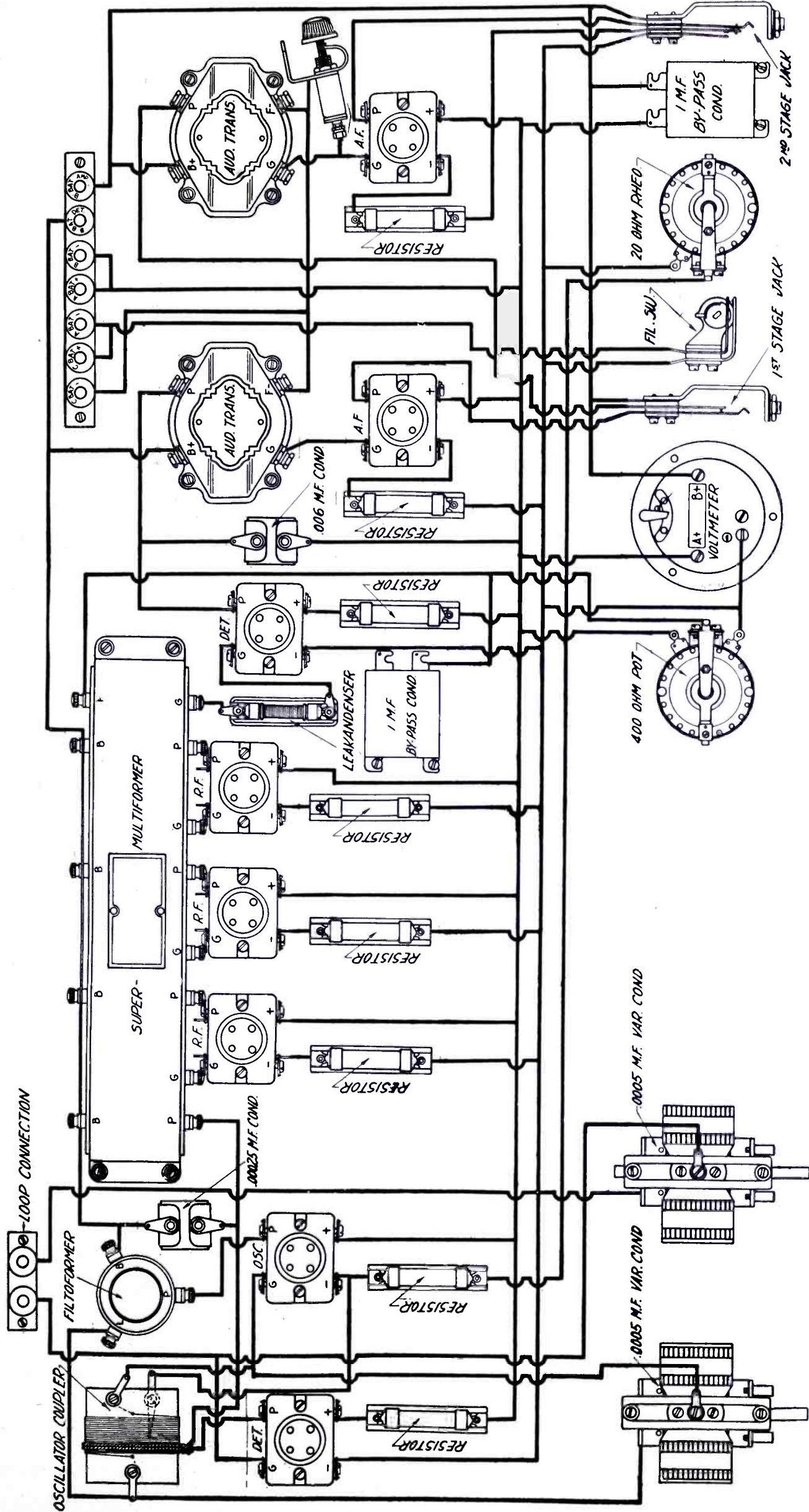


Figure 3. Graphic Illustration Showing Every Lead in Entire Receiver

possibly the two audio stages are controlled together. This means that two tubes with different ampere rates are coupled together in addition to overloading the rheostat. With automatic filament control, just remove the resistor for the last tube and substitute an Elkay type 2 and the tube is taken care of.

The hook-up to be considered is a superheterodyne, but this is purposely made difficult in order to demonstrate the advantages of this system. The first detector uses a type 50 resistance for controlling the UX199 or CX299 tube. The oscillator tube is a UX 201-A or CX 301A, but with a rheostat because some people like to play with an oscillator rheostat, so a type 4 unit is placed in series so the playing is not harmful to the tube. In the intermediate stages three of the MU-20 tubes are used so three type O Resistors are put in the negative lead to the filaments. The second detector is like the first so the same unit is used. The

- 2—Apex Vernier Dials
- 1—Package Kester Solder
- Lugs, Wire, Screws, Etc.
- 1—9"x27" Wood Baseboard
- 1—Electrad Audiohm

In experimenting with this receiver in our laboratory, we were able to produce considerable volume with distant stations and the quality of the signals was excellent. This receiver is very flexible as it is possible to experiment with different types of tubes in different parts of the receiver. Photo B shows a rear view of the completed receiver. Notice the neat arrangement and the absence of excessive wiring.

Figure 1 is a panel layout showing the size of the holes to drill and the correct place to drill them. Figure 2 shows a view of

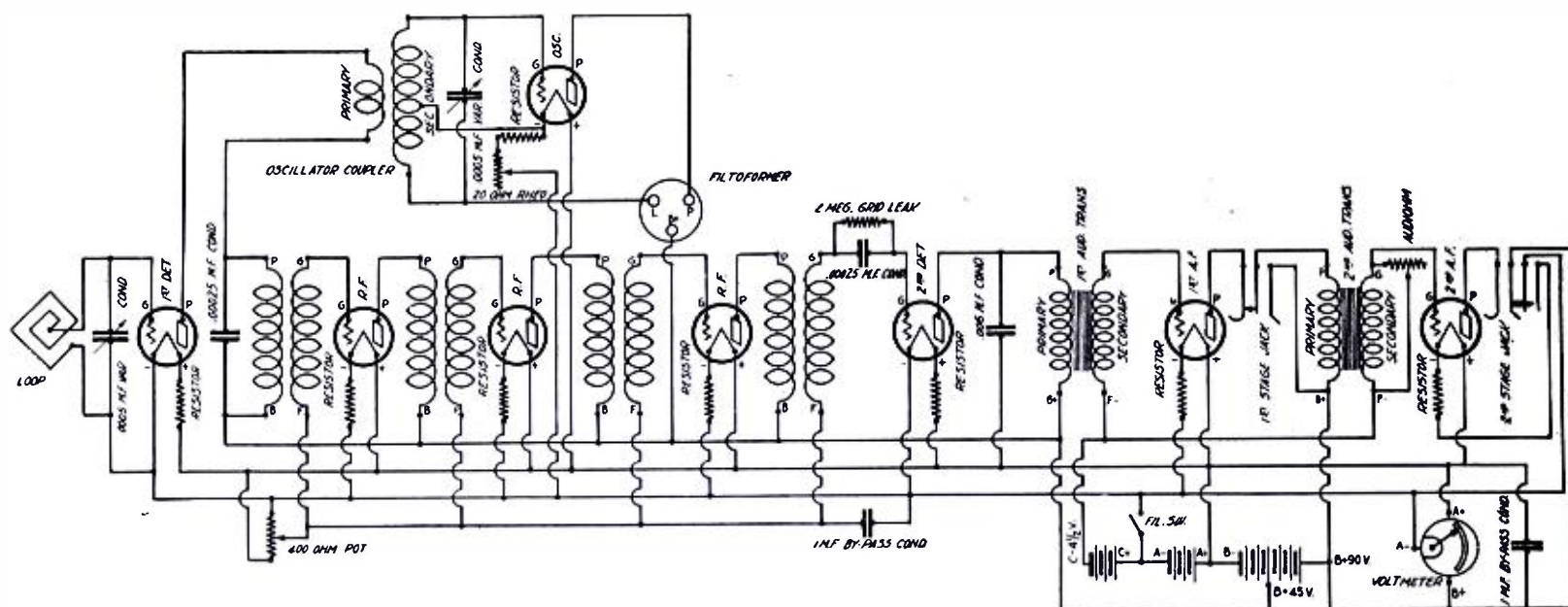


Figure 4. Schematic Diagram

first audio tube is another UX 201A or CX 301A so the type 4 unit is used again. In the last stage a UX112 or CX112 tube requires a type 2 cartridge.

LIST OF PARTS

These parts or their equivalent will give satisfactory results:

- 1—Precise type 1700 Multiformer
- 1—Precise No. 1900 Filtoformer
- 1—Precise No. 480 5 to 1 Audio Frequency Transformer
- 1—Precise No. 480 2½ to 1 Audio Frequency Transformer
- 2—Precise .0005 SLF Variable Condensers
- 8—Remler type 50 Sockets
- 2—Elkay type 50 Resistances
- 2—Elkay type 4 Resistances
- 1—Elkay type 2 Resistances
- 8—Elkay Resistance Mountings
- 3—Elkay type 0 Resistances
- 1—Jewell No. 55 double scale voltmeter
- 1—Daven 2. M. Leakandenser
- 1—Daven No. 50 Mounting
- 1—Bakelite 7"x28"x3/16" Panel
- 1—Bakelite ½"x6"x3/16" Strip
- 1—Bakelite ½"x2½"x3/16" Strip
- 2—Jones Color Plugs
- 7—Ganio Kramer Marked Binding Posts
- 2—Dubilier 1 MF fixed Condensers
- 1—Dubilier .006 MF Condenser
- 1—Dubilier .00025 MF Condenser
- 1—Yaxley No. 2A Jack
- 1—Yaxley No. 3 Jack
- 1—Yaxley 20 ohm Rheostat
- 1—Yaxley 400 ohm Potentiometer
- 1—Yaxley Filament Switch No. 10
- 1—Ft. Insulated flexible Wire
- 1—Precision Inducto-Coupler No. 260
- 1—Jewell No. 55 Double Scale Voltmeter

the baseboard layout and just where to mount each part before starting on the wiring.

All of the connections are shown in figure 3 and this should be carefully checked before you insert the tubes and connect the A and B batteries. For the more advanced radio fan, we are showing this same circuit in schematic form as illustrated in figure 4.

A double scale voltmeter is mounted on the panel. A switch is provided to give both the A and B battery voltage readings at any desired time. It is suggested that this be used at frequent intervals so that your super gets the proper voltage.

The primary on the oscillator consists of two turns of insulated flexible wire wound around the filament end of the precision inducto-coupler. The position of this primary, however, is not critical.

The intermediate frequency transformers are all contained in one complete shielded unit making this part of the set very easy to assemble. All transformers in this unit are shielded from each other thus preventing any magnetic or electrostatic coupling between circuits. The terminals are arranged in such a manner that very short leads are possible to the sockets, thus preventing interstage reaction. This shielding also eliminates all body capacity effects.

The filtoformer consists of a 200-millihenry radio frequency choke and .006 MF bypass condenser combined in a single unit. The proper connections to this unit are very plainly shown in figure 3.

The first audio frequency transformer has a ratio of 5 to 1 and the second has a ratio of 2½ to 1. These transformers are shielded and show a very slight variation in voltage amplification between 100 and 5000 cycles. The quality is excellent and these transformers will reproduce all broadcasted tone frequencies faithfully.

The last stage of audio frequency amplification is controlled by a filament jack as indicated in figure 4. If a power tube is used in this stage, the table accompanying the tubes should be consulted for the proper "C" battery voltage.

TUBE and BATTERY TESTING INSTRUMENTS



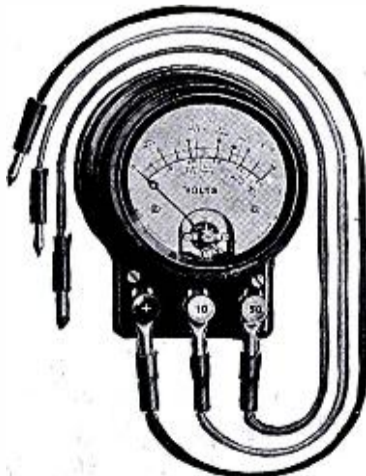
Pattern 95
Radio Test Set



Pattern 130
Direct Reading Tube Tester



Pattern 107
For Testing Tubes at Home



Pattern 98
For Checking Batteries

LEADING A FIELD

Before the day of popular broadcasting the amateurs were the only real radio enthusiasts: To this group of pioneers we gave the "Jewell Trio," the first and only line of uniform size miniature instruments in A. C., D. C., and thermo couple types for panel mounting.

The demand soon followed for instruments for testing tubes and batteries and radio engineers all over the world concede that Jewell Patterns Nos. 95, 110, 130, 107 and 98 are the best.

Gradually, set owners are learning the value of instruments on their sets for the control of tubes and the checking of batteries. We were the first to introduce to the radio trade a complete new line of "Two Inch" instruments for receiving sets.

LITERATURE

We have prepared attractive two-color circulars, describing our different instruments, and we will be pleased to send copies to you upon your request if your dealer cannot supply them.

Circular 776 describes our two inch instruments for panel mounting.

Circular 735 describes the Jewell 107 Junior Home Tube Checker.

Circular 739 describes Nos. 135-A and 135-C instruments for Radiola sets.

Circular 95 describes the Jewell 95 Radio Test Set.

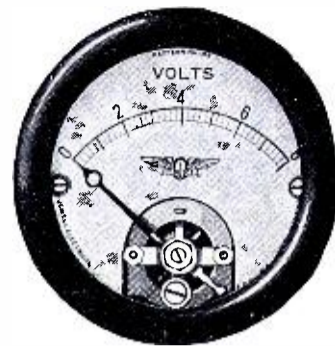
Circular 764 describes the Jewell Tube Checker for dealers.

Circular 726 describes the direct reading vacuum tube test set No. 130.

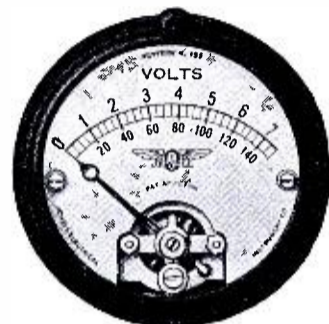
Catalog 15-C has 28 condensed pages listing all Jewell radio instruments.

Jewell Electrical Instrument Co.
1650 Walnut Street
CHICAGO
U.S.A.

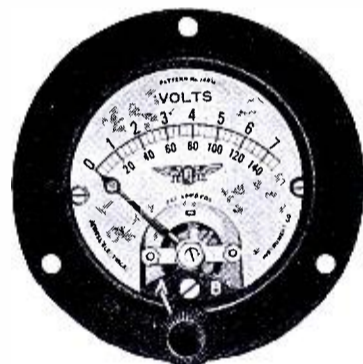
INSTRUMENTS FOR SET OWNERS



Pattern 135
Two Inch Case



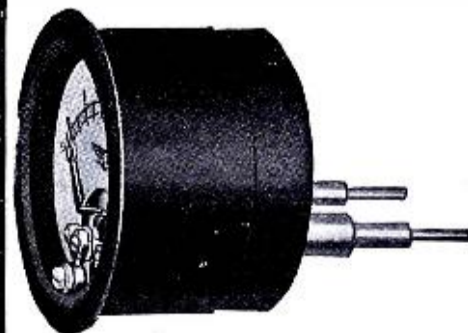
Pattern 135B
Double Reading



Pattern 140
Double Reading Switch



Pattern 135-C
For Radiolas 20, 25, 26, 28



Pattern 135-A
For Radiolas 25 and 28

Tell 'Em You Saw It in the Citizens Radio Call Book

Wonder Transformer of Radio

Madison-Moore receiving units are made and tested with such great precision that when built into a set they will easily outdemonstrate anything on the market. From Canada to Mexico, from the Atlantic to the Pacific, is the unrestricted range of the Madison-Moore.

There are no two-in-one concerts with these units. Being extremely selective, there is no difficulty in tuning out powerful local stations and bringing in distant stations.

In the faithfulness of tonal reproduction, the Madison-Moore Units are far superior. The tones of the human voice in low, medium or high, register; the notes of all instruments in solo or ensemble are so natural that they seem to be in the same room.

Ask your dealer about these wonderful transformer units. If your dealer does not carry them, write us for descriptive circular and name of nearest dealer.

**Madison-Moore Radio
Corporation**

39th and Yates Streets
Denver, Colo.



MADISON-MOORE

Tell 'Em You Saw It in the Citizens Radio Call Book

How to Build the Madison-Moore Superheterodyne

This Receiver When Properly Constructed Will Give Results Far Superior to Anything Hitherto Known in Radio Reception

Design, Construction and Illustrations Were All Prepared in the Laboratory of the Citizens Radio Call Book

OUR readers often ask us the question, "What is the finest super that I can build?" After many months of experimenting in our laboratory, we were able to construct the receiver about to be described that will give wonderful results and please the most exacting radio experimenter.

This receiver has produced remarkable results in a large steel

and all musical notes within the audible range will be passed through to the detector. We have selected high grade audio frequency transformers and a disc type loud speaker is recommended for perfect reproduction.

This receiver is so sharp that it is necessary to use vernier dials and care should be taken to turn them slowly as even nearby stations



Photo A. Front view showing arrangement of apparatus mounted on panel.

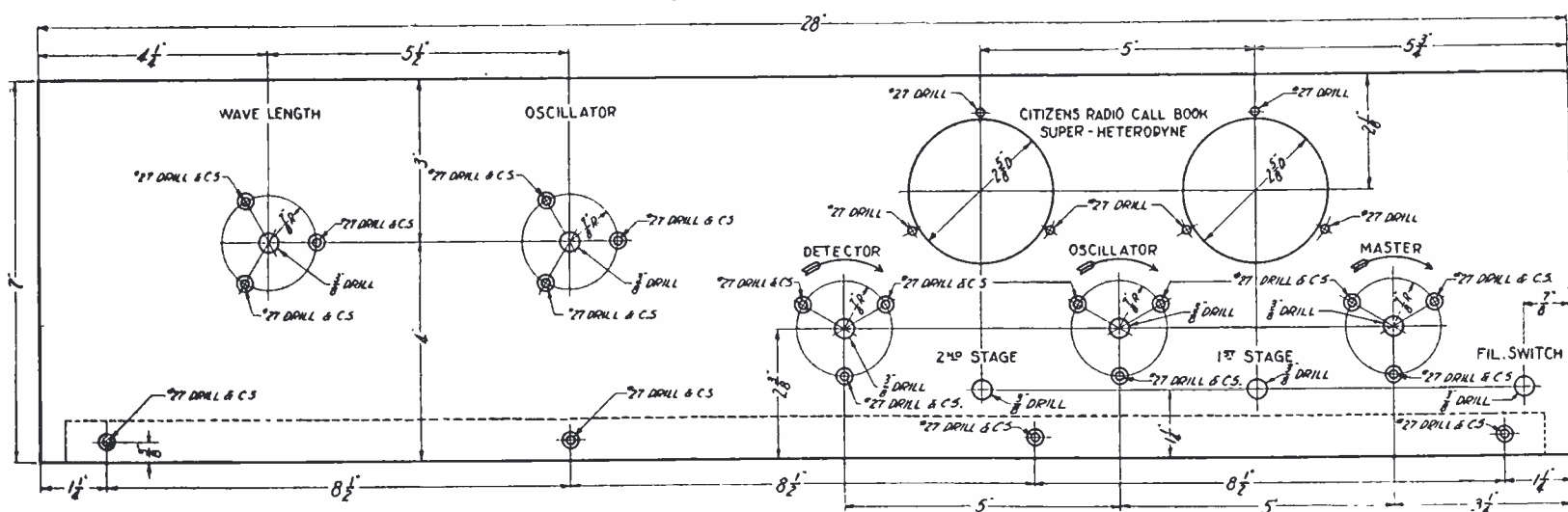


Fig. 1. Panel layout.

building, 100 feet from a broadcasting station while in operation and in the poorest localities for good reception. In fact, it is the finest set that can be constructed by the radio fan with the present apparatus available.

However, it is necessary to use extreme care in connecting the various parts. The smallest deviation from the following instructions will be disastrous. But, when all the parts specified are connected in the proper manner, you will be immediately convinced that this is the finest set you have ever listened to. The sensitivity is so acute that distant stations can be brought in with wonderful volume

may be passed over without being heard if the dials are turned too rapidly. With the present arrangement of all stations with a 10 kilocycle spacing from each other, interference is absolutely eliminated, taking into consideration, however, that your local station is sharply tuned and is on its assigned wavelength.

We have also selected the new General Radio type 374 .0005 MF straight line frequency condensers for tuning. Upon first looking at this condenser, it appears to be of the tandem type but it has been so constructed that the rotor plates are smaller than the usual straight line frequency condenser.

The Madison-Moore No. 1 unit is used in this set as an oscillator. When tuned with a .0005 variable straight line frequency condenser, it will cover all wavelengths from 200 to 600 meters with an even output throughout its range. The oscillator circuit has absolutely no harmonics. This eliminates all interference with the harmonics from other stations. It will be also noticed from the schematic diagram that the output of this oscillator is not mixed with the signal in the

weak, with the hum of the carrier wave apparent while the music is being played. While this method of correcting station defects within reasonable limits was intentionally incorporated in the set and is present in no other set now on the market, it is recommended that this second rheostat be placed in the normal position mentioned above, namely between one-third and one-half way on, and left alone unless it is absolutely necessary to use it for the purpose of correction, as

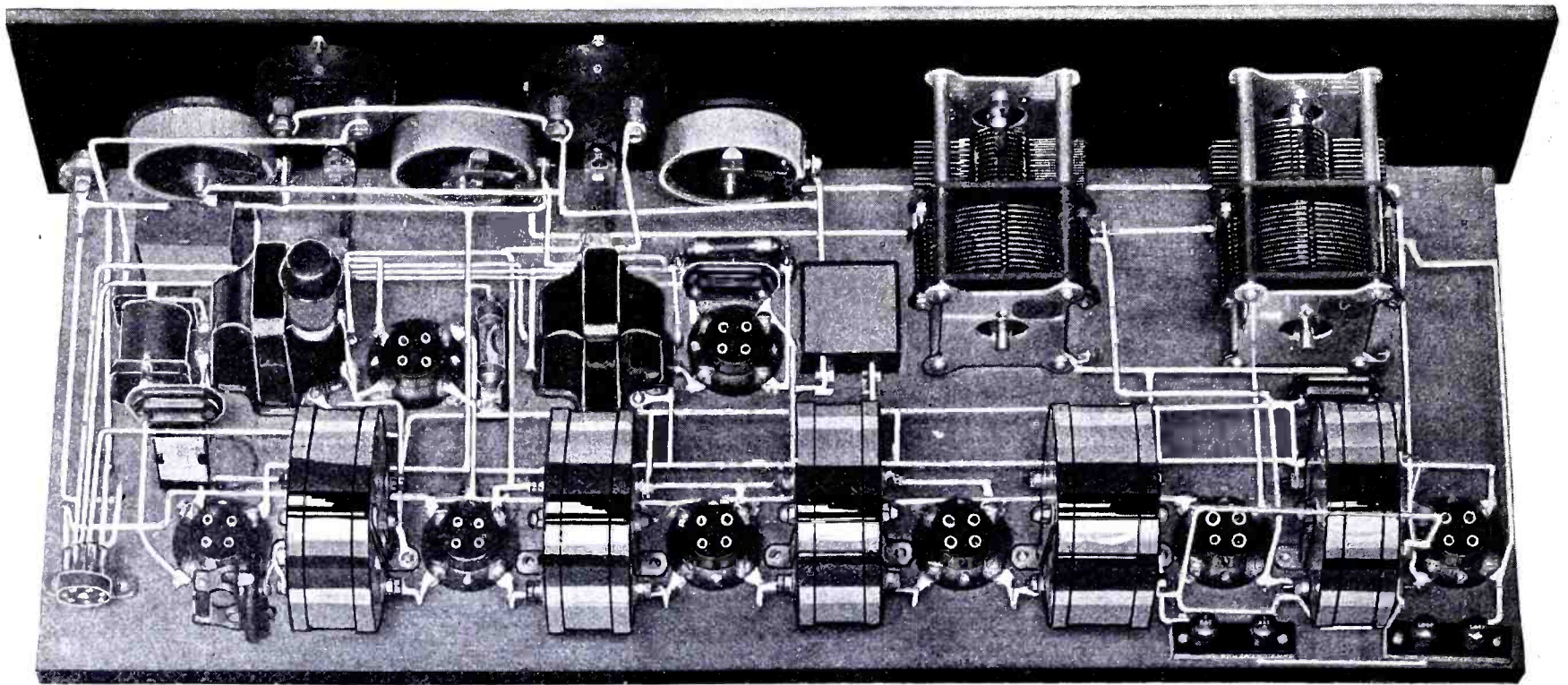


Photo B. Rear view of completed receiver.

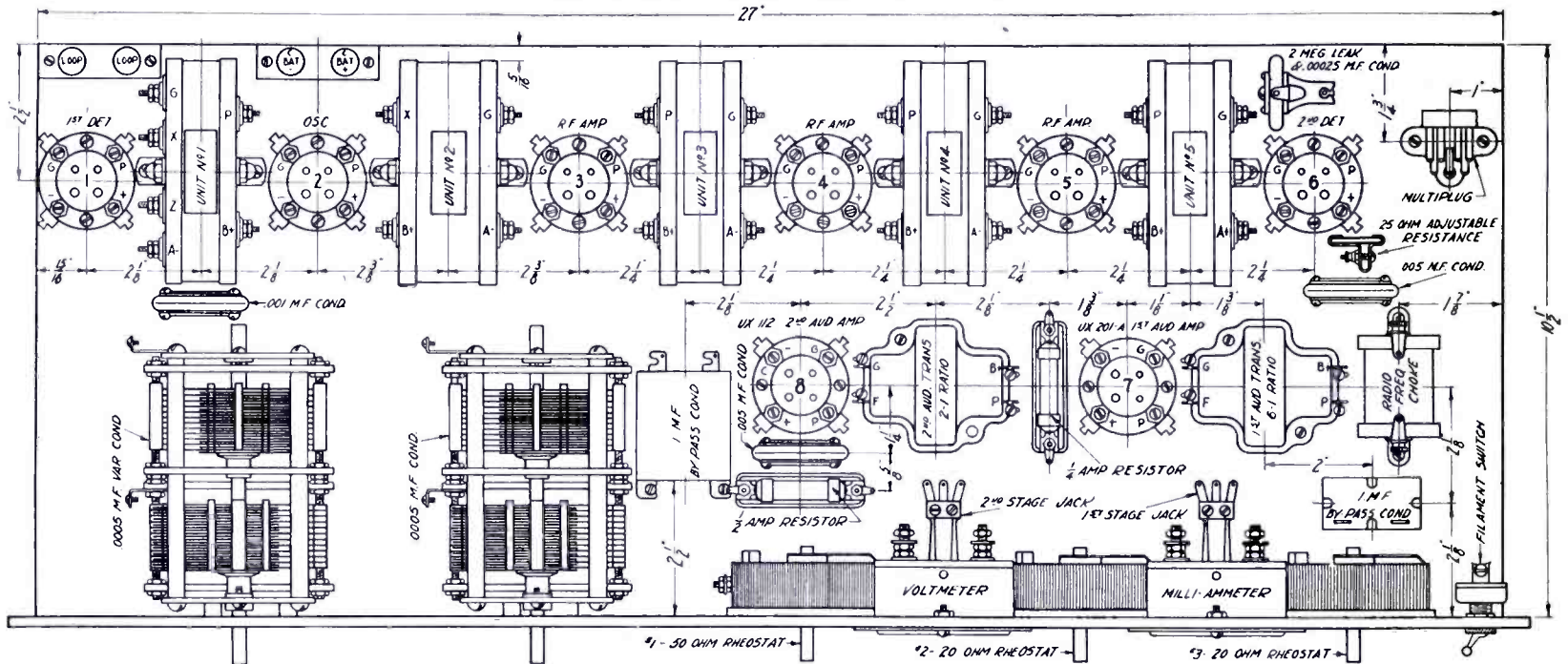


Fig. 2. Baseboard layout.

grid circuit of the first tube as is the customary practice. This means that it is practically impossible to tune in two stations at the same time.

The first tube is made to act as a partial detector by the four and one-half volt "C" battery in its grid return circuit. It also amplifies the signal between two and four times, depending on the character of tube used and its filament temperature as regulated by the 50-ohm rheostat. The continuous wave current generated by the oscillator is then mixed with the partially rectified and amplified signal in the proper amount to replace that taken out by the first tube. This amount is regulated by the position of the 20-ohm rheostat in the filament circuit of the second or oscillator tube. When listening to a perfectly modulated station this second rheostat should be turned slightly over half way out until the music or voice clears up. Undermodulation of the signal is corrected by turning the rheostat down to the one-third position or even lower. Overmodulation is recognized by a rather heavy or blurred tone, and undermodulation, while much more rarely found, is recognized when the tone is rather thin and

varying its position will cause a slight change of the setting of the oscillator condenser.

The signal is now passed on to the primary of the No. 2 unit which acts as a coupling coil and transfers the energy to tubes and units 3, 4, 5. This section of the set acts as an intermediate frequency amplifier working on 35,000 cycles or a wavelength of 8575 meters. The volt meter connected across the filaments of tubes 3, 4 and 5 shows the voltage applied to these filaments as regulated by the 20-ohm rheostat and will indicate from 2 to 2 1/4 volts for a local station. The distant stations will require more voltage on these filaments, although it will rarely be found necessary to use the maximum of 5 volts except on a very clear night when listening to a very distant station. There is no potentiometer needed in the set, the grid return of the Nos. 3, 4 and 5 tubes going directly to A minus. The intermediate amplifier will not oscillate and if it seems to do so, the trouble will usually be found to be a defective "C" battery in the loop circuit. When this "C" battery is defective it usually has a high internal resistance, making the first tube oscillate. When this hap-

pens the oscillator condenser will tune stations in and out with a whistle. The "C" battery should be tested with a voltmeter and should not be less than four and one-quarter volts. In the absence of a voltmeter this trouble can usually be detected by placing a moistened finger on the metal of the loop binding post that connects with the negative of the "C" battery. If the signal strength increases the battery has a high internal resistance and should be

The detector and audio circuits are wired up in the conventional manner except for the grid return of the detector, which goes to filament plus instead of battery plus. Quite a few of the tubes now on the market will be noticed to be microphonic under certain conditions, and may, in the detector socket especially show this tendency.

The Bradleyohm shown connected across the secondary of the

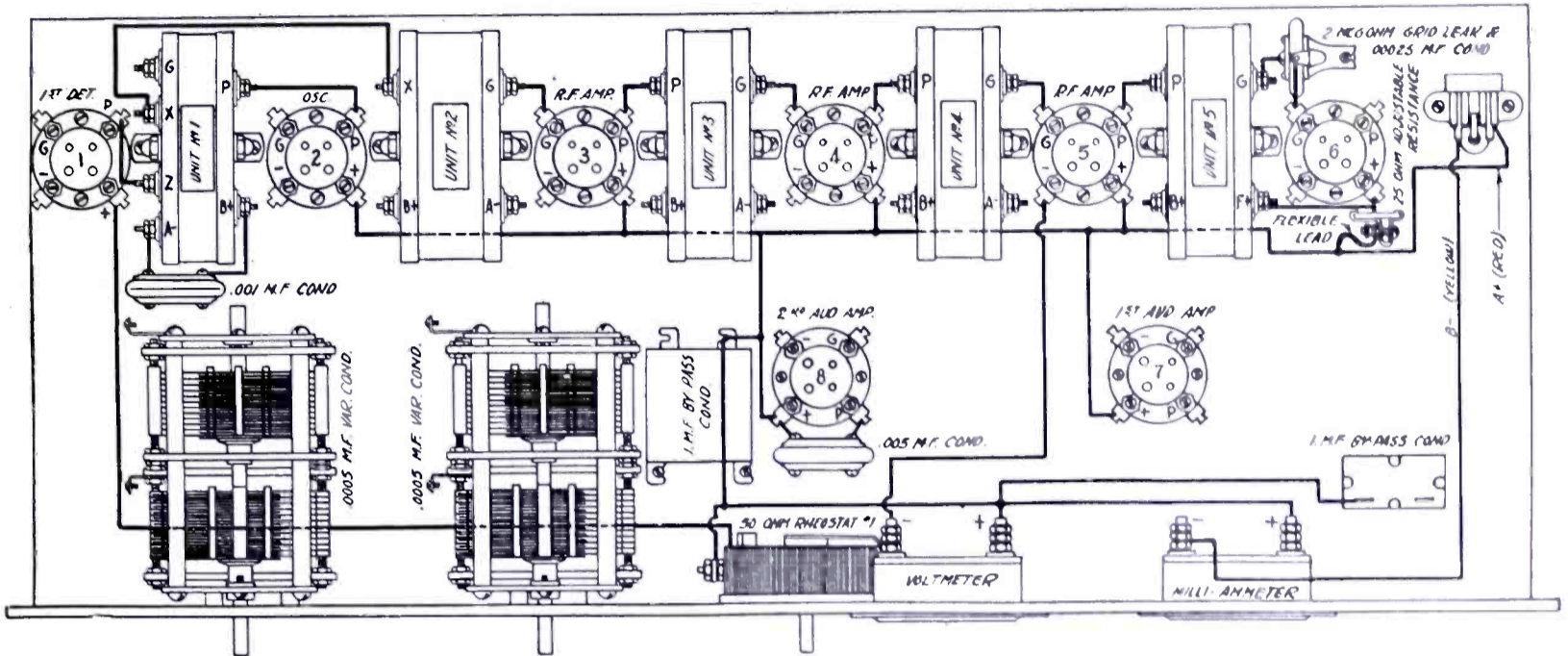


Fig. 3. First step in wiring.

changed. New batteries that have been carried in stock too long sometimes give as much trouble as those used for a long time. Another possible cause of oscillation in the intermediate amplifier will be too high a filament voltage on the detector or sixth tube. The proper voltage for the detector filament is three and five-tenths to three and eight-tenths volts. This is obtained by the

first audio transformer is necessary with the high ratio audio transformer. Once it is properly adjusted, it need not be moved again. Grid leaks are not suitable for this work.

All fixed condensers should be tested before being used. The best way is to connect them in series with a volt meter across a four and one-half volt "C" battery using the volt meter intended

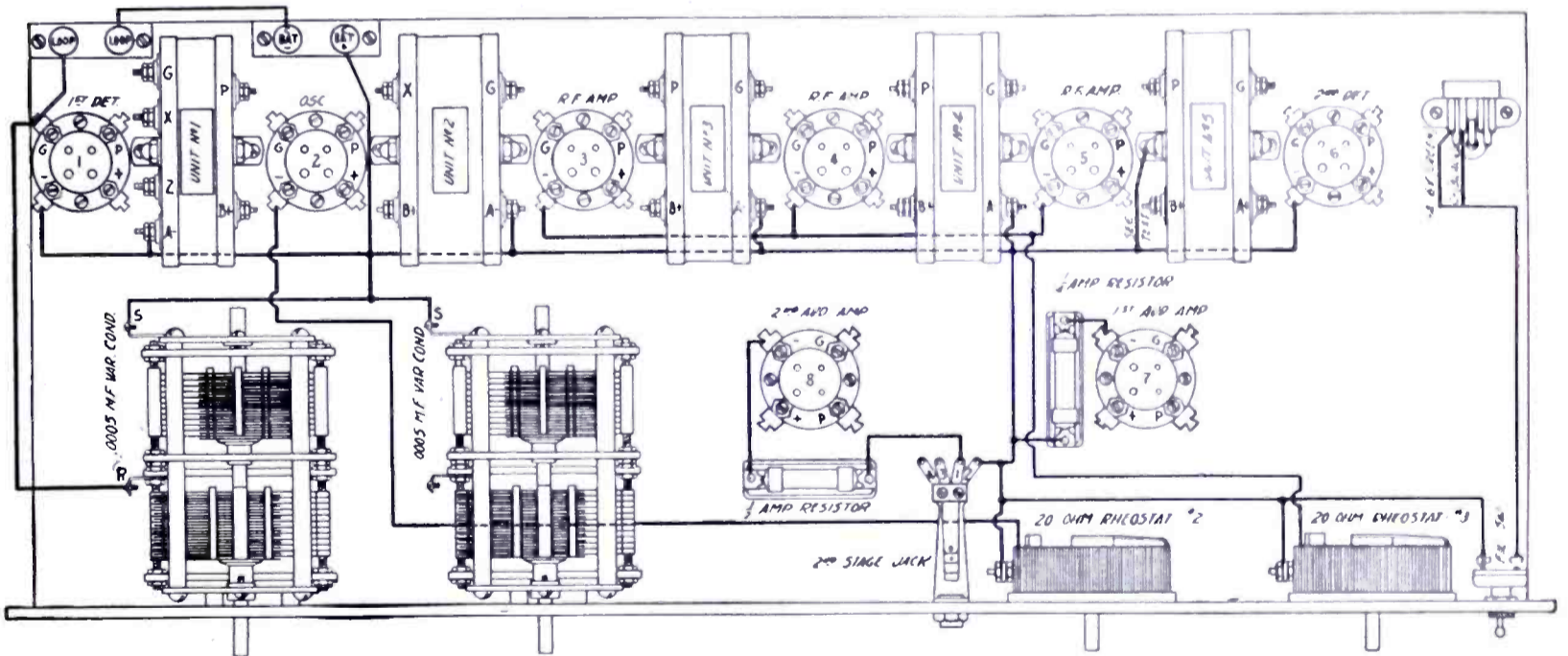


Fig. 4. Second step in wiring.

Cutler-Hammer resistance set so that there is about ten ohms in the circuit.

Actual oscillation of the intermediate amplifier is determined by taking tubes No. 1 and 2 out of their sockets and slowly turning up No. 3 rheostat so that the volt meter starts at two volts and increases gradually to five volts. Watch the Milliammeter closely, at the same time listening to the speaker which should be connected up as for actual reception. If the intermediate does go into oscillation there will be noticed a sudden drop of two or three milliamperes at the point where the oscillation begins and at the same time there will be a faint "plep" heard on the speaker. The cause will be found to be too high a detector filament voltage as stated above, poor connection on the No. 2, 3, 4 and 5 units or sockets, or a very bad tube in the 3rd, 4th, 5th and 6th sockets.

for the set before it is connected up. If there is any deflection of the voltmeter when the condenser is connected in the circuit it is defective and must not be used. If there is no deflection of the voltmeter needle, substitute a pair of head phones for the voltmeter and forty-five volt "B" battery for the four and one-half "C" battery and listen carefully for any crackling noise. If any such noise is heard the condenser is defective. All connections must be clean and tight when making these tests.

The first audio or seventh tube is controlled by a Daven 1/4-ampere ballast resistor suitable for handling one 201A tube in its negative filament circuit. A power tube is used in the last stage of audio, and is controlled by a Daven 1/2-ampere resistor.

LIST OF PARTS

- These parts or their equivalent will give satisfactory results:
 1—Complete set of Madison-Moore transformers

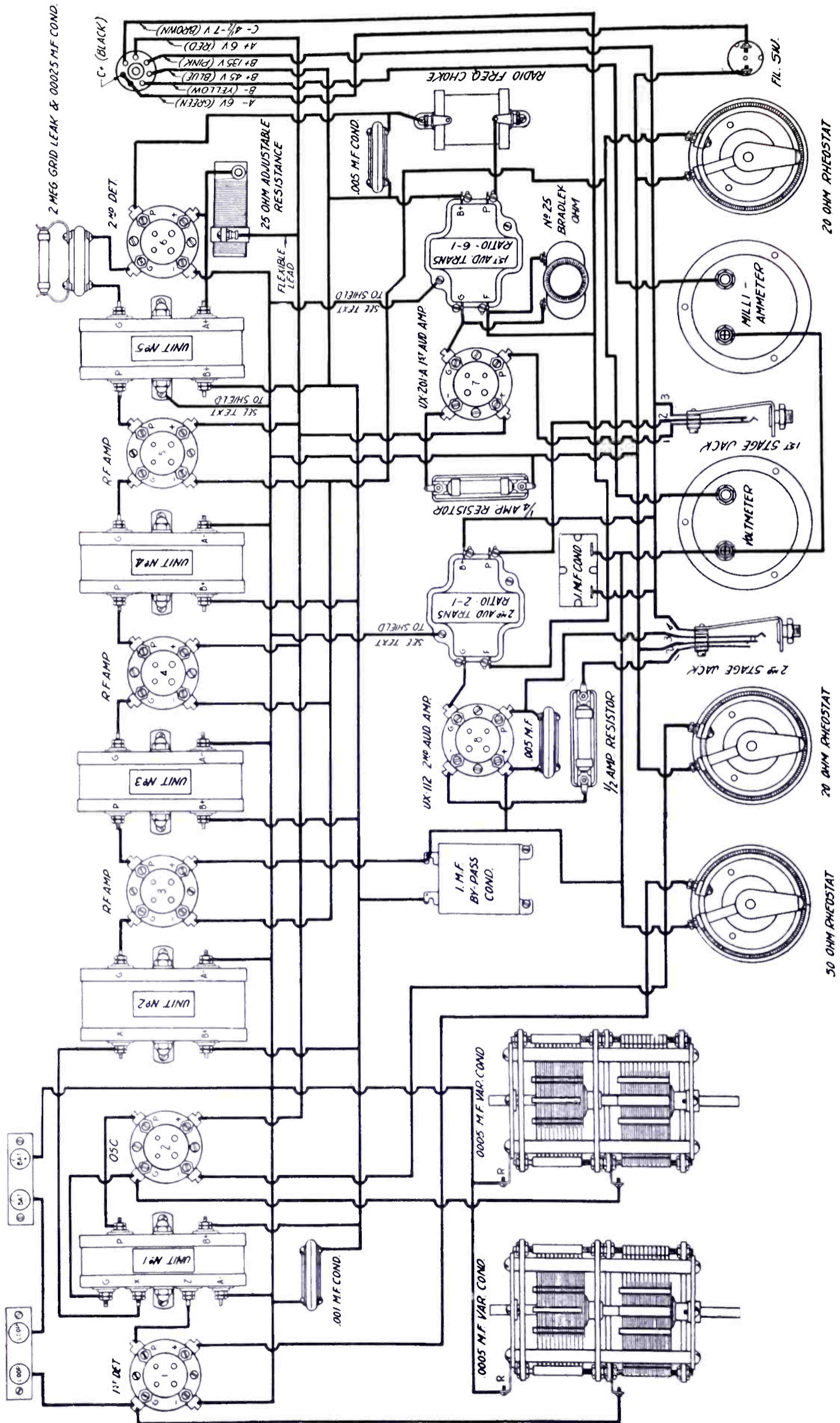


Fig. 6. Graphic illustration showing all connections in entire receiver.

- 1—7"x28" Radion panel
- 2—Pacent microvern dials
- 1—Weston model 301 voltmeter, 0 to 8
- 1 Weston model 301 milliammeter, 0 to 50
- 1—King R372 A jack
- 1—King R372 jack
- 1—Cutler-Hammer toggle switch
- 1—Cutler-Hammer 25-ohm sliding resistance

meters, jacks and filament switch can be mounted on the panel separately and put to one side before securing to the baseboard.

Figure 2 shows the baseboard dimensions. When laying out your receiver, follow this carefully as the apparatus mounted on the baseboard has been arranged for the neatest wiring.

Figures 3, 4 and 5 shows a progressive wiring diagram giving the proper order in which to run the leads for the neatest arrangement. First make the connections shown in Figure 3, the

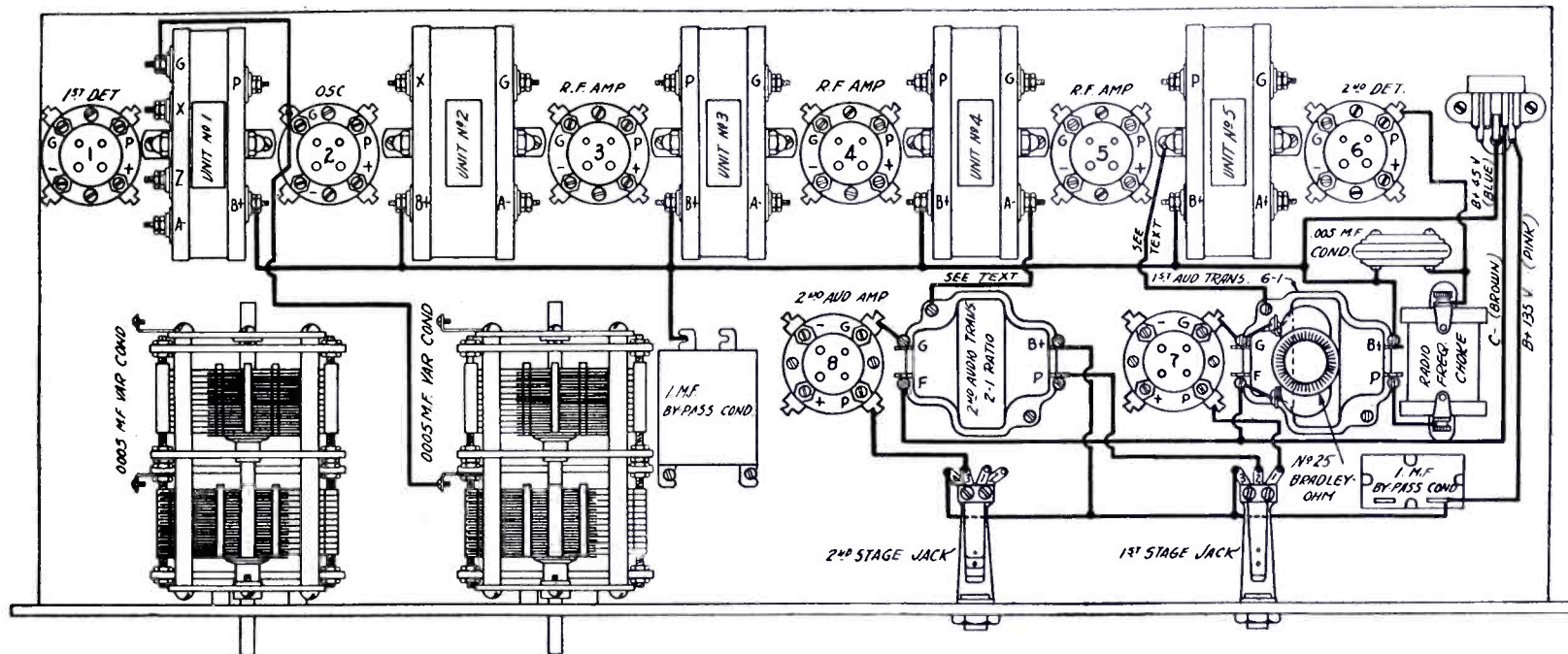


Fig. 5. Final connections to complete wiring

- 1—General Radio No. 214 50-ohm rheostat
- 2—General Radio No. 214 20-ohm rheostats
- 8—General Radio No. 349 sockets
- 1—General Radio No. 285 6 to 1 transformer
- 1—General Radio No. 285 2 to 1 transformer
- 2—General Radio No. 374 .0005 MF variable condensers
- 1—Jones type B M multiplug
- 2—Sangamo 1 MF fixed condensers
- 1—Sangamo .001 MF fixed condenser
- 1—Sangamo .00025 fixed condenser with clips

connections shown in Figure 4 and when you have made the connections as shown in Figure 5, the wiring will be complete. Now, check this carefully against Figure 6 which is a graphic illustration showing every lead in the entire receiver. Go over this several times to be absolutely sure that you are correct before inserting the tubes and connecting up the batteries.

Figure 7 shows a schematic diagram of the entire receiver. If you prefer to work from this, take particular notice that the leads marked X, Z, B plus and P are connected properly as marked on the Madison-Moore units.

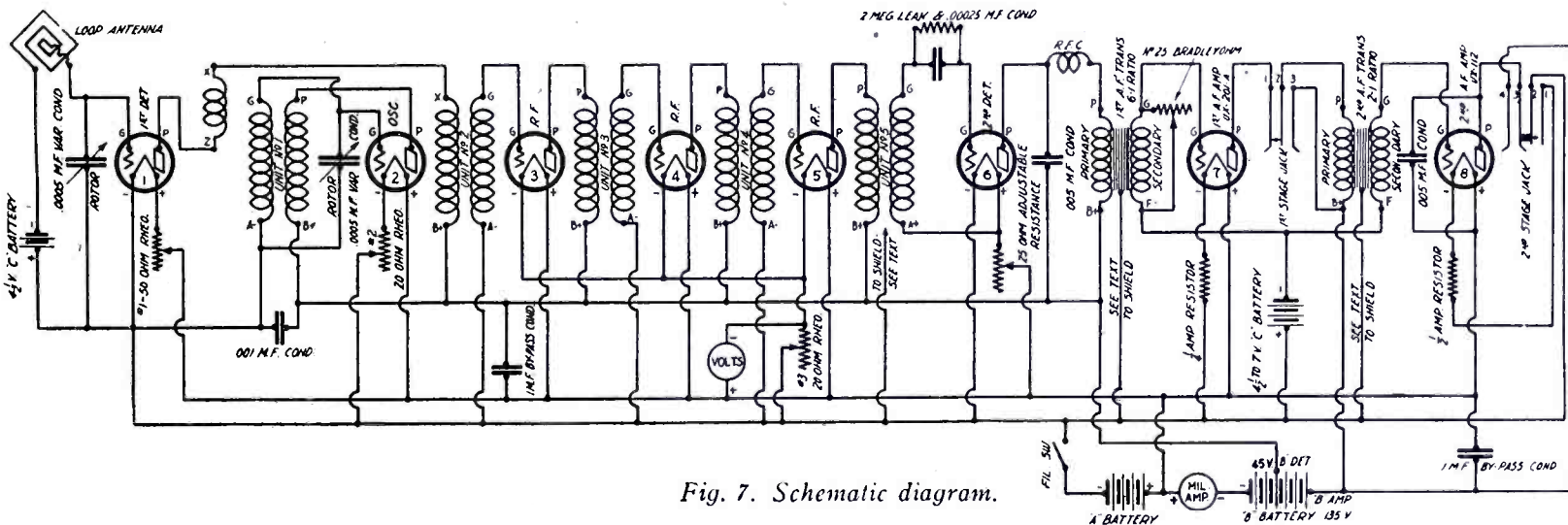


Fig. 7. Schematic diagram.

- 2—Sangamo .005 MF condensers
- 1—No. 25 Bradleyohm
- 1—Samson No. 51 radio frequency choke coil
- 1—Daven 1/2-ampere resistor
- 1—Daven 1/4-ampere resistor
- 2—Daven No. 50 mountings
- 1—Micamold 2-megohm grid leak
- 4—Eby marked binding posts
- 1—10 1/2"x27" wood baseboard
- 1—Package Kester solder
- Lugs, wire, screws, etc.

Photo A shows a front view of the complete receiver. Notice the neat arrangement of all apparatus mounted on the panel. The proper manipulation of these units has been previously explained. Figure 1 shows the panel layout giving the size of the holes and the proper place to drill them. The condensers, rheostats, volt-

It will be noticed that a Samson No. 51 radio frequency choke with an inductance value of 85 M.M.H. is connected in the output circuit of the second detector. This stabilizes the audio frequency circuit.

If it is desired to tune lower than 200 meters, remove the wire on the tuning condensers that connects the two units. This will give you a capacity of .00025 MF.

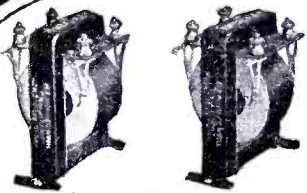
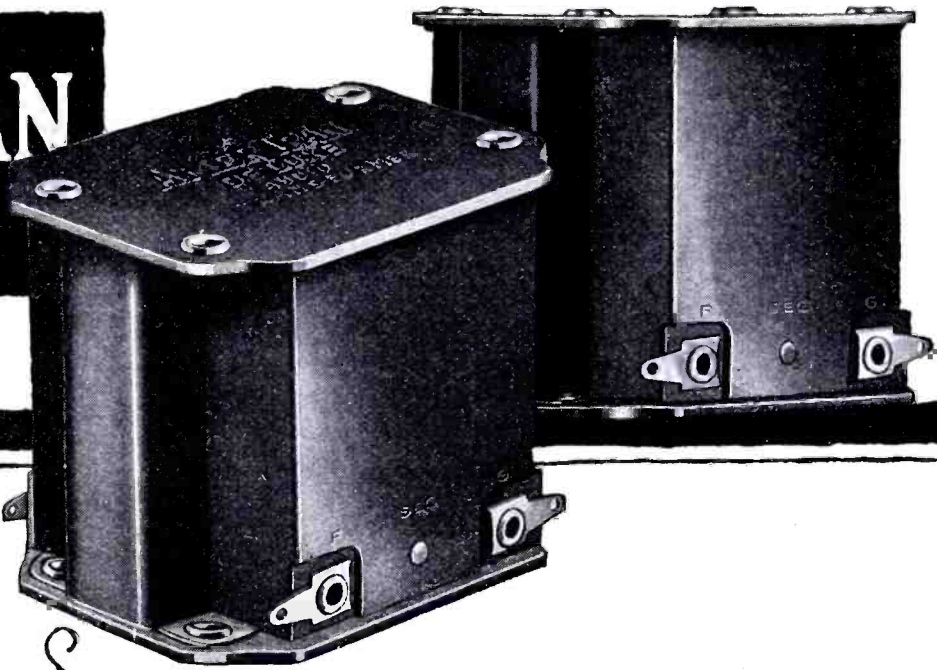
This is a very sensitive receiver and as previously stated, be absolutely sure that every part is functioning properly before blaming the hook-up. If you have any difficulties, write us explaining in full detail just how the receiver acts.

The brown and black leads on the Jones plug are used to make connections on the 4 1/4 volt "C" on the audio frequency amplifier. The black lead is connected to the positive and the brown lead is connected to the negative. The black and green posts on the plug are shorted as shown in the graphic illustration.

AMERTRAN

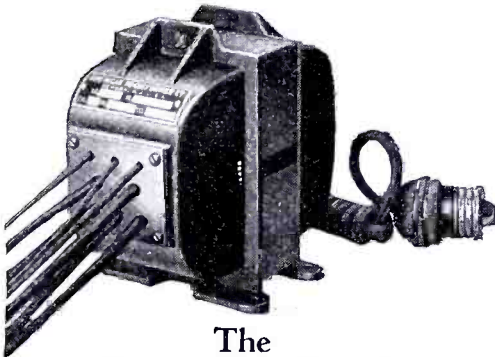
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DE LUXE



AMERTRAN
Types AF-7 and AF-6

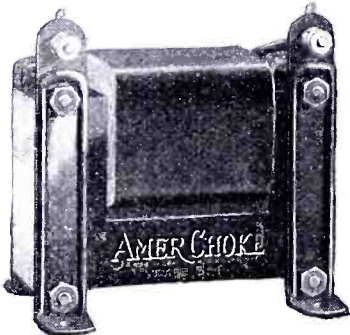
AmerTran audio transformers Types AF-7 and AF-6 have been considered for years among the leaders in audio amplification. These popular and efficient models may now be purchased at a considerable saving in cost. Types AF-7 (ratio 3 1/2:1)—AF-6 (ratio 5:1) . . . \$5.00 each



The AMERTRAN Power Transformer

Type PF-45, 65 Va-60 cycles 110 volts primary, 450-8/4-8/4 secondary

Type PF-45 is intended for use on the standard 110 volt, 60 cycle house lighting circuit. It has three separate well-insulated secondary windings. These are enclosed in a strong metal case provided with mounting feet. The secondary leads are standard code flexible wires left long enough to reach the terminals in the average set without splicing. This transformer is well suited for supplying AC power for filter circuits, and is designed with the usual margin of safety . . . \$15.00 each

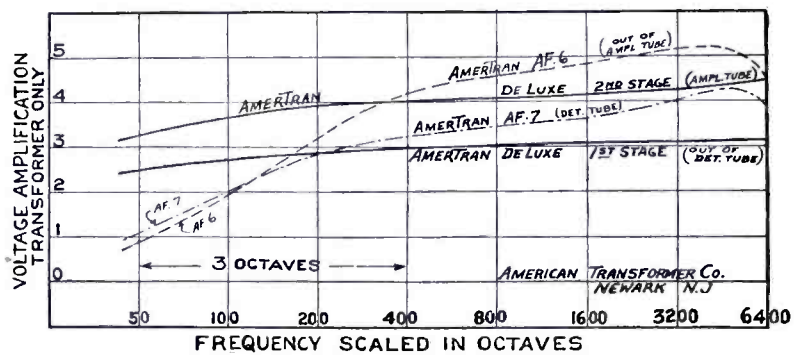


The New AMERCHOKE
Type 854

Type 854 is a scientifically designed impedance or choke coil of general utility, designed primarily for use in filter circuits. As an output impedance for by-passing direct current from the loudspeaker it is just as efficient and more economical than an output transformer. When used with a 1 mfd. (or greater) fixed condenser, the tone quality equals that of the best output transformer. DC saturation is prevented by two adjustable butt joints in the core. \$6.00 each

A New Standard of Excellence in Audio Amplification

THIS new audio transformer has been developed for those who are satisfied only with the utmost in quality. It possesses an unusually straight line frequency characteristic extending the range below the lowest note now being broadcast, and actually shows a gain of about three octaves below that previously obtained.



The AmerTran De Luxe is a transformer of moderate size and weight, enclosed in a strong metal case with mounting holes at both top and bottom so that it may be inverted, affording simplified connections. While the AmerTran De Luxe will improve any set, appreciation of its uniform amplifying qualities can best be realized when operated in conjunction with straight line frequency loudspeakers, such as the best cone and disc types, and with a tube in the last stage capable of handling the output.

The AmerTran De Luxe is made in two types, one for the first stage and one for the second stage, and plainly marked as such. The chief difference between these two types is that the first stage transformer has approximately 50% greater primary inductance than the second stage transformer, thus more nearly corresponding to the operating impedances of the tubes out of which they work. For this reason it is advisable to purchase and operate these transformers by the pair!

PRICE, EITHER TYPE, \$10.00

Write for descriptive booklet on AMERTRAN Radio Products

American Transformer Company

178 Emmet Street, Newark, N. J.

"Transformer builders for over twenty-four years"

SOLD ONLY AT

AUTHORIZED AMERTRAN DEALERS

How to Build a Short Wave Receiver

This Receiver Designed and All Illustrations Made in the Laboratory of the Citizens Radio Call Book

FOR the radio fan who wishes to explore the short wave band from 40 to 115 meters, this is an ideal and simple receiver to construct.

More and more experimenting is being conducted on short wavelengths. Of course, most of the signals that you hear will be in code, but the time is not very far distant when broadcasting stations will be using this band more extensively.

coil and the variable condenser. The resistance of the filament rheostat is decreased by turning the knob clockwise. A filament switch is provided to turn the tubes off and on.

Photo A shows a rear view of the completed receiver. A Daven $\frac{1}{2}$ ampere resistor automatically controls the filament adjustment on the two audio frequency amplifying tubes. These tubes can be of the UX201A or CX301A type and no adjustment on the filament is

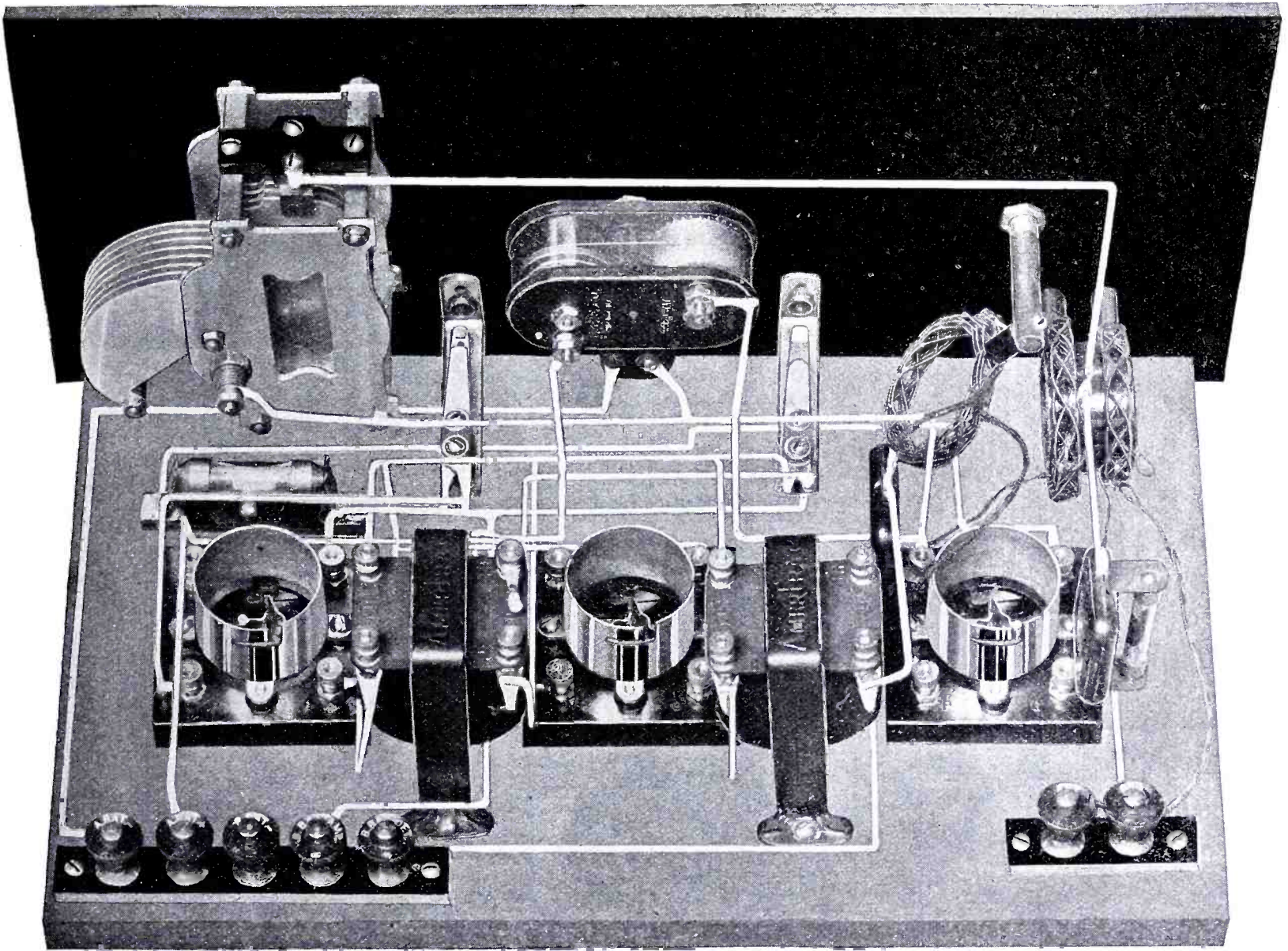


Photo A—Rear view of receiver

As the frequency of the receiver signals increases and as you begin to work on lower wavelengths, it is necessary to use low loss instruments having very fine adjustment. Purchase a UX200 or C200 tube for this receiver. The filament is controlled by a vernier rheostat which will give you the most minute adjustment. High ratio transformers have been selected for the best results.

The tuner used in this receiver has been designed to reduce losses to a minimum. Particular attention has been paid to the elimination of all metal within the influence of the fields of the coils. The 5 SW short wave tuner will give you a range of 40 to 150 meters when tuned by .00025 variable condenser. If it is desired to tune from 200 to 575 meters, the 3 circuit tuner No. 502 can be substituted. This tuner is manufactured by the Eastern Electrical and Manufacturing Company, Providence, R. I.

Vernier dials are employed for very careful adjustment of the tickler

necessary. Two small strips of Bakelite are used to mount the binding posts. Fig. 1 is a panel layout showing just how to drill the panel. Fig. 2 is a baseboard layout showing just where to mount the apparatus before starting to wire up the set. Fig. 3 is a graphic illustration showing all of the leads in the entire receiver. Fig. 4 is a schematic diagram for the more advanced radio fan who prefers to work from this type of illustration.

Your interest in radio will be more keenly developed if you learn the code. This may seem hard at first, but with an hour's practice each evening listening in, it will soon come to you.

Tremendous distances are covered on short wavelengths using small power. The construction of this simple receiver will help the average radio fan to learn more about radio and if you have any difficulties, we trust you will call upon us.

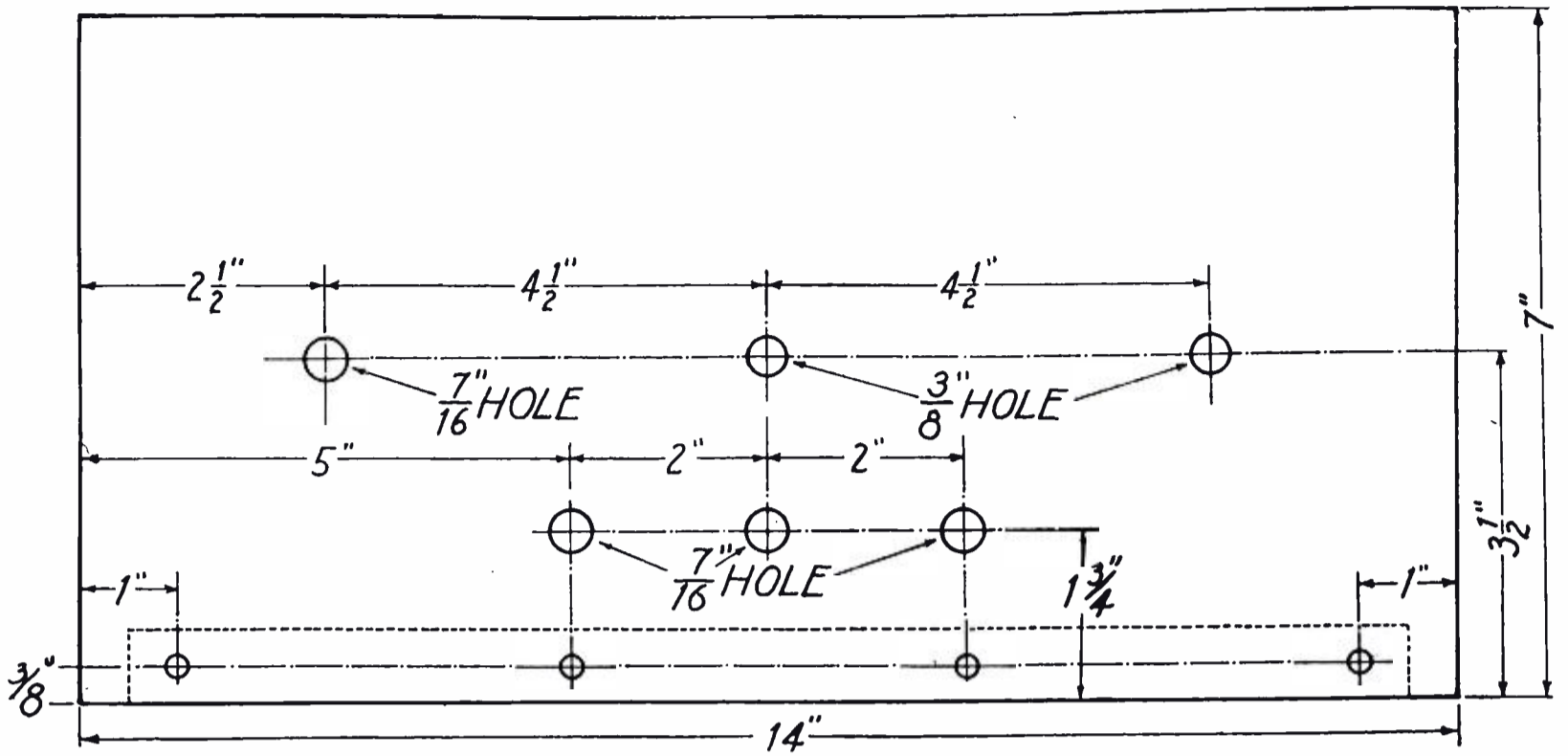


Fig. 1—Panel layout

List of Parts

- | | |
|---|---|
| 1—7"x14" Radion Panel. | 1—Saturn Filament Switch. |
| 2—Accuratune Vernier Dials. | 1—Saturn No. 3 Jack. |
| 1—Electrical Engineers' Equipment Company 6 ohm Rheostat. | 1—Saturn No. 4 Jack. |
| | 1—Lombardi .00025 M. F. SLF Variable Condenser. |
| | 1—Hexcell No. 5SW Short Wave Tuner. |

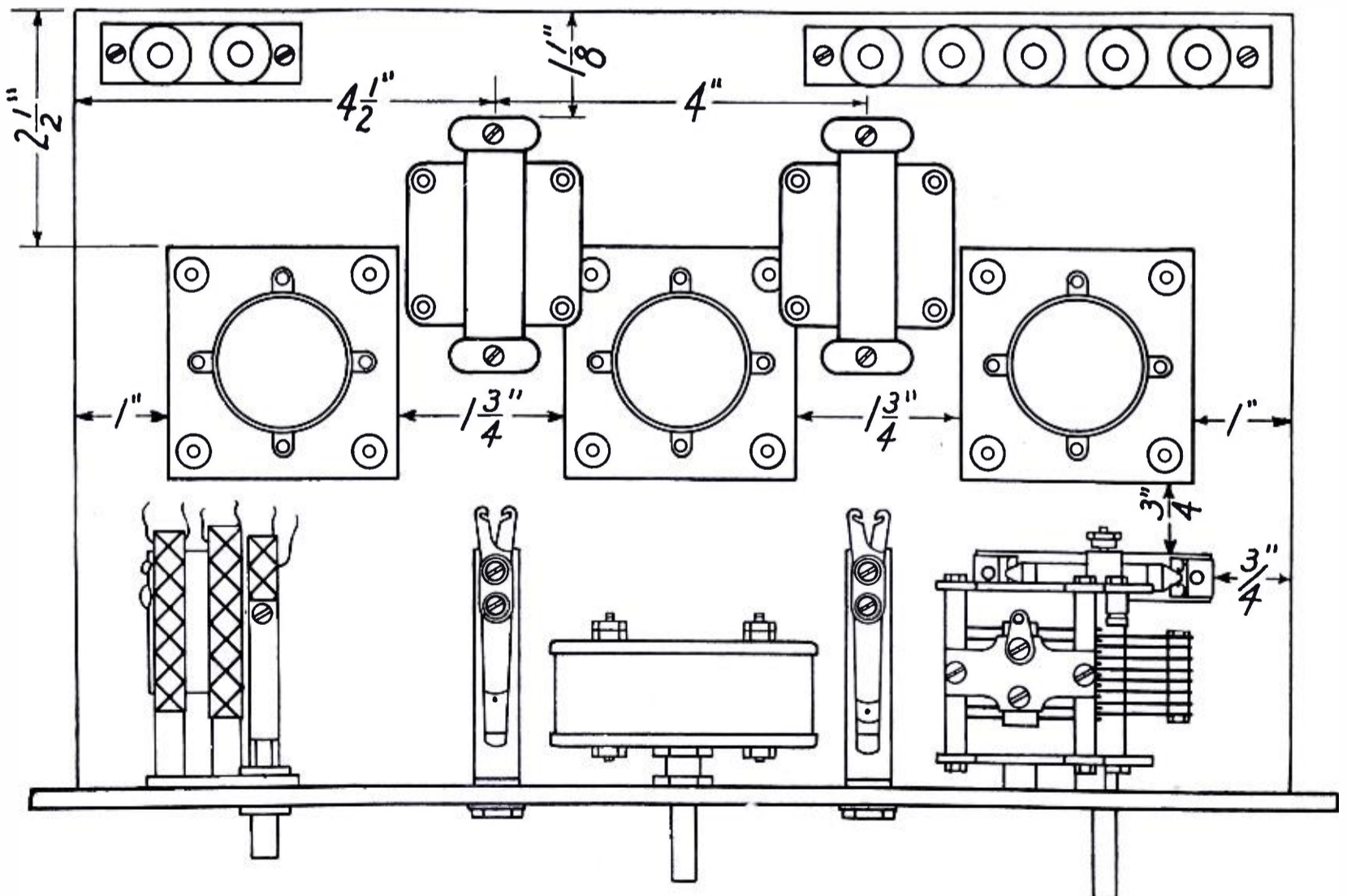


Fig. 2—Baseboard layout

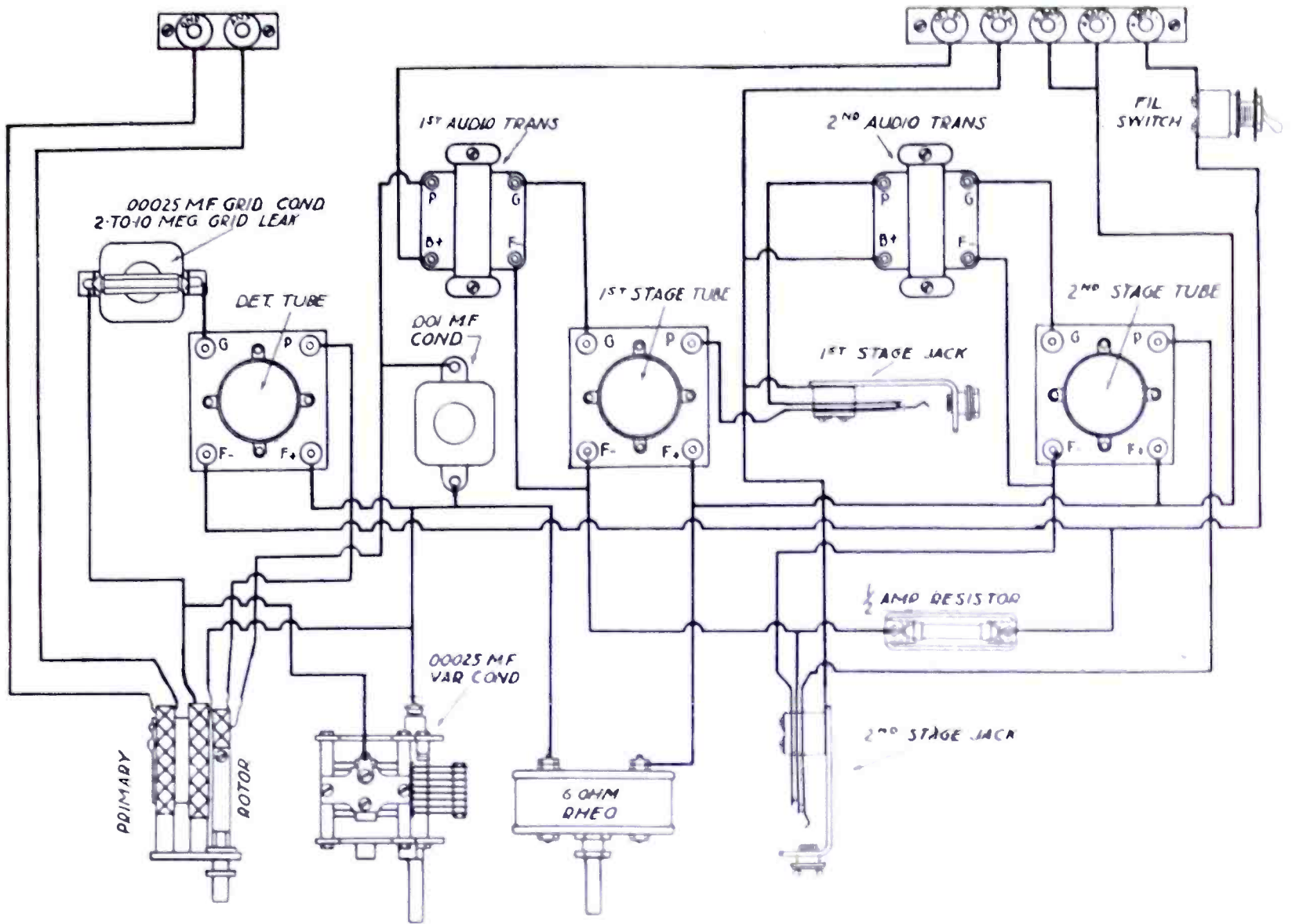


Fig. 3—Graphic illustration

- 1—Daven 1/4 Ampere Resistance.
- 1—Daven No. 50 Mounting.
- 1—Daven 5 Megohm Gridleak.
- 3—Howard Sockets.
- 2—Amertran Transformers.

- 7—Gamo-Kramer Marked Binding Posts
- 1—13"x8" Wooden Baseboard
- 1—Micamold 00025 Grid Condenser
- 20 Ft. Behlen No. 12 Tinned Copper Wire
- 1—Package Kester Solder.

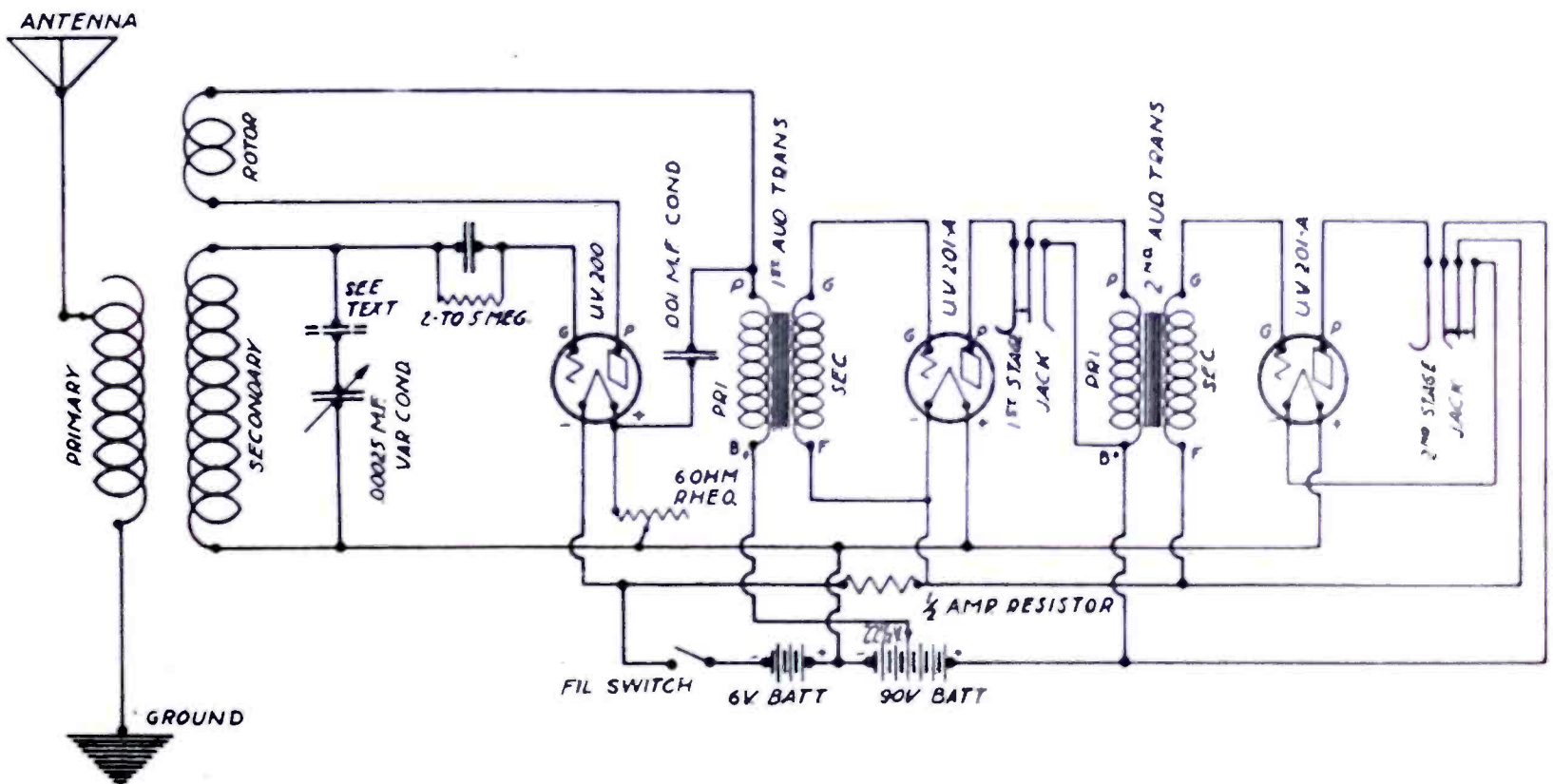


Fig. 4—Schematic diagram



The KURZ-KASCH

Aristocrat E-Z-TOON (EASY TUNE)

Group Control Kit

Tunes two or more units by means of one Master Control, and at the same time provides Vernier Adjustment for each separate condenser. All the advantages of single control with none of the disadvantages.

Simple to install—comes complete—nothing else to buy. No panel to drill, complete instructions with each kit. Nothing to get out of order.

Simplifies tuning without loss of efficiency and is built of Aristocrat quality.

Any dealer can supply. Write for illustrated folder.

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THE KURZ-KASCH COMPANY

Largest Exclusive Moulders of Bakelite

Factory and Main Office

Dayton, Ohio

Tell 'Em You Saw It in the Citizens Radio Call Book

A New Method of Efficiently Suppressing Oscillations in Tuned Radio Frequency Circuits

This Receiver Was Constructed and All Illustrations Made in the Laboratory of the Citizens Radio Call Book

THE past few years of radio have shown a marked increase in the use of tuned radio frequency amplifying systems. The first receivers to appear on the market embodying radio amplification of this character were known as neutrodyne receivers.

Before giving the details of the new system of amplification, which is to be the subject of this article, various fundamental requirements for satisfactory amplifying systems will be set forth.

Apparently the ability of any receiver in the minds of the buying public depends directly upon the number of tubes which are utilized. Three tube sets have been surpassed by four tube sets,

capable of oscillating vigorously, and it is this oscillating condition which has continued to be the limiting factor.

With the exception of only a few receivers this condition has been met by reducing the efficiency of the transformers, which has greatly impaired the over-all amplification of the system. Another method which is analogous to this is that of inserting an abundance of resistance at some point in the circuit so that the surplus oscillating energy is absorbed. Regardless of whether the receiver has been stabilized by reducing transformer efficiency or inserting resistance, the ultimate result is quite obviously a loss. The desirable circuit seems to be one in which the tube and associated transformer may both work near the point of maximum efficiency.

Researches of the past year have clearly disclosed the criteria for efficient transformer design and with the already efficient vacuum tube a few circuits have been developed tending to give a high degree of coordination and permitting many times more amplification than the systems which have been and still are in vogue. It should be definitely pointed out that it is quite easy to design a tuned radio frequency transformer having maximum efficiency, but it is a distinct and much more difficult problem to place such a transformer in an amplifying system with the correct type of vacuum tube and make it function in a satisfactory manner over the broadcast spectrum.

It was pointed out previously that the tendency of such arrangements to sustain self-generated oscillations was the limiting factor. It appears then, that having at our disposal an efficient transformer and vacuum tube, the most important consideration is that of the electrical circuit arrangement which will permit us to use the combination without encountering the very undesirable oscillating condition.

The circuit arrangement which has been developed and which is the subject of this article is fundamentally shown in Fig. 1. An input transformer consisting of primary L_1 and secondary

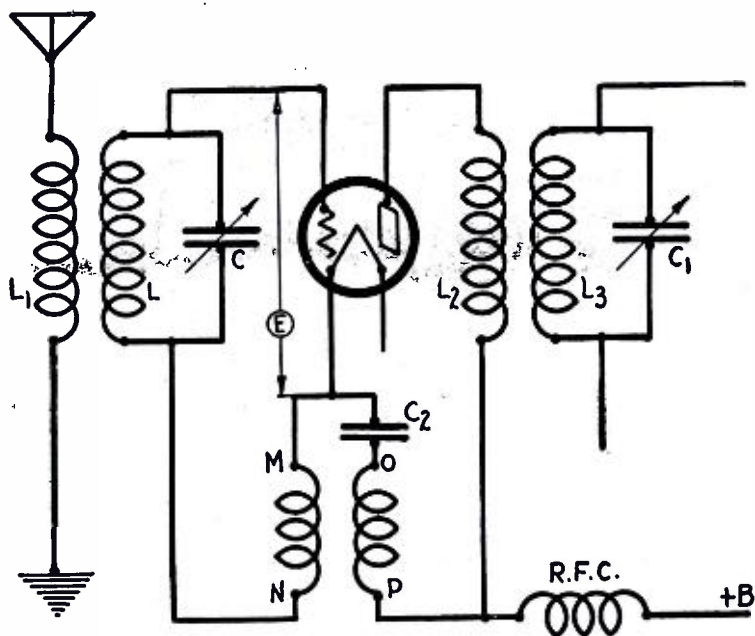


Fig. 1

and finally, five tube sets. It would indeed be a fortunate circumstance for the development engineer, if, in his attempts to design better receiving equipment, it were only necessary to keep adding additional vacuum tubes. The buyer or builder of a receiving set generally experiences little difficulty in discriminating between one or two tube sets and the larger multi-tube sets. If price is a consideration, he will buy a one tube set and be satisfied. If he is in search of big game, price is usually no particular drawback, and he is faced with the problem of buying something between a five tube set and maybe a 12 tube set.

With the exception of certain limitations, five tube receivers in general have filled their bill and have been commercially acceptable. Broadcasting conditions during the past year, however, have imposed unpredicted handicaps on the ordinary five tube receivers. The psychological aspect of the need for utmost selectivity has been so extensive that manufacturers are fearful in advertising their products without acclaiming high degrees of selectivity.

It is well known in the engineering profession that many tuned radio receiving systems which have been used up to and including the present time have been inefficient. The vacuum tubes which we have used have been inherently capable of amplifying much more than we have been in a position to allow them to amplify. The exact source of the trouble is that the circuits available for use in receiving equipment are of such a character that truly efficient radio frequency transformers could not be used. Vacuum tubes which are capable of amplifying to a great extent are also

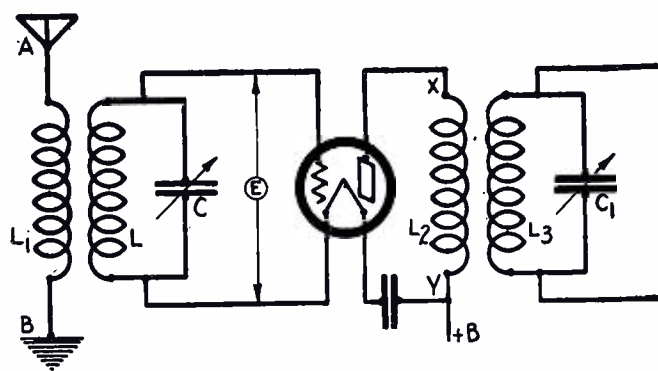


Fig. 2

L is shown. This transformer serves as a coupling between the antenna system and the amplifier tube. A second transformer is indicated by L_2 and L_3 which links the output of the amplifier to the input of a succeeding one. The primary L_2 has been carefully designed so as to have an optimum value as to amplification and selectivity and the conditions within the vacuum tube and the secondary L_3 have also been kept in mind, inasmuch as the characteristics of both the tube and the following secondary circuit influence greatly the optimum constants for the primary.

The theory of the circuit will be easily understood in first reverting to the more simple form of tuned radio frequency system in which no attempt at oscillation suppression is made. Such a circuit is shown in Figure 2. In such a circuit it is understood

that voltage E will be developed across the condenser C when the circuit consisting of L and C is tuned to resonance with a source of signal energy present in the antenna system AB. This voltage E is directly applied to the grid and filament of the vacuum tube as shown. This alternating voltage E on the grid of the tube causes similar periodic changes in the electron flow from filament to plate and thus we have a plate current through

driven into a state of steady oscillation. In the first case the amplifier would merely respond or resonate to the frequency of the signal appearing in the antenna system, but in the latter instance the resonance is sustained, so to speak, and the source of energy from the antenna may be entirely eliminated and the amplifier will continue to "sing" at some definite frequency. This singing or oscillating condition causes a distortion of a telephonic

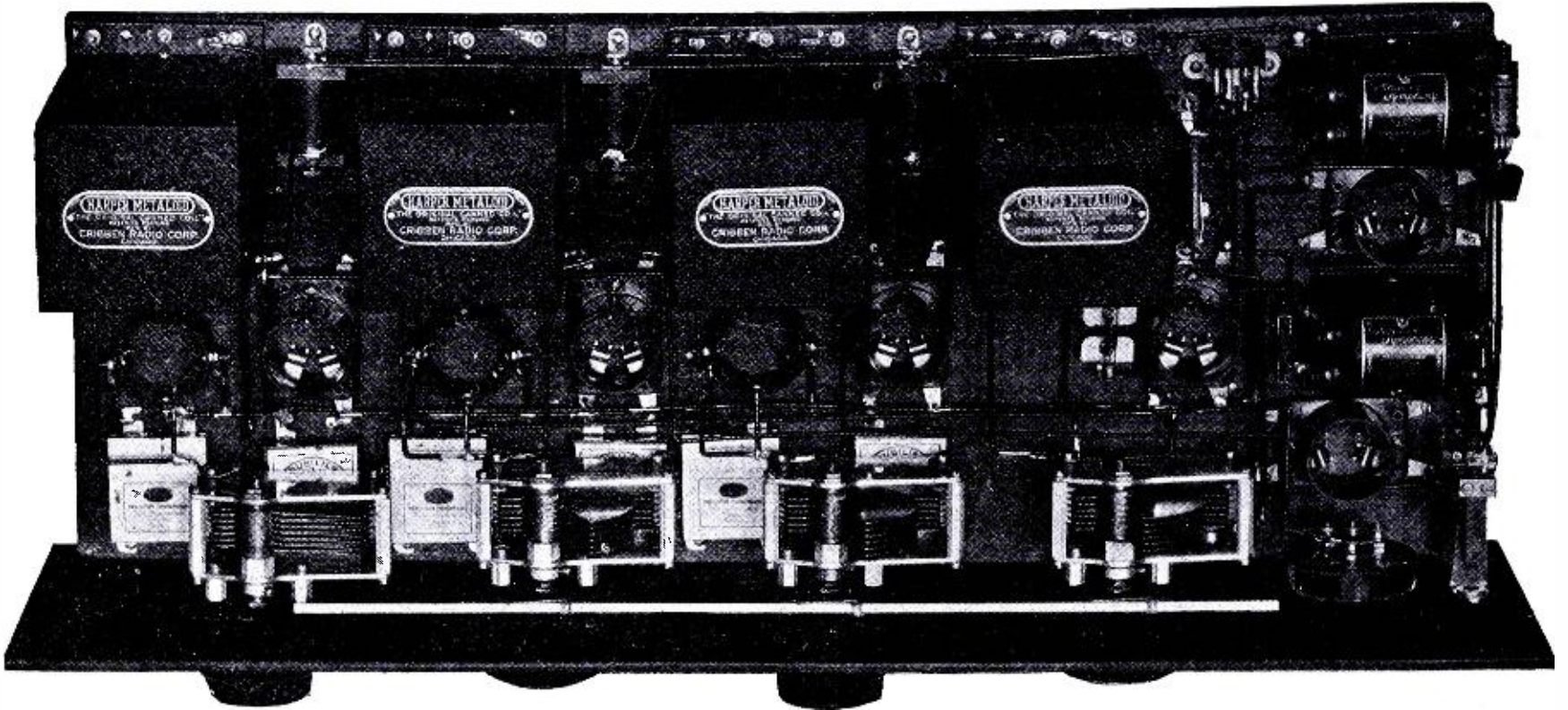


Photo B—Rear view

L2 which is pulsating in accordance with the original signal frequency. It is clear that because of the self-inductance of the primary L2 a counter electromotive force will be set up between points X and Y. In other words, the primary is acting as a small alternating current generator and is feeding energy back into the tube and its input circuit through the medium of the natural electrical capacity between grid and plate elements of the tube.

signal, and for this reason an amplifier cannot be used for amplifying such signals when it is in this condition.

The unfortunate fact comes to light when we find that in order to design the transformer L2-L3 so that it will give an efficient energy transfer it becomes necessary to use so many turns on L2 that the entire system oscillates very vigorously over the entire wave band. Inserting resistance at any point to cause absorption

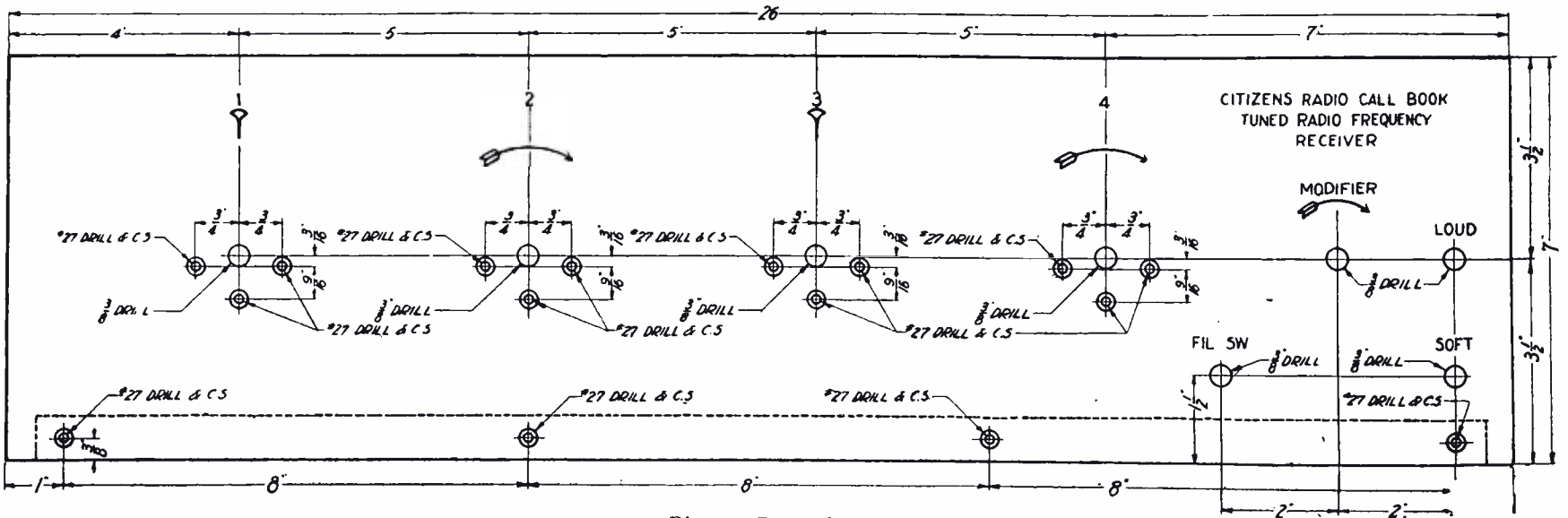


Fig. 3—Panel layout

It is this phenomena which is fundamental to what is known as regeneration and oscillation. If the amount of voltage set up in the primary is kept low by keeping the number of turns low or some equivalent process the whole amplifier will merely resonate at a particular frequency. The vivacity with which this resonance occurs depends upon the magnitude of this voltage operating in the plate circuit. As it is increased we say the tube is regenerating, that is, the amplitude to which it responds to the resonant frequency is increasing. Finally, when we use a comparatively large number of turns in the primary L2, so much voltage is generated between point X and Y that the tube is

will be detrimental as already described and is equivalent to taking off so many turns of the primary until oscillation stops. When we do that we are again back at the point of minimum efficiency. A circuit which is capable of preventing this oscillating disturbance and which does not impose undesirable losses upon the amplifier is shown in Figure 1.

The voltage E which is set up as in the foregoing circuit is caused to pass through the primary winding MN of a small transformer. The grid of the tube, being subjected to this same alternating potential, will cause plate current variations in the same manner as the first circuit and a voltage will be set up in L2 by

virtue of its self inductance. A second voltage, however, is introduced into the plate circuit. It is set up in the secondary of the small transformer between points O and P by the original voltage E circulating through the primary MN. The secondary OP is made a part of the plate circuit by interposing a radio frequency choke RFC as shown. This serves as a feed for the plate voltage, but due to its choking qualities the high frequency component is forced to go through the secondary OP and the condenser C2. We have, therefore, two voltages operating in the entire plate circuit. One is due to the normal grid control of the tube and the other is introduced directly into the plate circuit through the transformer MN-OP without the intermediation of the tube. It is possible of course to phase the transformer in such a way that the second voltage is tending to counteract the other voltage. In so doing, we find it possible to increase the primary L2 until an optimum value is reached and then by introducing sufficient counteracting voltage through the transformer MN-OP the amplifier can be prevented from oscillating.

The constants of the transformer, which has been named an "Oscillation Suppressor," cannot be given without having at hand exact knowledge as to the type of transformer and tube used.

The following specifications are to be used with the Harper metaloid coils and UX201A or CX201A tubes only:

The primary and secondary of the oscillation suppressors consists of 23 turns of No. 28 double silk covered wire both wound in the same direction on a bakelite strip 1½ inches in diameter. A single layer of Empire cloth is used for insulation between the two windings. Binding

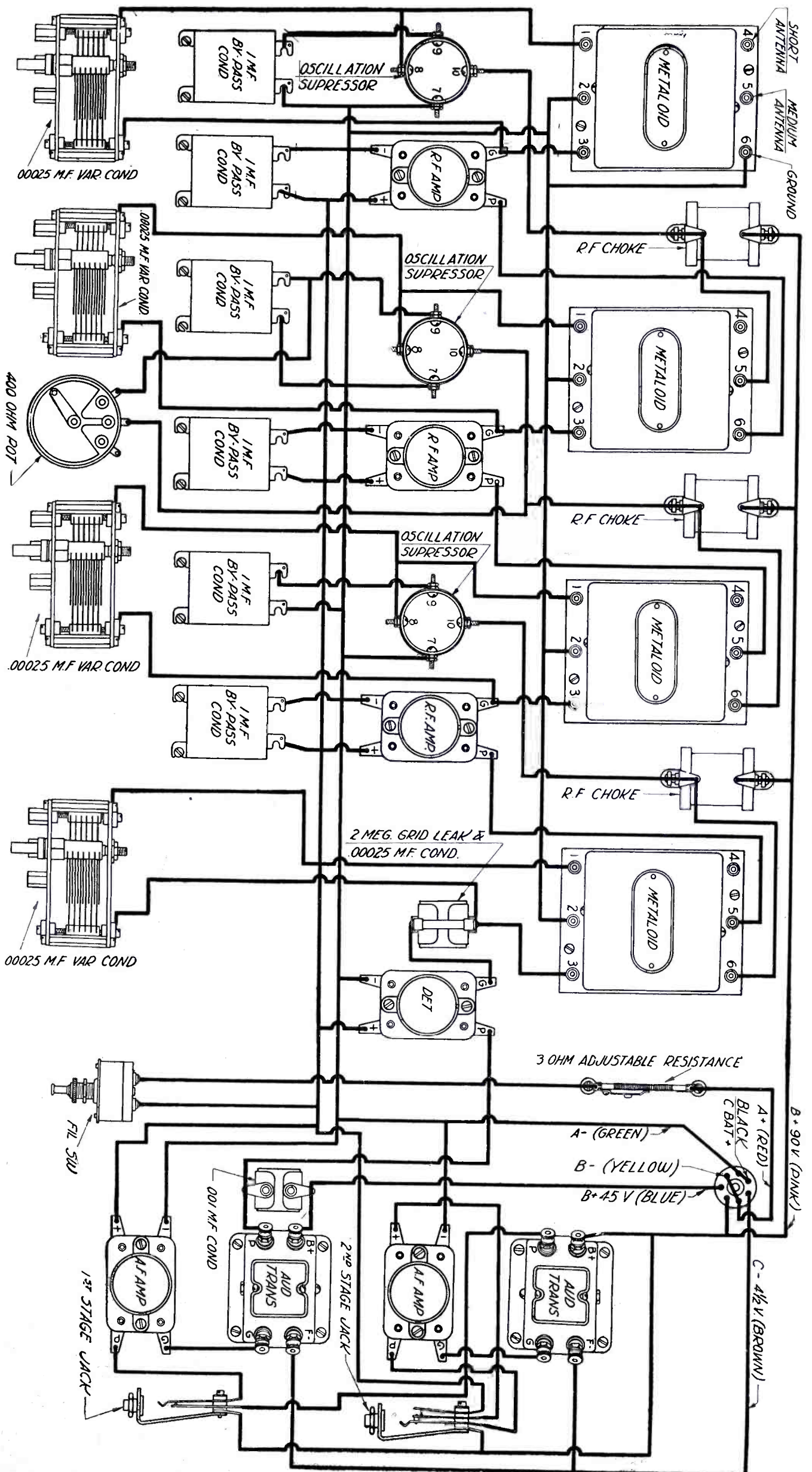


Fig. 5—Graphic illustration

posts can be brought and the ends soldered to them as indicated in the graphic illustration.

A 1 MF condenser is placed in series with the secondary of the oscillation suppressor and the negative filament leads of each radio frequency amplifying tube. This combination offers a path of low reactance to high frequencies, resulting in greater suppression where the tendency to oscillate is more prevalent.

arranged so as to correct the location of the rotor plates connected together in the group.

List of Parts

- 1—Kurz Kasch 180 Degree Counter Clockwise Group Control
- 1—Kurz Kasch 180 Degree Counter Clockwise Vernier Dial.
- 1—Central Radio Laboratory 400 Ohm Potentiometer.
- 1—King 273 Filament Control Jack.

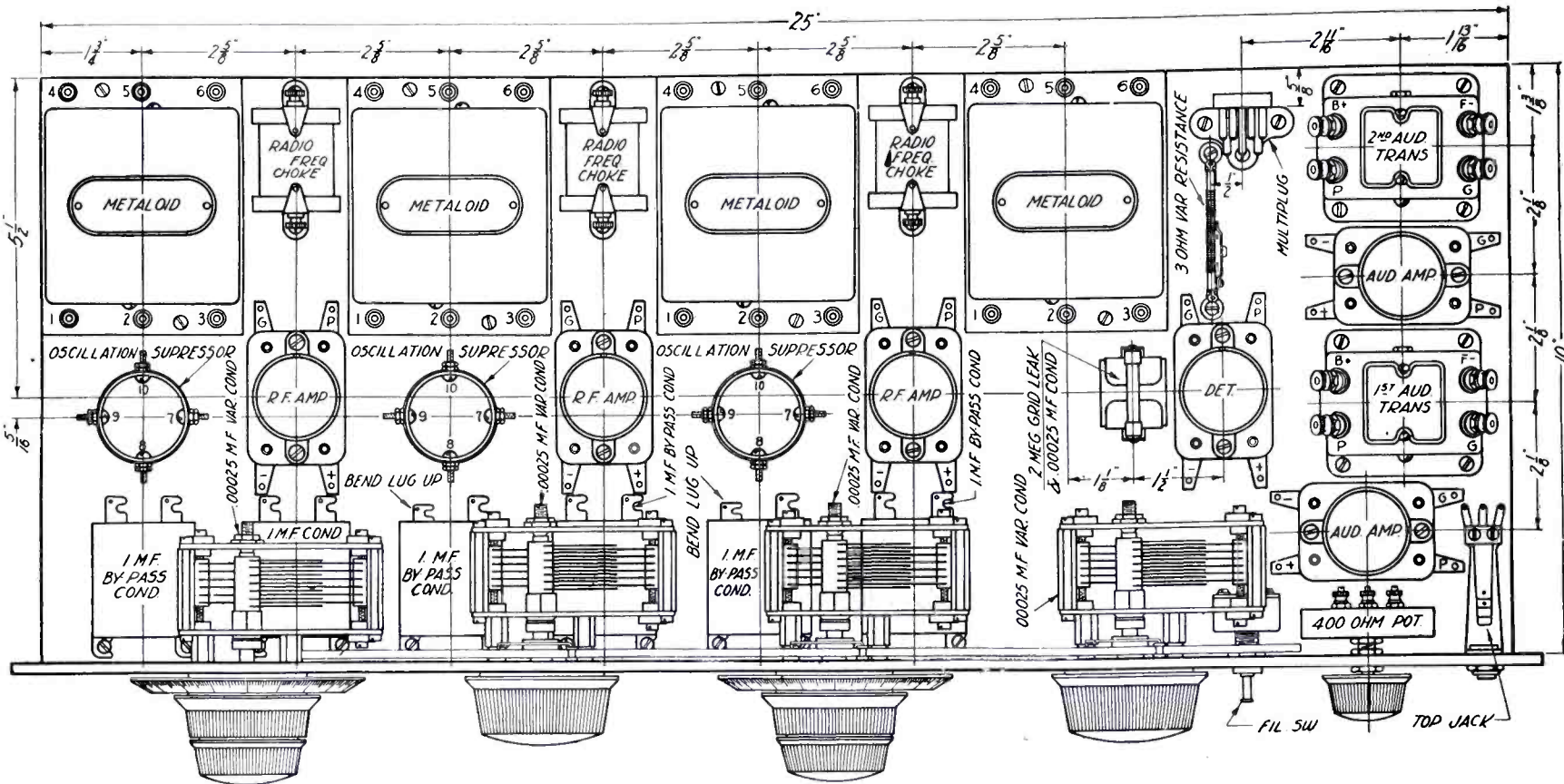


Fig. 4—Baseboard layout

It will be noted that this circuit contains four variable condensers. The antenna condenser is operated separately from the group control and is provided with a vernier dial.

A Kurz-Kasch 180 degree counter clockwise group control is employed to operate the three condensers on the tuned radio frequency amplifier. This provides a master control on these three condensers

- 1—King 272A Jack.
- 1—7"x26" Formica Panel.
- 4—DXL .00025 Variable Condensers.
- 6—Dubilier 1 MF Fixed Condensers.
- 1—Dubilier .00025 Grid Condenser.
- 1—Dubilier .001 MF Fixed Condenser.

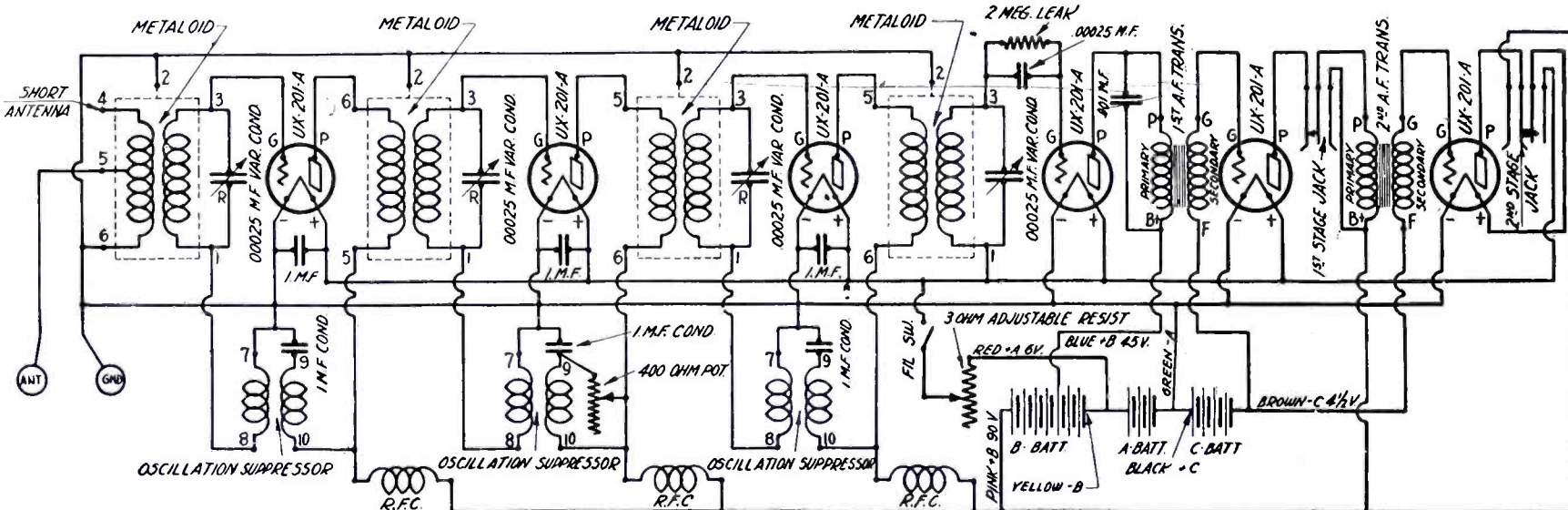


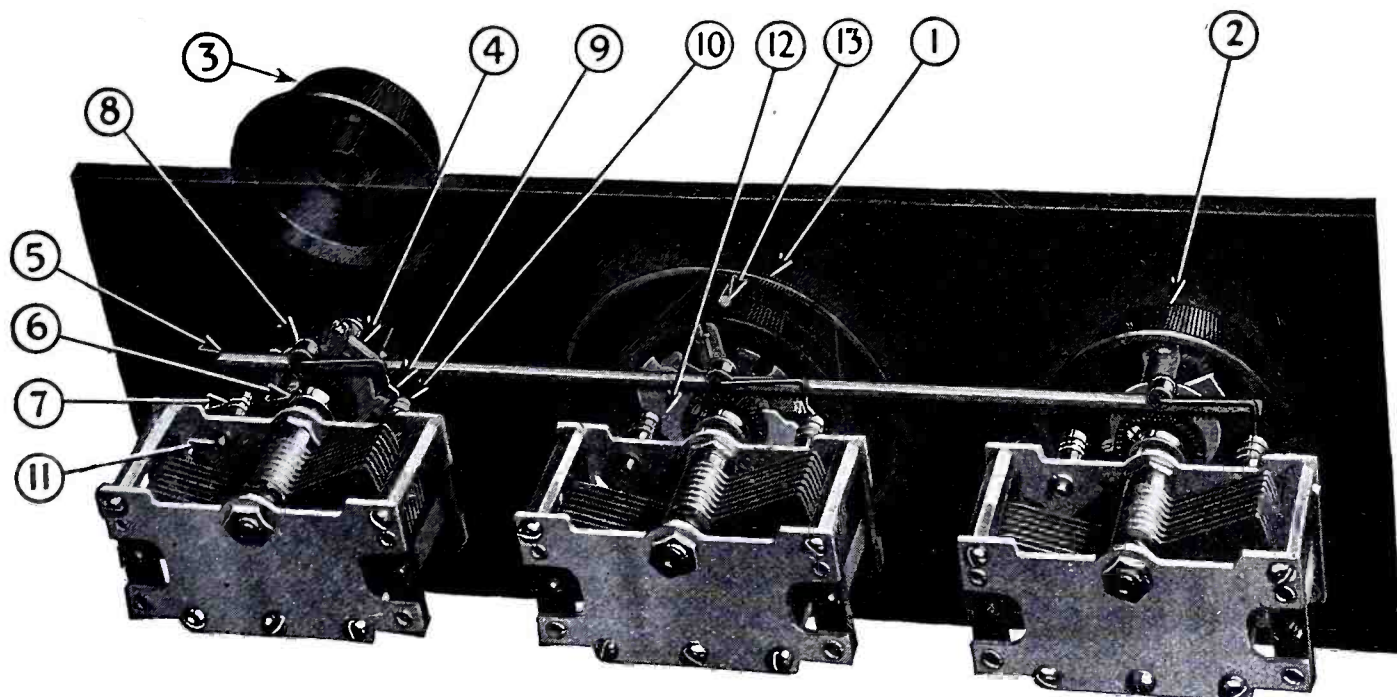
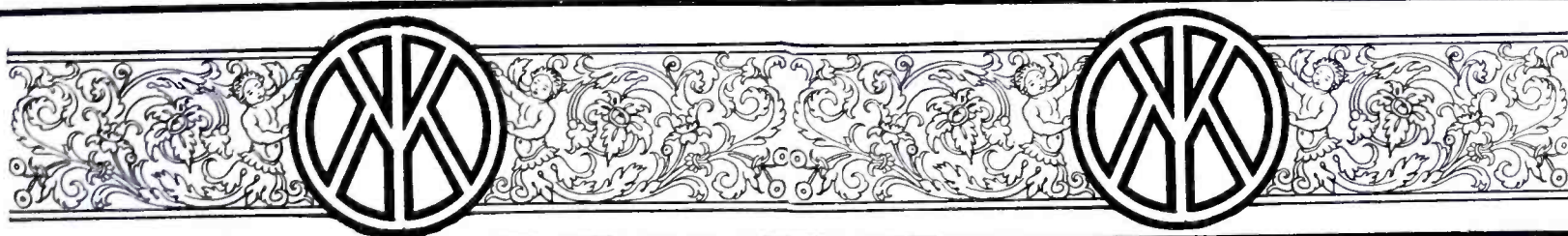
Fig. 6—Schematic diagram

and at the same time allows a vernier adjustment on each of the tuning units in the group.

Moving the master dial slowly over the 180 degree ordinarily gives indication of any station within the range of the receiving set. As soon as the station has been located, the tuning can be perfected by rotating the correcting vernier on each unit. After completing the tuning for that particular station, rotating the master dial ordinarily will tune in perfectly the adjoining station next to the station last tuned in; that is, in most cases, the correcting vernier will not have to be used for the stations of the wavelengths close to the station tuned in by using the correcting vernier.

The non-back lash, smooth adjustment of the dial has been maintained in each unit to provide for the correcting vernier. The ratio on this correcting vernier is approximately 50 to 1 and has been

- 1—Dubilier 2 Megohm Grid Leak.
- 3—Samson No. 51 Radio Frequency Chokes.
- 4—Harper Metaloid Coils.
- 3—Special Oscillation Suppressors. (See text.)
- 6—Shaw Sockets.
- 1—Jones Type BM Multiplug.
- 1—Yaxley 3 Ohm Variable Resistance.
- 1—Electrad Audiohm.
- 2—Modern Symphony Transformers.
- 40—Ft. Celastite Wire.
- 1—10"x25" Wood Baseboard.
- 1—Culver Stearns Battery Switch.
- 1—Package Kester Solder.
- 1—Southern Toy, 7x26 Cabinet.



The KURZ-KASCH

Aristocrat E-Z-TOON

(EASY TUNE)

Group Control

Simple to install, comes complete, no panel to drill. Each part detailed here for your convenience. Shown in Kits on Page 76.

No. 1—Master Control. Can be 180° or 360°, either clockwise or counterclockwise graduations.

No. 2—Correcting Vernier Assembled in place.

No. 3—Correcting Vernier Knob removed from mechanism.

No. 4—Correcting Vernier mechanism—self contained.

No. 5—Gear Rack. Total length 17-in. Additional lengths furnished for 360° dials.

No. 6—Moulded Bakelite Gear with set screw. One for each condenser.

No. 7—Spacer Washers. Eight furnished for each condenser. Quantity used depends on type of condenser.

No. 8—Rack Tension Roller—fiber—one for each condenser.

No. 9—Roller Tension Spring—one for each condenser. Place ring end against panel. Must operate free from rack.

No. 10—Tension Spring Spacer Washer. One for each condenser.

No. 11—Condenser Mounting Screws. Three 1-in. 8x32 flat head screws for each condenser.

No. 12—Friction Disc—one for each master control.

No. 13—Master Control Stop Pin—one for each Master Control.

Manufactured by

THE KURZ-KASCH COMPANY

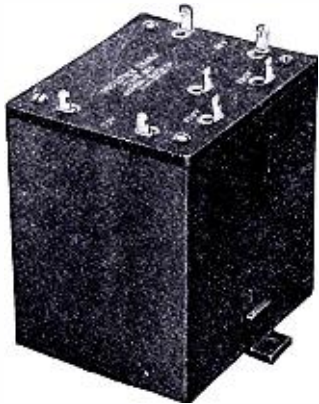
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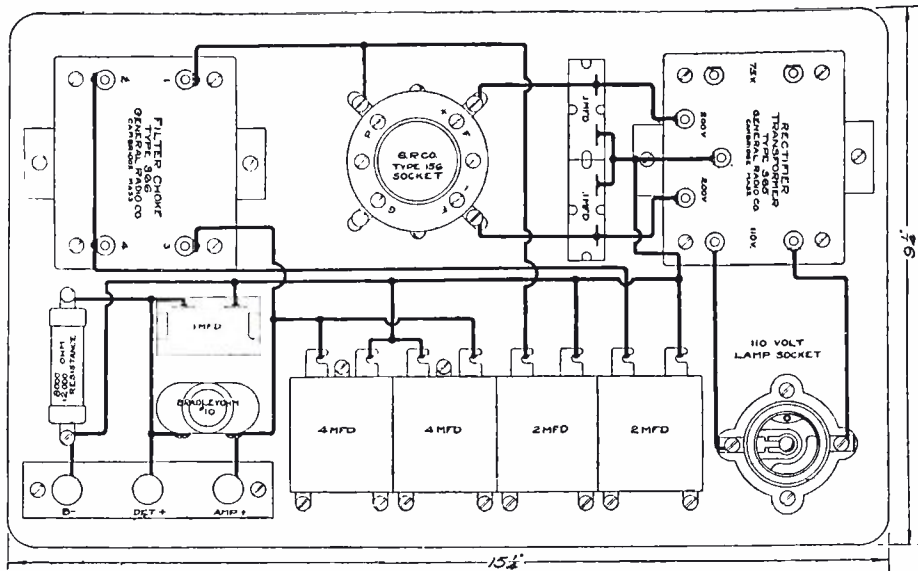
Dayton, Ohio

Tell 'Em You Saw It in the Citizens Radio Call Book

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Type 365
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Price \$10.00



Type 366
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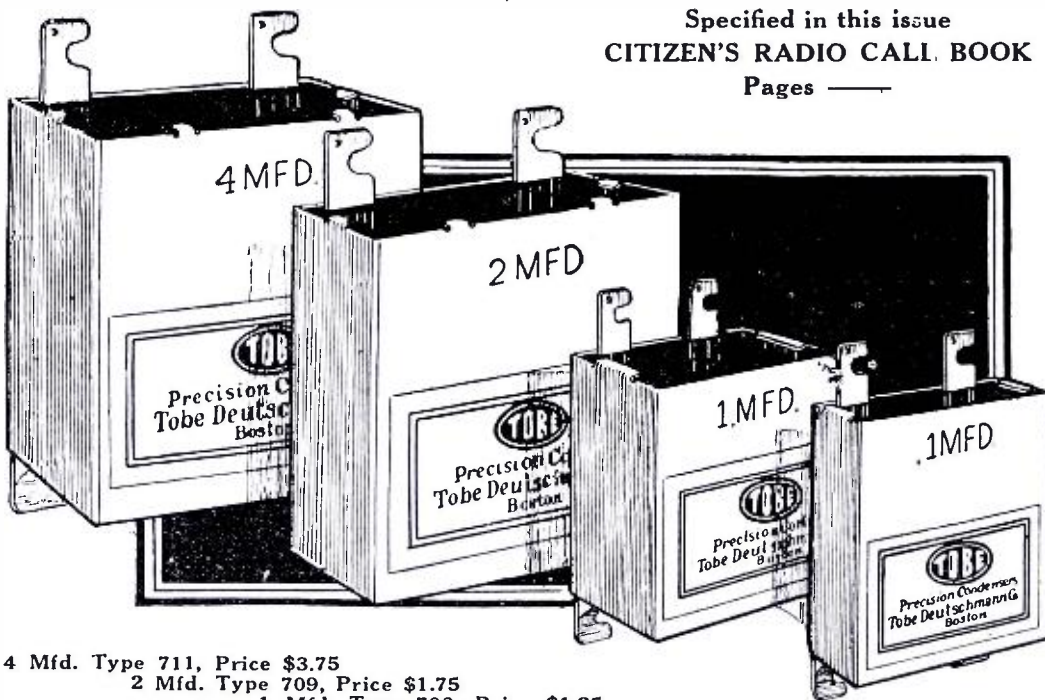
THE above diagram shows the arrangement of parts and connections for an efficient "B" battery eliminator using the new General Radio Type 365 Rectifier Transformer and Type 366 Filter Choke. These Transformers give very satisfactory results in a plate voltage supply unit when used

with the new Rayon rectifier tube or other tubes of similar characteristics.

For further description refer to page 9158 of our new Bulletin 923-CB or write for our circular, "Instructions for Building a 'B' Eliminator."

GENERAL RADIO CO., Cambridge, Mass.

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for
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- General Radio Co., Cambridge, Mass.
- Jefferson Electric Mfg. Co., Chicago, Ill.
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**E-1 Uses Raytheon Tube
Parts for "B"-Eliminator**

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 - B4 Transformer 7.00
- If you wish to build—see coupon below for use in ordering diagrams.

No noise—no hum —no "B" Batteries

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Now, you can get permanent reception, better reception and higher voltage. There is nothing to wear out; no "B" batteries to quit when you want them most. The first cost is the last; and the current consumed costs but a cent for every six hours.

Not only this, but the new Acme "B"-Eliminator has two voltages—100 and 150. It is highly effective on any set from 2 to 10 tubes.

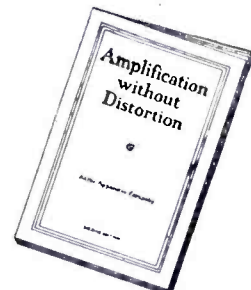
The rectifier, which consists of an Acme Transformer and Raytheon tube, which has no filament to burn out, handles both sides of the wave and will last indefinitely.

The full story of not only this new "B"-Eliminator, but also the new MA-2 closed type transformer, the new Acme "double free-edge cone" loud speaker and all other Acme receiving apparatus is contained in the 11th edition of "Amplification without Distortion," which is just coming off the presses.

Most of you, as old friends of Acme, are probably familiar with former editions, over 300,000 of which have been issued. This new one is more complete and interesting than ever. Send for your copy. If you wish to build your "B"-Eliminator rather than buy—send 25c for full directions and actual size diagrams showing how.

Claude Hains
President, Acme Apparatus Co.

ACME
~ for amplification

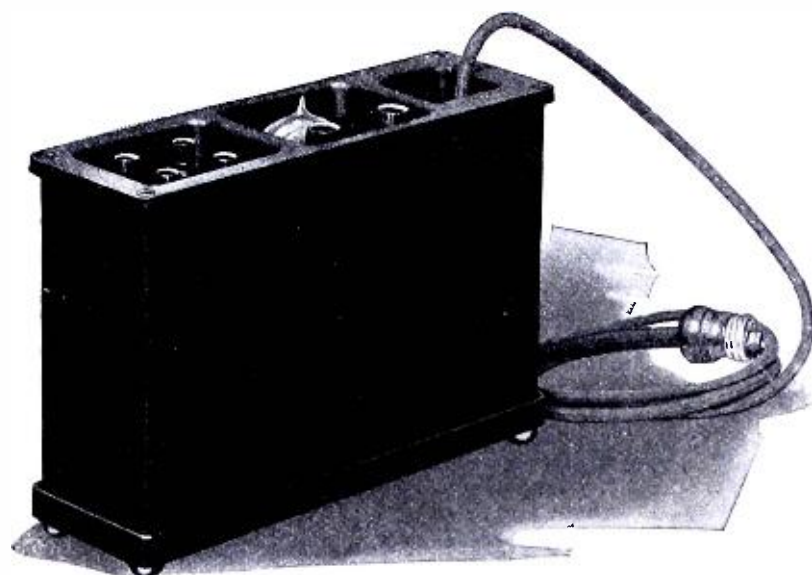


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 - Enclosed find 25c for working diagrams of "B"-Eliminator and a copy of "Amplification without Distortion."

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tests

The Modern "B" Power Supply Unit was developed, tested, and perfected in our laboratories. It goes to you as a finished product. It is unqualifiedly guaranteed.

It will operate any receiver satisfactorily, even improving in most instances the tonal quality. All types and designs of receivers, from the "super" to the neutrodyne have been operated from it. The four-tube Reflex, which is the stumbling block for the ordinary power supply unit, performed beyond all expectations from the Modern.

Ask your dealer to perform this test: Disconnect your ground and aerial; turn on your receiver; and then hold a Western Electric Speaker close to your ear. If your power supply unit is a Modern you will *not* be able to tell the difference; if your power supply unit is not a Modern you will perhaps hear a hum.

The Modern "B" Power Supply Unit can supply 150 volts, thereby permitting the use of the big power tubes. It has an extra 90-volt tap for peanut tubes. Optional connections are provided. The customary difficulties that beset the average power supply unit are totally absent from the Modern. Moisture seepage is prevented; electrical depreciation of the elements is completely overcome; several additional microfarads permit oscillation in the receiver that is designed to oscillate; each Modern "B" Power Supply Unit is thoroughly tested at 2,500 volts; and it is housed in an attractive, highly polished steel cabinet.

Furthermore, the Modern "B" Power Supply Unit is built by radio manufacturers of national reputation, manufacturers of standard equipment.

Ask your dealer or write direct for complete information.

MODERN ELECTRIC MFG. CO.

Manufacturers of Standard Radio Equipment

TOLEDO, OHIO

RAYTHEON

Tell 'Em You Saw It in the Citizens Radio Call Book

A Simple Design of "B" Battery Eliminator That Gives Astounding Results

TO successfully replace "B" batteries, an eliminator must possess certain definite characteristics which make of it a specialized piece of electrical apparatus. Its component parts must be the result of painstaking development. Contrary to popular opinion it is not possible to construct a satisfactory eliminator by the compounding of the usual three elements, tube, a Ford spark coil and a stray condenser. These parts do not lend themselves to the work. Special parts, designed for the purpose are required.

The Raytheon Manufacturing Company has produced a new tube rectifier, designed particularly for use in "B" battery eliminators. Its use in conjunction with transformers, choke coils and condensers, designed for use with it by equally progressive concern makes possible a "B" battery eliminator of unusual excellence.

The acid tests for a "B" battery eliminator are these: Does it hum? Can it be used on a receiver using ten or twelve type 201-A tubes with good results? Is the quality as good as that delivered by battery operated receivers? Is the volume as great or greater? Will it operate year in and year out with no attention? Is it economical?

The new rectifier makes possible the construction of an eliminator which operates without hum or noise of any kind, one which maintains its high voltage on receivers using as many as twelve large tubes, one which delivers better quality and more volume than the battery supply, and one which is a great deal more economical to operate than dry or storage "B" batteries.

The Raytheon rectifier tube is an outgrowth of the "S" tube. It operates on the same gas conduction principles which are responsible for the success of that device. There is no filament in the tube to burn out, or to become exhausted by constant use. The life of the tube is almost immeasurable; it should serve for a great many years. Full wave rectification is accomplished in the one tube. That is to say, both halves of the alternating current cycle are rectified, resulting in less operating expense and better quality of reproduction. The new tube handles large loads without the marked falling off in voltage characteristic of tubes containing filaments. As a result a higher voltage is applied to the "B" battery posts of the receiver, particularly with multi-tube sets, giving greater volume and clearer tone.

Special transformers and chokes, particularly designed for use with the new tube have been placed on the market by several foresighted manufacturers. They are given in the following table which gives the type numbers of the respective instruments. The eliminator will require one transformer. Where single chokes are used, two will be required. The number needed of each manufacture is noted herewith:

Manufacturer	Transformer type No.	Choke type No.	No. of chokes needed
Acme Apparatus Co., Cambridge, Mass.....	B4	B2	2
All-American Radio Corp., Chicago, Ill.....	R7	R8	2
Dongan Elec. Mfg. Co., Detroit, Mich.....	509	514	2
General Radio Co., Cambridge, Mass.....	365	366	1
Thordarson Elec. Mfg. Co., Chicago, Ill.....	R195	R196	2



The rectifying tube

The filter circuit used in the new "B" battery eliminator was designed by Professor F. S. Dellenbaugh, Jr., of the Massachusetts Institute of Technology, one of the foremost authorities on filters in this country. So efficient is the filter circuit that, under ordinary loads, it is impossible to hear the slightest trace of hum with either the head phones or the loud speaker in the second stage of audio amplification.

List of Parts

- 1 Raytheon Type B rectifier tube.
- 2 Benjamin No. 8629 Brackets.
- 1 Transformer (See list of manufacturers).
- 2 Choke coils (See list of manufacturers for number required).
- 1 Variable Resistance Rv, 10,000 to 100,000 ohms (Bradleyohm No. 10).
- 1 Fixed Resistance Rf, 10,000 ohms (Must be able to carry 15 milliamperes).
- 2 0.1-MF, 2 2-MF, 2 4-MF,
- 1 0.5 MF Condensers—
Deutchmann, Dubilier, or Potter Condensers may be used, any of which will work satisfactorily.
- 3 Bindingposts.
- 1 Howard socket.
- 1 Insulating bindingpost strip.
- 1 Fixture plug.
- 1 Hoyt 0.50 milliameter.
- 1 Federal 1424-W switch.

We have designed in our laboratory the eliminator shown in the accompanying photographs and illustrations. A double-throw switch has been installed to turn off all the current or throw the "B" voltage from "low" to "high." When the switch is on the "off" position the entire eliminator is "dead."

A milliameter mounted on the panel shows at all times just how much the eliminator is delivering to the plates of the tubes. Some types of receivers will work the best with the switch in the "low" position. For "supers" and multi-tube sets the eliminator generally works the best in the "high" position.

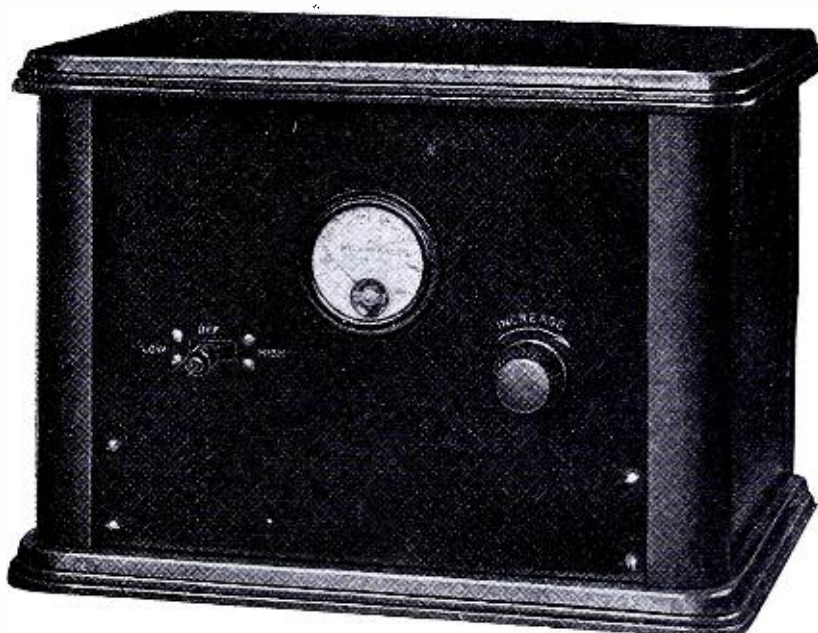


Photo A—Front view of eliminator mounted in cabinet

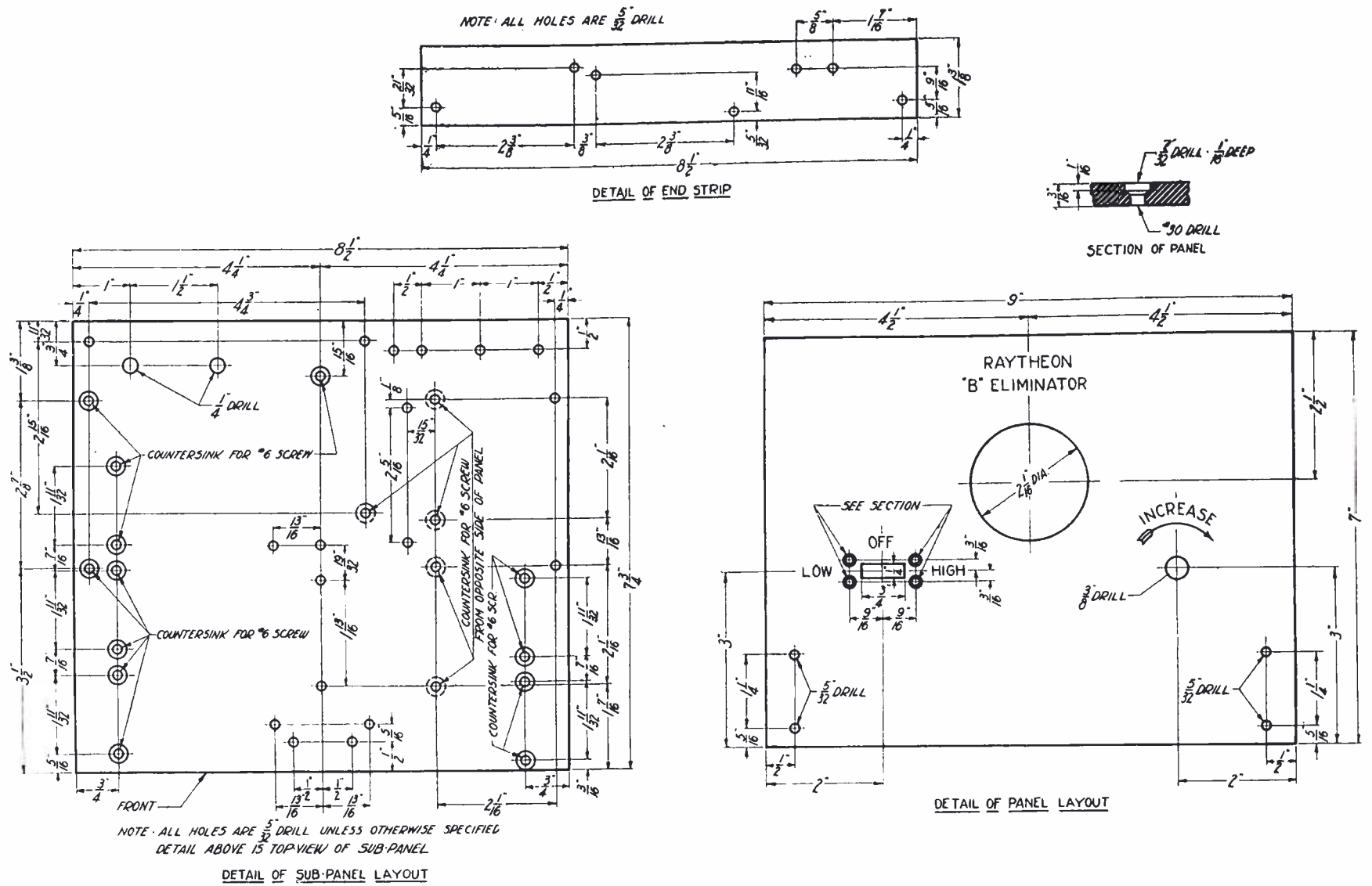


Fig. 1—Layouts of front panel, subpanel and end strip

By turning the Bradleyohm shown at the right of photo A it is possible to control the "B" voltage on the detector tube. This should be adjusted until it works the best and then left in that position.

Photo B shows a top view of the sub-panel and Photo C is a bottom view showing the arrangement of the fixed condensers.

By following the exact dimensions as shown in Fig. 1 you will be able to mount all of the parts on both sides of the sub-panel. Holes are shown which are to be used in running the leads

through the sub-panel. A layout of the end strip secured to the Benjamin brackets is also shown.

If it is desired to mount the eliminator on a baseboard, only the layout should be followed as shown in Fig. 6. Each part should be firmly fastened to the baseboard with wood screws. By bending the small tabs, fastened to the cases of the condensers at right angles to their usual position, it is possible to screw the condensers to the board in an upright position which will be found the most convenient position for wiring purposes. A soldering lug should be put

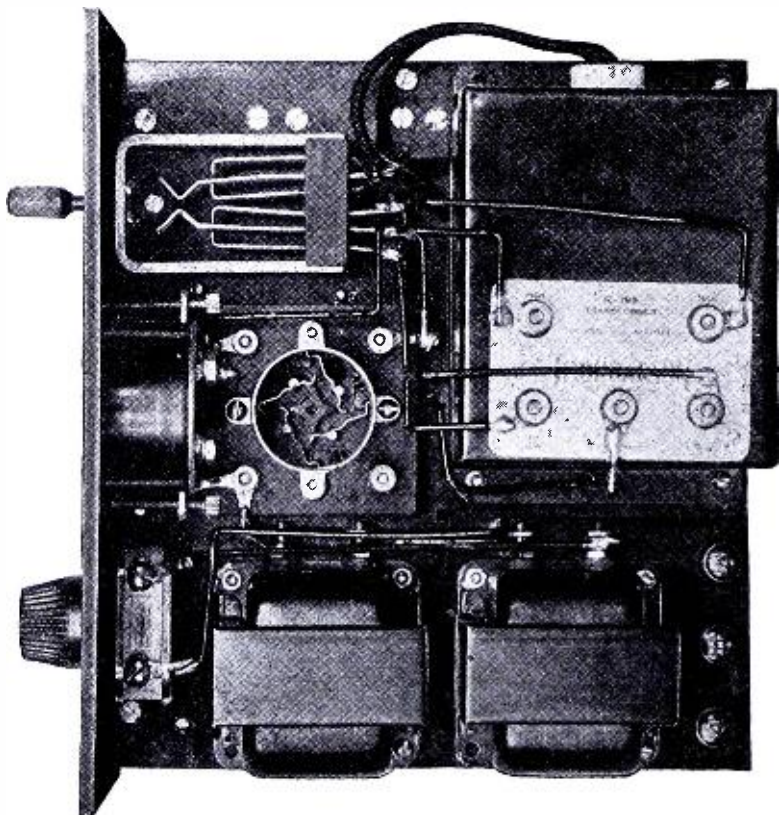


Photo B—Top view showing arrangement of parts

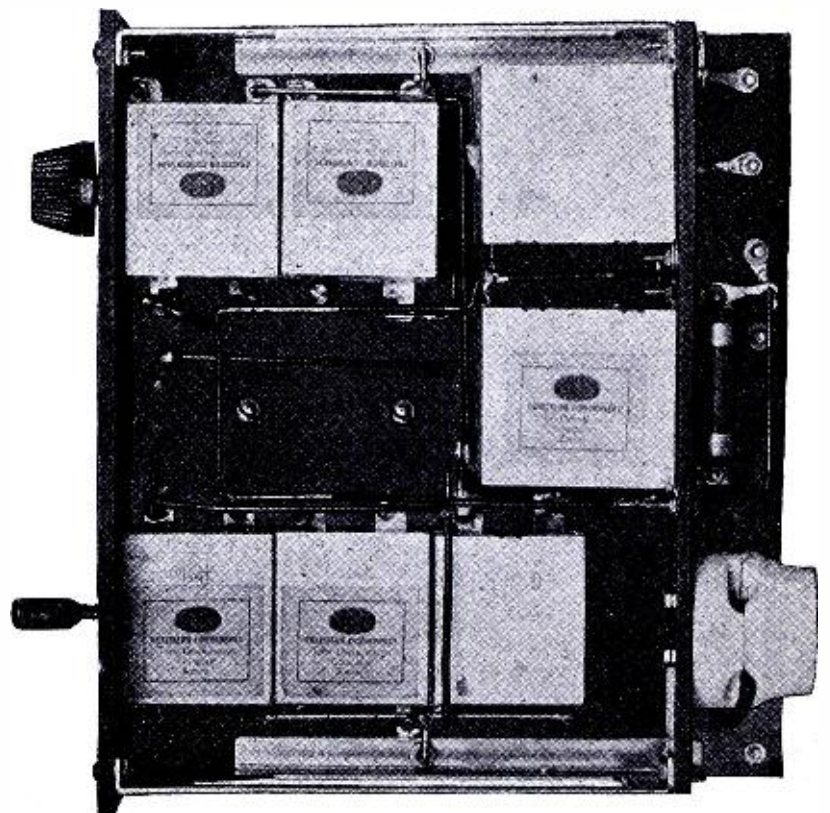


Photo C—Bottom view of subpanel

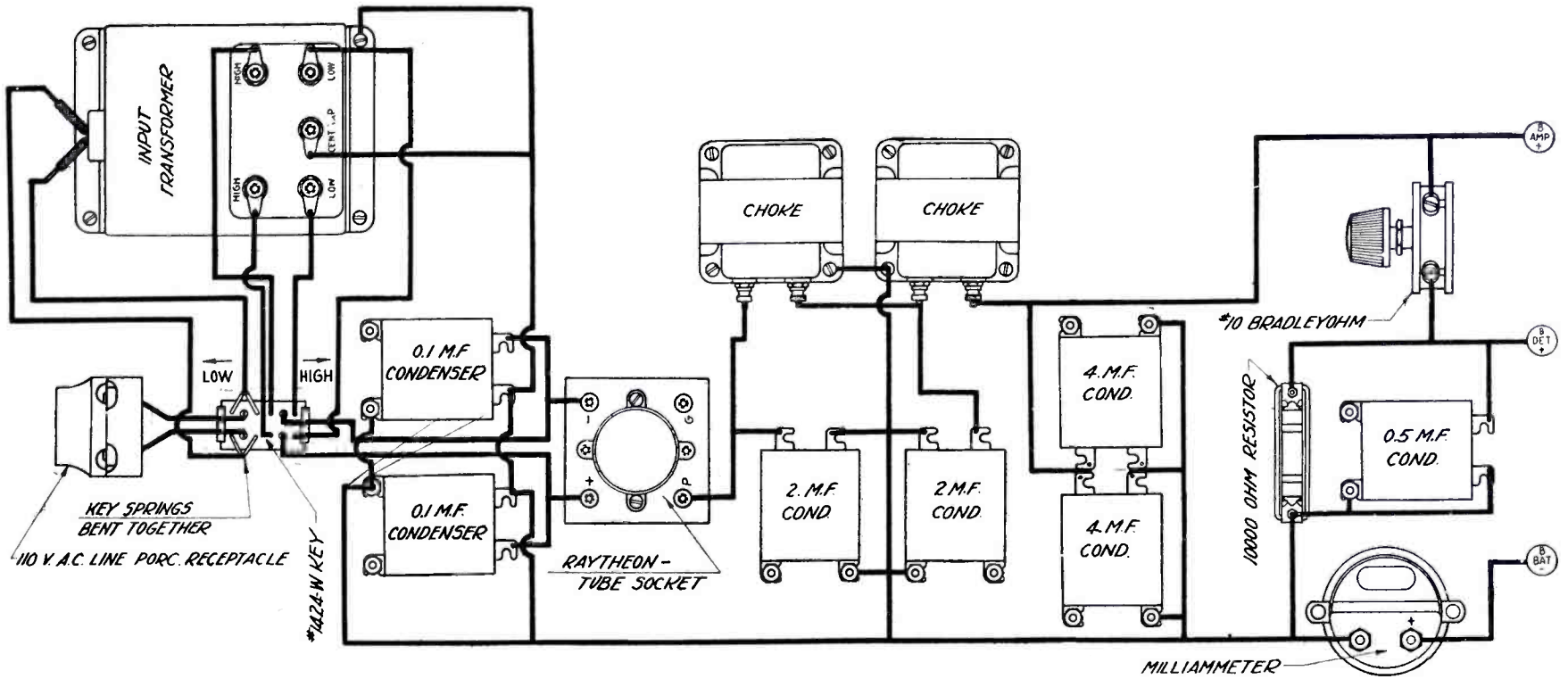


Fig. 2—Graphic illustration

under one of the screws holding each of the instruments to the board, for a purpose which we will describe later. Make sure that this lug is in good electrical contact with the metal case of the instrument by cleaning the contact areas with emery cloth. The bindingpost panel should be fastened to the right hand end of the baseboard as shown in Fig. 6. The variable resistance Rv should be mounted upon it as shown and the three posts should be labeled "B Amplifier," "B Detector" and "B Negative" from top to bottom respectively in Fig. 6.

Wiring Instructions

In order to wire the eliminator, after the parts have been fastened into place, proceed as follows: The eliminator should be

height corresponding to that of the transformer terminals, bend horizontal again to point 15 on the transformer. The bus just put in place will be referred to hereafter as the B negative lead. Connect points 8 and 9 with a piece of bus, soldering to the B negative lead at point 12. Connect points 5 and 7 together and continue to point 11, which is one filament post of the UV-201-A socket. Likewise, connect points 6, 10 and 13 (the other filament terminal of the socket) with a piece of bus. Connect points 14 (the plate socket terminal), 16 and 17 together. Connect points 20, 19 and 23 together. Connect points 24, 28 and 27 with a piece of bus and continue to points 31 and 32 (bindingpost marked B amplifier). Now connect points 18 and 21 together and continue to 22, at which point solder to the B negative lead. In

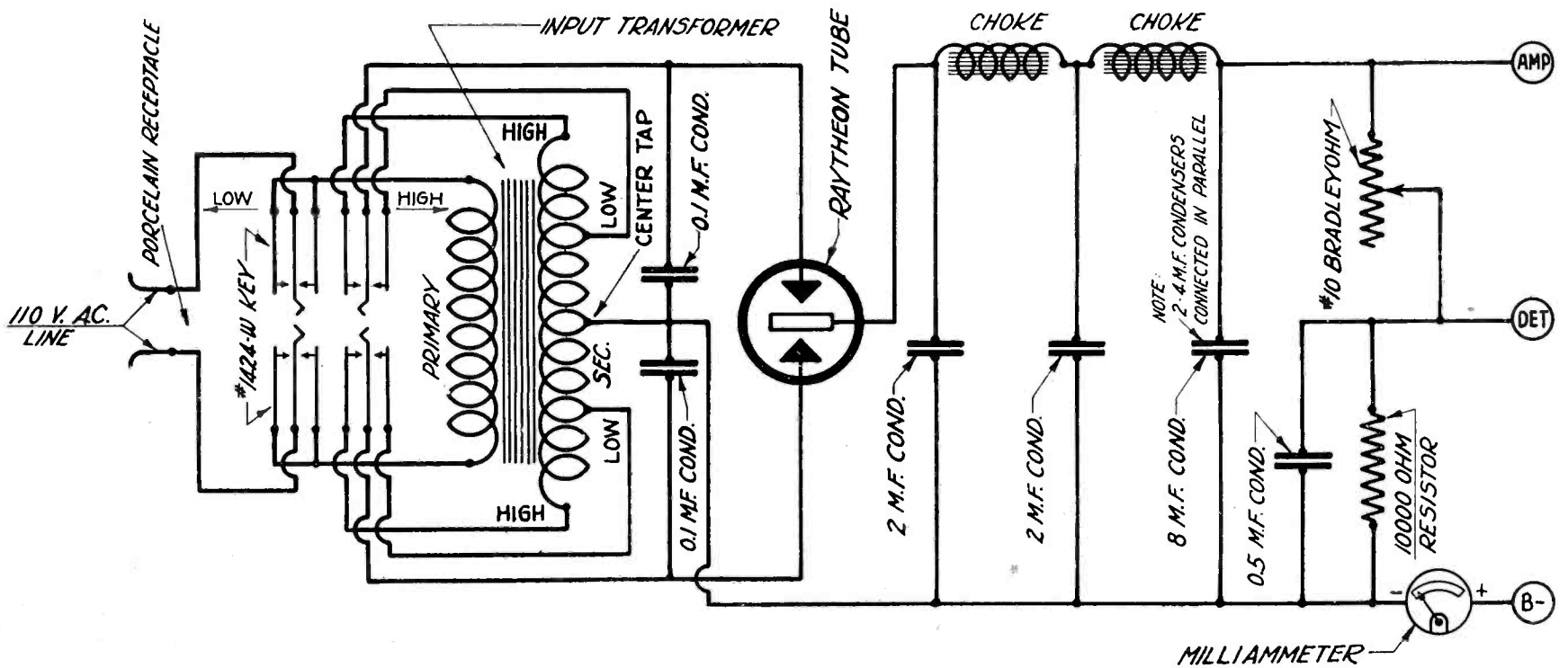


Fig. 3—Schematic diagram showing connections to make to double throw switch

wired with bus-bar, spaghetti being cut to the proper length and slipped on each wire as you proceed. Connect points 1 and 3 with one piece of bus. Connect points 2 and 4 with another. Now take a long piece of bus and, starting at the point 37 (Fig. 6) or the bindingpost marked B Negative and run along the baseboard as shown by the numbers 38, 26, 22 to point 12, located on the baseboard between the 201-A-socket and the condensers 7, 8 and 9, 10. At point 12 bend bus-bar into vertical position and at a

the same way connect points 25 and 29 together and continue to point 26, where the bus is soldered to the B negative lead. Now connect together points 30, 34, 35 and 33 (B detector bindingpost). Finally, connect points 38 and 36 to the B negative lead as shown.

It will be noted in the diagram that the cases of all transformers, chokes and condensers are grounded to the B negative lead. This should be done by soldering a piece of bus to the soldering

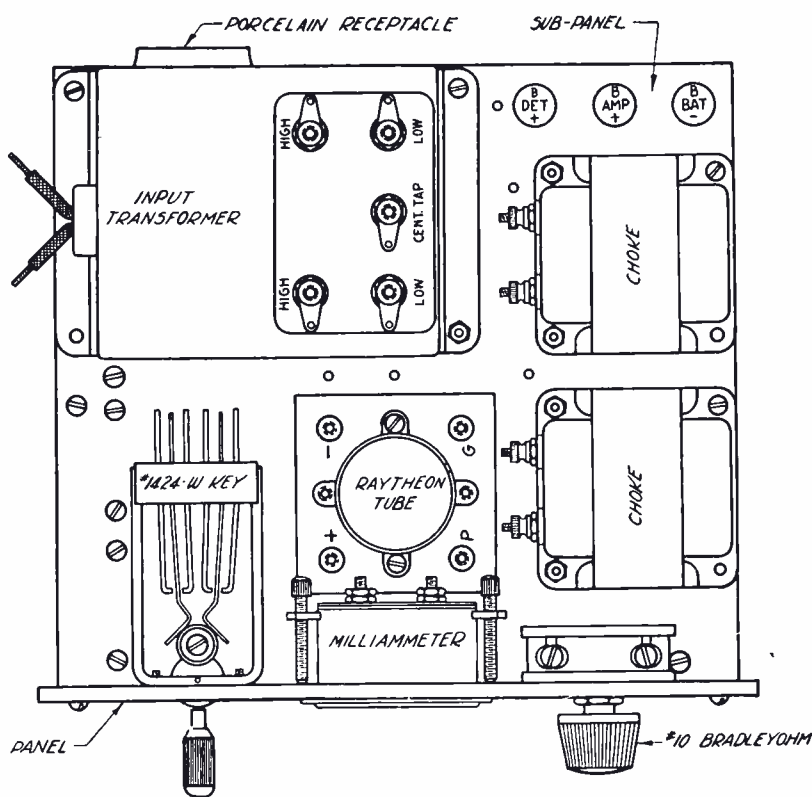


Fig. 4—Subpanel layout, top view

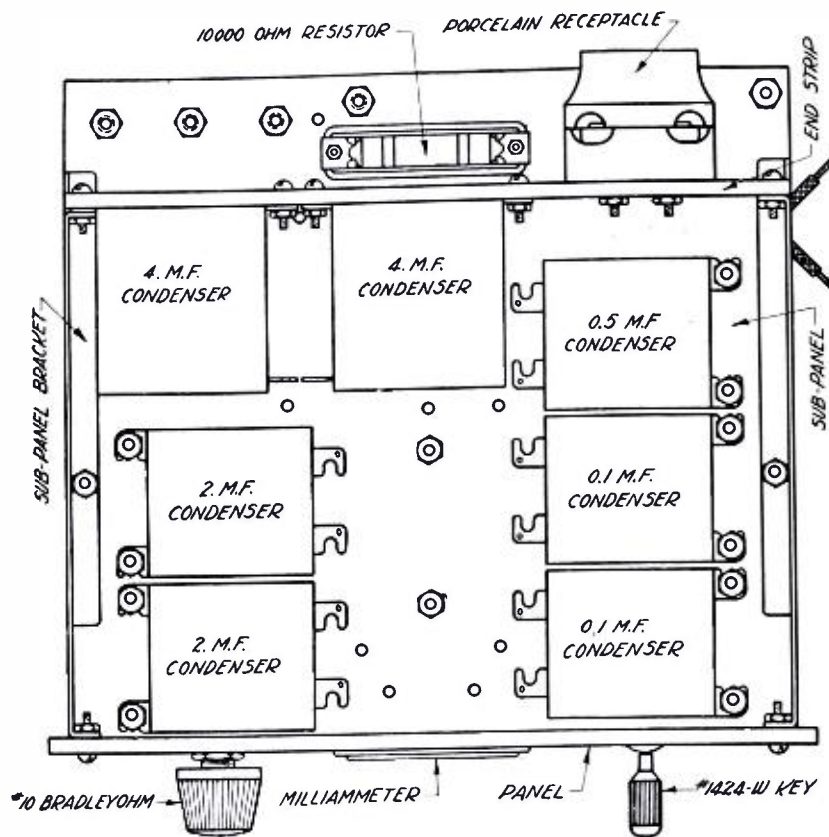


Fig. 5—Subpanel layout, bottom view

lug under the base mounting screw for each instrument and connecting to the B negative lead as shown by the dotted lines a, b, c, d, e, f, g, h and i. This completes the wiring.

In order to place the "B" battery eliminator in operation proceed as follows: Insert the Raytheon tube in the socket provided for it. Connect the posts marked B negative, B detector and B amplifier on the eliminator to the posts on the receiver in the same way, taking care that the proper order be maintained. This should be done by a twisted, three cable conductor about six feet long. In certain cases it may be advisable to keep the eliminator a foot or more from the set in order to do away with the inductive effect from the alternating current wires. Make sure that one terminal of your "A" battery is grounded. Now insert a plug into the receptacle at the left and connect by means of a cord with the nearest electric light socket. The eliminator is now operative. In order to lower the value of voltage applied to the detector tube, screw the knob of the variable resistance in a counter clockwise direction.

In operating a device of this kind, it should be borne in mind

that one is dealing with power circuits. High voltages are being handled, which are capable of giving one a bad shock if allowed to come in contact with the hand, or other parts of the body. It should be an invariable rule to always turn off the current at the lamp socket before touching any part except the detector adjustment. (It will be found that this detector adjustment will be a great help in clearing up distant stations which were just out of range of your battery operated receiver.) The voltage which the eliminator delivers is higher than that ordinarily employed, so the "C" battery voltage should be increased correspondingly. It may be advisable to use two "C" batteries connected in series to take advantage of the higher plate voltage. Some manufacturers make their Raytheon transformer with an extra tap on the primary so that either a "high" or a "low" amplifier voltage is available.

If properly constructed, the eliminator will give you greater volume than you had thought possible. It will give you quality of reproduction better than that obtained from batteries. It may even enable your receiver to cover greater distances.

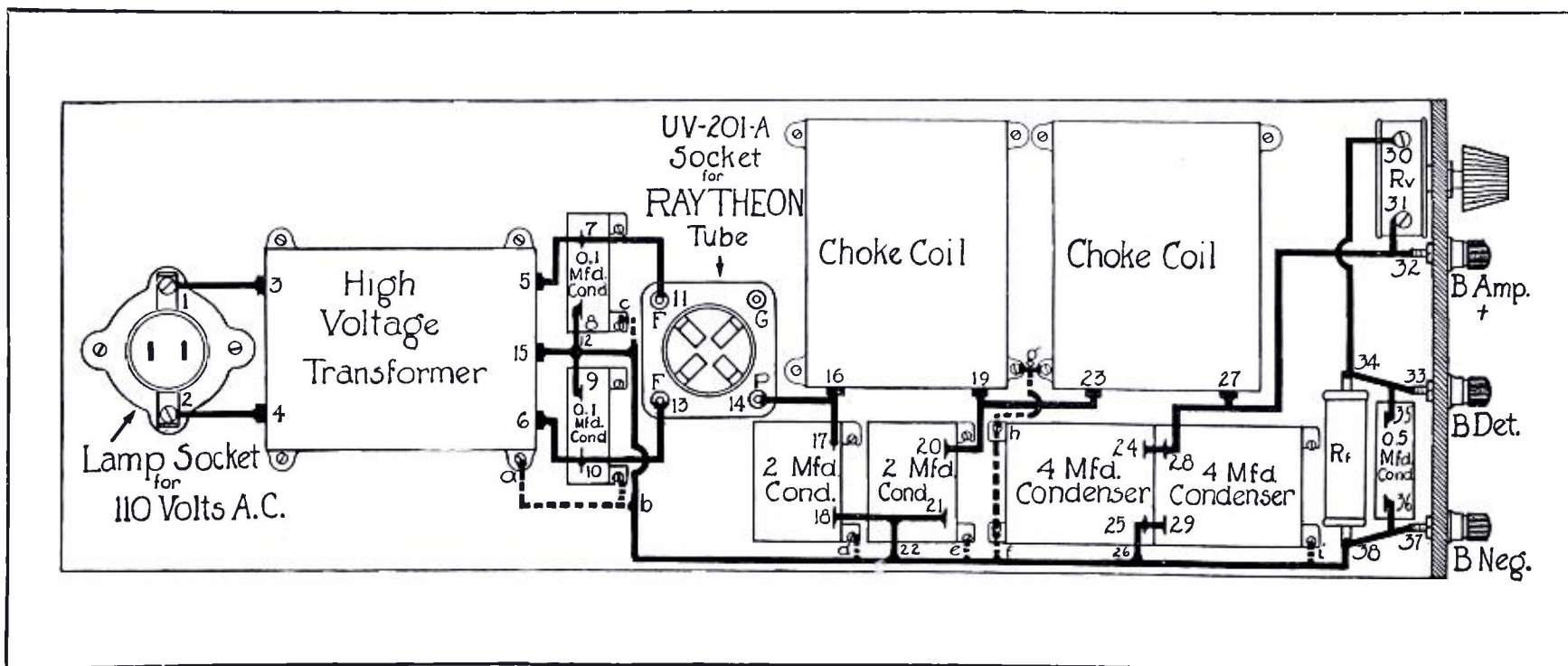


Fig. 6—Graphic illustration of eliminator mounted on baseboard only

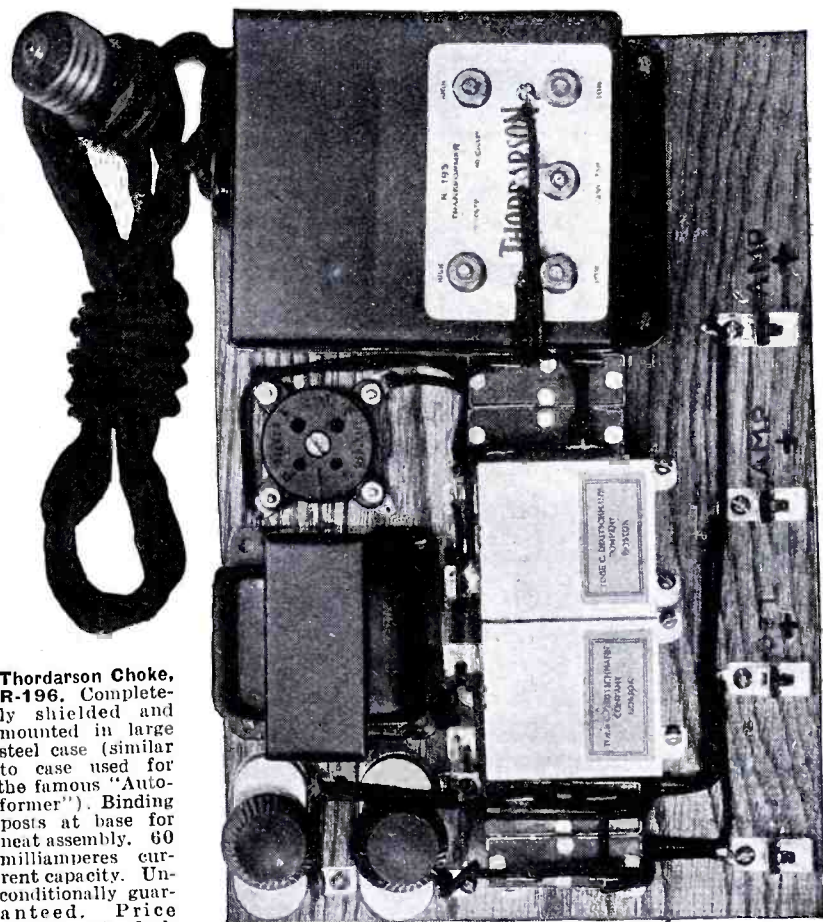
The RAYTHEON B-eliminator is the first "B" plate supply unit Thordarson has approved. Even on the modern all frequency amplifiers, it operates without hum, when built with the specially designed

THORDARSON

"Raytheon-type"

Transformers and Chokes

Thordarson Transformer, R-195. Larger in capacity—will not heat up in continuous service. Conservatively rated. Supplies 140 volts at 40 milliamperes, or 90 volts at 60 milliamperes when operated with Raytheon tube. Unconditionally guaranteed if used according to instructions. Price, including six foot cord and separable plug, \$7.00—at dealers, or by mail.



Thordarson Choke, R-196. Completely shielded and mounted in large steel case (similar to case used for the famous "Auto-former"). Binding posts at base for neat assembly. 60 milliamperes current capacity. Unconditionally guaranteed. Price \$5.00—at dealer's, or by mail.

(Photograph by Silver-Marshall, Inc., Chicago)

Write for Hook-up Bulletin

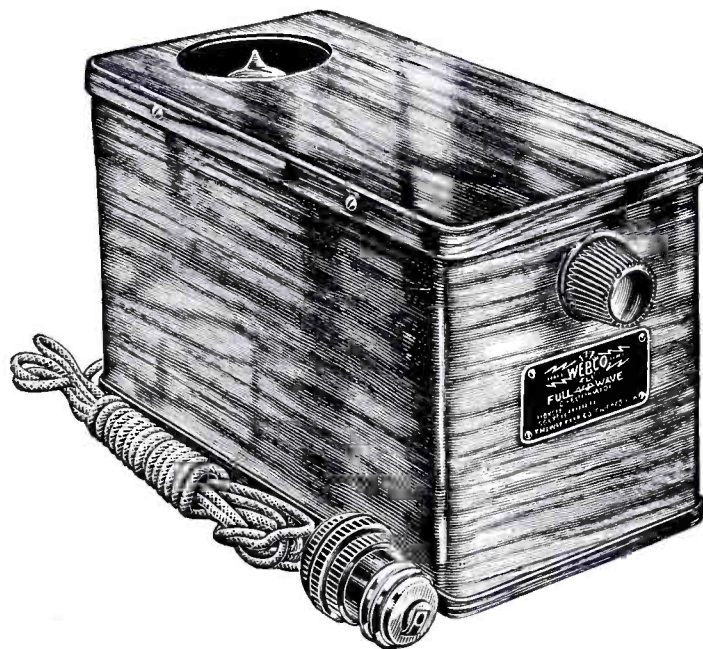
Thordarson Transformers and Chokes also are standard on the B-eliminators of leading makers. Insist upon Thordarsons—the product of the world's oldest and largest exclusive builders of transformers, transformer specialists for more than thirty years!

THORDARSON ELECTRIC MANUFACTURING CO.
Transformer specialists since 1895
WORLD'S OLDEST AND LARGEST EXCLUSIVE TRANSFORMER MAKERS
Chicago, U.S.A.

Webster

SUPER-B

New—Different—Better



More Than a Substitute It Improves Reception!

Whatever your set, whatever your present results, the Webster SUPER-B will improve your reception. It is not just another substitute for B batteries, but is *better* than B batteries.

Using the new Raytheon tube, the Webster SUPER-B gives you power to spare, *permanently*. It is as dependable as your electric light,—never diminishes, never fluctuates. Therein lies the secret of the matchless tone quality and increased volume obtained. It eliminates forever the noise of run down B batteries and the bother and expense of battery replacement.

The Webster SUPER-B will run any tube set, from any 110 volt 60 cycle alternating current light socket. Adjustable for any voltage requirement. One of the features is the provision made to handle the new power tubes, with a voltage range of 135 to 150 volts, independently of the regular radio frequency and audio frequency stage requirements.

The Webster SUPER-B saves money, too. It has nothing to wear out, to burn out, to spill out, or to replace. It is permanent. Its operating cost is less than one-tenth of a cent per hour,—many, many times cheaper than B batteries.

The Webster SUPER-B is handsomely finished in grained walnut enamel. Everyone will admire its handsome appearance, and the way it harmonizes with the most distinguished surroundings.

Write for Free Booklet, "IMPROVING YOUR RADIO"

Ask your dealer to show you a Webster SUPER-B. If he does not have one in stock it will pay you to wait till he gets one. Or write to us, mentioning his name.

THE WEBSTER COMPANY
 3510 West Lake Street Chicago, Illinois



**Better Quality—Greater Volume
More Economical**

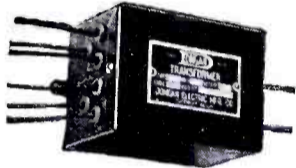
To Operate Your Set With

Raytheon Tube B-Eliminator

Using

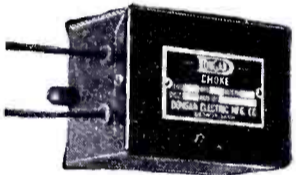


Practical in every respect the new Raytheon Tube B-Eliminators add more to the pleasure of radio than any achievement in two years. Performance is consistent and your B-Eliminator costs less to operate. It is very easy to build your own B-Eliminator—and inexpensive compared with the cost of B-Batteries.



509 Full Wave
\$7.00 List

Chokes



514 20 Henry
\$5.00 List

Raytheon Tubes
\$6.00 List

Also Transformers and Chokes for R. C. A. and Cunningham Tubes.

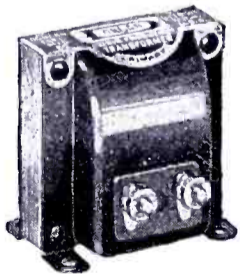
Order from your dealer or send check or money order direct to factory. C. O. D. deliveries made on request.

Built complete, including winding of coils, in Dongan plant

JOBBERS

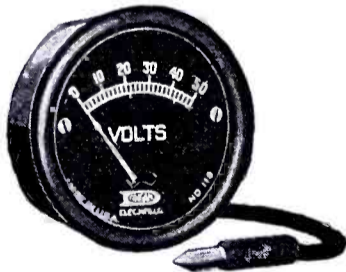
"Finest all-year radio merchandise on the market," said one of the country's leading jobbers. Dongan wishes new connections in certain territories.

**Used by 45 Set Manufacturers
Audio Transformers and Voltmeters**



Type S—Handsome Mountings. Ratios 2-1, 3½-1 and 6-1. List \$4.00, \$3.00, \$3.75.

Best for your Set



Type F—Portable. Handsome Black Finish. Range 0-7, 0-50, and 0-100 volts. List \$1.50, \$1.75.

Dongan Electric Manufacturing Company
2997-3001 Franklin Street
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TRANSFORMERS of MERIT for FIFTEEN YEARS



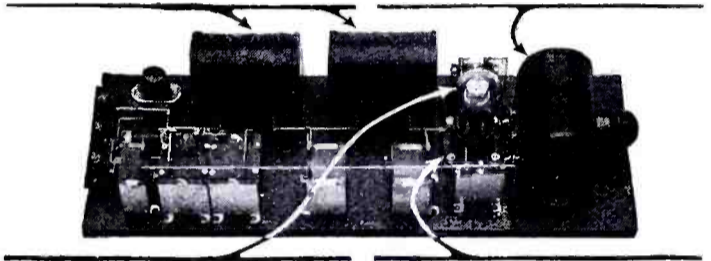
ALL-AMERICAN
TRADE MARK

PLATE-POWER UNITS

For permanent 90 volt power supply, using the new Raytheon Tube.

Plate-Power Choke. A Coil of 50 henries inductance—an unusually high value for a commercial choke.
Type R-8, each \$4.50.

Plate-Power Transformer with separable plug (short-circuit-proof) for connecting to A.C. house circuit.
Type R-7, each \$6.00.



The famous Raytheon Tube.
Price, each.....\$6.00

Side-Contact Tube Socket.
Type R-25, each.....75c

These units are manufactured to the same requirements for accuracy and durability which have made ALL-AMERICAN Transformers a standard of quality throughout the world of radio.

They are identical electrically with parts used in the ALL-AMERICAN *Constant-B*—a factory-built plate-power to be announced shortly.

Complete working drawings and circuit diagram of the B-power illustrated above sent on request.

ALL-AMERICAN RADIO CORPORATION

Pioneers in the Industry

E. N. Rauland, Pres.

4217 Belmont Avenue

Chicago, Ill., U. S. A.

OWNING AND OPERATING STATION WENR
266 METERS

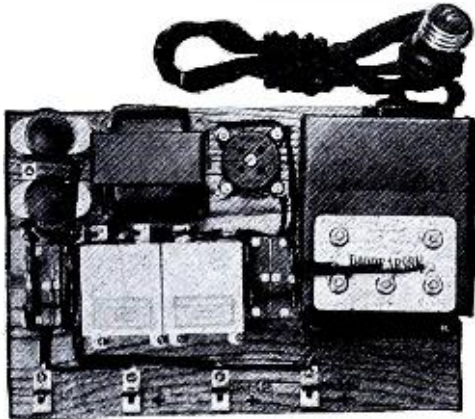
ALL-AMERICAN
Radio Built for the Years to Come

Tell 'Em You Saw It in the Citizens Radio Call Book

SM

650

Eliminator



ELIMINATOR HEADQUARTERS

The SM Type 650 Thordarson-Raytheon Kit is the accepted standard of this popular eliminator, representing as it does, not one, but the combination of five nationally-known engineering organizations.

Each part is carefully designed to function at maximum efficiency with every other part. Yet to assemble the kit and put it in operation requires but half an hour—so simple and positive is the design.

This Eliminator will operate with any type of set and will deliver from 20 to 200 volts at three adjustable voltages, with up to 50 milliamperes. Thus, it is ideal for super-hets, resistance, auto-formers or power amplifiers requiring high, constant, powerful output. It will invariably improve the distance, range, quality, volume and dependability of any set with which it is used.

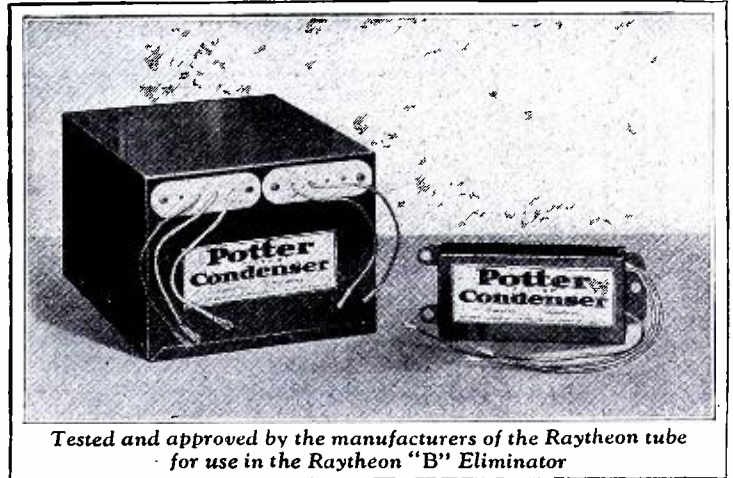
The SM 650 will end, once and for all, your B-Battery trouble, assuring you of constant service at maximum efficiency; since the tube has no filament to burn out.

Price DIRECT OR FROM YOUR DEALER **\$34**

Complete Building Instructions 10c

Silver - Marshall, Inc.

110C South Wabash Avenue
CHICAGO



Tested and approved by the manufacturers of the Raytheon tube for use in the Raytheon "B" Eliminator

The Only Condensers specially designed for the Raytheon "B" Eliminator

Complete in Two Groups

The two Potter Condenser Groups shown above constitute a complete condenser equipment for building the Raytheon "B" Eliminator. They are the only condensers specially designed in groups for this use. They are specially developed to stand up under the high voltages used with the Raytheon tube.

Tested 1000 Volts D. C.

Each unit in these groups has been thoroughly tested to a break-down voltage of not less than 1000 Volts D. C. They are of full capacity. They remove every vestige of A. C. impulses. They eliminate all hum.

The larger of the two groups is the Filter Unit, tapped for 8, 2, 2, and .5 Mfds. This unit is also made with smaller capacities as listed below. The smaller unit shown is the Transformer Condenser Unit, used across the secondary of the transformer. Both units have strong metal jackets. They occupy minimum space and make for quick assembly.

These two units provide a complete and ideal condenser equipment for the Raytheon "B" Eliminator, yet cost practically no more than would the cheapest condensers if bought separately. Ask for them at your dealer's today. If he cannot supply you write direct to us.

- No. 350 Raytheon Filter Unit—Tested 1000 Volts D. C. —Tapped 8 Mfds., 2 Mfds., 2 Mfds. and .5 Mfd.
- No. 375 Same as 350, but tapped 6 Mfds., 2 Mfds., 2 Mfds. and .5 Mfd.
- No. 385 Transformer Condenser Unit—Tested 1000 Volts D. C.

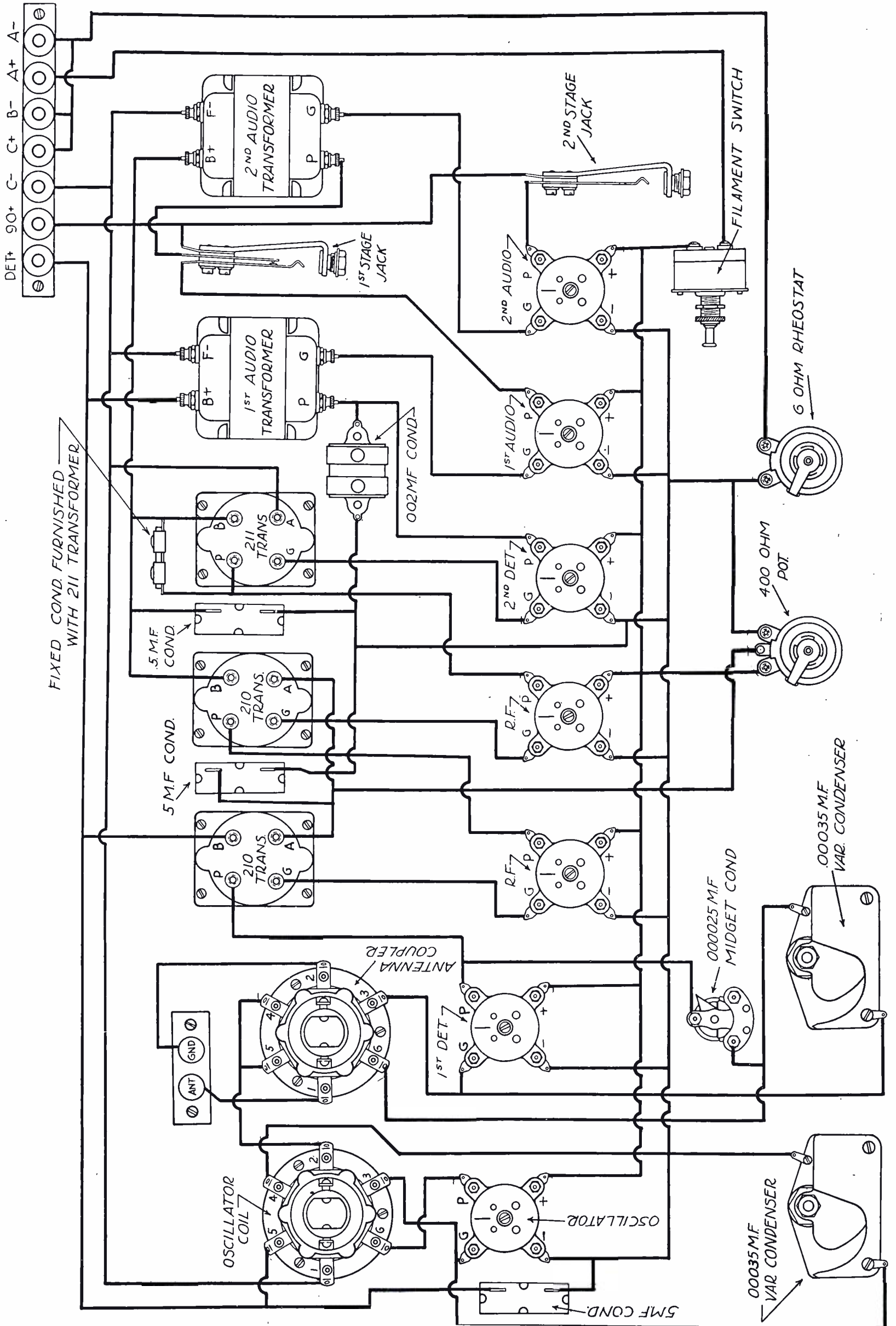
Potter FILTER Condensers

(An American-Made Product)

POTTER MANUFACTURING COMPANY, North Chicago, Illinois

Tell 'Em You Saw It in the Citizens Radio Call Book

The Improved Silver Super Heterodyne



SM SILVER SIX

McMurdo Silver's Newest Receiver

This amazing receiver has everything that makes for perfect reception. Thousands of builders report its startling performance—enthusiasts over its marvelous selectivity and sensitivity—marvel at its extraordinary volume. You will find Mr. Silver's description of the "SIX" very interesting. Send for it today.

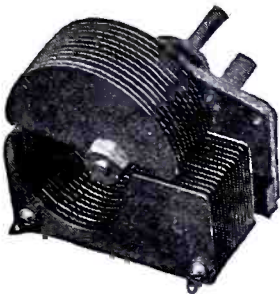
ANYONE CAN BUILD THE SILVER "SIX" AND SECURE PERFECT RESULTS



SM 210 AND 211 TRANSFORMERS

Designed so that maximum amplification will be obtained at 60 kilocycles. Both types in bakelite housings, hermetically sealed. No. 210 is iron-core type while No. 211 is of the air-core type, and is supplied with measured tuning condenser. Each transformer is furnished with individual laboratory curve chart.

Price: Both Types, each.....\$8.00



SM SLF CONDENSERS

These new condensers are particularly adapted for short wave reception because of their extremely low dielectric and eddy-current losses. They are the smallest SLF Condensers made. Supplied with special attachment for single control.

Prices: No. 310, .0005.....\$6.00
No. 311, .00035..... 5.75

SM LOW LOSS INDUCTANCES

All-bakelite Low Loss Interchangeable Coils for 50-550 meters. These new coils may be used as oscillators, antenna adapters and RF transformers in standard circuits.

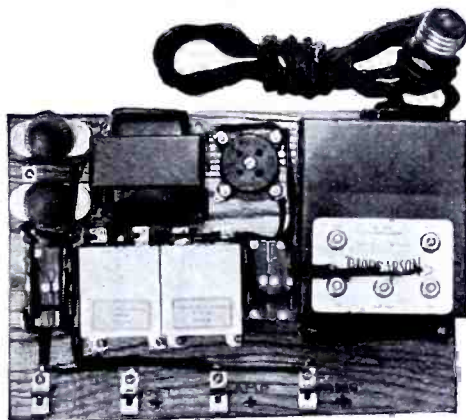
Price of all types, each.....\$2.50
Sockets for any size Coils, Each.....\$1.00



SM VERNIER DIALS

The SM Type 801 Vernier Dials are of all bakelite construction. Zero to 100—clockwise—counter-clockwise or 360 degrees (for Remler Condensers) in a single type. In appearance and operation the SM is the finest vernier dial on the market.
Price each.....\$2.50

TYPE 600 KIT, including all parts necessary to build the complete "SIX".....	\$53.00
TYPE 610 KIT, essentials only, including 3 condensers, 3 inductances and 3 inductance sockets.....	\$27.75



The IMPROVED RAYTHEON-THORDARSON B-ELIMINATOR

The SM Type 650 Kit includes Thordarson transformer, choke, Tube condensers, genuine Raytheon tube, Bradleyohms and all necessary parts. Price \$34.

This eliminator will deliver from 20 to 200 volts at three different, adjustable voltages with maximum current of 50 milliamperes—

more than enough for the largest receiver.
Send for Assembly Instruction by McMurdo Silver.....10c

Thordarson Power Transformer

This new, audio power transformer has been endorsed by McMurdo Silver, who says it is the very finest obtainable. Its curve is a straight line—
its quality cannot be improved on. Price each.....\$8.00

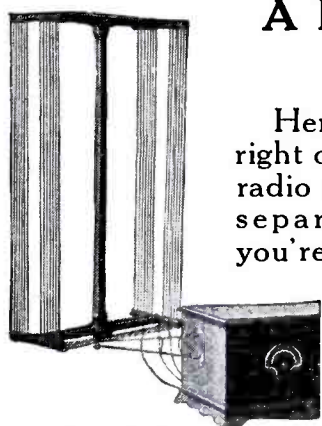
See SM Products at Your Dealers

SILVER-MARSHALL, Inc.,
110C S. Wabash Ave. Chicago, Ill.

Tell 'Em You Saw It in the Citizens Radio Call Book

Signal — Headquarters for Good Loop Aerials

If it's a Signal Loop it's a good one because we're old hands at making them. One of the first manufacturers to build inside aerials, we have the advantage of years of experience as well as engineering knowledge. That's why our loops today are second to none in performance and workmanship—the biggest buy for the money when it comes to results.



A Bracket Type That Saves Space

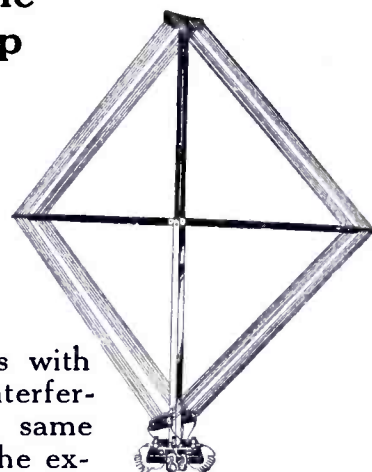
Here is an aerial that attaches right onto the end of the standard radio cabinet. You don't need a separate piece of apparatus if you're crowded for room. Screw on this bracket type loop and it becomes part of your set. It can be turned a complete 360° in a

space no greater than the width of the average cabinet. Aerial proper can be easily disconnected for moving about without unmounting the bracket.

The Signal Bracket Type Loop Aerial is built of solid walnut. All metal parts are heavily nickel plated. A third tap is provided for sets requiring it. The entire unit just radiates quality and matches up with all types of cabinets. Price \$8.50.

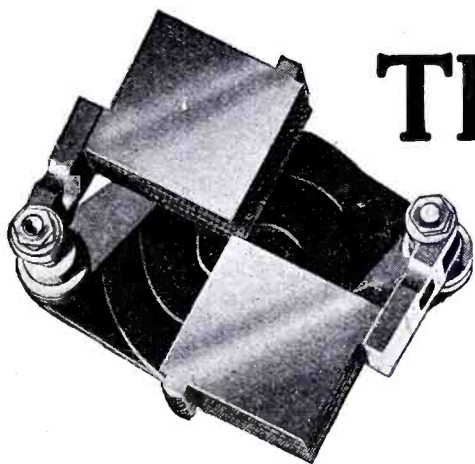
Handy Collapsible Table Type Loop

An old standby that has won the favor of thousands of fans everywhere. Folds up like an umbrella when not in use. Can be opened in a jiffy when needed. You don't have to worry about conflicting stations with this aerial. It cuts out interference with ease—at the same time it is not critical to the extent that it hampers tuning.



The Signal Table Type Loop Aerial is just as fine an aerial as the bracket type. All wood work is of beautifully finished mahogany. All metal parts are heavily nickeled plated. Third tap is provided for sets requiring it. Complete at your dealers, \$8.50.

Brand New In Condensers! The Signal Spiral Cam



An absolutely new type of plate control—the patented spiral cam—puts this condenser in a class by itself. It handles the high frequency, low wave lengths to a "T". It gives true straight-line frequency results—an even distribution of wave lengths over the 360° of the dial.

The Signal Spiral Cam Condenser is compactly designed, requiring no more space than the old semicircular type. There is no backlash. The perfectly balanced assembly provides smooth, velvety action. Electrostatic field is concentrated in center of condenser and dial shaft is dead, not being connected to either set of plates. Design permits single or three hole mounting—also the attachment of air core transformers directly on the condenser. Write for an efficiency chart that tells an important story. Built in three capacities—.00025, .00035, .0005—all one price, \$4.00.

JOBBERS AND DEALERS

Signal Radio Parts are built by a company with over thirty years of experience in the manufacturing of electrical equipment. Quality and performance are the requisites of every piece that leaves our factory. Signal parts mean enthusiastic customers. You cannot afford not to stock them.

SIGNAL ELECTRIC MANUFACTURING CO.

1919 Broadway, Menominee, Michigan

BRANCH OFFICES

Boston
New York

Philadelphia
Pittsburgh
Buffalo

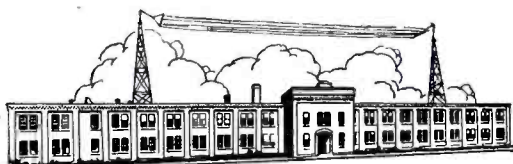
Atlanta
Chicago

BRANCH OFFICES

Minneapolis
Los Angeles

San Francisco
Toronto
St. Louis

Winnipeg
Montreal

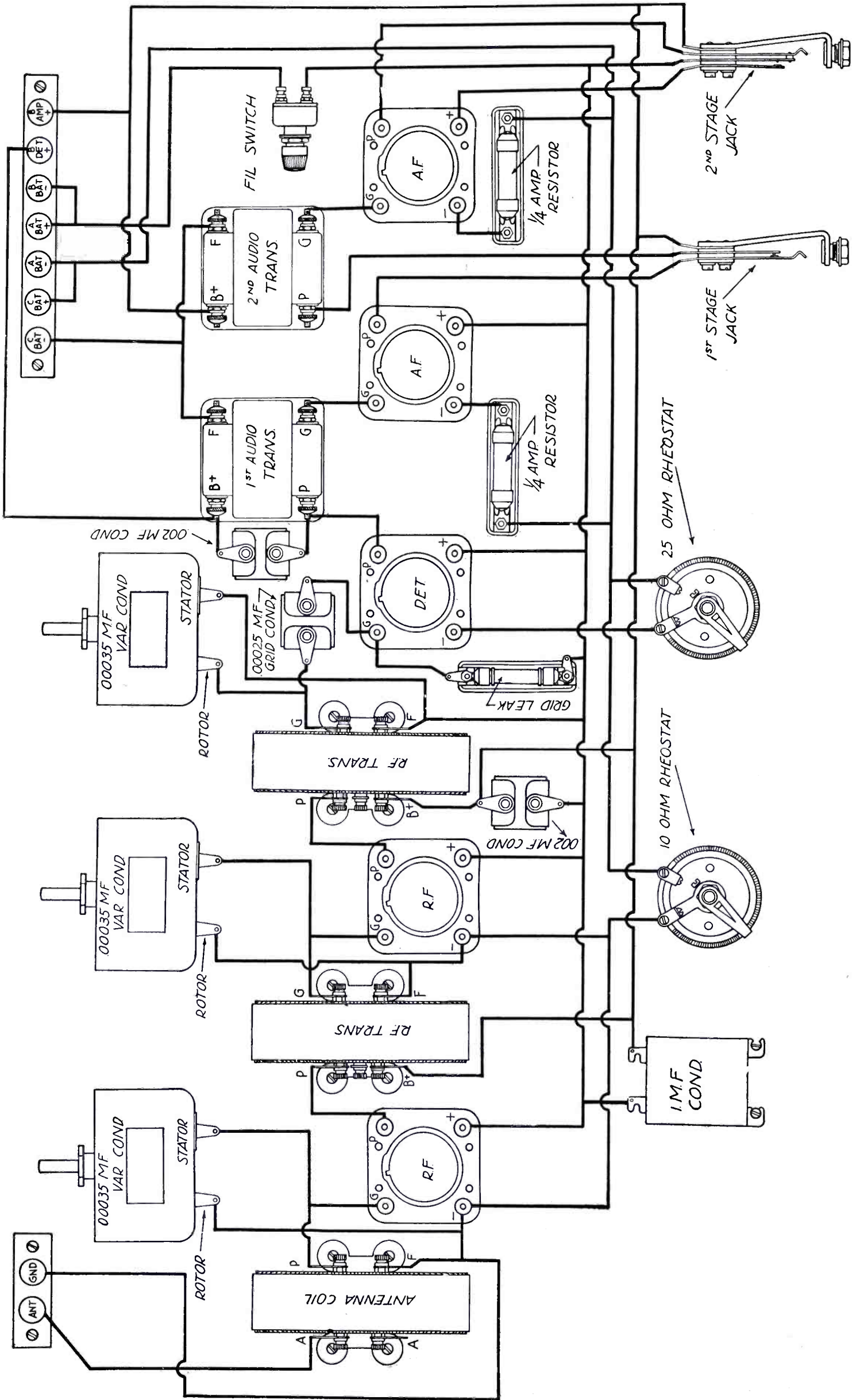


"WHERE MILLIONS OF GOOD

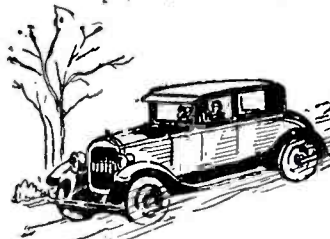
RADIO PARTS COME FROM"

Tell 'Em You Saw It in the Citizens Radio Call Book

Five Tube Receiver Using Toroid Coils



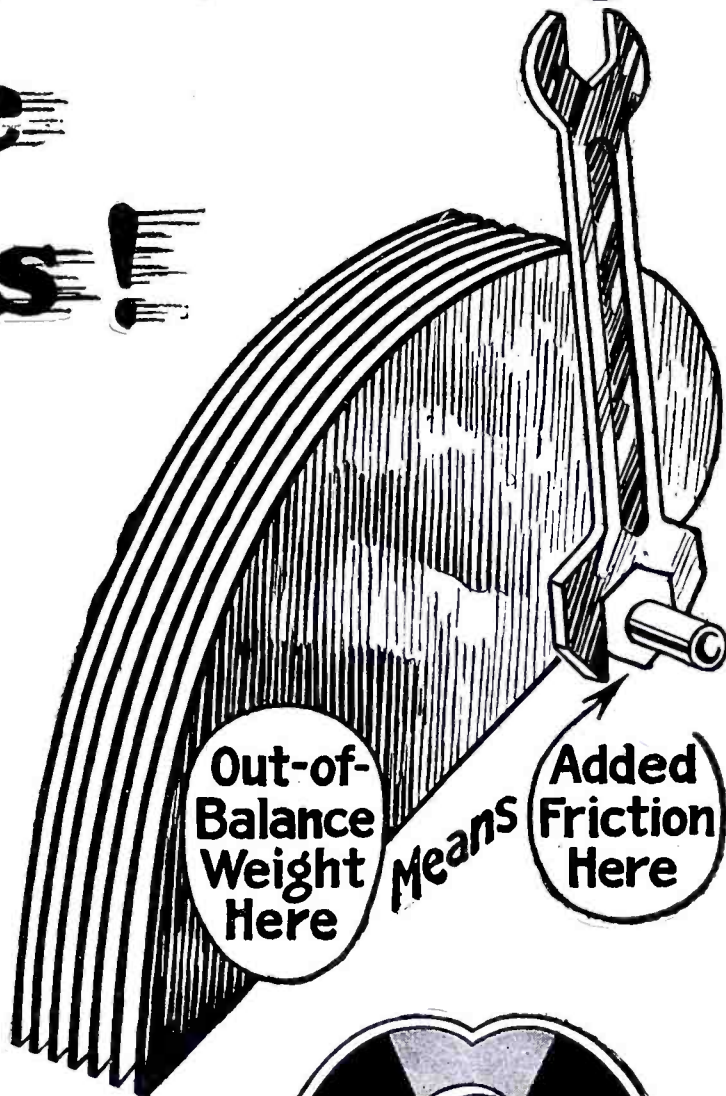
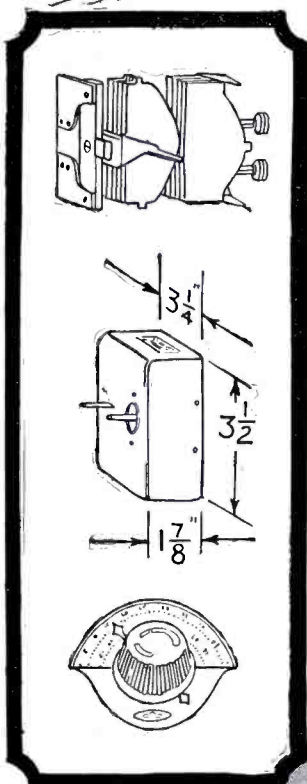
Straight-Line-Frequency Tuning Without the Brakes!

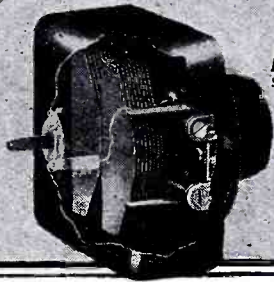


ALL-AMERICAN Condensers, with their smooth-sliding plates, (see sketch at left) require no tensioning. There is no sensation of raising a weight or letting it fall. Compactness, also, far exceeds that of rotor types. (See dimensions on sketch.) Efficient shielding prevents the touch of the fingers from affecting the tuning, and protects the plates permanently from dust or damage.

Taking full advantage of the 360° rotation, there is an ALL-AMERICAN Dial with two scales, both on the upper half, where they are always visible.


Used with the ALL-AMERICAN Toroid Coils, these Condensers space out equidistant on the dial all wave-frequency channels from 550 meters down even to 175 meters. Power and selectivity are greatly improved through the absence of stray magnetism.





**ALL-AMERICAN
Straight-Line-Frequency
CONDENSERS**

Type C-35 Max. 350 micro-microfarads (Min. 10.5 mmf. at 400 meters) . . . \$4.50
Type C-50 Max. 500 micro-microfarads (Min. 11.8 mmf. at 400 meters) . . . \$5.00
Type C-40, 360° Dial . . . 1.00



**ALL-AMERICAN
TOROID COILS**

Type T-1 Antenna Coupler, \$3.50
Type T-2 R.F. Transformer, 3.50
Set of 3 coils complete . . . 10.50
The R. F. Transformer has a small primary, closely coupled to the secondary, entirely air-insulated. The coupler has taps for long and short antenna. All bases are of bakelite.



ALL-AMERICAN
TRADE MARK
**Famous Audio
Transformers.**

Standard Audio Transformers	
3 to 1, R-12	\$4.50
5 to 1, R-21	4.75
10 to 1, R-13	4.75
Power Amplifying Transformers (Push-Pull)	
Input Type R-30	\$6.00
Output Type R-31	6.00
Rauland-Lyric	
A laboratory-grade audio transformer for music lovers. R-500 \$9.00	

ALL-AMERICAN RADIO CORPORATION, 4217 Belmont Avenue, Chicago, Illinois
E. N. Rauland, President



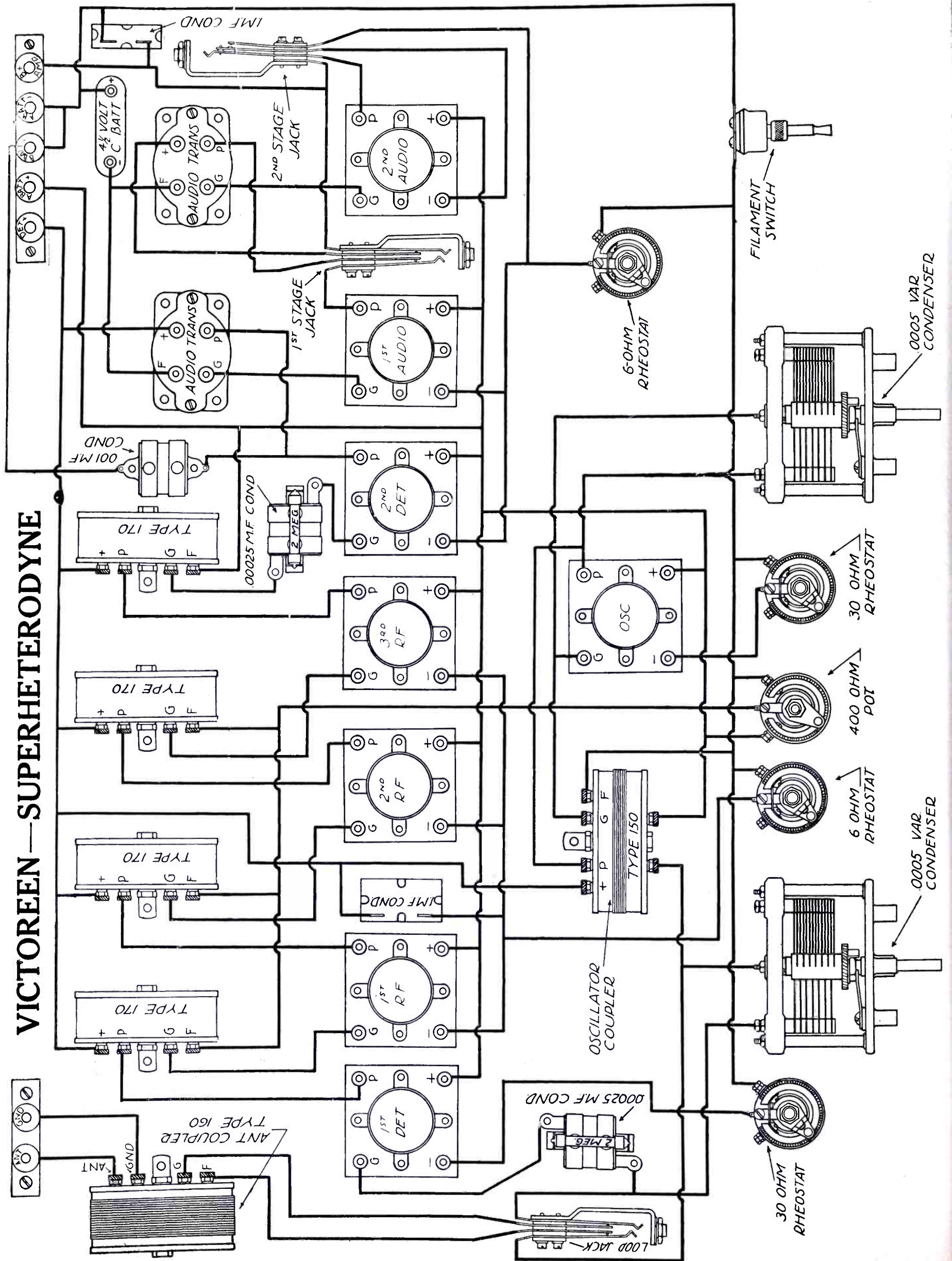
OWNING AND OPERATING STATION WENR-266 METERS

ALL-AMERICAN

Pioneers in the Radio Industry

Tell 'Em You Saw It in the Citizens Radio Call Book

VICTOREEN — SUPERHETERODYNE



Paris on a Victoreen!

Verified Reception from
Paris by Cadiz, Ohio,
Radio Fan



*Coast to Coast on a Loop
is easy with a*

Victoreen Super Heterodyne

Built with "Tuned" R. F. Transformers of Air Core Construction

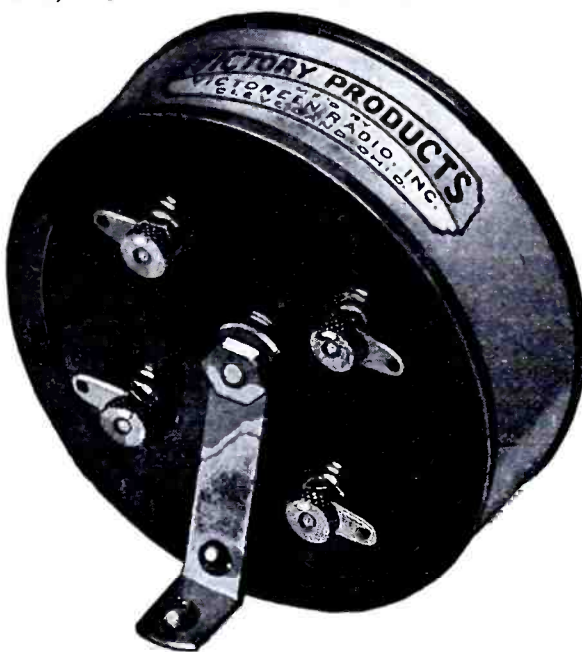
Additional Parts Required to Build a Victoreen Super Heterodyne

- 2 .0005 Variable Condensers
- 8 Vacuum Tube Sockets
- 2 .00025 Grid Condensers
with Mounting
- 2 2 MEG Grid Leaks
- 1 400 OHM Potentiometer
- 2 30 OHM Rheostats
- 2 6 OHM Rheostats
- 2 Double Circuit Jacks
- 1 Single Circuit Filament Jack
- 1 Filament Switch
- 2 Audio Transformers
- 1 1 MFD. Bypass Condenser
- 1 4½ Volt "C" Battery
- 1 7x24-in. Panel

Base Board—8¾x23x¾
Binding Posts, Screws, Bus Bar
and Solder Lugs

Any good dealer will have these
parts in stock

Complete parts for this set can be purchased of your dealer for approximately \$75, depending on quality of parts desired.



Victoreen No. 170 R. F. Transformer—
Neat and Compact—3" in
diameter, 1" thick

The Heart of the Circuit

- 4 "Victoreen" No. 170 R. F. Transformers—\$7.00 each
- 1 Victoreen No. 150 Coupling Unit—\$5.50 each

Should use of Aerial be preferred to Loop, the "Victoreen" No. 160 Antenna Coupler is required, at \$3.50, extra.

EITHER

UV199 or 201A Type of Tubes may be used—a truly Victoreen Feature.

"B" Battery consumption is remarkably low—8-10 Milliamps, with Potentiometer at negative side—less than some 3 tube sets.

No Oscillations, Howls or Squeals — No Matching of Tubes

Victoreen Air Core Transformers are not merely "matched," but are actually tuned to a guaranteed precision of 1/3 of 1%—another Victoreen feature

Range—Clarity—Volume—Selectivity—Ease of Operation

Ask Your Dealer for a Free Folder and Hook-up of the Victoreen Set—or Write Directly to Us. Your Dealer Is Prepared to Furnish You with All Parts Necessary

THE GEORGE W. WALKER CO.

6503 CARNEGIE AVENUE

Suite 961, 50 Church St.....New York City
719 Raymond St.....Philadelphia, Pa.
2006½ Commerce St.....Dallas, Texas
910 Terminal Sales Bldg.....Seattle, Wash.

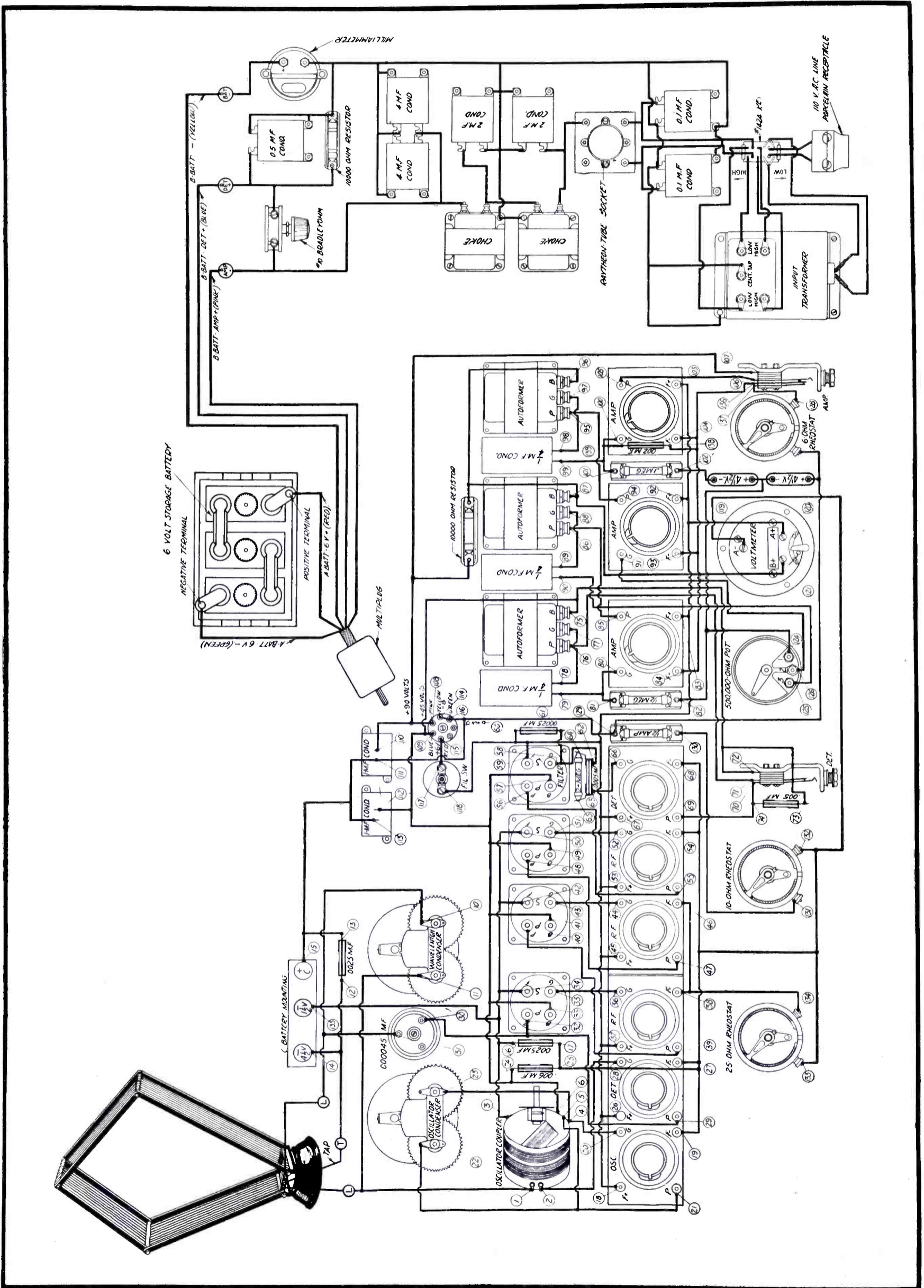
Branch Sales Offices Are Located at

202 Sugar Bldg.....Denver, Colo.
383 Brannan St.....San Francisco, Calif.
508 So. Dearborn St.....Chicago, Ill.
308 E. 17th St.....Kansas City, Mo.
5553 Vernon Ave.....St. Louis, Mo.

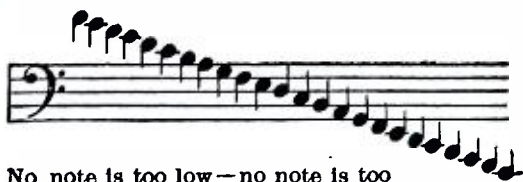
CLEVELAND, OHIO

45 Ruggery Bldg.....Columbus, O.
443 So. San Pedro St.....Los Angeles, Calif.
Box 321.....Boise, Idaho
332 St. Catherine St. W.....Montreal, Que., Can.

Tell 'Em You Saw It in the Citizens Radio Call Book

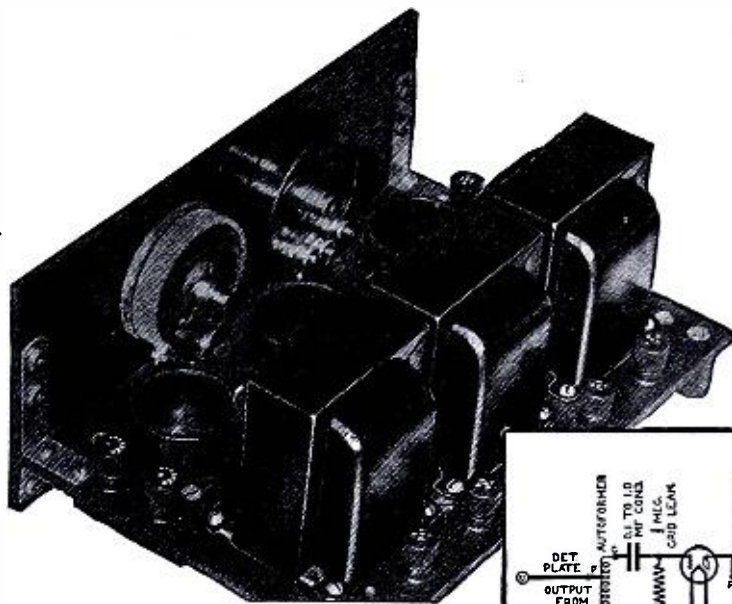


45 Kilocycle Super Using Impedance Coupled Amplification Connected with a Raytheon "B" Eliminator



No note is too low—no note is too high—to be fully amplified by Thordarson Autoformers. Autoformers are all frequency amplifiers—they amplify with even magnitude ALL notes within range of the human ear. Developed, perfected and built only by Thordarson.

A Thordarson Autoformer Amplifier built in accordance with instructions and diagrams furnished with each instrument

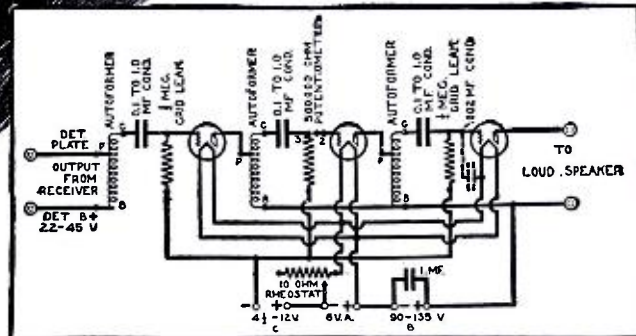


fans!

Send for our new interesting bulletins on Autoformer amplification. They contain hook-ups and complete directions.

Autoformer Amplification Wins Fans Everywhere

Fully Amplifies Those Bass Notes Hitherto Largely "Lost." Gives Greater Clarity on All Signals. Improves Reception of Distant Programs. Permits Better Volume Control.



How Autoformer Amplification is praised by its users

Dunkirk, N. Y.,

This is to congratulate the Thordarson Co. on their achievement in producing such a perfect piece of apparatus as your Autoformer which I embodied in a new hook-up I have just completed—tuned regenerative R. F. 2 stages, soft detector and 3 Autoformers. I wish to advise that it is without parallel, exception or any comparison whatsoever, the most perfect performer I have ever seen, heard, tested or built—and I have built some pretty good ones.

Reproduction is absolutely faultless and perfect throughout the entire register—each and every note from the deepest bass to the highest treble is perfect and uniformly amplified. Sunday night I had Godfrey Ludlow on his 225 year old Stradivarius (from WJZ) absolutely perfect although it was a pretty "rotten" night. It was some treat. To-night (one of the poorest for some time) I pulled in everything east of the Rockies, that was on the air and I pulled in enough music to overcome the static to a great extent. Everything on Speaker.

She's a good D.X. getter and as for volume, has all that the windows will stand—and with all this volume does not distort any. It makes a beautiful outdoor program distributor. You can hear it plainly and perfectly for two or three blocks (at night).

Very truly yours,
John Player.

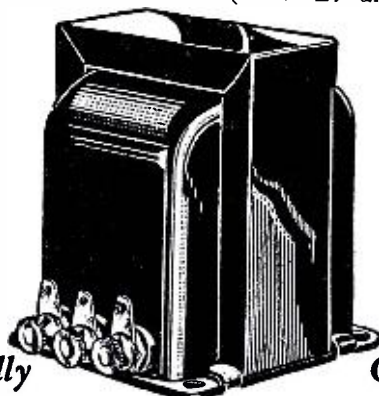
The Thordarson Autoformer is not "another transformer." Thordarson Autoformer amplification is not in any way to be confused with transformer-coupled amplification. It is step-up impedance coupled with capacities and resistances—a special Thordarson development—the same in principle as the line amplifiers in use at the more recently built high powered broadcasting stations.

While the volume of Autoformer amplification per stage is not as great as that of audio transformer-coupled amplification, increased clarity and uniform

amplification of all notes the human ear can detect far more than compensate for this. Three stages of Autoformers will give more amplification than the customary two stages of audio frequency transformers, and more volume than is required under normal conditions for home loud speaker reception.

With equal values of B battery voltage (110v B. and 6v C.) three stages of Thordarson Autoformer coupled amplification will give as much or more amplification than four stages of resistance coupled.

Autoformer amplification, in the opinion of fans everywhere, gives the finest reproductions of programs to be had. Autoformers are \$5.00 each.



Unconditionally

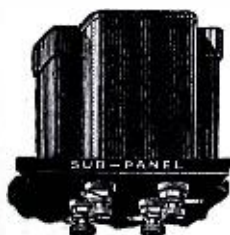
Guaranteed

THORDARSON Autoformer

Trade Mark Reg.

All Frequency Amplifier

Other Thordarson Transformers



Thordarson Super Audio Frequency Transformers are to be had in either the sub-panel or top mounting type. Sub-panel type permits neater assembly, shorter leads and concealed wiring—as in factory sets. Three ratios: 2-1, \$5; 3½-1, \$4; 6-1, \$4.50.

Thordarson Power Amplifying Transformers, \$13 the pair. Thordarson Interstage Power Amplifying Transformers, \$8. All Thordarson products are unconditionally guaranteed. Shipped direct upon receipt of price, if dealer cannot supply.



THORDARSON ELECTRIC MANUFACTURING CO.

Transformer specialists since 1895

WORLD'S OLDEST AND LARGEST EXCLUSIVE TRANSFORMER MAKERS

Chicago, U.S.A.

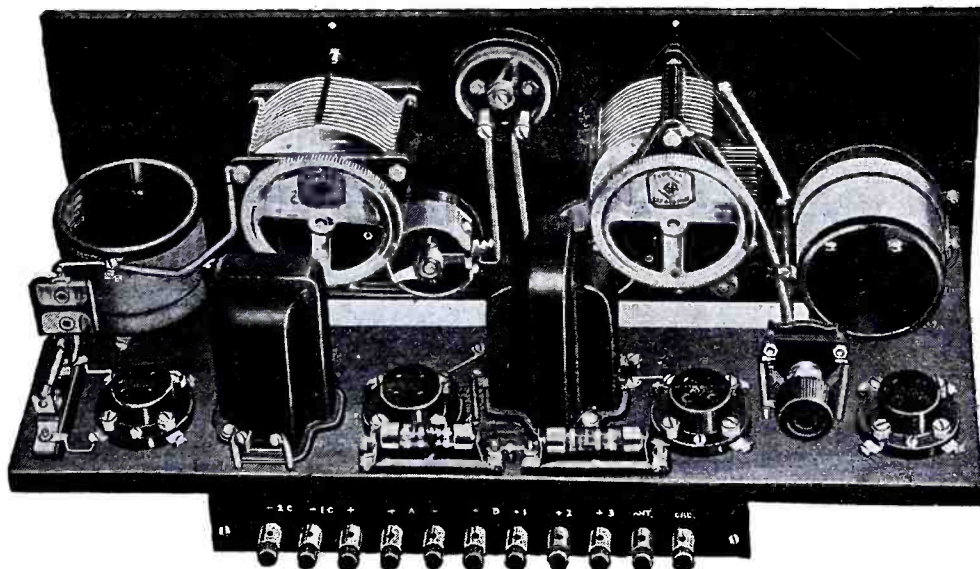
- ZENITH
- KENNEDY
- RADIODYNE
- Planstiehl
- Howard
- Thermodyne
- OZARKA
- Deresnadyne
- ADLER-ROYAL
- MURDOCK
- MU-RAD
- Valleytone
- LEICH
- Silver-Marshall
- GLOBE
- Newport
- BUCKINGHAM
- NUNN-LONDON
- KUSTOMBILT and many others

Also choice of the MacMillan Arctic Expedition

use Thordarson Super Amplifying Transformers. Leading set builders use more Thordarsons than all competitive transformers combined.

Tell 'Em You Saw It in the Citizens Radio Call Book

Build the Circuit that has won
 Nationwide Approval
 by its **PERFORMANCE**



The RADIO BROADCAST
UNIVERSAL

FOUR TUBE RECEIVER

The "UNIVERSAL" was designed by Arthur H. Lynch, editor of Radio Broadcast. It has been chosen as the one outstanding circuit which would meet the most rigid requirements of amateur set-builders from a standpoint of performance, simplicity and economy of construction and operation.

This circuit has been tested under a wide variety of receiving conditions and compared by competitive try-outs with other receivers of creditable performance and has proven well worthy of its name "UNIVERSAL."

To the set-builder who expects real results from his set and wants advance assurance that he will get them we recommend the "UNIVERSAL" as the circuit to build. Ask your local dealer for free booklet containing diagrams, templates, and complete instructions for the building the "UNIVERSAL." If he is unable to supply the necessary information and instruments write us.

General Radio Company, Cambridge 39, Mass.

GENERAL RADIO

INSTRUMENTS

Behind the Panels of Better Built Sets

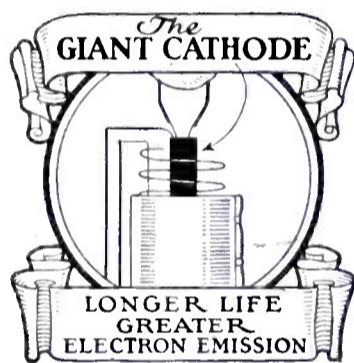
Tell 'Em You Saw It in the Citizens Radio Call Book

The New McCullough A-C RADIO TUBE

*It Operates off the House Electric Current, Eliminating the "A" Battery
It Assures Longer Life, because of the Ruggedness of the McCullough Giant Cathode
It Produces Greater Electron Emission, Better Quality of Reception—and
Volume of Signal without Distortion*

IN the set equipped with McCullough A-C Tubes is found a new pride in radio possession; the satisfaction of having radio in its newest and most logical development and the assurance of obtaining the very best results of which any set is capable.

The bother of the "A" battery, its periodic refilling and recharging, diminishing current supply, etc., has always been the "fly in the ointment" of the listener's pleasure. Now this nuisance is eliminated, the house electric current taking its place



through the new A-C Tube, being stepped down from the 110 line voltage by a small transformer. Once the new tubes are installed, and the transformer connections made, the set is operated as simply as snapping

on the light of a reading lamp.

However, the new tube goes far beyond looking after the mere comfort and convenience of the set owner. When the broadcast program comes pouring in—local or distant—and *quality of reception* is the thing uppermost in the listener's mind, then it is that the new McCullough A-C Tube performs in a manner that establishes a new standard of supremacy of radio performance.

The Rugged Giant Cathode

The sturdy, rugged giant Cathode, the dominating McCullough feature, which takes the place of the fragile filament of the ordinary vacuum tube, is responsible for this marked new efficiency. Its multiplied capabilities are directly derived from the larger electron emitting surface, creating an electron emission immeasurably in excess of the capabilities of the frail element it displaces.

This greater electron emission, with its resultant lower impedance, produces a new standard of signal strength in the vital sense of greater volume of sound in true natural tone. To the longer straight portion of the new tube's characteristic curves is attributed a new tone quality distinctly defined. The rugged construction of the Cathode prevents vibration and all microphonic distortion and noise.



Prompt Deliveries Assured—

The vast manufacturing and great technical facilities of the *Kellogg Switchboard & Supply Co., of Chicago*, are now back of the new tube, assuring uniformity of quality and adequate production.

\$6—List Price

Radio Set Manufacturers and Jobbers of radio tubes are urged to get in line with this important development.

McCullough Sales Co.

Distributors McCullough A-C Tubes

25 W. Broadway, New York

533 WABASH AVENUE, CHICAGO
963 LIBERTY AVENUE • PITTSBURGH, PA.

How to Build a Five Tube Receiver Using the McCullough AC Tubes

TO begin with the tubes used in this circuit have no filament. For those radio fans who are anxious to eliminate the troublesome "A" battery, here is a circuit that "fills the bill":

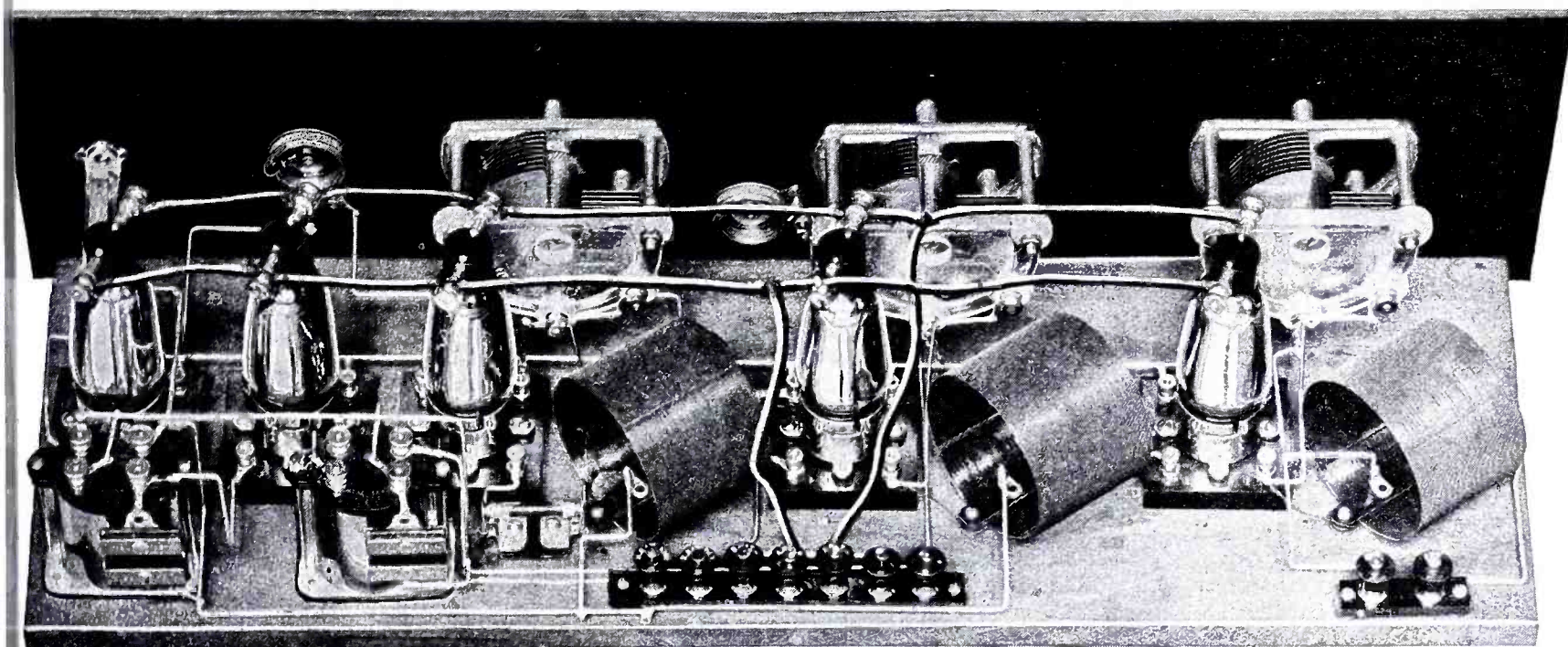
Instead of the usual filament heated to incandescence for the necessary electron emission the tube contains a cathode which consists of a thin cylinder of metal coated with special oxides. When this cathode is slightly heated a flow of electrons result in the proper functioning of the tube.

To supply heat to this special cathode, a heater is incorporated in the tube. This heater consists of a strip of resistance wire material; this is doubled back upon itself through two holes in a small porcelain rod. The porcelain is used to insulate the cathode electrically from the heater wires, but at the same time

Another 200 ohm resistance is connected across the primary of the second radio frequency transformer. When this resistance is increased it will reduce oscillations which occur on the lower wavelengths, and at the same time acts as a volume control for the entire receiver.

The audio frequency amplifier is connected in the usual manner with the exception that a .005 MF fixed condenser is connected across the primary of each transformer. The negative filament leads of the transformers are connected to the negative of the "C" battery.

It is unnecessary to install a jack on the first stage of audio frequency amplification, as the 200 ohm resistance shunted across the primary of the last radio frequency transformer acts as a volume control. A .005 MF fixed condenser is connected across



Rear View of Complete Receiver

act as a conductor for the heat generated in these wires. An AC current of one ampere at about three volts is required in the heater circuit. In this way a number of AC tubes may be run off the AC line through a step-down transformer.

We have designed in our laboratory a simple tuned radio frequency receiver using the McCullough tubes, which is shown in the accompanying photograph.

There are some slight changes necessary from the ordinary tuned radio frequency circuit. The usual filament circuit must be discarded and all of the filament binding posts on the sockets connected together on one common bus wire. This now becomes the cathode lead and is connected to the positive of the "C" battery and the grid return on the detector tube. The negative lead of the "C" battery is connected to the grid returns of all the tubes with the exception of the detector tube.

The connections to grids and plates of all the tubes are made in the usual manner. Plate voltages up to 150 volts may be used on the amplifying tubes and 22½ to 45 volts on the detector. These tubes will work in any type of receiver that the ordinary tubes will work in.

It will be noticed that a 200 ohm resistance is employed to control the negative bias on the grid of the second radio frequency amplifying tube. This eliminates the possibility of any AC hum in the radio frequency circuit. On higher wavelengths it will be found necessary to use more resistance than on the lower wavelengths because of the greater capacity shunted across the secondary of the radio frequency transformers.

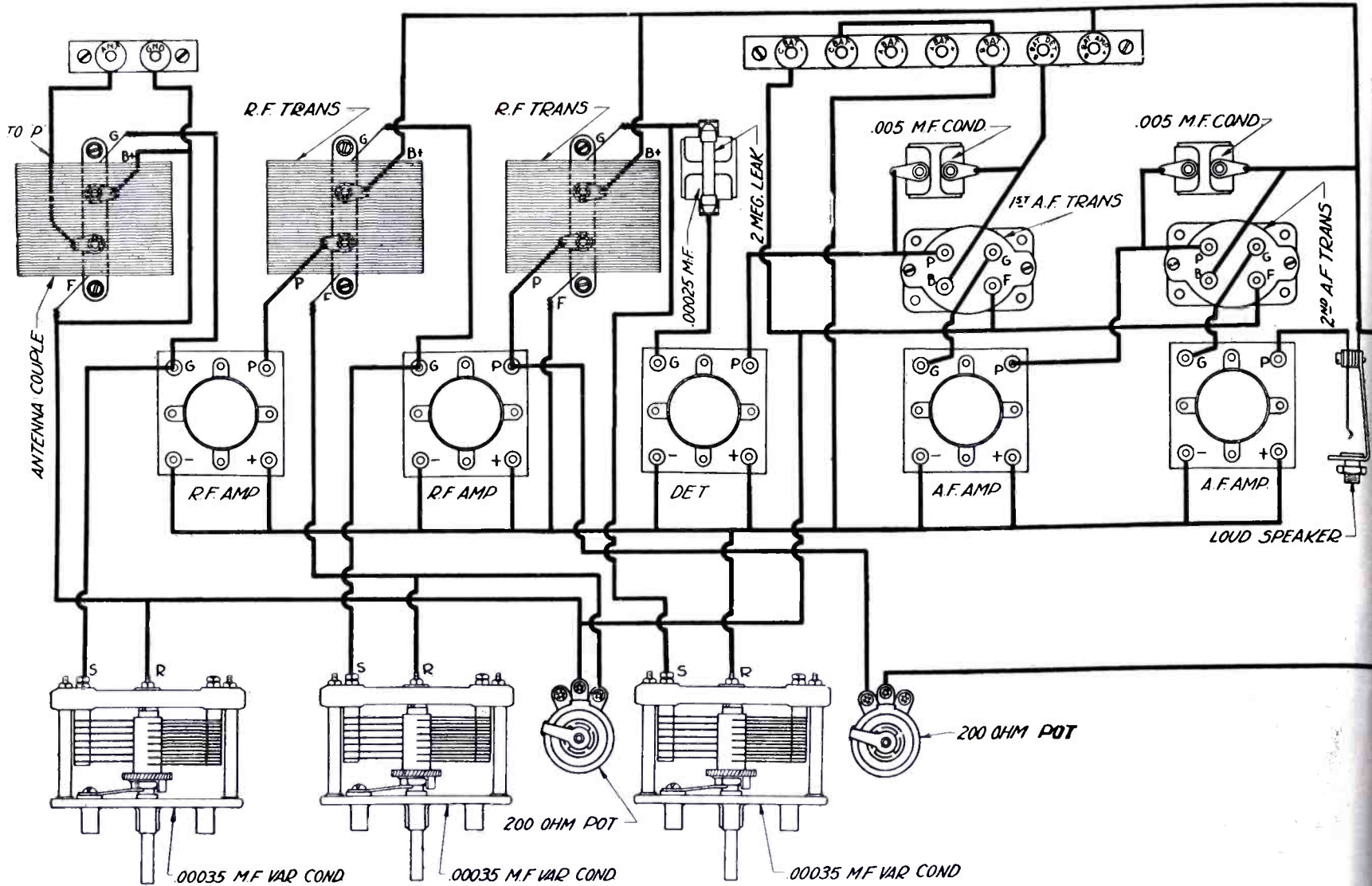
the loud speaker at all times. This will eliminate any unnecessary noise that may result from overloading the second stage of audio frequency amplifier.

The Thordarson filament lighting transformer is provided with three binding posts on the output. The middle post marked "neutral" should be connected to the ground. The other two binding posts are connected to the parallel leads running to the clips on the AC tubes.

When the set is turned on it will take about one minute before the heating element will have attained the proper operating temperature. The tubes operate at a dull orange glow and should never be allowed to light up like a filament.

List of Parts

- 1—7x26" Micarta Panel.
- 1—Carter No. 101 Jack.
- 5—McCullough Type 400 AC Tubes.
- 10—McCullough Type B Clips.
- 1—Thordarson Filament Lighting Transformer.
- 5—Howard Sockets.
- 2—Carter 200 Ohm Potentiometers.
- 9—Ganio Kramer Marked Binding Posts.
- 3—Hammarlund Radio Frequency Transformers.
- 2—Liberty Audio Transformers.
- 3—Quam .00035 MF Variable Condensers With Dials.
- 2—Electrad .005 Fixed Condensers.
- 1—Electrad .00025 Grid Condenser.



Graphic Illustration

- 1—Electrad 2 Megohm Grid Leak.
- 1—25x8" Baseboard.
- 1—Package of Kester Solder.
- 25 Feet Belden No. 12 Tinned Copper Wire.
- 1—4½ Volt Rayovac "C" Battery.

The connections from the secondary to the heater terminals should be made with not less than No. 14 flexible wire. The two leads are preferably twisted in order to reduce the possibility of AC induction in the set.

The cathode heaters are connected in parallel. This may be done by running the two leads from the transformer secondary along the tops of the tubes, with clips soldered on these leads, for making connections to the cathode terminals.

The heater supply transformer should be kept at least several feet away from the set, otherwise an AC hum may be heard

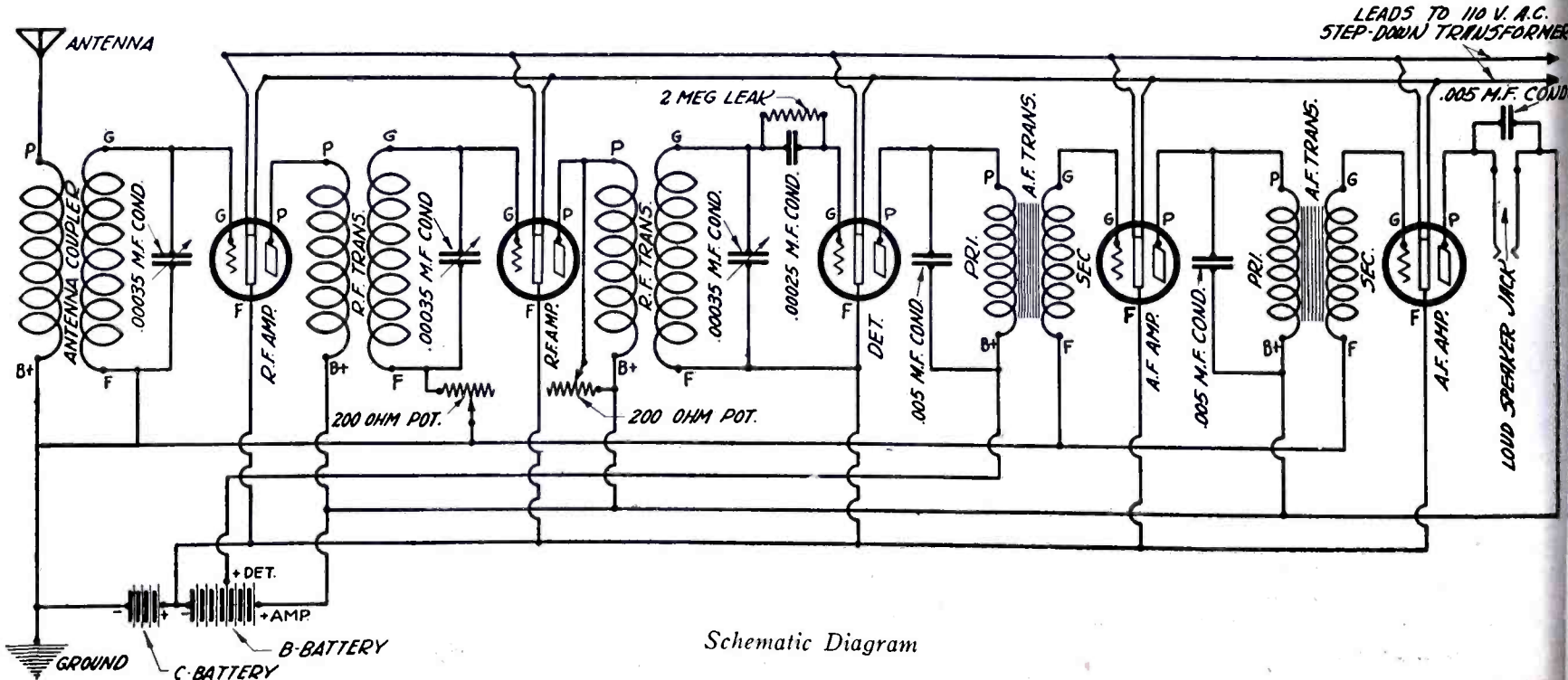
through the receiver due to the induction of the transformer.

The heater voltage should never exceed 3.5 volts. It is advisable to connect a voltmeter across the heater terminals to indicate the voltage applied.

The condensers used in this receiver use high grade Pyrex glass for insulation. A gear arrangement gives a two to one ratio over a 360 degree arc providing for fine tuning.

This circuit has many desirable features. In the first place it will not hum if the above specifications are carefully followed, but on the contrary the quality of the signals will be excellent.

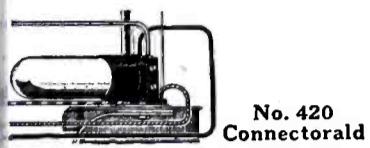
There are no filaments to burn out and the life of the tubes should be indefinite. Under no circumstances should more than 3.5 volts be applied to the heating elements. Check up on your source of 110 AC voltage. If the voltage is too low a reduction in the volume of the signals will be the result.



Schematic Diagram

Easy to get UX Volume and Clarity without rewiring

Na-Ald Adapters with UX Tubes an Easy Way to Better Radio



No. 420 Connectorald



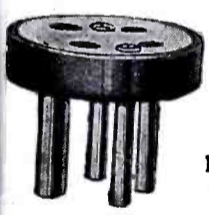
No. 920 Connectorald



No. 120 Connectorald



No. 419X Adapter



No. 421X Adapter



No. 429 Adapter



No. 999 Adapter

NOTE: The UX-120 tube has been designed to increase volume and clarity in all sets using dry battery tubes. The UX-112 tube has been designed to increase volume and clarity in sets using storage battery tubes. The purpose of this advertisement is to show fans the most easily made and most effective application of these tubes to their present sets.

RAUDIO current is so delicate and so highly sensitive to live metal that perfect connection between tube terminals and sockets is essential if the full benefits of the new tubes are to be obtained. For this reason the utmost care should be used in the selection of an adapter.

Na-Ald Adapters were placed on the market at the same time the new tubes were announced last summer. Extensive use since then has proved the value of their scientific design. Na-Ald Adapters and Connectoralds "adapt" and "connect" efficiently. Advance engineering and experimental work by the Na-Ald socket and adapter specialists assure this efficiency. There are no broad, parallel metal surfaces in Na-Ald Adapters and Connectoralds. There is a minimum amount of metal. Nicety of design and

A Word about Adapters

precision in manufacture are combined with the famous Alden-processed Bakelite molding. Lack of capacity effect and utmost efficiency is the result.

There are Na-Ald Adapters and Connectoralds for using new tubes in old sockets and for switching from dry to storage batteries and vice versa.

Na-Ald Connectoralds perform the double function of adapter and connector, as cables for attaching the necessary "B" and "C" batteries are provided. All cables are marked for their proper connections—this, together with the detailed instructions given with each device, which clearly explains the various tube changes made possible by the particular device, assure correct installation and full enjoyment of the improvements the new tubes will bring.

TO increase volume and clarity in sets using UV-199, use the new UX-120 tube in the last stage. It can be fitted to a UV-199 socket by the use of a No. 920 or No. 420 Na-Ald Connectorald. No. 920 Connectorald holds tube upright, while the No. 420 Connectorald holds the tube on an angle to fit Radiola Super-Heterodyne and Radiola Super-VIII.

How to increase volume and clarity in sets using UV-199 tubes

The UX tube requires a total of 135 volts "B" Battery and 22½ volts "C" Battery. The Na-Ald Connectorald, besides acting as an adapter, provides cables for attaching the necessary extra "B" and "C" batteries direct to this tube without any change in the wiring of the set. List price No. 920 Connectorald, \$1.25; No. 420 Connectorald, \$1.25.

The combination of a UX-120 tube for the last stage with UX-199 tubes in other sockets provides with dry cells results previously obtained only with storage batteries. The UX-120 tube, for the last stage, can be easily fitted to the UV-201A socket by means of the Na-Ald No. 120 Connectorald. This Connectorald

How to switch to dry batteries without sacrificing volume or quality

provides the necessary cables for attaching additional "B" and "C" battery voltage required. The UX-199 tubes may be quickly fitted to the other UV-201A sockets by means of Na-Ald 419-X Adapters. List price, No. 120 Connectorald, \$1.25; No. 419-X Adapter, 35c.

From Radiola III, III-A and similar sets made for WD-11 tubes, it is possible to obtain a really surprising increase of volume, quality and selectivity, either by using the combination of UX-199 tubes with the UX-120 tube in the last stage; or, by switching to

How to improve Radiola III and similar sets made for WD-11 tubes

storage battery operation and using UX or UV-201A tubes. Either improvement can be made by the use of the Na-Ald 421-X adapter. This adapter will fit all UX tubes as well as UV-201A tubes to WD-11 sockets. List price, No. 421-X Adapter, 75c.

The UX-112 tube for storage battery service increases volume and clarity when used in the last stage of storage battery sets just as the UX-120 tube increases volume and clarity in dry battery sets. UX-112 handles double the output of the 201-A tube without distortion. The Na-Ald 112 Connectorald fits this tube to

How to improve volume and clarity in storage battery sets

UV-201A sockets and provides connections for the necessary extra "B" and "C" batteries so that proper voltage is supplied to this tube without affecting operation of rest of set. List Price, No. 112 Connectorald, \$1.25.

To fit ALL UX tubes in UV-199 sockets

Na-Ald 999 adapter fits all tubes with UX bases and also UV-201A bases to UV-199 sockets. This adapter makes the UV-199 socket universal, to take any desired tube. List price No. 999 adapter, \$1.00.

To use UV-199 tubes in large sockets

The Na-Ald Adapter No. 429 makes it possible for you to use the small UV-199 tubes in regular large sockets. List Price, No. 429 adapter, 75c.

Detailed information on the complete Na-Ald line of adapters, sockets and dials will be gladly sent to any fan on request.

THE ALDEN MANUFACTURING COMPANY

Dept. F3

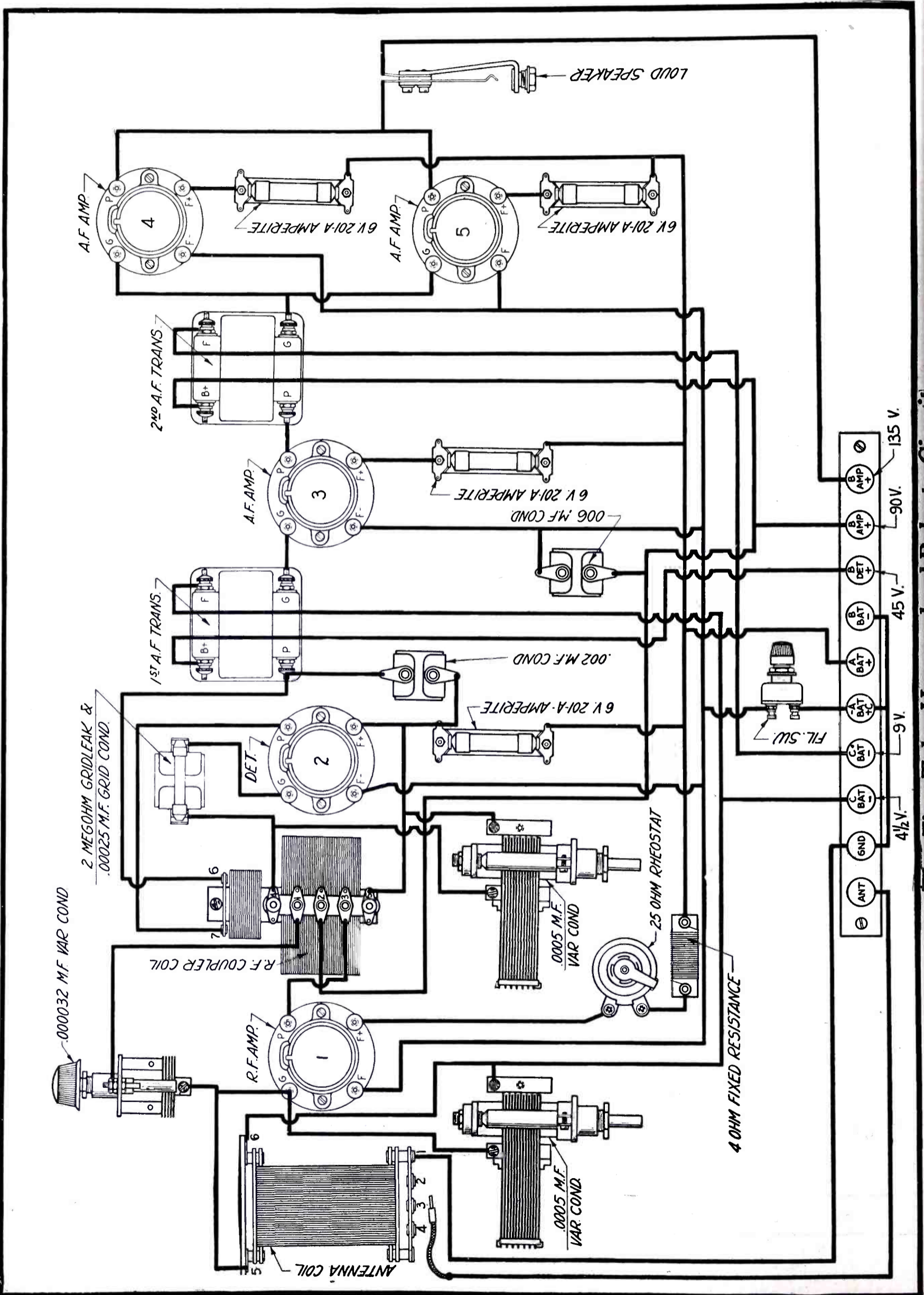
Springfield, Mass.

ADAPTERS



CONNECTORALDS

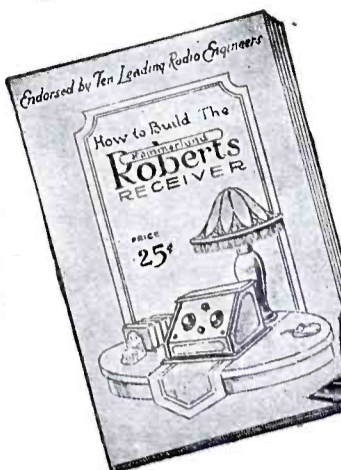
Tell 'Em You Saw It in the Citizens Radio Call Book



The Five Tube Hammarlund-Roberts Circuit

Write For This Interesting Booklet

It gives complete illustrated instructions for assembling and operating the Hammarlund-Roberts Receiver. Price 25 cents.

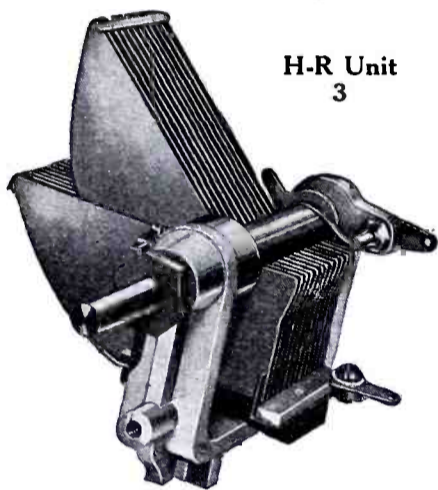


H-R Foundation Unit

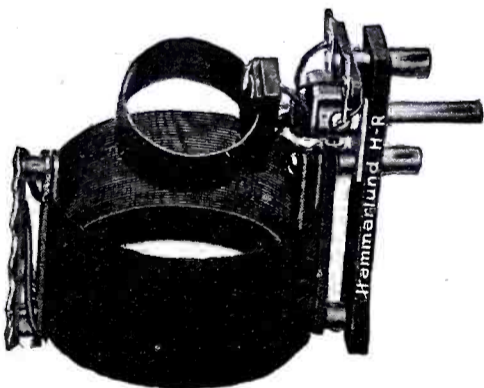
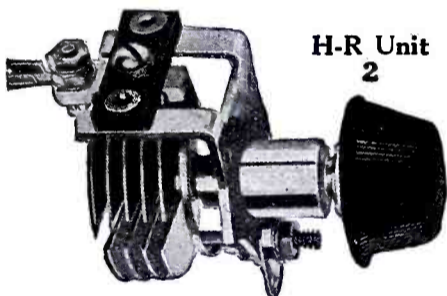
This package contains all of the special parts needed to build the Hammarlund-Roberts Receiver, including an engraved drilled Bakelite panel, drilled Bakelite sub-panel, metal brackets, wire and mounting screws. Price \$7.90. Your dealer carries also all other parts required. Total cost, \$60.80 (Cabinet extra).



H-R Unit 3



H-R Unit 2



H-R Unit 4



The New **Hammarlund Roberts** RECEIVER

THIS remarkable circuit development represents the composite ideal of ten leading radio engineers, each an expert in his particular field.

It embodies the utmost in sensitivity, selectivity, ease of tuning and quality of reproduction ever obtained with five tubes.

Thousands of radiophans throughout the country, have built it and their unsolicited letters of praise are convincing testimony of its merits.

Go to your dealer today and purchase the necessary parts. They are the best the radio world affords and will cost you only \$60.80 (Cabinet Extra).

You can quickly assemble this receiver yourself. It's easy with the book of instructions. The parts are all designed to fit. And when you get it completed you will have a radio set which you will be proud to exhibit to your friends as the outstanding radio achievement of 1925-26.

"Hammarlund, Jr." (H-R Unit 2)

"Hammarlund, Jr.", the superior Midget Condenser is used to control oscillations in the radio-frequency tube of the Hammarlund-Roberts Receiver. It is a precision product, embodying every feature of the larger Hammarlund models.

S-L-F Condenser (H-R Unit 3)

This newest product of Hammarlund engineers distributes stations equally over the dials and is particularly effective in reducing interference between low-wave stations. It is rugged, compact and efficient.

Space-Wound Coils (H-R Unit 4)

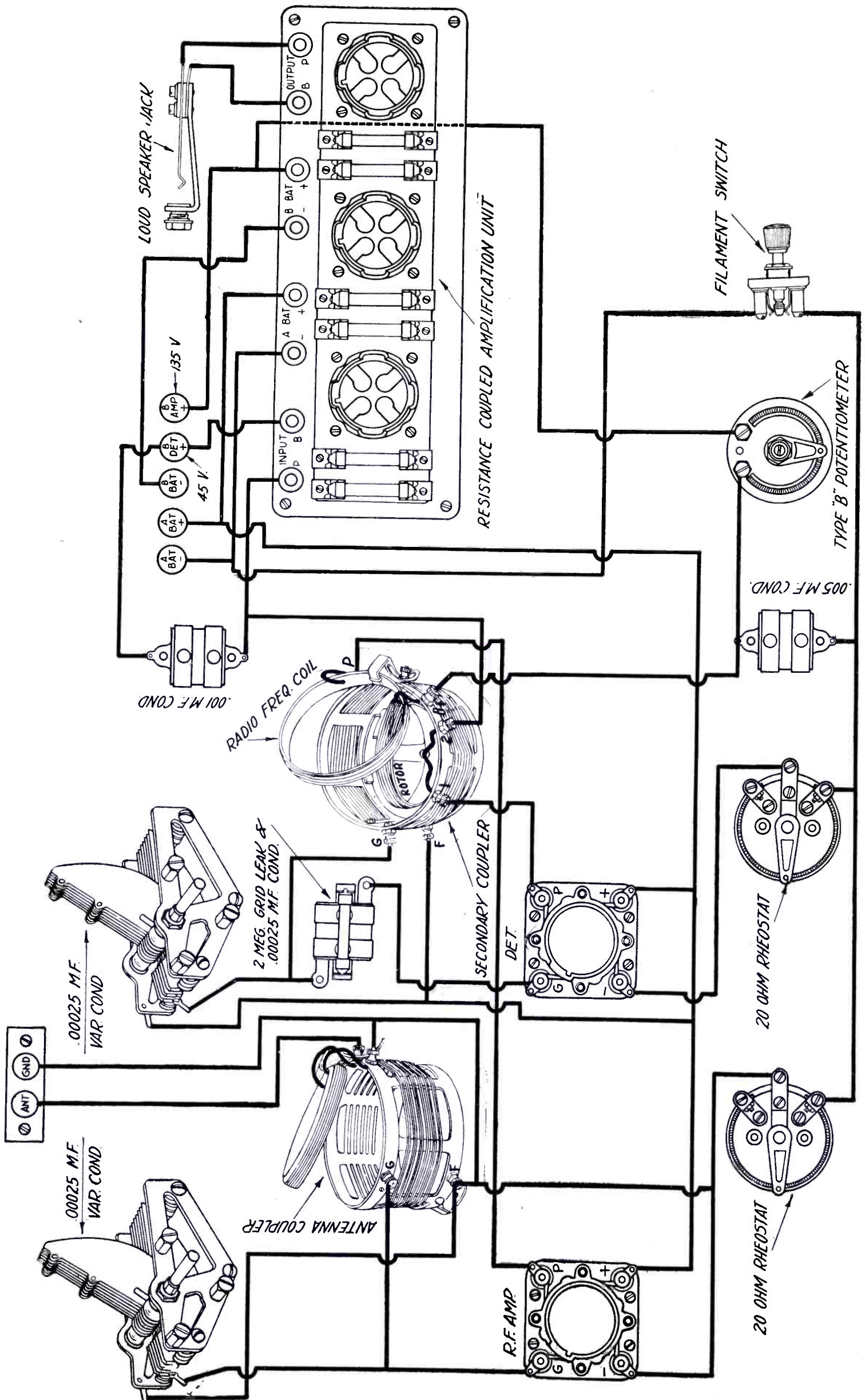
By an ingenious process, the famous solenoid coils are now wound with a definite space between turns, supported and anchored by a mere film of dielectric material. These coils are among the most important elements in the super-performance of the Hammarlund-Roberts Receiver.

You will make no mistake in constructing this new ideal receiver. All required parts are listed in the "How to Build" booklet mentioned above. Write for it today.

HAMMARLUND MANUFACTURING COMPANY
424-438 W. 33rd Street, New York City

For Better Radio
Hammarlund
PRECISION
PRODUCTS

Tell 'Em You Saw It in the Citizens Radio Call Book



Nonradiating regenerative receiver with resistance coupled amplification

Timely Tips On Radio Improvements

Suggestions for the Set Owner Who Wants To Be Master of His Set and To Get the Best Reception

Briefly, the old adage "you get out of life what you put into it" applies to radio, too. Here are just a few helpful hints which lead to better reception.

The life of your set centers in the batteries, while the tubes are the main arteries from which amplification is obtained. It is vitally important to test your B Batteries with a Sterling Pocket Meter to determine if the voltage is "up." Remember a cheap meter may be worse than useless, meaningless in its reading or taxing the vitality of the battery under test. Sterling meters are "right resistance" meters, a protection to the battery and an assurance of correct reading.

Your A Battery should be tested likewise for indications of needed recharging. There is a special Sterling Voltmeter for this purpose.

Your set is no better than the weakest tube, and inasmuch as tubes sometimes degenerate over night, they should be tested frequently with a Sterling Tube Tester which shows their amplifying ability. This device is also used for locating weak sockets, transformer troubles and wiring leaks. If tubes are low you can invigorate them right from the lighting socket in a few minutes with a Sterling Tube Reactivator. This meter-equipped instrument tells first whether tubes need reactivation and then shows how much better they are after reactivation. Don't guess at tube reactivation! Know—the Sterling way.

Keep your "A" Battery fully charged and be sure you charge it at the proper rate. The Sterling Rectifier offers the simplest and safest means of accomplishing this purpose, charging at the scientifically accepted rate of charge.

Sterling Filament Meters can be mounted on the set for correct rheostat adjustment—really tube life insurance. If you own a Radiola 25 or 28, use a Sterling Filament Meter No. 25-28 that plugs into the jacks provided on the panel.

A better rheostat or transformer or the use of a microcondenser is often the solution to the betterment of a troublesome set. Sterling Parts make good sets better.

See your nearby dealer or write us for fully descriptive booklets on any or all of the Sterling line.

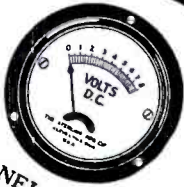
The Sterling Manufacturing Company

Cleveland

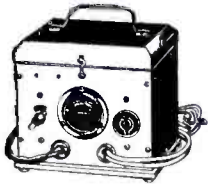
Ohio

Sterling RADIO EQUIPMENT

can be said to be evident because we now know that the giving out of light from a gas always results in the recombination of positive gas ions and positive gas ions as the result of anyone now known to be neutral protons grouped the element in any neutral position. It is a fact that the electron is a negatively charged particle consisting of a very small amount of mass. It is a fact that the electron is a negatively charged particle consisting of a very small amount of mass. It is a fact that the electron is a negatively charged particle consisting of a very small amount of mass.



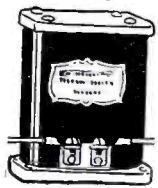
PANEL METER
Mounted on the panel shows battery conditions at a glance.
Prices \$3.00 to \$5.00.



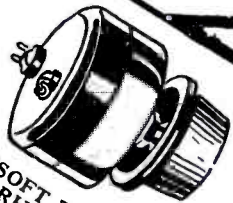
BATTERY CHARGER
Combination A and B battery charging types. Other types for A Batteries only. Prices \$16.00 to \$25.00



"HOME" TUBE TESTERS
Tests tubes in the set.
No. 401 for large tubes, \$8.50
No. 399 for small tubes, \$10.00



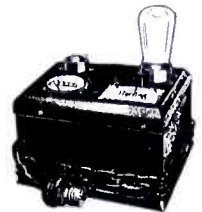
"FULL RANGE" TRANSFORMER
Audio Frequency Amplifying Transformer covering entire range of audibility.
Price \$6.00



"SOFT TREAD" RHEOSTAT
Noiseless in movement, easily and quickly installed.
Price \$1.25



POCKET METERS
A type for every requirement. "Right resistance."
Prices \$1.00 to \$4.00



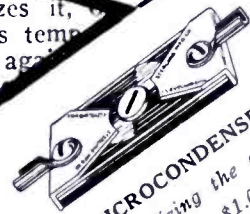
TUBE REACTIVATOR
Rejuvenates your tubes and tests them too. Price \$12.50 (50 to 60 cycle), \$14.00 (25 to 40 cycle).



UNIVERSAL TUBE TESTER
Really an entire set serving as a testing device.
Price \$18.00



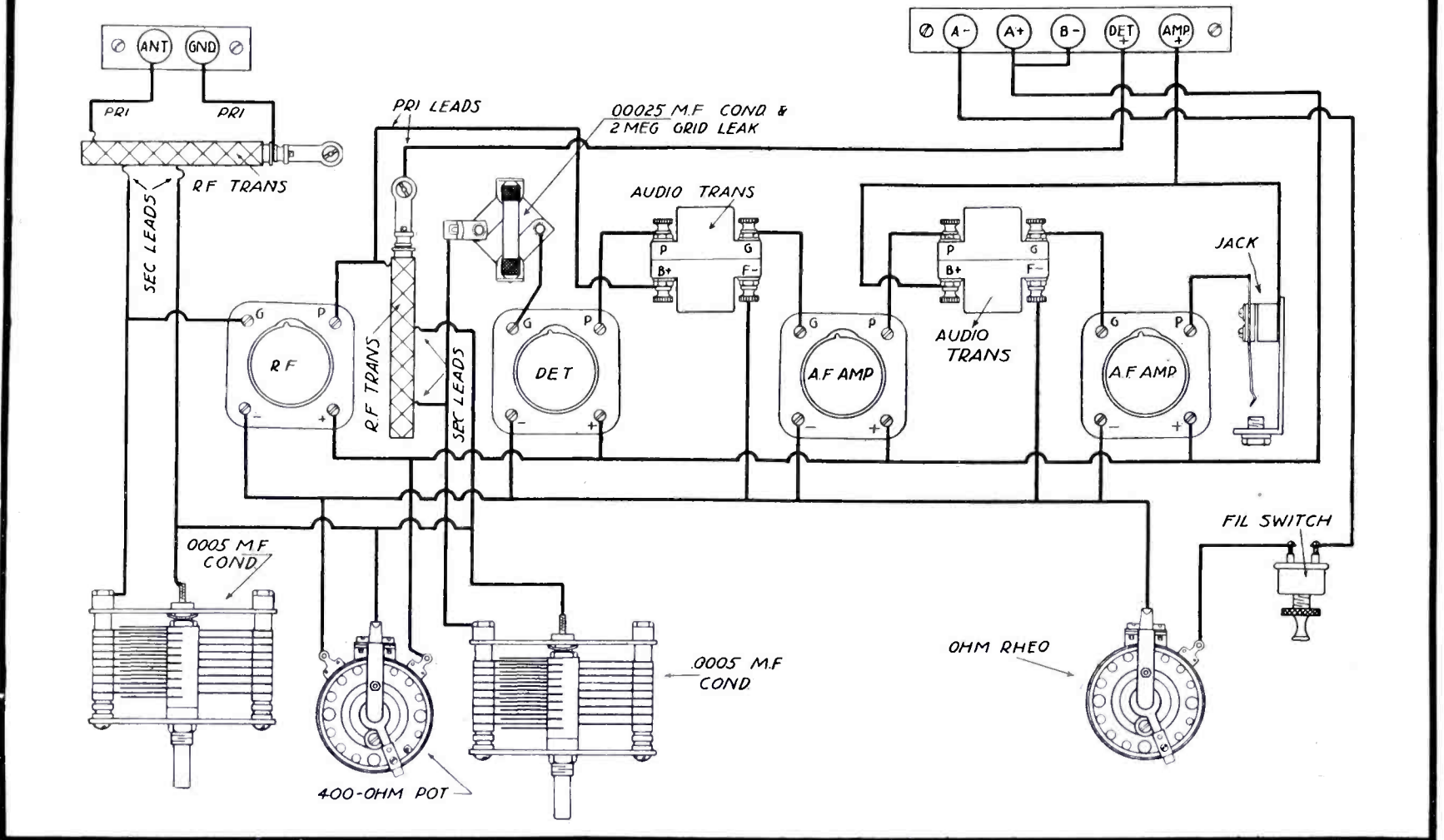
25-28 FILAMENT METER
Especially built for Radiolas 25-28 for better reception and for saving tubes.
Price \$7.50



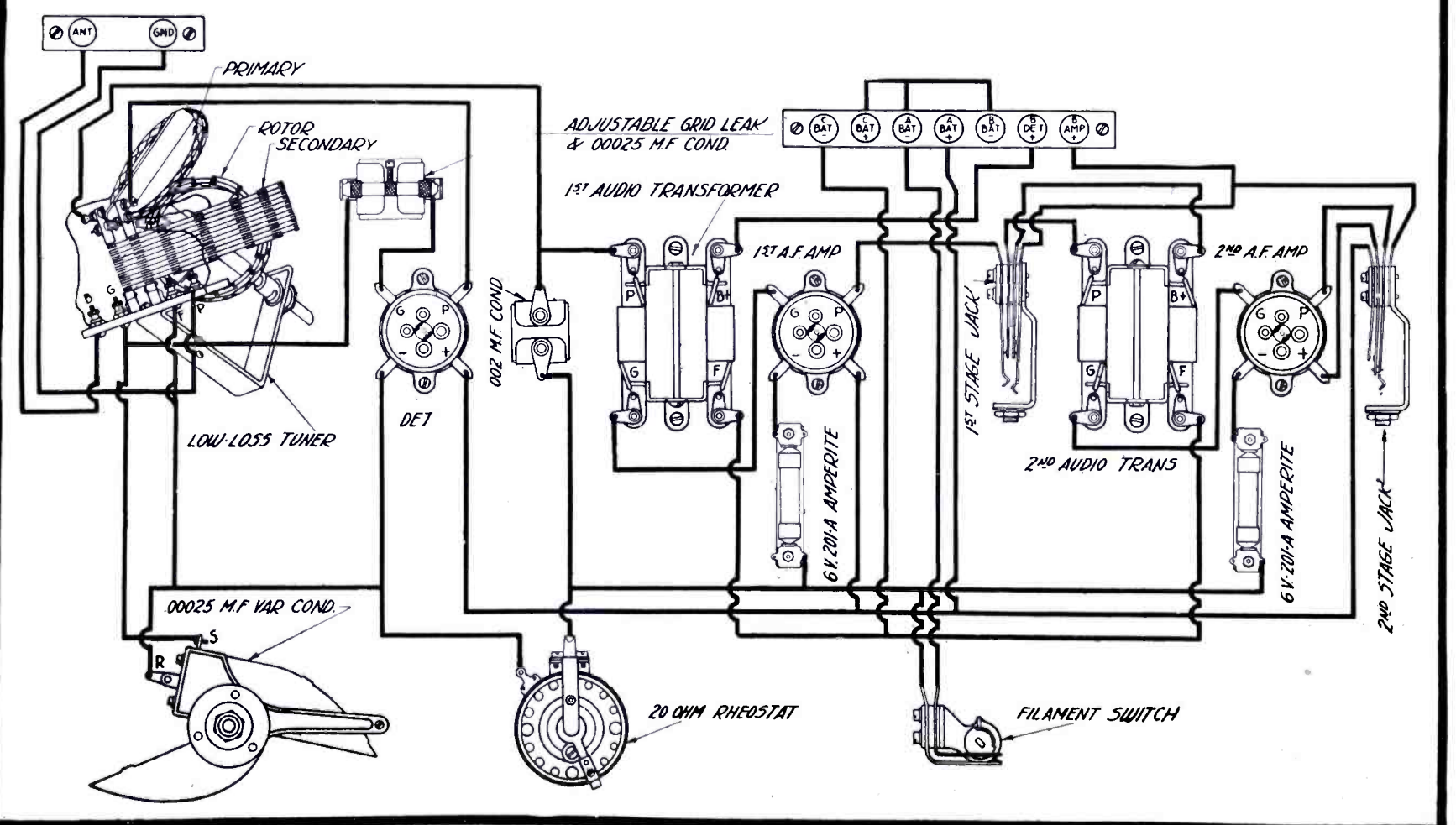
MICROCONDENSER
For equalizing the circuit.
Price \$1.00
R-311. Max. capacity 5 micro farads. Price \$1.00
R-312. Max. capacity 40 micro farads. Price \$1.50

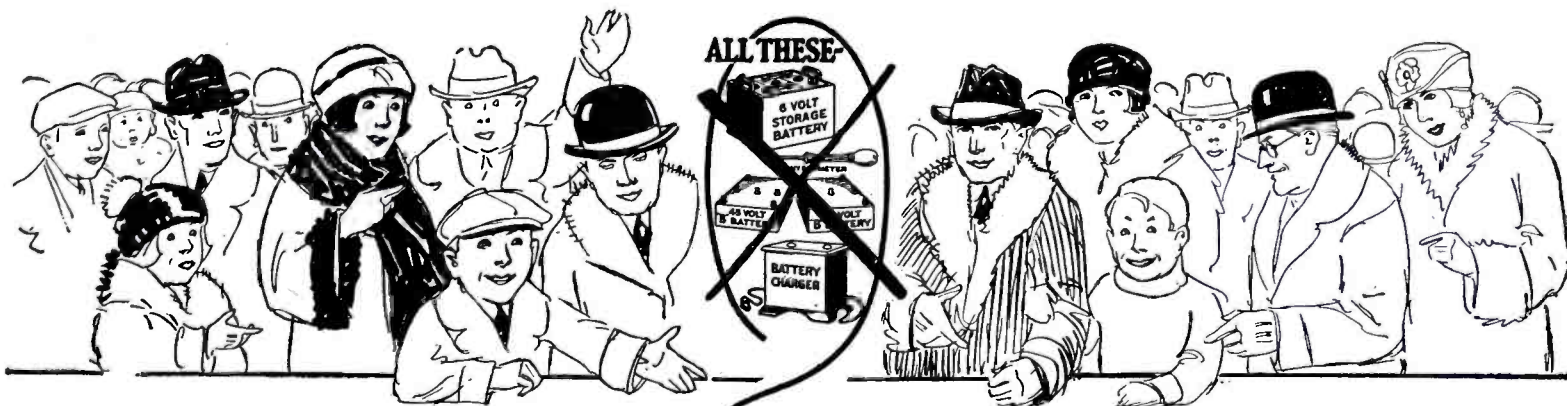
Tell 'Em You Saw It in the Citizens Radio Call Book

MONOFLEX CIRCUIT



LOW LOSS TUNER





What Does Every Radio Fan Want?

A constant, unvarying, trouble-free current supply. The Majestic A & B Current Supply really eliminates both the A & B batteries. Just plug in, on your house current supply (alternating current) and turn "on" the switch. You can then operate your radio continuously 24 hours each day for a week, month or a year if desired. This would not be possible with a battery and charger.



\$47⁵⁰

Without Tubes

Majestic A-B Current Supply

No more does your customer have the annoyance of batteries and their ills, chargers, hydrometers, acids, etc. All this is eliminated.

Used with Any Radio

The Majestic A & B Current Supply can be used with Radio receiving sets using 201A or 199 type tubes. It gives uniformly excellent results on any circuit or combination of circuits.

Majestic Reproducer

ONE PROFIT RADIO PRODUCTS

Our Products Are Popularly Priced—Because We Do All the Work That Goes Into Them

There are no parts makers' profits and overhead—or other outside costs to add to the price of Grigsby-Grunow-Hinds Radio Equipment. That's why we are able to sell our merchandise at considerable saving to you, and that's why you, in turn, can meet the trade with attractive prices in any competition.

Our own skilled craftsmen are all we need to rely upon for quality. They work under one great roof and are constantly under our exacting supervision—which insures the very best that it is possible to build. The result is volume and tone unexcelled in the industry.

WE MAKE THEM—WE KNOW

Manufactured by

GRIGSBY-GRUNOW-HINDS Co.

4560 Armitage Avenue

Chicago, Illinois

In Canada: Benjamin Electric Mfg. Co. of Canada, Ltd., Toronto



Model WG-10

\$15⁰⁰

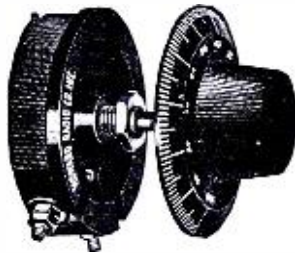
Follow the Reasons:

1. Genuine Roxalin Horn hydraulically pressed.
2. Bases beautifully finished in crystalline lacquer.
3. Exclusive "formed" diaphragm.
4. Adjustable lever volume control.
5. Elimination of all harsh sounds.
6. Permanently perfect reproduction.

Tell 'Em You Saw It in the Citizens Radio Call Book

HOWARD RADIO COMPANY—CHICAGO

HOWARD STANDARD RHEOSTAT WITH DIAL CONTROL. Note the simplicity of this rheostat and the convenience of drilling only one hole in the panel for mounting.



HOWARD



HOWARD Rheostats are guaranteed to give uniform service, perfect filament control and maintain constant resistance under continuous duty. HOWARD Rheostats meet every radio requirement. Workmanship and materials are of the highest quality. The bases are of special heat resisting materials, preserving shape and finish under all operating conditions. Slide contacts are phosphor bronze, insuring perfect electrical connections and resistance elements constructed of special non-corrosive resistance wire, accurately spaced by precision machines and wound under tension on a seasoned fibre strip so that the turns cannot come loose. Carrying capacity 1.5 amperes. Its operation is controlled by a beautiful 2 1/8-inch arm. Diameter of base 2 5/32 inches. Made in resistance of 6 1/2, 25, 40 and 60 Ohms.

Each\$1.10



HOWARD MICROMETER RHEOSTAT WITH DIAL. ONE CONTROL. The HOWARD Micrometer Rheostat gives instantly that extremely fine and hair line adjustment so necessary for the successful operation of all gas content tubes, known as soft tubes. The micrometer adjustment does not have a separate control but is automatically carried along with the main contact arm and brought into play instantly when desired. Made in resistances of 6 1/2, 25 and 40 Ohms. The micrometer attachment can be purchased separately and will fit any standard HOWARD Rheostat.

Dial Rheostat with Micrometer Attachment. Each.....\$1.50
Micrometer Attachment separate. Each..... .50



POTENTIOMETERS WITH DIAL. HOWARD Potentiometers are noted for that extremely close control of the potential in the plate and grid circuits so necessary to increase selectivity and obtain satisfactory results. The potential is kept under positive control at all times.

The HOWARD Potentiometer is the same size and matches the HOWARD Standard Rheostats. Furnished in resistance of 200 and 400 Ohms.

200 Ohms. Each.....\$1.50
400 Ohms. Each..... 1.50



MIDGET RHEOSTATS. The HOWARD MIDGET RHEOSTAT was designed to meet the long-felt want for a high grade rheostat small enough to be used in portable sets where space is limited and a smaller instrument is desired. The same materials and workmanship will be found in this Rheostat as in the standard HOWARD Rheostats, the only difference being in the size, the base being 1 3/8 inches as compared with 2 5/32 inches on the standard Rheostat. This Rheostat is not furnished with micrometer attachment. Made in resistances of 6 1/2, 25, 40 and 60 Ohms.

Each\$1.10



Front view of HOWARD Dial. These dials are sold separately and may be placed on any HOWARD Rheostat or Potentiometer. Size, 2 1/2 inches in diameter.

Each\$0.25



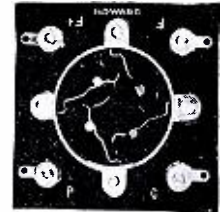
Rear view of HOWARD Dial showing 3/16-inch shaft permanently anchored in dial. The length of this shaft is 1 3/8 inches.

Each\$0.25



451-469 E. Ohio St.

The superiority of the HOWARD Socket lies in the "Sure Contact" which is made to the side of the tube pins and not to the ends. The contact arms have more than twice the spring value found in the average socket, as well as a full 1/4-inch contact surface applied to the side of the pins. These contact arms cannot lose their spring tension and can be relied upon to make a permanent, perfect contact. The base of the Howard Socket is moulded from the highest grade bakelite.



Each\$1.25

Upper Cut shows the Howard Socket and Lower Cut shows the construction of the "Sure Contact" springs.

THE HOWARD MULTI-TERMINAL PHONE PLUG is the most simple and efficient on the market. The patented feature provides instantly a positive connection for phones or loud speaker and will accommodate from one to six pairs of phones, all connected in at the same time, with maximum electrical efficiency. Slip in another pair of phones instantly without interfering with connections previously made. Merely insert the tips in the holes provided in the plug for that purpose.



FIXED CONDENSERS. Nearly every radio set in existence makes use of small fixed condensers. They perform a very important part in the successful operation of the set. Defective or inaccurate condensers cause no end of trouble. When a circuit calls for a condenser of a "fixed" rated capacity, install a "HOWARD" for accuracy and permanency. Only the best grade of Indian Ruby Mica is used to separate the copper and brass conductors. No paraffin or similar substances form any part of the dielectric. They are all hand made, each tested on a capacity bridge and guaranteed to be noiseless and accurate. Made in capacities of .00025, .0005, .001 and .002.



HOWARD INDUCTANCE SWITCH LEVER. This switch lever is made in two sizes, with small and large knob and having a blade radius of 1 inch and 1 9/32 inches respectively. The highly nickel plated phosphor bronze contact blade is securely keyed to the knob and will not turn or come loose under any condition.



HOWARD BINDING POST. The special feature of this binding post is the holding device which positively prevents the binding post from turning after it has been mounted. The top is made of the same high-grade insulating material as used in the manufacture of other Howard products.



21-22—Large and small indicating pointers. .020 inch thick, 8-32 thread, 1 1/16 inch radius and 13/16 inch radius respectively. Highly nickel plated.



23-24-25—Soldering Lugs with standard 6-32 hole, nickel plated.



26-27—Switch points and switch stops, highly nickel plated, 6-32 thread and equipped with nut.

All Howard Products are sold with a Guarantee of "Satisfactory Performance or Money Back"
Ask your dealer to show you the Howard line of parts. If he cannot supply your wants, send his name to us with your order.

Review of Circuits

The Improved Silver Superheterodyne

(See page 92 for diagram)

THE features of this receiver are the interchangeable oscillator and antenna coil systems. Plug in coils are used in each circuit, arranged to cover the desired wavelength range. Three coils are used in either oscillator or antenna circuit to tune from 50 to 550 meters. They are wound upon moulded bakelite forms, since moulded bakelite is known to be the best coil form from the low-loss standpoint. Losses in the coils are kept very low through the use of a ribbed winding surface which renders them almost air-supported, and by the use of spaced windings for the low wave inductances. The inductance to capacity ratio is quite favorable, due to the use of .00035 tuning condensers, rather than the usual .0005 with their poorer L/C ratio and consequent waste of signal voltage.

If a loop is to be used, it is merely necessary to remove the antenna coil from its six-contact socket and connect the loop to three binding posts on the socket. For different wavelength ranges, both oscillator and antenna coils are merely plugged in or out, exactly as a tube would be. The oscillator coupling coil is connected in the filament return of the first detector rather than in the grid lead, which gives somewhat greater selectivity and permits of greater efficiency at short wavelengths.

Straight-line-frequency, or straight-line-wavelength condensers are recommended, in order that maximum ease of tuning may be experienced upon the short waves. The condensers illustrated have losses as low as many pyrex-insulated laboratory standards, and show an extremely low surface resistance due to complete silver-plating.

The choice between straight-line-frequency and straight-line-wavelength condensers is much a matter of personal choice. It must be understood that selectivity with either type will be equal, but SLF will favor in ease of separation the low wave stations, while SLW will favor the Class A stations with their better programs.

The intermediate amplifying transformers and filter are carefully tuned at the factory to exactly the same operating frequency, the filter being provided with a measured tuning condenser of exactly the correct value. They are of the iron core type, quite sharply tuned, and with controlled regeneration will give as great amplification as it is possible to obtain. The overall amplification curve of the two stage amplifier is very similar to that of an extremely good band-pass filter as used in carrier telephone work. This means that a band only wide enough to pass the desired signal receives amplification. In this particular amplifier, the width of the band may be varied by the volume control, from a width so great that selectivity and amplification are poor, up through a good operating condition, and on to a point where the frequency band passed is so narrow that little or nothing but the low notes of a station come through. Truly, in a popular phrase, the selectivity is sufficient to split sidebands. The selectivity is further enhanced by the use of a negative bias on the second detector, which also increases its handling power for strong signals.

The audio amplifier suggested employs Thordarson 3½:1 transformers, which, despite their low price, compare excellently with the most expensive so-called straight-line-frequency transformers available.

The circuit is not at all new, and is the original laboratory circuit, except for the use of a grid bias upon both detector tubes rather than the grid-condenser and leak previously used. The reason for this is primarily one of convenience, since, practically, the sensitivity for either system appears substantially equal. However, a grid-condenser and leak suited to broadcast reception with the first detector would be too large for good results on low waves. Further, regeneration control and selectivity improves slightly through the use of a grid bias.

The positioning of the oscillator coupling coil is evident from a reference to the circuit. It will also be noticed that only the oscillator grid circuit is tuned, thus bringing one side of the oscillator tuning condenser at ground potential, and eliminating any tendency to hand-capacity effect.

List of Parts

- 3—Silver Marshall .00035 MF SLF Variable Condensers.
- 2—Silver Marshall No. 210 Intermediate Transformers.

- 1—Silver Marshall No. 211 Filter Transformer.
- 6—Silver Marshall UX or CX Sockets.
- 3—Silver Marshall .5 MF Fixed Condensers.
- 2—Silver Marshall Coil Sockets.
- 1—Carter 6 Ohm Rheostat.
- 1—Carter 400 Ohm Potentiometer.
- 1—Carter 2 Spring Jack.
- 1—Carter 3 Spring Jack.
- 1—Gleason .000025 MF Midget Variable Condenser.
- 1—Muter .002 MF Fixed Condenser.
- 2—Thordarson 3½ to 1 Audio Transformers.
- 9—XL Marked Binding Posts.
- 1—Silver Marshall Type 110A Special Coil.
- 1—Silver Marshall Type 111A Special Coil.
- 1—Pk. Kester Solder.
- 50 Ft. No. 12 Belden Tinned Copper Wire.

A Tuned Radio Frequency Receiver Using Twin-Eight Transformers

(See page 94 for diagram)

THIS new transformer enables you to build an inexpensive radio set that equals the very best high-priced factory-built receivers. It enables you to build a set—sharp as a knife in cutting through local stations—that will bring in all the distant stations with full volume on your loud speaker.

The reason for this extraordinary performance is the high amplification per stage that is now made possible with this new type of transformer. Its self-contained field eliminates losses and bucking action between coils. Its compact design concentrates the windings and allows the tight coupling between the primary and secondary turns that is necessary for a large transfer of energy. The magnetic field of the twin-eight transformer is concentrated right in the coil itself. No energy is wasted through interference of the field of the coil with other parts of the set—every bit of energy is conserved and amplified tremendously. The faintest signal collected by your aerial is brought up to loud-speaker volume without losses, and entirely undistorted.

Purity of tone and flawless reproduction are only possible in a set in which amplification is perfect. The faultless tonal reproduction obtained with these transformers is due to the fact that they do not respond to outside stray currents or disturbances. Its self-contained field does not affect other parts of the set; its design isolates it from stray fields as effectively as if it were shielded. It responds only to the desired station to which it is tuned.

The low distributed capacity and negligible resistance make it unusually sharp-tuning. It cannot pick up undesired signals from strong nearby stations—the pick-up effect on one barrel of the coil is nullified by an equal opposing effect on the other barrel. It pierces the worst jumble of local broadcasting in the larger cities to bring in just the distant station that you want.

List of Parts

- 3—Bodine Twin-Eight R. F. Transformers
- 3—Signal Spiral Cam condensers.
- 5—Radion Sockets.
- 1—Micamold 2 Megohm Grid Leak.
- 1—Micamold .00025 MF Grid Condenser.
- 1—Micamold .001 MF Fixed Condenser.
- 2—Dongan Audio Frequency Transformers.
- 1—Howard 400 Ohm Potentiometer.
- 1—Howard 6 Ohm Rheostat.
- 1—Howard 25 Ohm Rheostat.
- 1—Yaxley Jack.
- 1—Yaxley Jack.
- 1—Apco Filament Switch.
- 1—Elkay 4 Ohm Resistance.
- 1—Elkay Mounting.
- 1—Potter .5 MF Fixed Condenser.
- 1 Pk. Kester Solder.
- 50 Ft. No. 12 Belden Tinned Copper Wire.



For the "Call Book's" New "Tuned Radio Frequency" Circuit

ONLY the best panel material is good enough for the Call Book's new 5 Tube Tuned Radio Frequency Circuit and the .45 Kilocycle Super Het. That is why their Laboratory Experts recommend Insuline Panels to all set builders in assembling these circuits.

Every quality that a panel should have is found in Insuline. It has highest dielectric strength, is moisture-resistant, does not warp nor crack, and possesses a permanently beautiful finish.

Insuline Panels, drilled and engraved ready to set up, are furnished for the two circuits named above.

We Also Furnish Drilled and Engraved INSULINE PANELS for These POPULAR KITS

	No. Tubes	Size	List Price	
			Black	Mahogany or Frieze Finish
Ambassador	3	7x18	\$3.50	\$4.00
Ambassador	4	7x21	4.00	5.00
B. T. Counterphase.....	5	7x24	4.50	5.50
B. T. Counterphase.....	6	7x24	4.50	5.50
Browning Drake.....	4	7x24	4.50	5.50
B. T. Nameless.....	5	7x26	5.00	5.50
Cockaday	4	7x24	4.50	5.50
Cockaday Super.....	7	7x24	4.50	5.50
Cockaday L. 26.....	5	8x22	5.50	6.50
Eastern Classic.....	5	7x21	4.00	5.00
Roberts Knockout.....	4	7x21	4.00	5.00
Fada Neutrodyne.....	5	7x26	4.00	5.00
Freshman Type.....	5	7x18	3.50	4.00
Hammerlund-Roberts....	5	7x18	3.50	4.00
Citizens Radio Call Book 45 Kilo Super Het. Tuned Radio Fre- quency	9	7x30	6.50	7.50
Radio Broadcast Universal	5	7x30	6.50	7.50
Universal	4	7x18	3.50	4.00
Aristocrat	4	7x18	3.50	4.00

We also furnish Sub-Panels for nearly all of the above circuits, fitted with sockets for UV or UX Tubes. All panels and sub-panels 3/16-in. thick. Insuline may be had in the form of blanks, all standard sizes, in Black, Mahogany or "Frieze" finish.

Do not take a substitute for Insuline. If your local dealer can't furnish Insuline write us and we will see your wants supplied

INSULATING COMPANY OF AMERICA, Inc.
Radio Panel and Parts Corp.
Insuline Building 59 Warren St., New York
Branches in Principal Cities



A Tuned Radio Frequency Receiver Using Toroid Coils

(See page 96 for diagram)

SOME of the best circuits to be found on their recent models are used by set manufacturers themselves on their recent models. It is the exact hook-up used in the new All-American Model R Receiver, with one or two little changes necessary in order to make the set practicable for the home builder. A set made up following the diagram, accurately and properly wired with the parts named, should perform in every way as well as the actual manufactured receiver.

There is nothing very unusual in the diagram itself, except the use of three fixed condensers as shown in the diagram. They are all connected so as to by-pass the B battery and attendant wiring, but their actual placing in the set is also of great importance. The 1 mfd. condenser is connected across the B battery at a point near the battery terminals, while the .002 condensers are placed so as to run directly from the post on the toroid coil marked —F to the —F post on the tube socket.

The unusual clean-cut appearance of the set is largely due to the use of toroid coils and tube sockets of a type well suited to it. That is, the sockets are of a type such that binding posts can be inverted so as to bring the lead under a sub-panel, and in this way all of the filament wiring is brought out of sight. The binding posts on the coils are set very low, so that they are easily reached by short leads through the holes in the sub-panel.

Ordinary 5volt tubes are used, and they may be either the old navy base type or the new "X" base, since the sockets used take either base. Laboratory-grade transformers are used in both audio stages, insuring unsurpassed tone quality. With condensers having a strictly straight-line-frequency characteristic and fully 360 degrees rotation, there is no need of vernier mechanism, thus still further simplifying the set without sacrificing any ability to tune in all stations of whatever wavelength.

List of Parts

- 3—All American .00035 S.L.F. Variable Condensers.
- 1—All American Type T1 Toroid Coil.
- 2—All American Type T2 Toroid Coils.
- 5—All American Sockets.
- 2—Rauland Lyric Audio Transformers.
- 1—Dubilier .002 MF Fixed Condenser.
- 1—Dubilier 1 MF Fixed Condenser.
- 1—Dubilier .00025 MF Grid Condenser.
- 1—Dubilier 2 Megohm Grid Leak.
- 1—Carter Filament Switch.
- 1—Carter 2 Spring Jack.
- 1—Carter 3 Spring Jack.
- 2—Daven 1/4 Ampere Resistors.
- 3—Daven No. 50 Mountings.
- 9—Ganio Kramer Marked Binding Posts.
- 1—King 10 Ohm Rheostat.
- 1—King 25 Ohm Rheostat.

The Victoreen Super-Heterodyne

(See page 98 for diagram)

DU E to the fact that there is no iron used in the core, the curve is very sharp. The aircore is two inches in diameter, which means that a minimum amount of wiring is used to get the proper inductance and the field is kept in close proximity to the coils, practically eliminating feed back and enabling the transformers to be placed in close relation to each other. The secondary is tuned by a small variable condenser, by means of which all the transformers are adjusted to match each other to a precision of within 1/3 of 1 per cent. This small capacity decreases the amount of inductance required and therefore decreases the radio frequency resistance, which further accounts for the sharpness of its curve.

A difficulty which is encountered in most Super-Heterodynes is the problem of preventing inter-stage oscillations, which ruins the clarity and reduces the sensitivity. In the Victoreen transformers this is accomplished by a second adjustment, also made at the factory, which

Tell 'Em You Saw It in the Citizens Radio Call Book

The Adapted Mogul 5VC Power Tube is another Van Horne development—an other indication of progressiveness. There will be other improvements and developments by the Van Horne Company that will sustain and promote an already established reputation as manufacturers of radio tubes of unusual merit.

Then You Can Really Boast Of Real Reception

Increase your speaker volume from 50 to 100 per cent.

Insure faithful reproduction without loss of tone quality.

Eliminate distortion and undesirable noises in speaker caused by overloading of amplifier tubes—by using the Van Horne-Musselman Adapted Mogul 5VC Power Tube in your receiving set.

The Van Horne-Musselman Adapted Mogul 5VC Power Amplifier Tube can be applied to any receiving set without requiring a change in the circuit. This advantage of ease in adaption, made possible by the patented adapter, is an exclusive Van Horne feature found on no other power tube.

The Mogul 5VC is used chiefly on the last audio stage. It can be used on the other audio stages and also as a detector. It operates at higher "B" voltages than the standard storage battery tube with 5 volts on the filament, filament amperage .50. The double filament of the Mogul 5VC insures full emission and ample signal and current carrying capacity.

The Musselman Certified Mogul 5VC is guaranteed to read up to the test specifications indicated by the characteristic curve sheet drawn for that particular tube and packed with it. These specifications will be found to run higher than those set by the leading radio engineers, as indicating a superior tube. Like the Van Horne Selected Mogul 5VC it is unconditionally guaranteed.

Van Horne Selected and Musselman Certified radio tubes are made in various types and for all receiving purposes. Write for folder covering our complete line.



List price Musselman Certified.....\$5.75

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Ask your dealer—or clip and send the coupon direct to the factory—you are at liberty to return tubes for refund if not entirely satisfactory.

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Send me C. O. D., postpaid

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..... Musselman Certified } Power
Tubes

Name.....

Address.....

City.....

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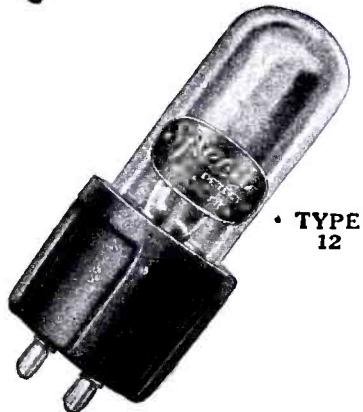
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gives each transformer exactly the same amplification constant. If this constant is too great, the transformer will oscillate. If it is too low, the transformer will not have the proper amount of pep, and it has been found impossible to make this constant alike in two transformers without an adjustment. After all of these adjustments are made at the factory, the transformer is sealed to prevent it from being changed and detuned, through the handling of the coils.

Still another feature, worthy of special mention, is the fact that it is unnecessary to match tubes. This is accomplished by another action of the condenser across the secondary. The variation in tube capacity, in comparison with the shunt condenser, is so small as to become negligible. This same holds true for the variation of wiring, for no special care need be taken as far as the capacity of leads or position of instruments is concerned. However, short leads are always advisable, even though for neatness alone.

Due to the truly resonant characteristics of the secondary, an aperiodic primary is used. This permits the transformers to be used with either 201 A or UV 199 type of tube. Inasmuch as all the transformers are tuned to exactly the same wavelength, in case one of them should become damaged, the manufacturer can easily replace it with another that is tuned exactly the same and will match the remaining ones in the set.

The peak of these transformers has been so designed that the variation in voice frequency will not cause distortion. Usually Super-Heterodyne transformers are tuned between 1600 and 10,000 meters. On the latter wavelength an iron core transformer alone can be used, which in itself brings up the possibility of distortion. On 1600 meters the amplification is hindered because of interstage oscillation, and it is always necessary to use a potentiometer to decrease the sensitivity of the tubes and prevent oscillation, which is not desirable.

The wavelength of 3400 meters was selected by the engineer who designed these transformers, because this wavelength, which is equivalent to 88,000 cycles, offers the least trouble from harmonics, which will be experienced in any receiving set of this nature.

The potentiometer, or lossy, as it is sometimes called in the parlance of the experimenter, is used in the average set to prevent oscillation by decreasing the sensitivity. However, in this set it does not act as a lossy, but purely as a desirable and useful control of the grid voltage for the R. F. tubes, consequently affording an ideal means of varying the volume of the signal.

The intermediate stages in this set will not oscillate, regardless of the position you place the arm of the potentiometer. Greater clarity and much less tube noises are obtained, and together with the fact that the grid voltage can be controlled conveniently to that point on the negative side, which gives best results, a greater reduction in B battery consumption is obtained. This is a very desirable feature in receivers of this type, in fact, with the potentiometer on the negative side, the set only draws from 8 to 10 milliamperes. This is less than some 3 tube sets draw.

No special input transformer is required in this set. A No. 170 R. F. transformer is used, as each R. F. constitutes its own filter system. This feature does not require the balancing of any of the coils with condensers. In the average superheterodyne, the input transformer is of first importance, being more sharply tuned than the intermediates. This is necessary, due to the fact that the ordinary intermediate transformer has no sharp resonance peak and this defect must be offset by the aid of an input unit, tuned by means of a matched condenser. A very crude method, to say the least.

For those desiring to use an antenna, the Victoreen type No. 160 Antenna coupler, is available and makes an admirable unit. The increase in volume, due to the use of an antenna over the loop is not great; however, it has, in some instances, a decided advantage, as when the loop would be somewhat inconvenient, due to directional properties. The Victoreen oscillator coil, No. 150, and the 4 R. F. transformers No. 170, are all matched as far as size and color scheme is concerned and because of this, when assembled into a set, make an arrangement which is sure to please the constructor, who takes pride in having the best in appearance, as well as the best in results.

The oscillator coil requires absolutely no adjustment. It is very small and neat and it is neither necessary nor advisable to shield any part of this set, eliminating a tedious and complicated operation, which

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ORCHESTRION DE LUXE

*The All-Wood
Loud-Speaker*

*Radio News Certificate
of Merit No. 870*



\$37.50

F. O. B. Indianapolis
OR AT YOUR DEALER'S

*The Tone-arm is
Built of Bent Wood*

Therein is the secret of the marvelous superiority of ORCHESTRION de Luxe over all other loud speakers. The tone arm of ORCHESTRION de Luxe is built entirely of bent wood, from the best tone-reproducing spruce-pine and maple, just as all fine musical instruments are made. From the lowest notes of the bass viol to the highest soprano, every sound put on the air at the broadcasting station is received with life-like fidelity. The clearness and resonance of reception that ORCHESTRION de Luxe gives you is truly wonderful. The harsh, metallic vibration, the tin-panny effect so often present with metal or moulded plastic loud-speakers, is entirely eliminated by ORCHESTRION de Luxe.

Truly a Masterpiece of Radio Craftsmanship

Both in construction and in the superiority of results that it brings, ORCHESTRION de Luxe is a real masterpiece. The amplifying bell, 15 inches in diameter, contains **twenty-four separate ribs**, alternating in walnut and mahogany. The natural grain of these woods in **soft velvet finish** makes the appearance of the All-Wood ORCHESTRION de Luxe a joy to all lovers of fine craftsmanship. The tone arm has a stippled mahogany finish. The outer edge of the bell is bound in **black and white pyralin inlay**. The base containing the electrical unit is 8 inches in diameter, made of solid mahogany and highly finished. The complete instrument stands 27 inches high, is perfectly balanced and will harmonize with any furniture.

Try ORCHESTRION de Luxe at Our Risk!

Every dealer handling ORCHESTRION de Luxe is authorized to sell to you on ten days' trial. If this splendid instrument does not please you completely and fulfill every claim we make, you may take it back and your money will be refunded. We also absolutely guarantee this speaker against any structural or material defects for one year from date of purchase.

Get ORCHESTRION de Luxe in your home on trial. If your dealer does not handle it *order direct from our factory*, on same money-back guarantee

RADIO CABINET COMPANY
2128 North Olney Street
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Aero Coil Units that Meet the Inductance Requirements of Any Set

Tuned Radio Frequency Kit

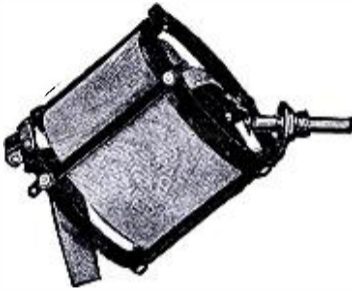


Consists of one Aero-Coil antenna inductance with variable primary and 2 Aero-Coil Radio Frequency Transformers. Tuning range below 200 and above 550 meters when shunted with a good .00035 condenser. S. L. F. Nickel plated brackets which fit any condenser for mounting a condenser or sub-panel, and mounting screws included in kit. Also complete instructions and constructional data for making the most efficient tuned radio frequency receivers ever designed. **\$12.00.**

ing the most efficient tuned radio frequency receivers ever designed. **\$12.00.**

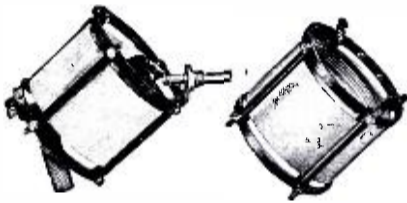
The Aero Coil 3 Circuit Tuner

Another adaptation of the patent-protected Aero Coil construction and for that reason the most efficient 3 circuit tuner ever offered. Wave length range below 200 and above 550 meters when shunted with a good .00035 condenser. This is the tuner which, in a 3 tube set, brought in Havana, Cuba, in the daytime in Chicago. **\$8.00.**



The Aero Coil Radio Frequency Regenerative Kit

Consists of one AERO COIL 3 Circuit Tuner and one AERO COIL Antenna Coupling Transformer. Makes the most powerful, most selective 4 tube, non-radiating set possible to build. **\$11.00.**



The Aero Coil Wave Trap Unit

Also for Crystal Sets

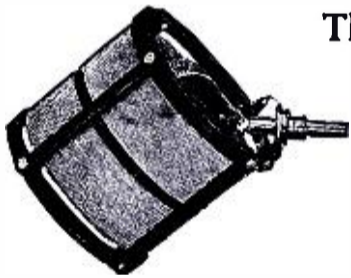
By reason of the characteristics made possible by the Aero Coil construction, this unit makes a very efficient wave trap. **\$4.00.**



The Aero Coil Oscillator

For Super Heterodynes

The characteristics achieved through the use of the Aero Coil principle make of this instrument the ready means to tremendously increase the efficiency of the oscillator circuit in any Super Heterodyne receiver. **\$5.50.**



The New Low Wave Tuner Unit

The Aero Interchangeable Short Wave Tuner has a range of 15 to 130 meters. There is no reason why the experienced amateur may not hear foreign stations practically every night. Set of 3 Aero Coils with mounting base and descriptive bulletin, **\$12.50.**

Complete description of all Aero Products on request. Order from your dealer or send his name with your order to—

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used to be considered a necessity in the building of Super Heterodyne receivers.

While the set can be operated with a single rheostat for all tubes—providing it was made to carry the load,—four, at least, are recommended. A 30 ohm rheostat for the oscillator tube, a 30 ohm rheostat for the first detector, a 6 ohm rheostat for the 3 R. F. tubes and another 6 ohm rheostat for the 2nd detector and two stages of audio. These resistances are suitable for the standard 201A type tubes and this arrangement will give all the finer adjustments that are ever required on the most critical of long distance signals. A 400 ohm potentiometer, that is smooth in its operation, should also be mounted in a convenient position.

List of Parts

- 4—Victoreen Type 170 R. F. Transformers
- 1—Victoreen Type 150 Oscillator Coupler
- 1—Victoreen Type 160 Antenna Coupler
- 8—Howard Sockets
- 2—Quam .0005 MF Variable Condensers
- 2—Electrad .00025 MF Grid Condensers
- 2—Electrad 2 Megohm Grid Leaks
- 1—Electrad .001 MF Fixed Condenser
- 2—Sangamo 1 MF Fixed Condensers
- 1—Rayovac 4½ Volt "C" Battery
- 1—Victoreen 400 Ohm Potentiometer
- 2—Victoreen 30 Ohm Rheostats
- 2—Victoreen 6 Ohm Rheostats
- 2—Yaxley No. 4 Jacks
- 1—Yaxley No. 3 Jack
- 1—Allen Bradley Filament Switch
- 6—Ganio Kramer Binding Posts
- 2—Liberty Audio Transformers

45 Kilocycle Super Using Impedance Coupled Amplification

(See page 100 for diagram)

WE are showing in this circuit how impedance coupled amplification can be connected to a Raytheon "B" eliminator. It is commonly recognized that the clearest reception and the most realistic reproduction have been obtainable hitherto only from the detector. Amplification, to a more or less degree, has been at some sacrifice of tone and fidelity.

This has been inevitable, due to the fact that all makes of audio frequency amplifying transformers favor certain notes above others, and amplify them with greater volume to the partial exclusion of notes below their range.

The better grade of amplifying transformers give even amplification of all notes above 60 cycles but below that point suffer a marked loss of amplification to the effect that the bass notes seem to be lost entirely. Sixteen cycles marks the lower end of the musical scale as is sounded forth by the pedal of the grand organ. The reproduction of the bass notes between these frequencies is the "something missing" in the average receiver.

While impedance coupled amplification is not as great per stage as that of transformer coupled, increased clarity and the uniform amplification of all notes the human ear can detect more than compensates for this. Three stages of Autoformers will give more amplification than the customary two stages of audio frequency transformers, and more volume than is required under normal conditions for home loud-speaker reception.

When the volume limit has been reached the Autoformer will block. Therefore it is on the weaker signals—signals below the volume limit—where the superior amplification of the Autoformer is most pronounced.

The proximity of the first Autoformer to the detector and radio frequency circuits may require grounding of the frame to eliminate body capacity effects when coming in contact with the frame. In most sets one terminal of the A battery is grounded; this enables the grounding lead to be connected to this side of the A battery wiring in the most convenient manner. Do not strap

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Radio Plug

The smooth and instantaneous action of this Radio Plug, the positive grip, the beauty of design and finish mark it as a typical Weston product. The tremendous national demand has made this popular Weston device one of radio's outstanding sales successes.

Radio Instruments for Economy—Results

WESTON, a name famous in every electrical field, stands for unusual achievement in radio. The models here shown combine unusual precision, ruggedness and beauty at reasonable cost.

There are Weston Radio Instruments for Receiving and Sending Sets, for both the Expert and the Amateur.

Ask your dealer to show them to you, or write us for our interesting free booklet, "Weston Radio Instruments."



Model 301 Filament Voltmeter

A filament voltmeter is no longer a luxury. It is now recognized as an essential of every good radio set, because close regulation of filament voltage improves reception and materially lengthens the life of the tubes.



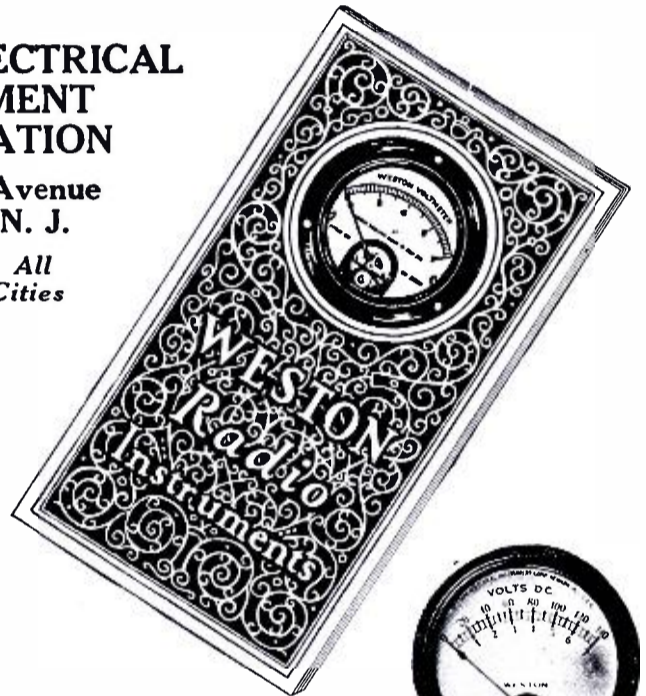
Model 425 Thermo-Galvanometer

A sensitive thermo-milliammeter of low resistance, designed especially for use in a wave meter circuit for the measurement of wave length and decrement; and for the measurement of high frequency resistances by the resistance and reactance variation methods. It has a large overload capacity, a resistance of 4.5 ohms and requires only 115 milliamperes for full scale deflection.

WESTON ELECTRICAL INSTRUMENT CORPORATION

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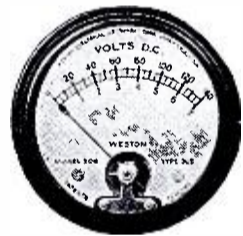
Model 489 Radio Table Voltmeter

A high resistance instrument, beautifully made with a strong Bakelite case. Its portable form, accuracy, dependability and range combination (150/7.5 volts) make it an ideal all purpose voltmeter around the radio set, for checking filament and grid voltages, locating troubles such as loose or broken connections, testing new hook-ups, for improving reception and for materially increasing the useful life of the tubes. Pinjacks and a pair of cables accompany each model 489 to connect the filament circuits to the panel so that the voltmeter may be plugged in at will.



Model 425 Antennae Ammeter

This Weston thermo-couple type ammeter solves perfectly the problem of measuring high frequency currents such as are imparted to the antennae. It also measures accurately and with equal facility, alternating currents of low frequency. It is also accurate on direct current service and is a remarkable contribution to the art of electrical measurement.



Model 506 Panel Instruments

Two inch Radio Panel Voltmeters, Ammeters and Milliammeters. Voltmeters have an exceptionally high internal resistance (125 ohms per volt)—an outstanding advantage for dry-cell battery operated sets. Small and compact in design, but retaining all of the famous Weston quality. These small instruments are made in a comprehensive list of ranges for radio measurements. For the particular application to your set write us for full information.



Model 506 Pin-Jack Voltmeter

This instrument plugs directly into the pin-jacks mounted on Radiola, Victor and Brunswick superheterodynes. Dial has a red line at the three volt mark. Simply turn battery setting knob until voltmeter pointer reaches this mark—you are then operating at the critical tube filament voltage for best reception, long tube and battery life, and economical operation of the set.



2 Inch Model 506 Voltmeter

and



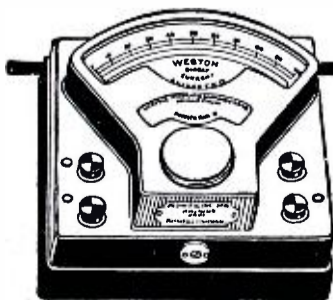
Weston Universal Bi-Polar Switch

A new and remarkable combination having universal application to all types of radio sets.

It consists of a Weston 2-Inch Voltmeter with double scale (140/7 volts) and a nine-point bi-polar switch. The resistance for the high range of the instrument is contained in the housing of the switch.

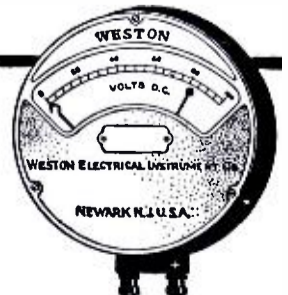
For the remarkable application of this combination take, for example, its use on a five-tube neutrodyne set—you can closely regulate the filament voltage of the radio frequency tubes, the detector tube, the first audio frequency tube and the second audio frequency tube and check the voltage of the "A" and "C" Batteries and the detector "B" Battery and the Amplifier "B" Battery.

In this way this Weston combination makes a complete electrical check of your set—by simply turning the switch. It can be readily installed by any radio enthusiast.



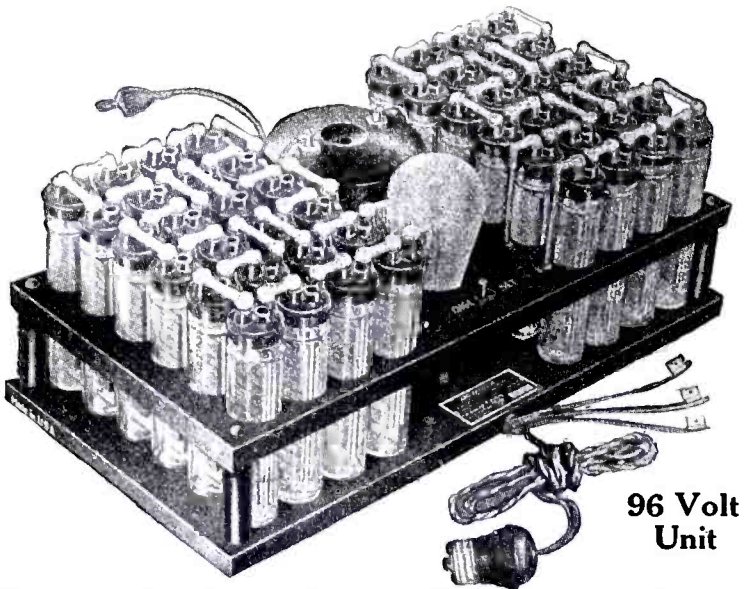
STANDARD THE WORLD OVER WESTON

Pioneers since 1888



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Indirect Socket Power Insures Perfect Reception



96 Volt
Unit

Without a hum-free and absolutely dependable "B" unit the best receiver you can buy or build is a disappointment. The new principle of indirect socket power, as embodied in the GRAYNIE, enables you to enjoy perfect reception with a minimum of trouble and expense.

As current is taken indirectly from the light socket, there is no trouble whatever from line surges or A. C. hum. There is no "battery static" such as is caused by defective dry cells. Voltage is always constant. The unit is controlled by a simple "On" and "Off" switch. Connections to light socket and receiver are permanent. Handsome Duco finish. Suitable for use with the finest set. No other unit equals the GRAYNIE for convenience, economy of operation and uniformly satisfactory performance. To enjoy real reception hook one of these perpetual "B" units to your set. Price \$36.

A GRAYNIE Quality "B" Unit at a Popular Price

\$19.85



This new storage "B" battery is built for those who want a GRAYNIE quality "B" unit at a popular price. It is the most economical plate current supply, for its guaranteed life is equivalent to the life of \$64.00 worth of dry cells.

Only one unit is required to operate your set, and it will

last indefinitely as it can be recharged with a minimum of trouble and at negligible cost. This battery occupies less space than 90 volts of dry cells. Like the complete indirect socket power unit, illustrated above, it is constructed with cell tops of brown glazed porcelain and has the same neat metal rack and handsome Duco finish. GUARANTEED TWO YEARS. Either type of GRAYNIE will prove to be one of the best investments you have ever made and will give long, dependable service.

If your dealer does not have GRAYNIE units in stock, ask him to order for you. Be sure to examine the GRAYNIE before purchasing any other device for supplying "B" current.

GRAYNIE

Graynie Corporation
323 W. Jackson Blvd., Chicago

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together or ground the stopping condenser cases. The large capacity between the case and the condenser will cause capacity feed back between grids if the cases are connected together or grounded.

The stopping condensers designated $\frac{1}{4}$ Mfd. are not critical as to value. Good condensers having a high dielectric resistance should be used. The dielectric resistance of commercial condensers decreases with increased capacity, therefore, it is advisable to use the smallest condenser possible without reducing the amplification of the low frequencies.

A smaller resistance leak of about 1/10 megohm can be used on the third stage in place of the $\frac{1}{4}$ megohm resistance shown, to increase the volume limit. This change will result in a slight decrease in amplification.

The A and B batteries should be kept fully charged to insure best results. Run down batteries will injure the quality of reception. This effect is more noticeable on the Autoformer than on the customary transformer coupled amplifier. For satisfactory results we recommend 110 volts B battery and 6 volts C battery or 135 volts B battery and 9 volts C battery. The circuits show the negative B battery connected to the positive A battery to conform with a like connection in the receiving set. When the receiver has the negative B battery connected to the negative A battery the Autoformer coupled amplifier should be connected likewise.

The Autoformers will give satisfactory results with the Raytheon tube using Thordarson transformer type R-195 and choke coils type R-196, provided a 10,000 ohm resistance is placed in series with the positive B supply from the eliminator to the plates of the first and second audio tubes through their respective Autoformers.

A Universal Four Tube Receiver

(See page 102 for diagram)

THIS receiver has a stage of balanced tuned radio frequency, a tuned detector with resistance control of sensitivity and two stages of audio amplification. This type of circuit has proved in recent years to be very efficient and popular. A feature of the circuit is that any type of tube may be used without making any changes once the receiver is completed. This is made possible by the use of a new type of tube socket which is now standard for all UX or CX tubes. Separate "B" and "C" terminals are provided for the last stage of audio frequency amplification so that a UX 112 tube may be used if desired. Amperites are used to control the current of the two audio tubes automatically. The detector and radio frequency tubes are controlled by one rheostat, while an additional rheostat in series with the radio frequency tube serves as a volume control.

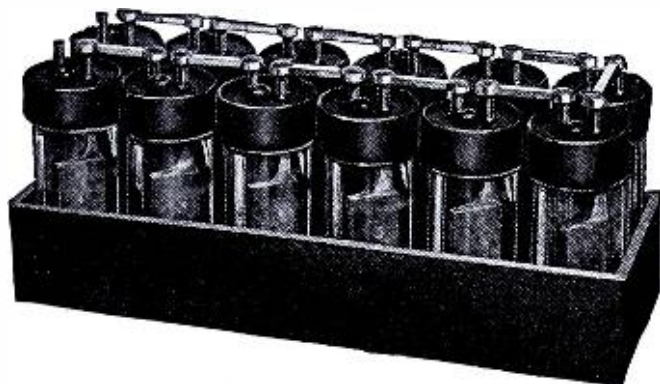
List of Parts

- 1—General Radio Type 277 D Coil
- 1—General Radio Type 277 C Coil
- 4—General Radio Type 349 Sockets
- 1—General Radio Type 368 Micro Condenser
- 2—General Radio .0005 MF Type 247 H Condensers
- 1—General Radio Type 301 10 Ohm Rheostat
- 1—General Radio Type 301 30 Ohm Rheostat
- 1—General Radio Type 285 Audio Transformer
- 1—General Radio Type 285 L Audio Transformer
- 1—General Radio Type 236 .5 MF Fixed Condenser
- 11—General Radio Type 138 Z Binding Posts
- 2—Dubilier .0001 MF Fixed Condensers
- 1—Dubilier .00025 MF Fixed Condenser
- 1—Cunningham Variable Grid Leak
- 2—Radiall Amperites with Mountings
- 1—Electrad Royalty Type C Resistance, 050,000 Ohms
- 1—Micarta Panel 7"x17"x3/16"
- 1—Baseboard 7"x16"x1/2"
- 1—Micarta Terminal Strip 9 3/4"x1 1/4"x3/16"
- 1—Cutler Hammer Filament Switch
- 1—Package Kester Solder

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World Batteries

"To Purchase a World is to Purchase Economy"



RADIO Storage "B" Battery

\$275
C. O. D.

4 Batteries in Series
(96 Volts)
\$10.50

World Storage "B" Battery 12 Cells—24 Volts—Solid Rubber Case

To ten million homes with Radio Sets—and to countless millions of prospective buyers—this WORLD Storage "B" Battery brings a new conception of battery economy and performance. Here is a battery that pays for itself in a few weeks—will last for years, and can be recharged at a negligible cost.

Approved and listed as Standard by leading Radio Authorities, including Pop. Radio Laboratories, Pop. Sci. Inst. Standards, Radio News Lab., Lefax, Inc., and other important institutions.

A *Superior* Battery Equipped with Solid Rubber Case.

Has heavy, rugged plates and plenty of acid circulation. Extra heavy glass jars allow ready observation of charge. You will find this battery a boon to long distance reception. It does away with a great many noises so often blamed on "static."

WORLD STORAGE "A" BATTERIES

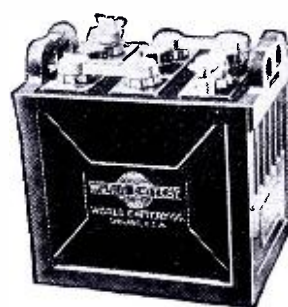
Equipped with *Solid Rubber Case*, an insurance against acid and leakage

TWO-YEAR WRITTEN GUARANTEE

Famous for Guaranteed Quality and Service. Backed by Years of Successful Manufacture and Thousands of Satisfied Users.

6 Volt, 100 Amps, Solid Rubber Case.....	\$11.25
6 Volt, 120 Amps, Solid Rubber Case.....	13.25
6 Volt, 140 Amps, Solid Rubber Case.....	14.00

Approved and listed as Standard by leading Radio Authorities, including Pop. Radio Laboratories, Pop. Sci. Inst. Standards, Radio News Lab., Lefax, Inc., and other important institutions.



Send No Money

Just state number and kind of batteries wanted, and we will ship order the day it is received. When shipment arrives, examine the battery or batteries before you pay one penny. Then pay C.O.D. charges. 5% discount for cash in full with order. Remember, *"to purchase a World is to purchase economy."* Send your order TODAY.

WORLD BATTERY COMPANY

1219 So. Wabash Ave.

Dept. 26

Chicago, Ill.

Set your Radio Dials at 210 meters for the new 1000 watt World Storage Battery Station, WSBC, Chicago. Watch for announcements

Save You 50%

Tell-'Em You Saw It in the Citizens Radio Call Book

The only adjustment other than the usual tuning operations is the fixing of the balancing condenser. Once set, this does not require readjustment. In order to set the balancing condenser properly, some broadcaster whose frequency is in the vicinity of 1000 K. C. (300 meters) and whose volume is moderate, should be tuned in with the detector oscillating. The detector condenser should be tuned until the whistle from the station is quite loud. The antenna condenser should then be tuned. The whistle will change in pitch as the antenna condenser dial is turned. The balancing condenser should be adjusted until the pitch of the whistle does not change as the antenna condenser is rotated. The set is balanced when this condition exists. The balancing condenser should be varied, a little at a time, each time noting the change in pitch of the whistle. On one side of the balancing point of the pitch will rise, on the other it will fall.

The value of the grid bias on the radio frequency tube affects the ease with which the set is balanced. If difficulty is encountered in balancing the set—that is, there seems to be no balance point—the "C" battery voltage on this tube should be reduced.

If the detector circuit oscillates, even with the resistance at its maximum, the detector "B" voltage should be reduced.

The Monoflex Circuit

(See page 112 for diagram)

MANY radio circuits have come and many radio circuits have gone. Some of them have been quite clever, others have been "things equal to the same thing." But let that go.

In a four tube "hook-up" known as the "Curtis Monoflex," a unique system is used in boosting the effect of a four tube set having one stage of tuned radio frequency, a detector tube and two stages of transformer audio amplification. The interesting feature of this circuit is the novel method of producing the Monoflexing without the use of additional parts. The result is a set with excellent tonal qualities. It is a distance getter and the volume is sufficient to please the fan who is afraid his neighbor won't know that he has a new radio set.

The aerial circuit is aperiodic and the coil is a diamond weave coil wound to tune with a .0005 condenser. The radio frequency transformer is a duplicate of the first coil except the primary is wound with twice the number of turns used in the first coil. All four tubes are controlled by a $3\frac{1}{2}$ ohm rheostat. The grids of the radio frequency and of the detector tube are biased by a 200 ohm potentiometer. All four tubes are of the 201-A type. The set as built by myself was very compact—the panel being 7x14 and baseboard 8 inches deep. The material selected is standard of high quality.

The "Monoflex" effect is obtained by connecting the positive "B" battery of the first audio transformer to the "plate" side of the radio frequency tube. This causes all the plate voltage of the detector tube to first pass through the primary circuit of the radio frequency transformer; the result is a four tube set equal to the standard five tube tuned radio frequency set, there there is only two dials to tune instead of three. This set is simple and easy to build, but care must be exercised that balances are preserved and the coils connected as described, so that currents will boost and not counteract each other, and that the tubes will oscillate on both low and high waves. This set will tune from 200 to 600 meters.

See that the tube used for the radio frequency stage is one that is efficient on radio frequency currents and select a "soft" 201-A tube for the detector. The efficient voltage in the detector circuit varies all the way from $22\frac{1}{2}$ volts to 90 volts or more. Vary the detector voltage until you find the most efficient point, which will be when the set has volume with being unduly sensitive.

The Hammarlund-Roberts Five Tube Receiver

(See page 108 for diagram)

IN theory the Hammarlund-Roberts receiver is comparatively simple. It combines the best of modern practices in the addition of a neutralized stage of tuned radio frequency amplification to a regenerative detector. Beyond the detector is an audio frequency amplifier.

Tuning has been reduced to the simplicity of just two major controls. A sensitivity and a volume control are provided in addition to the two major controls to make the receiver so flexible in tuning as to meet every possible condition. All tubes but the radio frequency tube are controlled by separate Amperites which automatically adjust the tubes to their correct operating voltages. The radio frequency stage is controlled by a Carter 25-ohm rheostat which serves as an efficient volume control.

The antenna-ground system is coupled to the radio frequency amplifier and voltages induced in the amplifier by the antenna inductance are fed to the first vacuum tube. Due to the amplification of the tube these voltages are again amplified before passing to the detector. If this amplifier is properly neutralized, the ratio between the output and input voltages, known as the voltage "gain," will be about ten. This means that if the antenna were connected directly to the detector, the input voltages there would be only one-tenth of the value attained through the use of this radio frequency unit. Aside from the evident advantage of amplification, the additional coil and condenser constitute an additional tuned circuit through which signals must pass before getting through the remainder of the receiver. This means that unwanted signals can be tuned out very much better than they could be without the use of such a radio frequency amplifier.

Signals are passed into the detector from the radio frequency amplifier by means of an "interstage transformer." The detector circuit is tuned by means of a condenser to the proper frequency so that signals will find a clear path through the amplifier and the detector. Both circuits being tuned to the desired frequency, undesired signals will find considerable impedance to their progress through the receiver. The two tuned circuits, together with the highly efficient parts used and the engineered layout are responsible for the remarkable selectivity of the receiver.

The detector is the familiar condenser-leak detector which is so sensitive to weak signals. Regeneration is secured through the use of a fixed condenser and tickler coil.

In fact, the whole receiver might be described by stating that it is the best of the early days, a regenerative detector, to which has been added the best of modern days, a tuned high-frequency amplifier. Since this amplifier is made of exceptionally efficient parts, its "gain" is very great, and the increased sensitivity and selectivity make it appeal to all radio listeners. Due to the use of this neutralized radio frequency, tube radiation of oscillations from the antenna is entirely prevented.

Signals after passing through the detector tube are audible and a pair of phones placed in the detector circuit should pick up broadcasting signals. Since these signals are simplified by an audio frequency transformer they are much stronger after passing through this third tube.

The proper B and C battery voltages for this tube are 90 and —4.5 respectively and there is little use in increasing these values. The negative C voltage will decrease the B battery consumption and insure the operation of the tube under the best possible conditions for pure audio amplification.

Coming out of the first audio amplifier, the signals are again passed through a transformer before entering the two tubes with their grids and plates connected together. The output of these parallel tubes should provide sufficient volume to operate a loud speaker on any station that can be heard even faintly in the detector. On medium distance stations, it is probable that the volume control will have to be reduced to avoid overloading and distortion in the last audio amplifier; certainly this is true of local stations.

Satisfactory operation will be obtained by using 90 and 4.5 volts throughout from the B and C voltages, although on these last two tubes it may pay to use 135 volts of B battery and from 7.5 and 9 volts C battery.

Assuming that the antenna, ground and loud speaker are connected to the set, turn the volume control on full and advance the sensitivity dial to its maximum position. Both knobs should be turned to the right to increase and to the left to decrease. Now, by simultaneously rotating the two tuning dials at approximately the same settings, a squeal should be heard in the loud speaker, provided any stations are "on the air."

Samson Radio Products

Samson Radio Products show the results of nearly half a century manufacturing experience. They are built to a standard and not to a price.

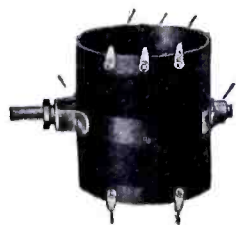
Samson Radio Products, when used with other high-grade standard parts, produce results that are unequalled for tone quality, selectivity and sensitivity.



Samson Neutralizing Condenser is variable by fine gradations and stays permanently where adjusted. Minimum capacity .00002 mfd. Maximum capacity .0003 mfd. Price \$1.75.



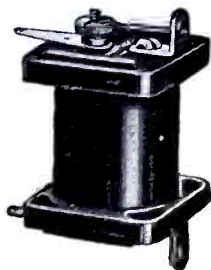
Samson Double Rotor Coupler gives a selectivity instantly adjustable from broad to "razor edge" and can be used as a coupler and R. F. transformer in many circuits. Price \$7.50.



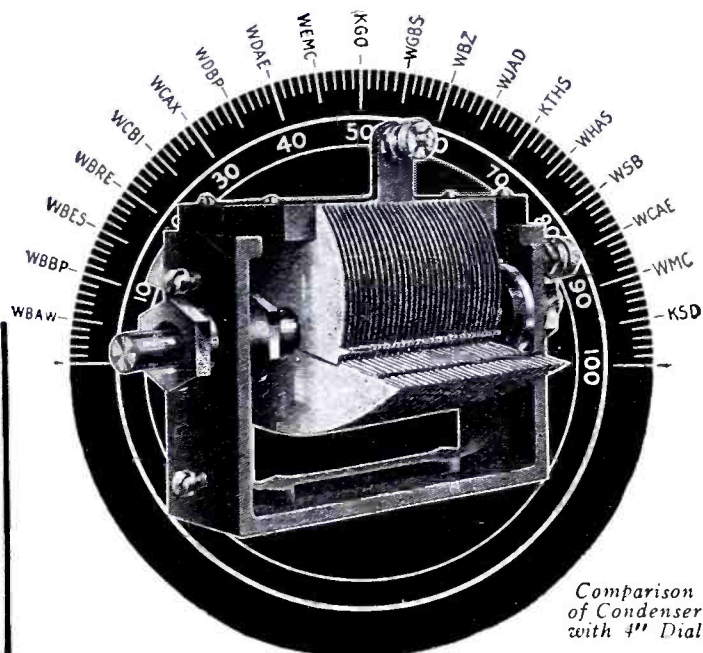
Samson Split Stator Coupler can be used efficiently in various circuits, due to its unique construction. Price \$4.50.



Samson Audio Frequency Transformers, due to patented helical winding, give practically uniform, high amplification over entire audible range with minimum distortion. This transformer has the lowest distributed capacity.



Samson Radio Frequency Choke Coil has many uses, in neutralizing circuits, and any circuit where the absence of R. F. energy will improve the quality of reproduction. The Samson Helical Wound Choke Coil has advantages which can not be duplicated by any other method of winding and is used by many of the better set manufacturers. Price \$1.50.



Comparison of Condenser with 4" Dial

Samson Uniform Frequency Condensers

Smallest Made, Yet Easily Fit Into Present Sets

ILLUSTRATION above shows Samson Condensers are but 2 1/4" diameter with plates fully extended—half to a third the size of others.

With them you can easily do away with the crowding of stations on your present receiver having ordinary condensers—where 85 out of 100 come in below 50 on the dial.

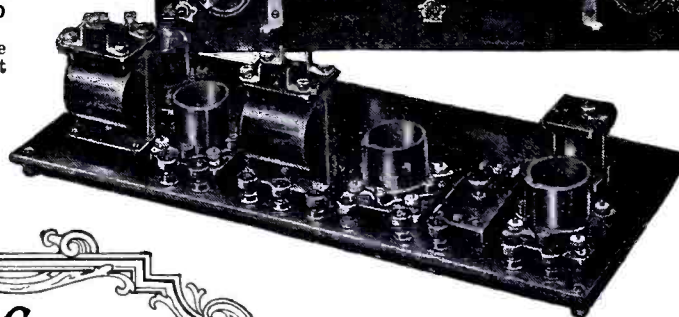
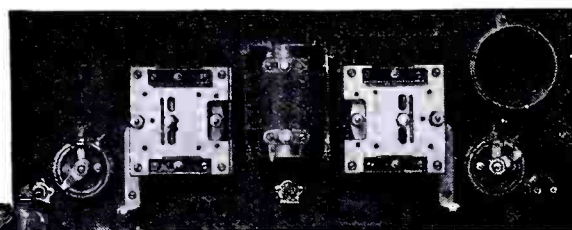
Samson Uniform Frequency Condensers are built to a tolerance of 1/1000 inch, silver plated all over for high surface conductivity, and—in addition—have gold plated rotor and stator plates to prevent oxidation.

These grounded rotor type instruments have losses lower than the average laboratory standards.

This condenser, due to its design, does not have the defects caused by either solid metal or dielectric end plates. 500 mmf, \$9.00; 350 mmf, \$8.75; 250 mmf, \$8.50.

The Samson T. C. Assembly offers to the constructor an assembly of highest grade parts mounted on drilled and engraved panels. This assembly is designed primarily for quality of reproduction and selectivity, and is particularly popular where numerous local broadcast stations make outside reception difficult\$65.00

The essential parts are supplied in the Transcript Kit at \$14.75.



Samson Electric Company Canton, Mass.

Manufacturers of Electrical Products Since 1882

Sales Representatives in Thirty Leading American Cities

Tell 'Em You Saw It in the Citizens Radio Call Book

STUDY RADIO!

Radio, the field of unlimited opportunity, calls for more trained men.

Prepare yourself for a high salaried position by using your spare time to study radio at home.

Radio Institute of America, the world's oldest radio school, has graduated more than 7,000 students. The value of RIA training is universally recognized—and graduates readily secure positions.

This coupon will bring you a wealth of important and interesting information.

RADIO INSTITUTE OF AMERICA

Formerly Marconi Institute
Established in 1909
326 Broadway
New York City

TEAR OUT

RADIO INSTITUTE OF AMERICA
326 Broadway, New York City

Please send me full information about your Home Study Course of radio instruction.

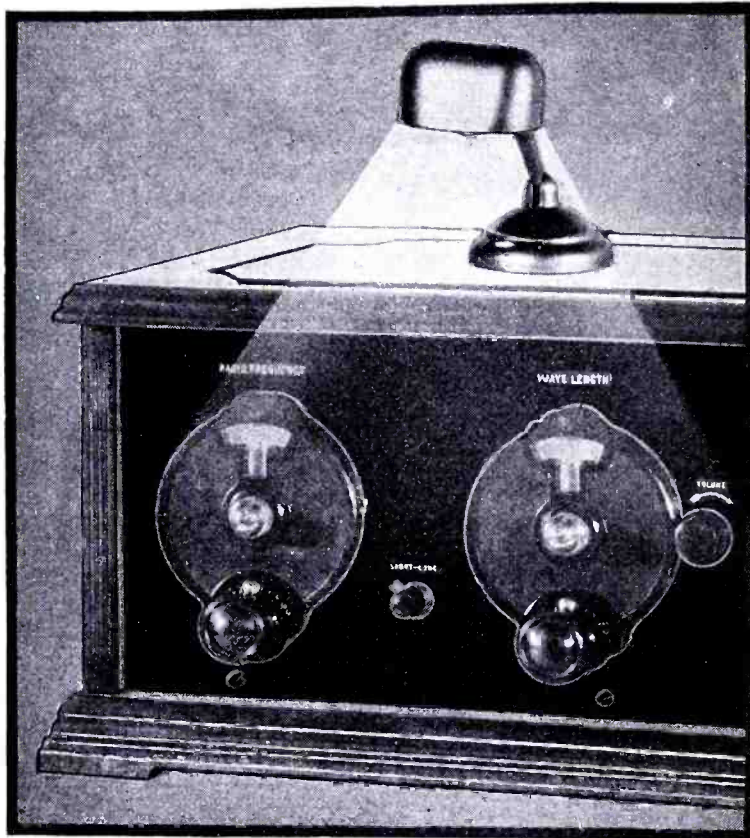
I am interested in the complete course, including code instruction, which qualifies for the U. S. Government Commercial or Amateur Radio License.

Name.....

Address.....

City.....State.....

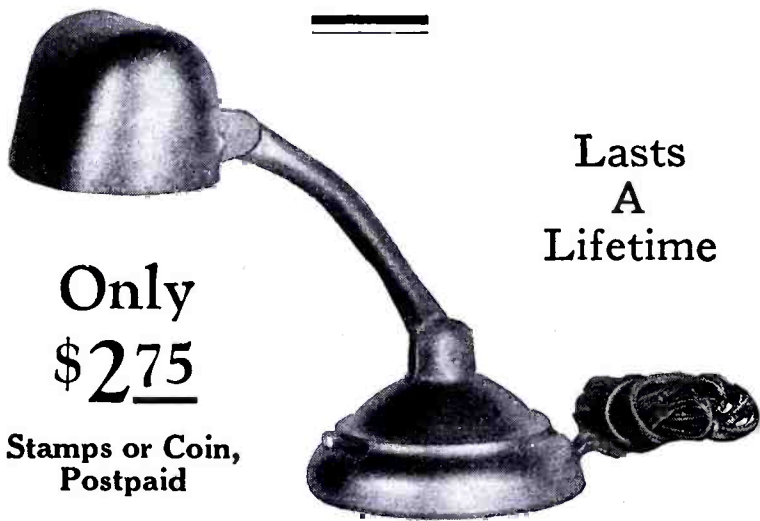
Improves The Appearance of Any Set—



Not A Plaything

but

A High Class Lamp Finished in Gold



Lasts A Lifetime

Only \$275

Stamps or Coin, Postpaid



HIGH-CLASS miniature Library Lamp, heavy castings and gold finish, designed for radio use; long silk cord. Leads to be attached to 6 volt battery. Switch it on or off with small switch in base of lamp (shown on illustration). Piano feet on bottom of base, will not scratch.

Money cheerfully refunded if not pleased.

Will send C. O. D. if requested. Pay postman plus few cents postage.

MACK LABORATORIES
720 Cass Street Chicago, Illinois



ACME WIRE RADIO PRODUCTS

Celatsite Wire

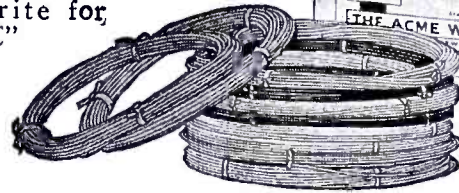


(Single Strand)

Tinned copper bus bar wire with a non-inflammable "spaghetti" insulation, for wiring radio sets. It can be stripped of its insulation easily for making connections and can be bent and rebent without cracking. Moisture proof. High insulation value. Colors: red, yellow, green, brown and black—one for each circuit. Supplied in 30 inch lengths. Write for Folder "C"

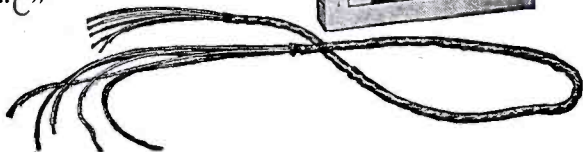
Celatsite Wire (Flexible Stranded)

Latest development of Celatsite. Flexible, stranded, tinned copper wire in a non-inflammable, moisture-proof "spaghetti" insulation. For sub-panel and other "point to point" wiring of radio sets. Red, yellow, green, brown and black—a color for each circuit. 25 ft. coils. Write for Folder "C"



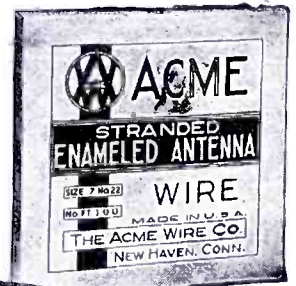
Celatsite Battery Cable

A neat, multiple cable, 5 feet long, for connecting A and B Batteries, or other current supply, to your set. Composed of five Flexible Celatsite Wires, red, yellow, green, brown and black—enclosed in a brown silk braid, a color for each terminal. No chance of short circuiting wires and "blowing" tubes. Adds greatly to the appearance of your set. Write for Folder "C"

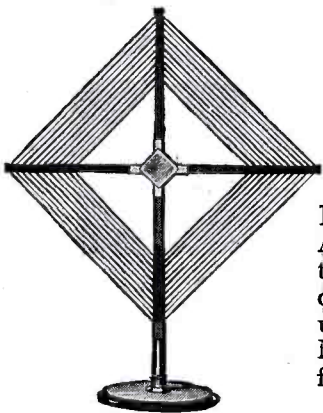


Stranded Enameled Antenna Wire

Seven twisted strands of enameled copper wire. This greatly increases signals by presenting greater surface to incoming waves. Enameling each strand prevents corrosion and resulting weak signals. 100, 150 or 200 foot coils, boxed. Write for Folder "C"



Wire for Loop Antenna



Make your own loops with Acme loop wire from instructions in the magazines. Made of 65 strands of fine copper wire insulated with green silk. Neat; non-stretching; flexible for folding. Write for Folder "C"

"Spaghetti"

Flexible Varnished Tubing

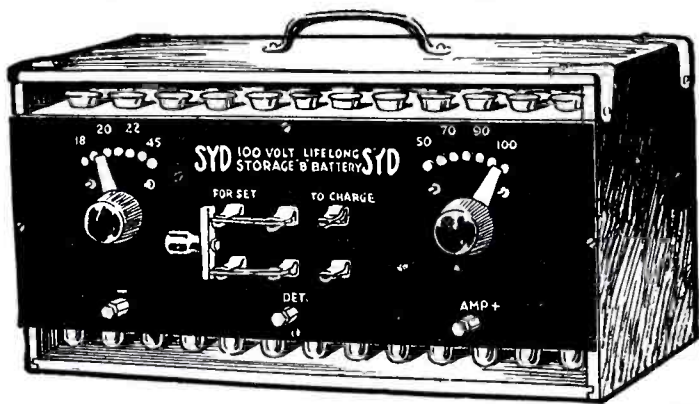


An insulated covering to be slipped over bus bar wire to protect it from contact with other wires. A perfect protection for all "danger" points. Costs a little more, but worth a LOT MORE than the ordinary grade offered. 30 inch lengths. Red, yellow, green, brown and black for wires No. 10 to 18. Write for Folder "C"

THE ACME WIRE CO., Main Office and Works, NEW HAVEN, CONN.

BRANCHES: New York, 52 Vanderbilt Ave.; Chicago, 427 West Erie St.; Cleveland, Guardian Bldg.; Boston, 80 Federal St.

Tell 'Em You Saw It in the Citizens Radio Call Book



The Syd Battery pictured above is a storage "B" Battery made of Edison Elements, which have nickel and iron in their construction.

The solution used is a preserver of nickel and iron, thereby giving the battery practically unlimited life.

Radio Fans' unqualified approval of the SYD "B" Battery, product of the SYD Battery Co., is founded solely on merit. Experience is a wise teacher and has taught the need of exact voltage at all times to insure greater volume, clearer reception and better selectivity from any radio set. The unvarying adequate power derived from the SYD "B" Battery explains its great and ever-growing popularity.

Operating on an average of 4 or 5 hours daily the SYD Batteries will last six weeks or more on a single charge. The cost of recharging is less than 5 cents. SYD Batteries do not discharge through idleness. The SYD Battery is assembled in a beautiful polished, chemically treated quarter oak cabinet. The Bakelite front panel has a voltage selector switch and various binding posts, which make it easy to obtain voltage from 16 to 100 volts. The battery unit is 14 inches long, 7½ inches high and 6½ inches wide and weighs less than eighteen pounds.

There Are Many Satisfied Users—

Ask Your Friend Who Owns One

MANUFACTURED AND SOLD EXCLUSIVELY BY

SYD Storage "B" Battery Co.

1452½ South Wabash Avenue Chicago

Mail Orders Filled Promptly

SYD 100 VOLT LIFE LONG SYD STORAGE "B" BATTERY SYD

The Battery of Many Advantages

Tested and approved by The Chicago Daily News Radio Laboratory.

It is only through our policy of selling direct to the consumer that we are enabled to sell this battery at the remarkable prices of—

100 Volts

Complete with Charger

\$15.50

145 Volts

Complete with Charger

\$21.50

Laboratory News Notes.

Syd "B" Battery.

The Syd storage "B" battery submitted to The Daily News radio laboratory for a test was found satisfactory. This battery is different from the usual lead sulphuric acid cell type of battery. The cells used are commonly known as the Edison cell; the electrodes, or "plates" are of nickel and iron instead of lead, and the electrolyte is an alkaline instead of sulphuric acid.

In the hands of the novice the Edison type of cell has the distinct advantage of durability, and ability to withstand neglect and abuse without injury. The battery can be left in a discharged state for any length of time without injuring the plates. Over-charging or heavy loads, even short circuits, have no effect on the life of the battery.

The Syd battery consists of ninety-one Edison cells mounted in a cabinet. Each cell delivers 1.5 volts at full charge. The bakelite front panel has a voltage selector switch and various binding posts which make it easy to obtain voltages from 18 to 100 volts. The battery unit is 14 inches long, 7½ inches high and 6½ inches wide. It weighs eighteen pounds.

RD
KG
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Quality Merchandise at REAL PRICES

Our FREE Big New Catalog is just off the press. Send for it and see the enormous savings we offer on all your radio needs.

Hundreds of standard quality parts, sets and kits are shown in this big new catalog at the lowest prices in America. Write today.

We are an old reliable house and specialize in Radio only. The name of Western Radio Mfg. Co. stands for satisfaction from Coast to Coast.



Only the finest advertised merchandise is shown and is backed by an absolute guarantee of satisfaction or money back. Write for FREE Catalog NOW.

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CHICAGO, ILL.

Tell 'Em You Saw It in the Citizens Radio Call Book

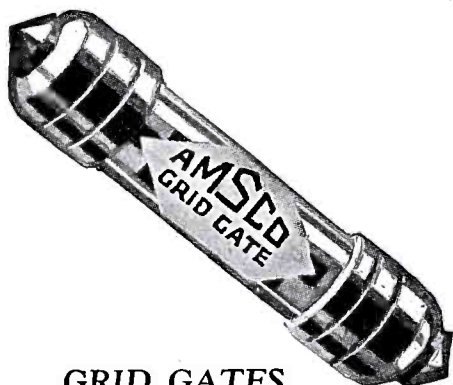
AMSCO

RESISTANCE COUPLERS



FOR STRAIGHT-LINE AMPLIFICATION

—Or in plain English—TONE!



GRID GATES

—Instead of "Leaks"

There is something haphazard and unscientific about the word "leak." These perfected instruments of Amsco are not "leaks" in the radio circuit but "gates," providing known, measured and positive control of the current flow.

Extra size for silence—Fit all mountings. Slip them into your set and hear the difference!

Made in all standard Values! Sold everywhere.

THE verdict of science, and of ears—is *Resistance-Coupled Amplification*. It is the one method offering an amplification "curve" that is a straight line—the only method of getting Volume without losing Reality.

Amsco Resistance Couplers, with *Amsco Resistors*, are the perfected instruments for straight-line amplification. All frequencies within the voice and music ranges, from the highest treble to the lowest bass, are augmented equally, giving true tone reproduction without distortion.

Amsco Resistance Couplers and *Amsco Resistors* are obtainable at all good radio dealers.

AMSCO PRODUCTS, INC.
Broome and Lafayette Streets, New York City

Makers of Amsco Allocating and Siamese Condensers, Universal Sockets, Vernier Dials, Rheostats and other radio necessities.



Tell 'Em You Saw It in the Citizens Radio Call Book



OUT OF THE DARKNESS OF UNCERTAINTY APEX BRINGS ABSOLUTE ASSURANCE OF DEPENDABLE RADIO VALUES

Apex reputation is a wide open book. The reliability—the efficiency—the merit of Apex Radio Receiving Sets is being demonstrated every day—day after day in thousands of homes and every day, every week, every month records a mighty increase in demand. Apex has conclusively proven its value in every phase of operation and upon that proven value is based the preference and the selection of those thousands of radio buyers who want quality beyond question.

No one feature of Apex Radio Receiving Sets has been perfected at the expense of

some other feature. Step by step every feature has been brought to the finest degree of excellence and transformed into one marvelously sensitive instrument that supplies every element to be desired in radio receptivity, combined with rich beauty of appearance.

Have your nearest dealer demonstrate an Apex Super Five Receiving Set. See the superb beauty of finish. Hear the clear, true to life tones and measure its value with visible merit and bear in mind that quality of Apex is vouched for by the choice and the absolute satisfaction of thousands of users.

APEX ELECTRIC MFG. COMPANY
1410 West 59th Street Dept. 320 CHICAGO

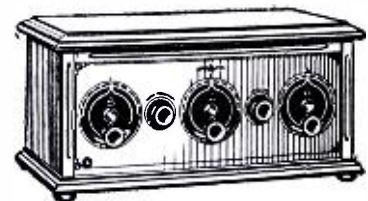
Upon request, we will gladly mail descriptive folder.



Apex Baby Grand Console
Price \$225



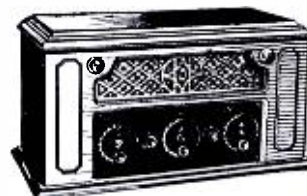
Apex Entertainer
Price \$22.50
Console Type
Price \$27.50



Apex Super Five
Price \$80—without accessories



Apex Utility Radio Table
Price \$75



Apex De Luxe—Price \$135

Prices West of Rockies slightly higher.

Canadian prices approximately 40 per cent higher.

ALSO MAKERS OF THE FAMOUS APEX VERNIER DIALS

BRASS
4 inch \$1.50
3 1/4 " 1.25

SILVER
4 inch \$1.75
3 1/4 " 1.50

24 kt. DE LUXE GOLD
4 inch \$2.50
3 1/4 " 1.85

Tell 'Em You Saw It in the Citizens Radio Call Book

KARAS Parts Are Intended Only for the Few Who Demand Finest Quality and Workmanship

IT takes many manufacturers to supply the tremendous demand for condensers and transformers in this vast radio market of ours. If all home set builders were ready to pay the price which *real* quality commands, a big proportion of them would necessarily be disappointed—the Karas factory could not begin to take care of all. Karas parts are designed and built for the select few—you builders who want the utmost in quality, in quiet operation, in appearance. You who take pride in your workmanship—whose sets have that “professional” appearance which is the envy of all your radio friends.

Just as water quickly finds its level, so did Karas Harmonik Transformers and Orthometric Condensers quickly find the exclusive market for which they were intended.

The most skillful radio set builders the country over, discovered Karas Harmonik Transformers soon after they were placed on the market in 1924. When Karas Orthometric Condensers appeared a year later they were snapped up far too quickly for our own comfort. Perhaps it was because they were the first to meet the demand for a Straight Frequency Line tuning instrument. More likely it was because of the

Buy” is far greater than we first imagined. Our production has been greatly increased to provide for the growing numbers who demand Karas parts and will accept nothing else.

In many places, good dealers who wanted a stock of Karas products could not be supplied. If you are still unable to find them in your local stores, tell your dealer that we are now able to take care of his requirements. Or, if you wish to get Karas parts in the quickest possible time, we will be glad to send them to you direct.

However you buy Karas Harmonik Transformers or Orthometric Condensers, you do not run the least risk of their not performing up to your highest expectations. If there is the slightest cause for disappointment during a thirty days’ test, you are invited to return the parts to the dealer from whom you bought them, or to us if you buy direct. Your money will be promptly refunded without question or quibble.

In all hook-ups designed by the technical editors of Citizens Radio Call Book, Karas Harmonik Transformers and Karas Orthometric Condensers may be used with the utmost satisfaction. Two stages of Karas Harmonik Transformer coupled amplification will give you reception of delightful musical quality and loads of volume.

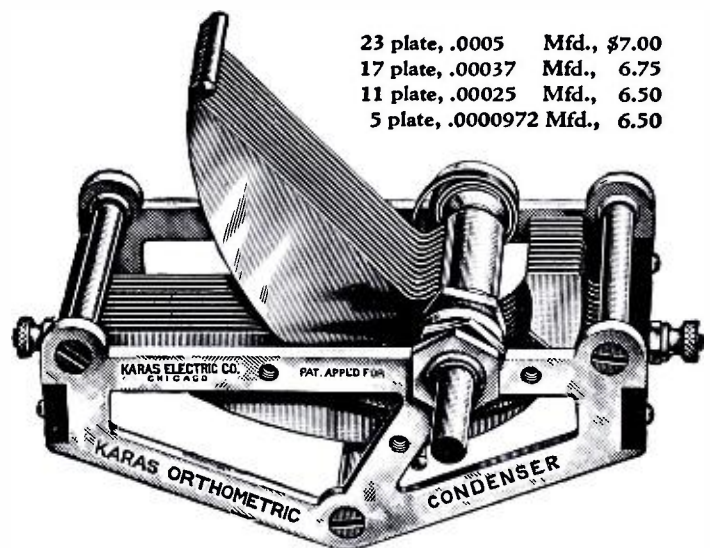


THE KARAS HARMONIK "ALL-STAGE" RATIO AUDIO FREQUENCY TRANSFORMER

Price \$7 each. Shipped direct where dealers cannot supply, cost plus a few cents postage paid to postman on receipt. Parcel post is prepaid where payment accompanies order. Our 30-day Money Back Guarantee applies, wherever and however purchased.

enviable reputation created the year before by Karas Harmonik Transformers. At any rate, it was months before we could fully supply the insistent, clamorous demand that came to us from all sides.

We begin to think now that the number of set builders who want the very “Best that Money Can



- 23 plate, .0005 Mfd., \$7.00
- 17 plate, .00037 Mfd., 6.75
- 11 plate, .00025 Mfd., 6.50
- 5 plate, .0000972 Mfd., 6.50

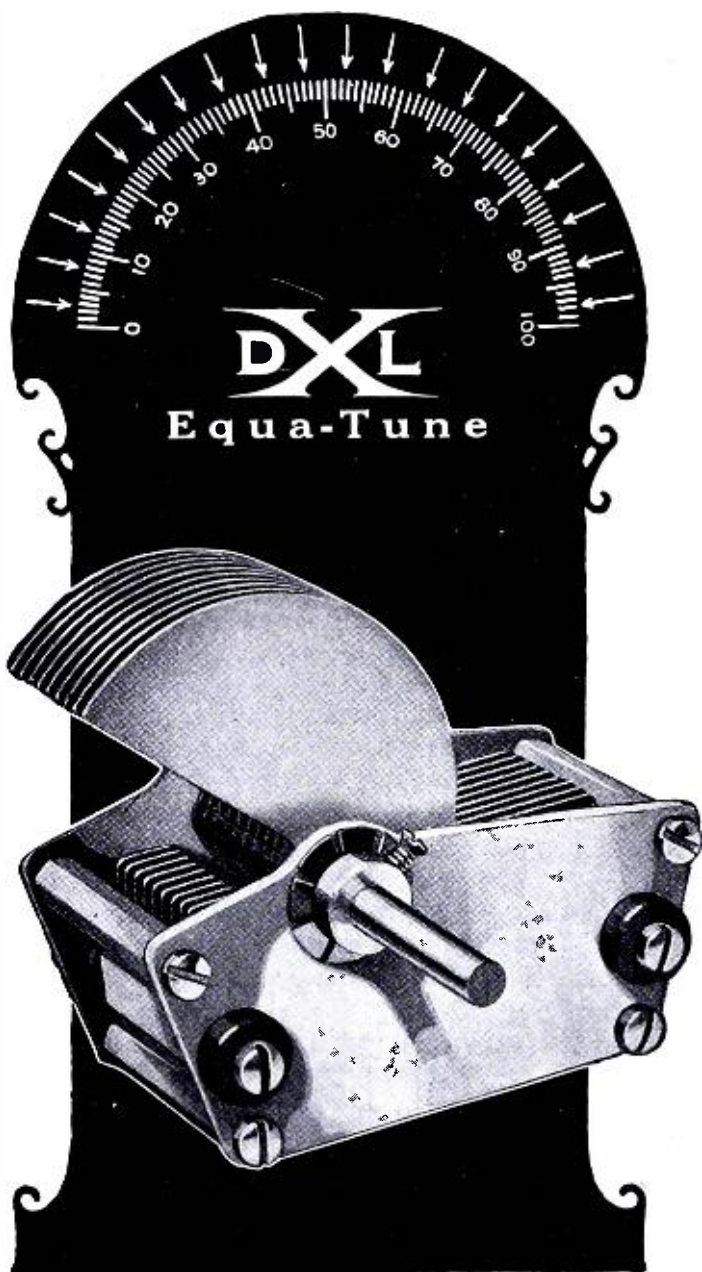
THE KARAS ORTHOMETRIC (STRAIGHT FREQUENCY LINE) CONDENSER

Prices and sizes above. Shipped direct where dealers cannot supply. No money in advance. Pay the postman price plus a few cents postage. Or send cash with order and we prepay parcel post. 30-day Money Back Guarantee.

Karas radio parts are the pride of an organization that has been making precision electrical apparatus for more than thirty years. We believe we are making the finest transformers and condensers possible to produce and we are glad to back them up with this, the strongest guarantee we know how to write.

KARAS ELECTRIC COMPANY
4054 NORTH ROCKWELL ST. CHICAGO

Tell 'Em You Saw It in the Citizens Radio Call Book



Small—Compact
3 7/16 in. wide

List

Capacity .00025.....	\$5.00
Capacity .00035.....	5.25
Capacity .0005.....	5.50

Beautifully Silver-Plated Rotor and Stator Plates standard in all capacities.

If your dealer cannot supply you order from factory C. O. D. or send check or money order.

Model SS
for Set Manufacturers

Special S L F Condensers, compact and sturdy, built in large production for high-grade sets. Exclusively for manufacturers—prices and samples on request.

Double Your List of Stations

Bring your set up to date—1926 Model. Equa-Tune Condensers (Full Straight Line Frequency), used in place of your present condensers, will modernize your set for S. L. F. is the chief reason for improvement in this season's receivers.

Frequencies are separated evenly over the range of the dial with Equa-Tunes. In other words, you get away entirely from the crowding of stations down in the lower part of the dial. You double easily the number of stations you've been getting and get each one easily.

In D X L Equa-Tunes volume and distance are not lost to a single degree, even with their wonderful tuning qualities. For you who demand the best quality and range in reception, Equa-Tune Condensers have no equal.

Mechanically perfect, Equa-Tunes possess the usual D X L precision of construction—will, in fact, out-wear your set.

DXL Radio Corporation

5769 Stanton Avenue

Detroit



Small parts and condenser assembly department.



Final assembly, adjustment, inspection and packing department. In the far corner two engineers make two complete electrical and mechanical tests of every condenser.



S. L. F. IMPROVED



Tell 'Em You Saw It in the Citizens Radio Call Book



Handsomely Decorated Complete Formica Panels for Famous Kits

The fan who is putting together one of the better known kits can have a panel for it decorated by the Veri Chrome process—as fine a panel as any manufactured set uses.

These complete panels are now available for Bremer-Tully Counterphase, Nameless, and No. 1; Best's Superheterodyne in two sizes, 7x20 and 7x26; and the four tube Browning Drake kit of the National Company, and Marco Browning Drake.

Ask to see them before you start work on your set.

Formica panels have been standard among set manufacturers and the more skillful amateurs for many years. They are better in finish. They come in beautiful wood grains, Walnut, Mahogany, as well as gloss and flat black.

Sizes from 7x14 to 8x40 are sold in neat individual trade marked envelopes, and are stocked by leading dealers and jobbers

The Formica Insulation Company

4666 Spring Grove Avenue, Cincinnati, Ohio

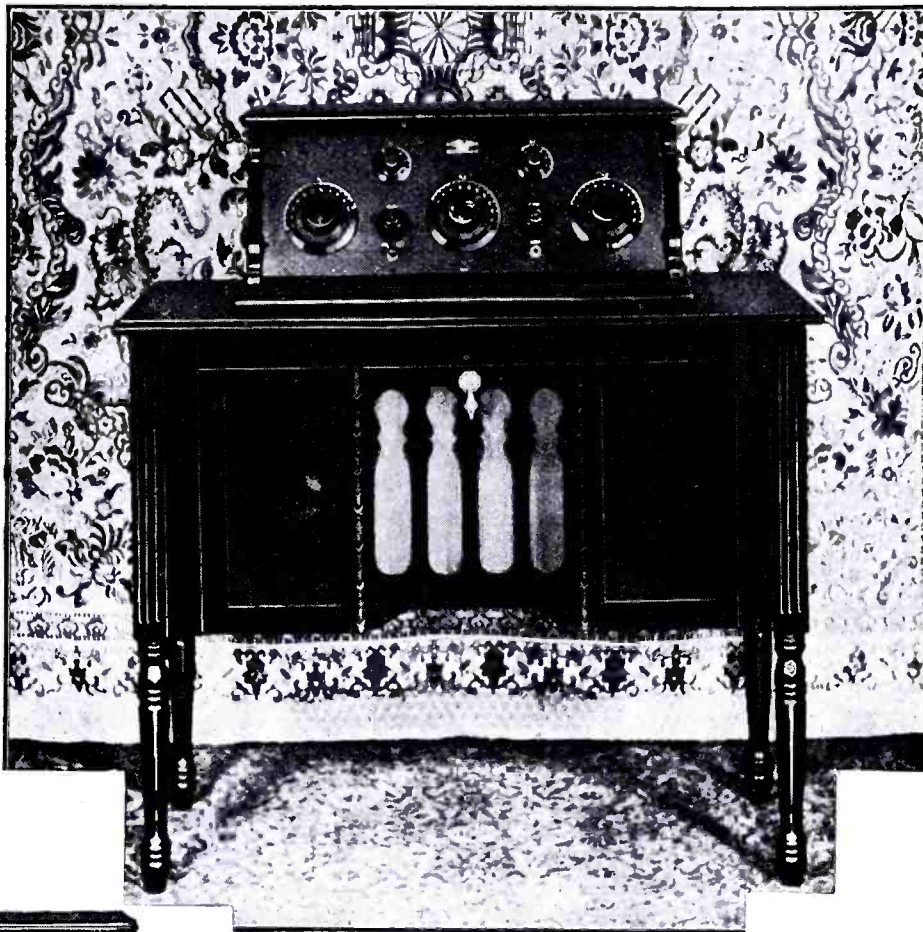
FORMICA
Made from Anhydrous Bakelite Resins
SHEETS TUBES RODS

Tell 'Em You Saw It in the Citizens Radio Call Book

Better Because It's Practical

The Greatest Loud Speaker Value Today

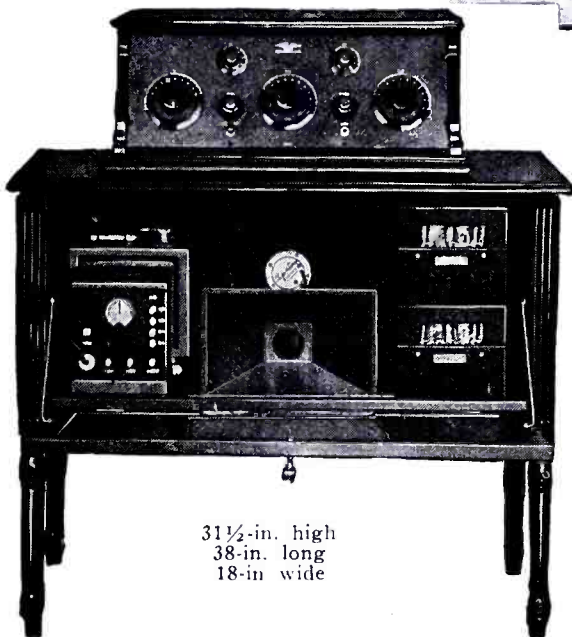
Considered only as a piece of furniture or only as a loudspeaker, the Console Master Speaker is worth the money. But as a combined cabinet and speaker it is the greatest loudspeaker value today. The loudspeaker is concealed behind the silk covered grill and has a beautiful, natural tone, of great volume.



An Unusual and Exclusive Feature

The Console Master Speaker, with a front that may be opened to give convenient and quick access to batteries and speaker. This is own own exclusive origination, and strong patent claims protect it.

In Walnut or Mahogany. Either way a fine piece of furniture.



31½-in. high
38-in. long
18-in wide

The Console Master Speaker

with the opening front, showing the exceptionally spacious battery compartment, which will hold an "A" battery, a charger, and 2 dry or wet "B" batteries, besides the built-in loudspeaker.

Retail Price \$49.50
Complete with Loudspeaker
(Adjustable Unit)

The Console Master Speaker

for any
Radio Set

*Our model #25
will fit the
Radiola
Superheterodyne
#25*

THE MOST PRACTICAL CONSOLE SPEAKER

Just a pull of the handle and ALL the batteries, charger, and loud speaker unit are within immediate reach

ORDER FROM YOUR JOBBER

FULL TRADE DISCOUNTS

CONSOLE MASTER SPEAKER CO.
15 East 40th Street, NEW YORK

Tell 'Em You Saw It in the Citizens Radio Call Book

THE BIG LITTLE THINGS OF RADIO



The DAVEN LEAK-ANDENSER—the new combination grid leak and grid condenser all in one! For any detector tube circuit.



The biggest of all the little things—THE DAVEN GRID LEAK. Made in 29 standard values from 2500 ohms to 10,000,000 ohms.



Clip Mounting No. 50—suitable for single Resistor or Grid Leak.



Resisto-Coupler No. 42, with special Daven Type "A" Coupling Condenser hidden in the base—the original and most popular resistance coupling unit.



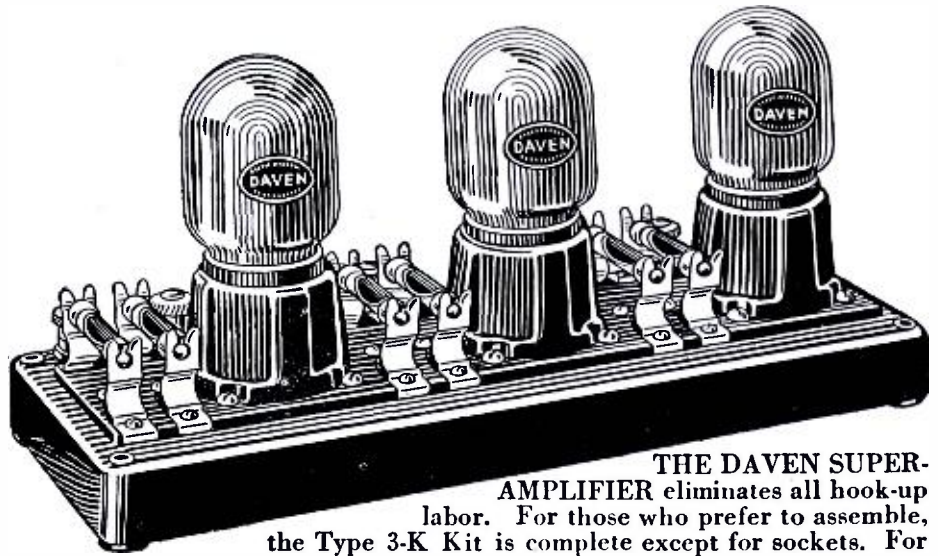
Daven Ballast Resistors—for use with amplifying tubes in place of rheostats. There are five sizes, for one to five tubes. Sold with mounting only.



New Daven Special Type "A" Coupling Condenser increases volume with Resistance Coupled Amplification. Sold separate, and also included in all Resisto-Couplers, Super-Amplifiers and Kits.



A practical handbook on Resistance Coupled Amplification. At your dealer's 25c. By mail postpaid 30c. Dealers send for free sample.



THE DAVEN SUPER-AMPLIFIER eliminates all hook-up labor. For those who prefer to assemble, the Type 3-K Kit is complete except for sockets. For 50% more volume use the new Daven Tubes Type MU-20 with the Daven Super-Amplifiers. Daven Power Tube Type MU-6—for the last stage of any set.

Volume and Quality

As an owner of a radio set you should demand two things: (1) Volume on the weakest signal, (2) Tone quality that makes criticism impossible and excuses or qualifications unnecessary. Why sacrifice one for the other? Demand both. Today it is a simple matter to have both.

It is easy to get volume but there is only one way to get both quality and volume. Use Resistance Coupled Amplification in the audio end of your set. We have made this very simple by developing the Daven Super-Amplifier. Or, if you prefer self-assembly, couple up Daven precision-built resistances and mountings as contained in the 3-K Kit. Then you will hear radio at its best.

Three new Daven Products were announced this Fall. The Daven Leakandenser is a Daven grid leak of permanent and constant value, combined with a grid condenser of fixed capacity, correct for all makes of detector tubes. Precision-built, simple, effective, uniform and very handsome. A pair of mounting clips included.

The new Daven High MU Tube Type MU-20, used with the Daven Super-Amplifier, is designed to give 50% more volume—6 volt, 1/4 ampere. The Daven Power Tube Type MU-6 is for use in the last or output stage of any set regardless of the method of amplification used—6 volt, 1/2 ampere.

The new Daven Special Type "A" Condensers are the latest development of Daven Engineers. Their use in Resistance Coupled Amplifiers gives you 50% more volume than ordinary condensers.

The Resistor Manual is the "A.B.C." of Resistance Coupled Amplification—a complete handbook for designers and builders. Send for it.

DAVEN PRODUCTS ARE SOLD ONLY BY GOOD DEALERS

"The Sine of Merit"

DAVEN RADIO CORPORATION

Resistor Specialists

Newark

Reg. U.S. Pat. Off.

New Jersey

CLIP THIS COUPON

The Resistor Manual

DAVEN RADIO CORPORATION, 160 Summit Street, Newark, New Jersey. Please send me the following on Resistance Coupled Amplification:—

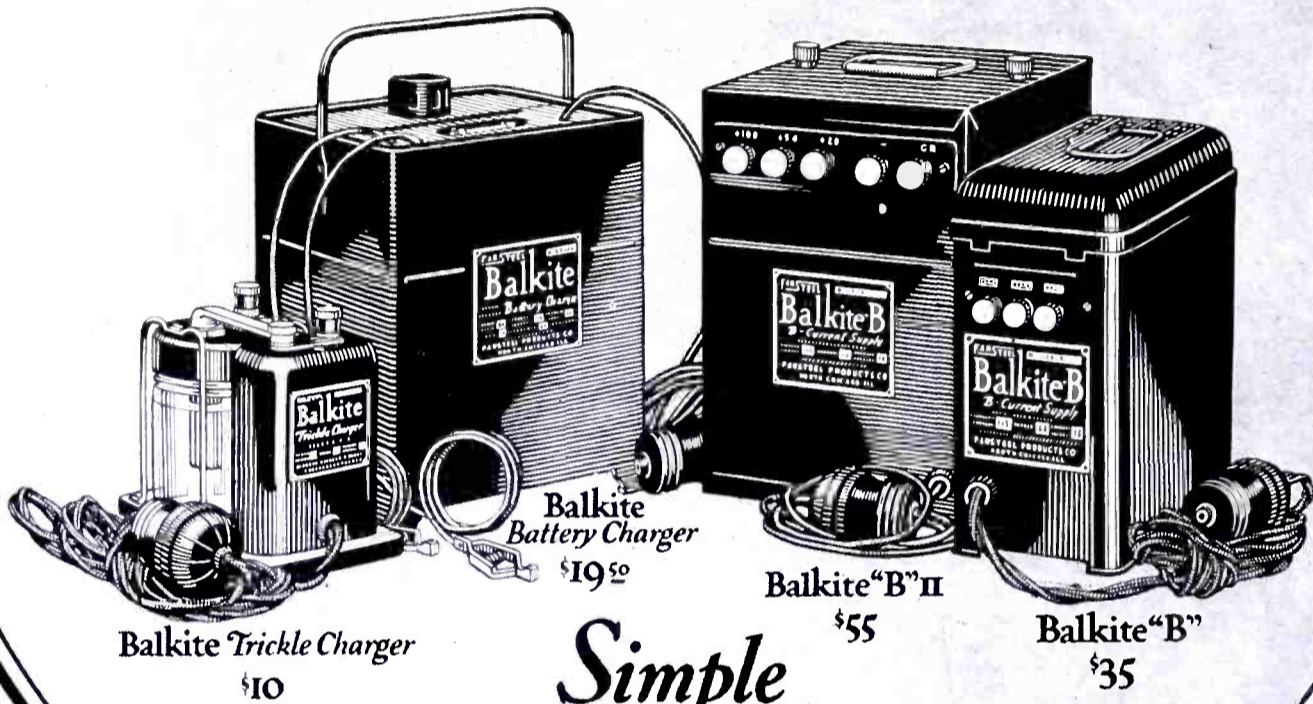
Check One
 Resistor Manual. 30c is enclosed. Complete Catalog (free).

Name Address

To Dealers: May we have our nearest distributor communicate with you?

Tell 'Em You Saw It in the Citizens Radio Call Book

FANSTEEL
Balkite
Radio Power Units



*Simple
 Entirely Noiseless
 Permanent*

Manufactured by FANSTEEL PRODUCTS COMPANY, Inc., North Chicago, Illinois

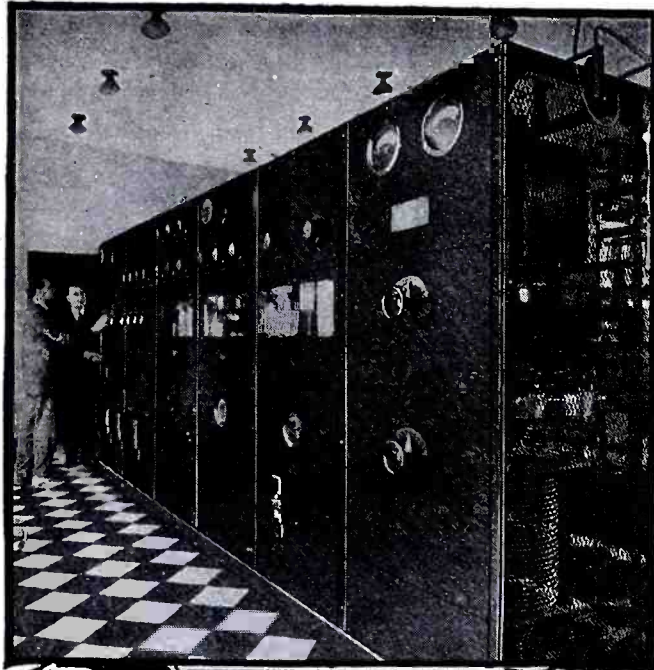
**Convert your present receiver into
 A LIGHT SOCKET SET
 with
 Balkite Radio Power Units**

Ask your Radio Dealer

Manufactured by FANSTEEL PRODUCTS COMPANY, Inc., North Chicago, Illinois
 Sole Licensees in the United Kingdom:
 Messrs Radio Accessories Ltd., 9-13 Hythe Rd., Wellesden, London, N.W. 10



Tell 'Em You Saw It in the Citizens Radio Call Book



**\$50. to \$250 a week
IN WORK THAT IS
ALMOST ROMANCE**

Be a Radio Expert

Get into the great new Big-Pay Industry—Radio. If you're earning a penny less than \$50 a week, clip coupon now. Send for AMAZING FREE BOOK. Be a Radio Expert, and draw down big money for the easiest and most fascinating work in the world. Positions everywhere. Thoroughly trained men are in big demand. Need for Radio Experts in every community. Short hours. BIG PAY. Free book gives all the facts. Astonishing opportunities—thousands of them! Every day N.R.I. trained men are taking good places in Radio Field. Free book tells all about their success. Send for it now!



**LEARN QUICKLY AND EASILY
AT HOME**

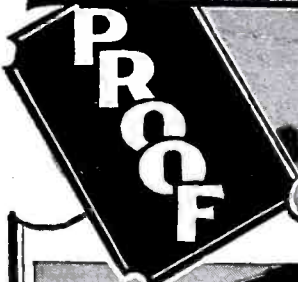
Master Radio Engineers will show you how to qualify quickly and easily at home, for Radio's fine jobs. We guarantee to train you successfully. Lack of experience no drawback—common schooling all you need. Our tested, clear methods make it easy for you. Send coupon now for free proof.

**Instruments Given
with Course**

All instruments shown here and many others given to students for practice work while learning. Receiving sets, from simplest kind to thousand mile receiver. an UNEQUALLED OFFER. Many other big features for limited time only.

**Famous Training That
"Pays for Itself"**

Spare time earnings are easy in Radio. Increase your income almost from the start through practical knowledge we give you. This is the famous practical training that pays its own way.



Operates WMAQ

"Accepted a position with Chicago Daily News—Station WMAQ. My income practically doubled, thanks to your fine course."

Keith Kimball, Chicago.



Gets Big Job

"Just been made Sales Manager of this Radio concern—a big raise in pay. Regret I did not take course sooner."

R. E. Jones, Bay City.

**Get
this
Amazing
Book**

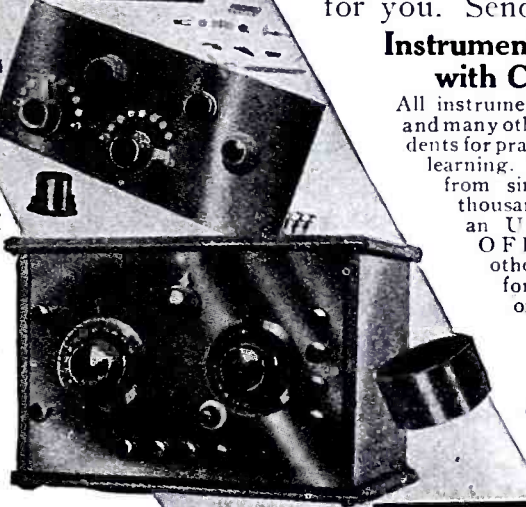
Most amazing book on Radio ever written—full, interesting facts about this great field and how we prepare you and help you start. You can do what others have done. GET THIS BOOK.

Send Coupon

Send coupon today for special limited offer, including all instruments—you'll get full particulars by return mail.

National Radio Institute
Dept. CP-3, Washington, D. C.

**You get
all of
these**



MAIL THIS NOW

NATIONAL RADIO INSTITUTE
Dept. CP-3,
Washington, D. C.

Without obligating me in any way, send me your free book, "Rich Rewards in Radio," and all information about your practical, home-study Radio course.

Name..... Age.....

Address.....

Town..... State.....

LARGEST RADIO SCHOOL IN THE WORLD

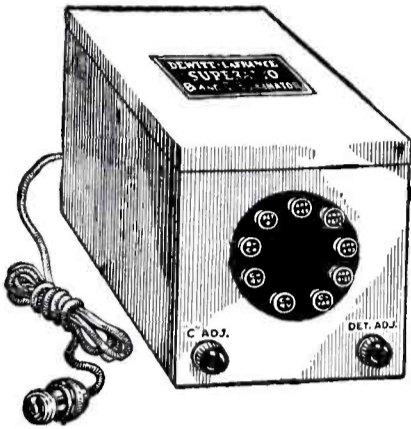
ORIGINATORS OF RADIO HOME-STUDY TRAINING

**Radio
Needs
Trained
Men**

Tell 'Em You Saw It in the Citizens Radio Call Book

SUPERADIO

A PERFECTED B-Battery Eliminator



Guaranteed

The Superadio is a super-power B and C Battery Eliminator capable of delivering high voltages and heavy current *continuously*. Operates *any* receiver at maximum efficiency, as well as the new power tubes UX120 and UX112. It is far superior to conventional eliminators because it delivers so much more power. Provided with 5 "B" taps for precision adjustment of detector voltage; also 3 "C" taps for precision adjustment of "C" battery voltage when new power tubes are used.

"B" Taps: Det—4 to 35 volts variable; Amp.—45 volts; Amp.—67½ v.; Amp.—90 v.; Amp.—135 v. "C"—Taps—4½ volts; 9 volts; 4 to 40 volts variable.

Type A for B and C Batteries.....\$35.00
 Type B for B Batteries..... 25.00



Patents Pending

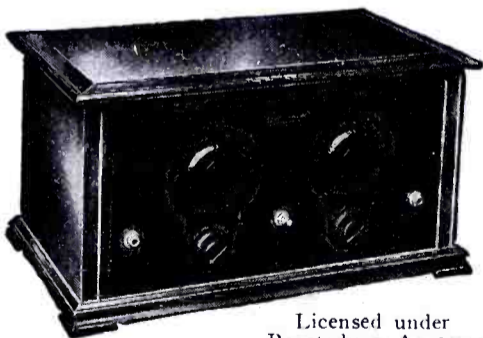
New Method of Testing Tubes-Dynamometer

The Superadio is different from the conventional tube tester. Tells exactly what the tubes will do. Price \$120. Includes headset. Use Special Model S-2 Amplifier to test with loudspeaker. Price \$30.

Now you can SEE your tubes tested. No meaningless curves or calculations. Any clerk can test 3 tubes per minute on the Wonderful Dynamometer, which is direct reading and absolutely accurate. Measures amplification factor, plate impedance and mutual conductance of any type tube on the market.

Liberal Discounts

Inquiries Invited from Manufacturers, Distributors and Reliable Dealers



Licensed under Reactodyne Agreement

Powerful 5-Tube Receiver of Advanced Design-\$56.00

Superior engineering has produced this beautiful, compact Receiver in which finest results are uniformly obtained. Only 2 dials to tune. Matchless tone quality. Includes many technical features not to be found in any Set in the price class of the Superadio.

Write for Descriptive Literature on Superadio Products

DE WITT-LA FRANCE CO., Inc.

54 Washburn Avenue, Cambridge, Mass.

BOSTON REPRESENTATIVE:
 Martin, Hartley & DeWitt Sales Co., 99 Bedford St.

CHICAGO REPRESENTATIVE:
 William A. Welty & Co., 36 South State St.

Tell 'Em You Saw It in the Citizens Radio Call Book



THE FIRST LIGHT SOCKET RECEIVER AT A MODERATE PRICE

YOU need wait no longer for a really fine light socket receiver. Deresnadyne III combines all the remarkable features of Deresnadyne performance with the most perfect light socket convenience. And the price is moderate—one you can afford.

Deresnadyne III is installed simply by plugging into a light socket. It operates by a single switch. It is equipped with permanent, *guaranteed* power units that supply all current from the lighting circuit. It requires no attention.

All equipment including the speaker is enclosed in the cabinet. You have nothing more to buy but the aerial. Ask to see Deresnadyne III at your dealer's today. Price complete, including matched tubes, \$285.

Also Deresnadyne II for your present equipment, \$125.

Andrews
Deresnadyne
Radio Receiving Set

ANDREWS RADIO CORPORATION • 1414 S. WABASH AVENUE • CHICAGO

Tell 'Em You Saw It in the Citizens Radio Call Book

WILLARD RADIO BATTERIES

are heartily endorsed by the radio industry. More than 200 leading broadcasting stations have standardized on Willards because of their steady power and freedom from electrical leakage. Broadcast listeners all over the country look to them for unfailing, satisfactory reception.

To every buyer you are also able to offer the convenient service and complete recharging facilities that are featured in the advertising of the Willard Battery Men.

WILLARD STORAGE BATTERY CO.
CLEVELAND, OHIO

The Right Selling Plan for Radio Dealers

Your local Willard Service Station will act as your jobber on Willard Radio Batteries.

This means a quick source of supply of strictly fresh, well charged batteries which you can turn over to your customers in the pink of condition.

No servicing problems for you. Your local Willard Service Station assumes the responsibility for service.

Willard Radio Batteries are being advertised more extensively than ever. Have your local Willard Service Station show you this advertising and explain the details of our new and practical plan for selling radio storage batteries. The advertisements will be signed:

Sales and Service through
The Willard Battery men
and their
Authorized Radio Dealers

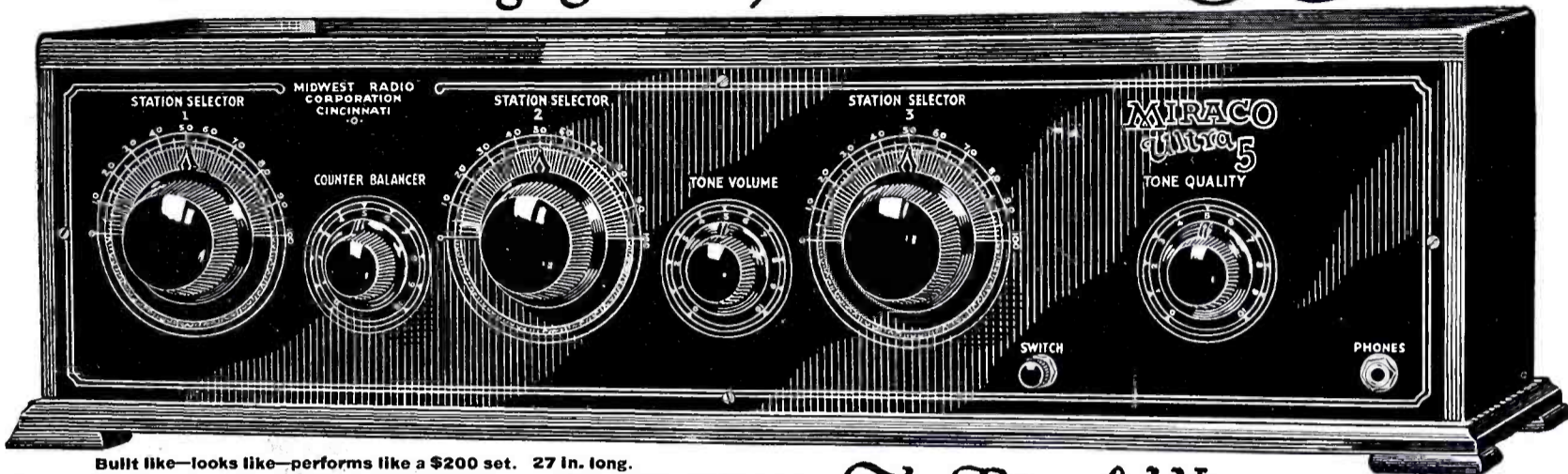
Appropriate signs and window cards will identify you as an Authorized Dealer. Booklets and other valuable selling helps will also be furnished.

*Your Nearest Willard
Service Station is Your
Nearest Willard Jobber*

Tell 'Em You Saw It in the Citizens Radio Call Book

Now only \$ **59.50** **GET SPECIAL OFFER** Retail

Just a slight turn of the dials and with all Chicago local stations broadcasting I get everywhere outside.



Built like—looks like—performs like a \$200 set. 27 in. long.

Get Amazing Offer we make to Users who will demonstrate our set to friends.

MIRACO RADIO GETS 'EM COAST TO COAST

Notice!

Enormous demand for the celebrated Miraco Ultra 5 (resulting from its many enthusiastic users so highly recommending it to their friends) enabled us to add hosts of costly new features, latest refinements and up-to-the-minute improvements such as you might expect to find only on the newest sets selling at much higher prices. So the Improved Ultra 5 for 1926 is even a better set—a more beautiful set—a more selective and more powerful set—incredible as this may sound!—for less money than ever before.

COAST TO COAST RECEPTION VERIFIED BY USERS

Reports from Ultra-5 users everywhere leave little for us to add. These are only a few of the many in our files and which we receive daily. Send coupon for plenty of additional proof. Let testimony of users instead of high-sounding claims convince you.

CALIFORNIA THE FIRST NIGHT
Received KFI Los Angeles, Cal. and Mexico City the first night, besides about twenty more on my Ultra-5. Ray K. . . . Eaton, Ohio.

CANADA TO THE GULF AND COAST TO COAST
I sure do like the Miraco Ultra-5. I got from C.K.Y. Winnipeg, Canada, to W.S.M.B. New Orleans, and from W.G.Y. New York, to K.F.I. California, last night. Chas. M. D. . . . Seatonville, Ill.

CUTS THROUGH THE LOCALS
My Set certainly cuts through the locals. For a good well made set and good workmanship it can't be beat. I know if there is anything on the air, my Miraco Ultra-5 will bring it in. J. H. A. . . . Pittsburg, Pa.

PRaises ITS CLEAR TONE
Received the Ultra-5. It is working fine and in fact is the clearest toned outfit I ever heard. I have gotten 40 or more stations including K.F.I. Los Angeles, Calif. W. A. C. . . . Potwin, Kansas.

CALIFORNIA HEARS CINCINNATI THE FIRST EVENING
I wish to thank you for your promptness in shipping, and the perfect condition in which the Ultra-5 arrived. I have proven your promises to be absolutely truthful. The tone, volume, and distance are excellent. The first evening I enjoyed a concert from Cincinnati. E. E. S. . . . San Francisco, Cal.

NEW YORK GETS 'EM COAST TO COAST
I have one of your Miraco Ultra-5 radios and it's working fine. I get all stations from coast to coast and would like to be one of your agents. Kendrick, E. E. . . . Cooperstown, N. Y.

OUTPERFORMS ALL OTHER SETS IN HIS LOCALITY
There is not a radio in this neighborhood that can compare with the Miraco Ultra-5. J. H. . . . Alden, Iowa.

COAST TO COAST THE FIRST NIGHT
The first night I had the Miraco Ultra-5 I got Santa Catalina Island on the Pacific Coast, also New York and last night Chicago. W. O. K. Lytton L. W. . . . Hot Springs, S. D.

TENNESSEE HEARS CALIFORNIA
Received my Ultra-5 O. K. Never saw a set packed so well. As to performance, it's just simply wonderful. No trouble for me to get Los Angeles, California, and without any interference. Wonderful tone and easily operated. W. F. T. . . . Adamsville, Tenn.

AS GOOD AS IT LOOKS!
I received the Ultra-5 in fine shape. It is a beautiful piece of furniture and works just as good as it looks. Arthur E. A. . . . Greenock, Pa.

YOU'LL WANT IT, TOO!
The Miraco Ultra-5 you sent me is so satisfactory I would like the agency for it. Wm. E. C. . . . Torrington, Conn.

HAS EXCEPTIONALLY FINE TONE
My Ultra-5 works fine. My friend liked it very much and said it certainly is a good set and has an exceptionally fine tone. I would like to sell your sets in my spare time. H. M. S. . . . Stuttgart, Ark.

TUNES OUT POWERFUL NEARBY STATION AND GETS DISTANCE
We are surely having fine luck with the set. We get everywhere with all Chicago stations broadcasting. We now live about one mile from W.C.N. the Drake Hotel. It has a wavelength of 370 meters and on all other sets around here they are not able to get out or get any other station without also hearing W.C.N. But with our Miraco 5 we don't have any trouble. Just a slight turn of the dials and it isn't there. We can get outside any night better than our neighbors. Here are some outside stations we have heard in four nights on the loudspeaker: W.J.J.D. WORD, W.C.B.D. WLIB W.S.M.B. (New Orleans), W.S.A.I. WOC, W.S.M. WEAF (New York City), K.F.K.X. Hastings, (Neb.), K.O.A. (Denver), K.F.N. KDKA (Pittsburg), W.H.A.S. WLW, W.A.F.D. WLB.L. WLR. Everyone that hears the Ultra-5 is in love with it and says it is so clear. Herman C. . . . Chicago, Illinois.

PENNSYLVANIA HEARS CALIFORNIA TO CUBA
Your Ultra-5 works splendid! from Los Angeles to Cuba, everything came in fine. Roy H. . . . Rochester, Pa.

SOLD IT THE DAY RECEIVED
I received my Miraco Ultra-5 a few days ago and sold it the very same night. The buyer is very much pleased. It sure works fine. Jacob K. . . . Beulah, N. Dak.

57 STATIONS IN FIRST FEW DAYS
Our Ultra-5 arrived in fine shape. Had no trouble at all hooking it up. Set it up about 11:00 A. M. and heard several stations. In fact tonight we have gotten 57 stations without just trying to get new stations for we listen to the different programs as we get them. Claude L. B. . . . Willow Lakes, S. D.

IOWA HEARS MEXICO CITY
We have given the Ultra-5 quite a thorough tryout and are very well pleased with its performance. Alongside of an expensive receiver its performance on tone, volume and distance are more than we expected. We pulled in K.F.I. Los Angeles, Cal. with many others the first evening and last night Mexico City came in clearly on the loudspeaker. Lewis W. H. . . . Greenville, Iowa.

PRaises ITS CLEARNESS
I received my Ultra-5 in fine condition and am very pleased with it. I really think that it is the best radio I have heard. Everything comes in so clear and plain. Sydney C. M. . . . Ft. Harrison, Mont.

The Powerful New **MIRACO Ultra-5**

Guaranteed by One of the Oldest Radio Builders

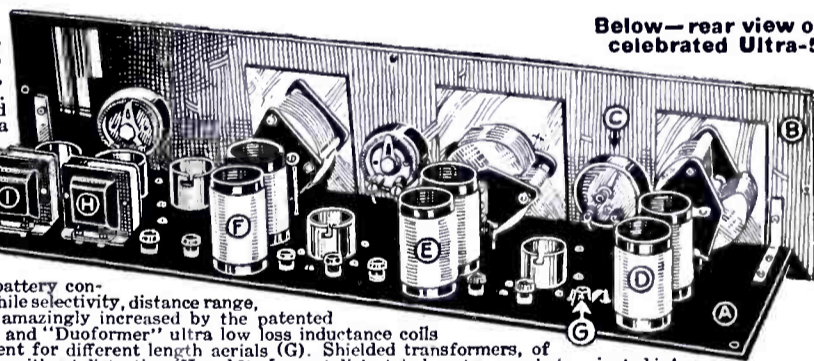
Tested and Approved by Radio's Highest Authorities

[ULTRA SELECTIVE FIVE TUBE SET IN MAHOGANY CABINET]

You can either *save* or *make* a lot of money by sending coupon today for our **Amazing Special Offer**. It will astonish you. Just say you'll let your friends listen to the powerful new Miraco Ultra-5 in your home and we ship it to you **ON APPROVAL** at the wholesale price—*satisfaction unconditionally guaranteed*. The wonderful selectivity, long distance range, clarity of tone, power and volume of this famous set—plus its beauty of appearance and splendid construction—will sell it to your friends. Big profits easy for you—accepting their orders. No salesmanship required—no agreement to sign. You can also buy accessories at wholesale from us. Even at its retail price this latest improved big beautiful 1926 model Miraco Ultra-5 is an astonishing bargain, in the opinion of radio authorities. Remember, too, that each Miraco comes *completely built, thoroughly tested and fully guaranteed* by the great Midwest Radio Corporation—one of America's oldest, reliable and most successful makers of quality sets. Send coupon now.

Compare its construction with highest priced sets

Note the neat, sturdy, high-class construction. All wiring concealed under genuine Formica base panel (A). Wiring is flexible to prevent broken or noisy connections. Genuine Formica panel (B)—handsomely gold-etched on front. Oscillations are easily controlled on all wave-lengths and "B" battery consumption is minimized while selectivity, distance range, clarity and volume are amazingly increased by the patented "Counter-Balancer" (C) and "Duoformer" ultra low loss inductance coils (D, E and F). Adjustment for different length aerials (G). Shielded transformers, of celebrated make, amplify without distortion (H and I). Lowest dielectric loss type sockets—riveted into base panel. Low loss plate condensers—and other latest features of costliest sets. Literature describes fully—send for it!



Below—rear view of celebrated Ultra-5

AGENTS! DEALERS!
Write for the new Miraco proposition. Nation-wide use and popularity of Miraco sets coupled with their amazingly low prices make them wanted everywhere.



Other Miraco Long Distance Sets \$13.75 up retail

Remember you are dealing with a big, responsible corporation—one of the oldest and most successful in the industry, a concern which has grown to immense size through the recommendations of satisfied customers—when you buy a Miraco. Absolutely no risk on your part. All Miraco sets work on storage or dry batteries, are easily connected, operated, and logged. Approved by Radio's Highest Authorities. Unmatched values! Let testimony of users convince you. Send coupon for complete literature and **AMAZING SPECIAL OFFER!**

Get **Special Offer!**



All the Proof you want is waiting for You!

Reports from hosts of users in every state prove Miraco sets—at rock-bottom factory prices—outperform sets costing up to three times as much. Send for latest literature, **SPECIAL OFFER** and plenty of additional testimony leaving no doubt that "Miraco Radio Gets 'em Coast to Coast."

Send coupon for **Amazing Special Offer!**

MIDWEST RADIO CORPORATION
Pioneer Builders of Sets Cincinnati, Ohio

531-S East Eighth Street
Send free literature, **AMAZING SPECIAL OFFER** and all particulars regarding your big money-saving proposition on Guaranteed Miraco Sets and all radio supplies.
 Agent User Dealer.

NAME.....
ADDRESS.....

MIRACO RADIO GETS 'EM COAST TO COAST

Tell 'Em You Saw It in the Citizens Radio Call Book

Noted for its tone!

THE next time you listen in, note carefully the low tones—or the void where they ought to be! You may never have noticed it before, but now you will be amazed at what you have been missing.

The rumble of the tympani, the deep notes of the viols and tubas, the thunder of the great organ pipes, the prize tones of the basso—the very foundation of rhythm and harmony—are either indistinct or absent altogether.

The Bristol Loud Speaker is known for its tone, because it brings in these low tones, as well as the middle and upper tones—thus reproducing ALL the concert instead of only a part of it.

The secret is the SUPER-UNIT in the base of the speaker, which contains a large, low-pitch diaphragm. The Super S and the Super C models here shown have this SUPER-UNIT.

If your dealer does not handle the Bristol line, we will gladly send you any Bristol Loud Speaker on receipt of price.

Send for Free Booklet

As there are so many speakers offered, all looking much alike, we have prepared a booklet entitled, "How to Select Your Loud Speaker." In a simple, non-technical way it describes the different principles of reproduction and tells how to look for and find tone in a speaker. Glad to send you a copy free.



Model J \$20.00 Baby Grand \$15.00

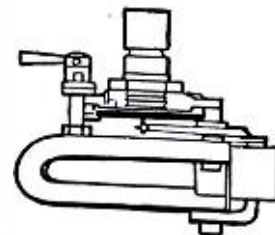
The Model J horn is 26½ inches in height and has a 12-inch bell. The finish is rich bronze. An excellent horn but slightly smaller than Model "S." Price, \$20.00.

The Baby Grand, with its 10-inch horn, is a glad surprise to all. It has a full round resonance due to its non-metallic body. Furnished in black velvet mat. Stands 24 inches high. Price, \$15.00.



Super C \$30.00

Cabinet of handsome mahogany, 17 x 10 x 10¼ in.—worthy of a place amid the finest furnishings. Has a splendid voice, due to spacious sound chambers and the new Super-Unit.



Has the New
SUPER
UNIT
In the Base



Super S \$25.00

Stands 29¼ ins. high; bell, 14½ ins. in diameter. Black mat finish with gold trimmed base. Contains the new Super-Unit. Wonderful tone quality, extremely sensitive.

BRISTOL LOUD SPEAKER

(THE AUDIOPHONE)

The Bristol Company, Radio Division CR., Waterbury, Conn.

For 36 years makers of the highly sensitive and accurate Bristol's Recording Instruments

Tell 'Em You Saw It in the Citizens Radio Call Book

after all.....

“HOW WELL YOU CAN HEAR” is the only thing that really counts



Look to your amplifying transformer if your set fails to pass this “quality test”

AS one radio fan to another, let's admit a few things. After all, when a fellow settles back in his easy chair and wants some real entertainment, isn't "How well you can hear" the only real satisfaction in owning a radio set?

Up here at Cambridge we've been making radio transmitting and receiving apparatus since the days when radio was "wireless."

We've found that the only thing worth experimenting with is quality—this amplification without distortion. If you would like to test your own or any other set for quality, here's the way to do it.

Tune in and at the same time start talking with a friend.

Unless you can understand the voice over the radio with as much ease as that of your friend . . . and without any more effort or concentration . . . then you are not getting quality . . . you have distortion.

For distortion is something more than mere howls and squeals . . . it is anything which prevents you from getting exact, faithful reproduction of the human voice.

If you find that it requires more attention and effort to hear the radio voice than that of your friend, this is the reason.



The Acme Amplifying Transformer

Amplifies properly not only the middle range of music and voice, but the sensitive over and undertones usually blurred out. New closed model, type MA-2, price \$5.

The individuality of the radio voice has been blurred out by distortion. The peculiar characteristics that make your voice recognizable from mine, the sensitive overtones and undertones, have been drowned. The result is a monotone, a droning flatness always difficult to understand.

Yet almost any set can be made to give quality reproduction, if certain precautions are taken.

First of all, look to your amplifying transformer. Here is usually where the trouble lies. Most transformers fail to have the high, flat prolonged amplification curve essential to correctly amplify the sensitive, delicate over and undertones. Hence distortion.

Replace your transformers with Acme MA2's which give amplification without distortion and repeat the voice test.

Send for this helpful book

THE whole story of distortion and how it can be overcome is carefully and fully explained in a 28-page book, "Amplification without Distortion," the 11th edition of which is just off the presses. Over 300,000 of our friends have already found previous editions helpful. Perhaps this new edition will help you get quality, too. At any rate send for it and see.

Claude Cairns

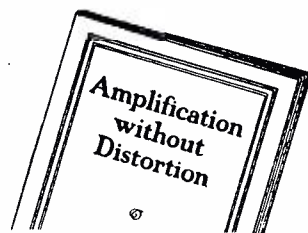
CLAUDE F. CAIRNS, President, Acme Apparatus Co.

For Amplification without distortion use ACME transformers in the set you build. Insist on them in the set you buy and enjoy all the year round Radio

11th edition of this famous book just off the press

Send for your copy!

THE complete story of distortion and how to prevent it is clearly and fully described in this famous book, of which over 300,000 copies have been issued. For convenience use coupon below.



ACME APPARATUS COMPANY, Dept. O4, Cambridge, Mass. Enclosed find 10c stamps or coin for my copy of "Amplification without Distortion."

Name..... Street..... City..... State.....

ACME

~for amplification

Tell 'Em You Saw It in the Citizens Radio Call Book

Look for this Mark

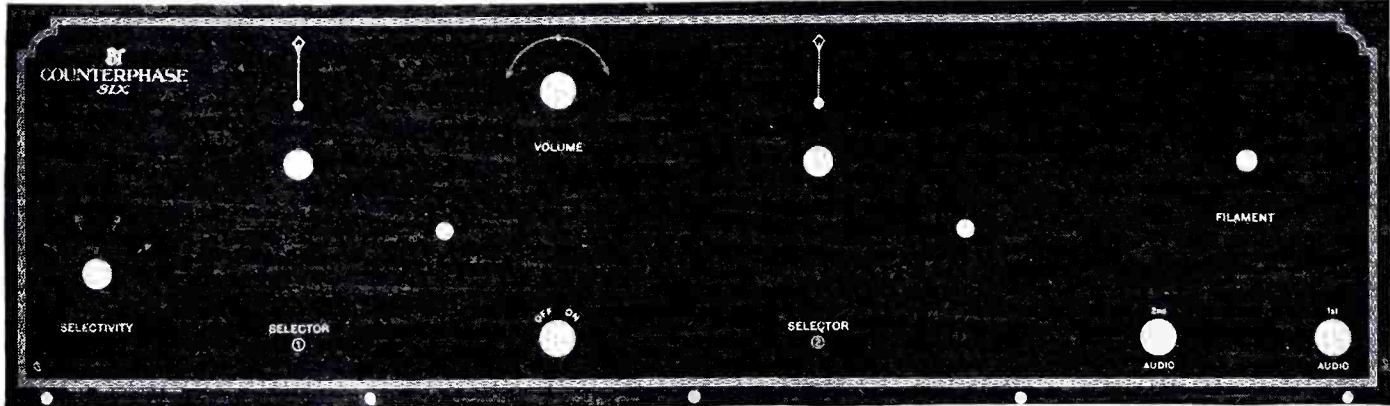


It denotes the Genuine

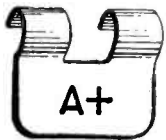
CROWE METAL PANELS

for Well-Known "Kits" and Circuits

The technical superiorities of Crowe metal panels have already won the approval of many leading set manufacturers. Now—with the introduction of Crowe panels, completely drilled and beautifully decorated, to fit the requirements of various popular kits and circuits—the amateur who likes to build his own set may enjoy the advantages of this new paneling medium. Metal panels obviate the necessity of separate metal shielding of panel.



Crowe Panel for "B-T Counterphase-Six," Size 7x24, Accurately Pierced, Ready for use.
(Packed in Individual Containers, with Insulation and Directions)



Easily Attached With Pair of Ordinary Pliers

Crowe Cable Markers

Insure Your Tubes!

Every set owner will appreciate the safety and convenience these markers afford

Made of Metal, Bold Black Markings

25c

the package—at your dealer's



Crowe Panels Are Sold by Leading Radio Dealers

If your dealer cannot supply you as yet, tell us the set you want to build, and if we have a panel available for it, we will direct you to a source of supply.

You are invited to write for descriptive literature, explaining how Crowe metal panels improve reception and aid in eliminating interferences.

Address

CROWE
Name Plate & Mfg. Co.
1749 Grace St. CHICAGO

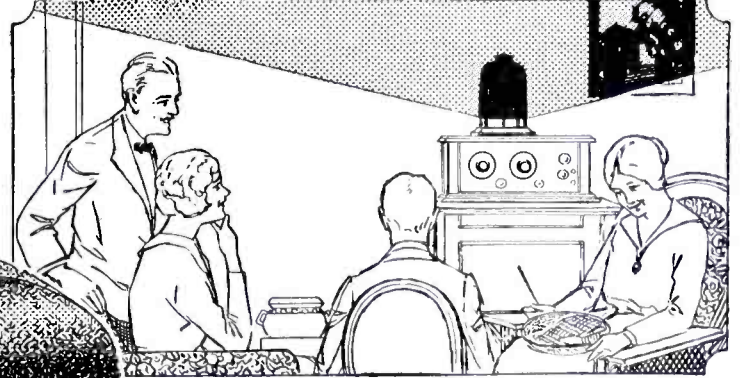
NEW ENGLAND MILLS CO.
851-855 W. Washington Boulevard
CHICAGO
Wholesale Distributors

Tell 'Em You Saw It in the Citizens Radio Call Book

No "Reserved Seats" Needed



"One-direction" speakers make "reserved seats" necessary, if you want to hear clearly. Shaded portion indicates where the broadcasting loses force and distinctness.



The new all-direction N & K Imported Model S Loudspeaker sends the broadcasting clearly and distinctly to every part of the room. EVERY seat is a reserved seat.



THE new N & K Model S Imported Loudspeaker is always pointed in your direction—no matter where in the room you are. Its pure, life-like tone goes out clearly on all sides. It "plays no favorites."

This original loudspeaker takes up little space. It stands 9½ inches high on a 6½ inch square base. It is interesting in shape and design, harmonizing with any surroundings. Looks appropriate in any part of the room.

Its tone is natural and lifelike. For it is made of *burtex*, a scientific material which eliminates false tone vibrations. It contains the famous N & K diaphragm unit, adjustable to every variation in local broadcasting conditions and receiver construction. Adjustable units are used in all types of N & K Speakers.

In volume the new Model S equals speakers costing several times the money. Yet it sells for—

Only \$1250 In Canada \$15



The New Imported

LOUDSPEAKER

MODEL S

Write for Free Folder describing this unusual new speaker

NEUFELDT & KUHNKE
Division

Th. Goldschmidt Corp.
Dept. F1

15 William Street
New York, N. Y.

The N & K Line

N & K Imported Phones

4000 ohms. Price \$8.50.

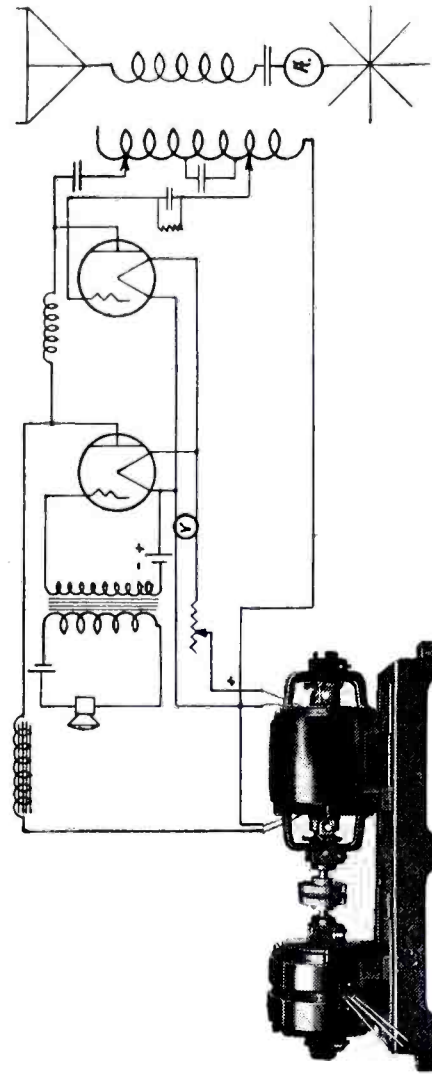
N & K Imported Phonograph Unit

Adjustable. Attaches without screws. Price \$7.50.

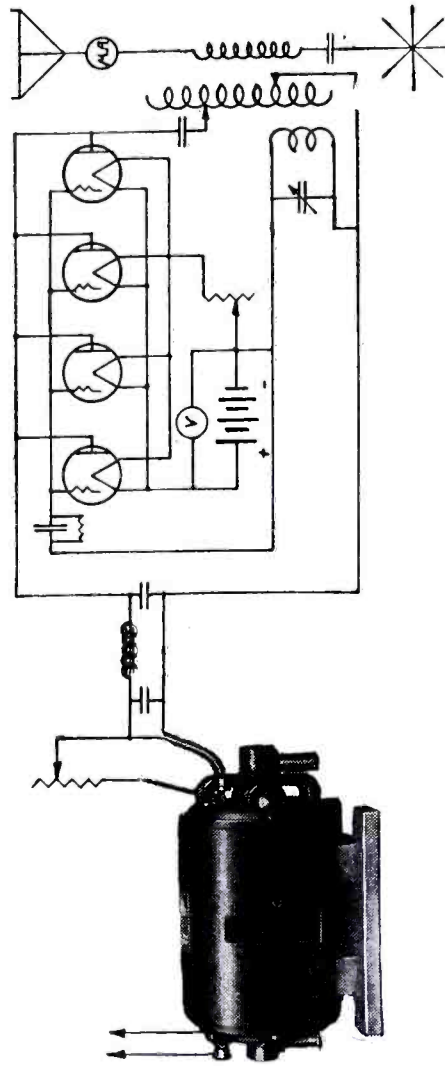
N & K Imported Loudspeaker

Model W. "Bowl" type. Adjustable unit. Price \$22.50.

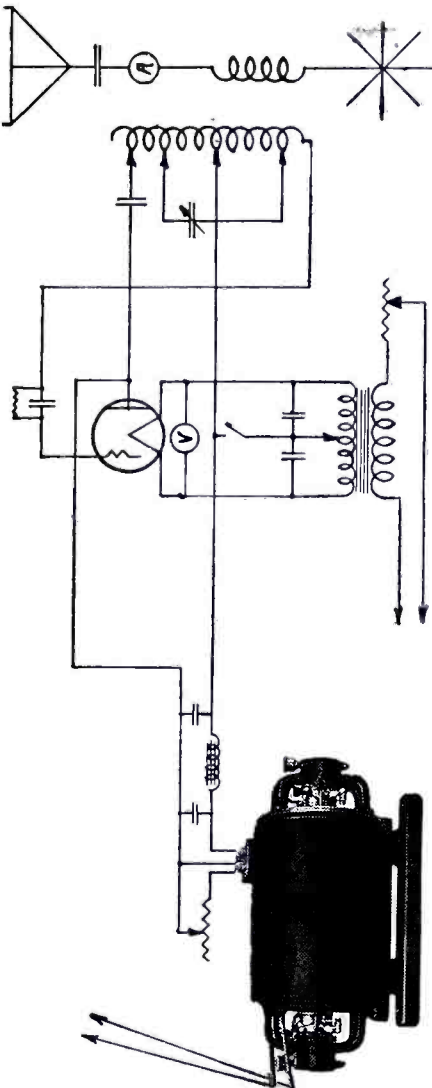
Tell 'Em You Saw It in the Citizens Radio Call Book



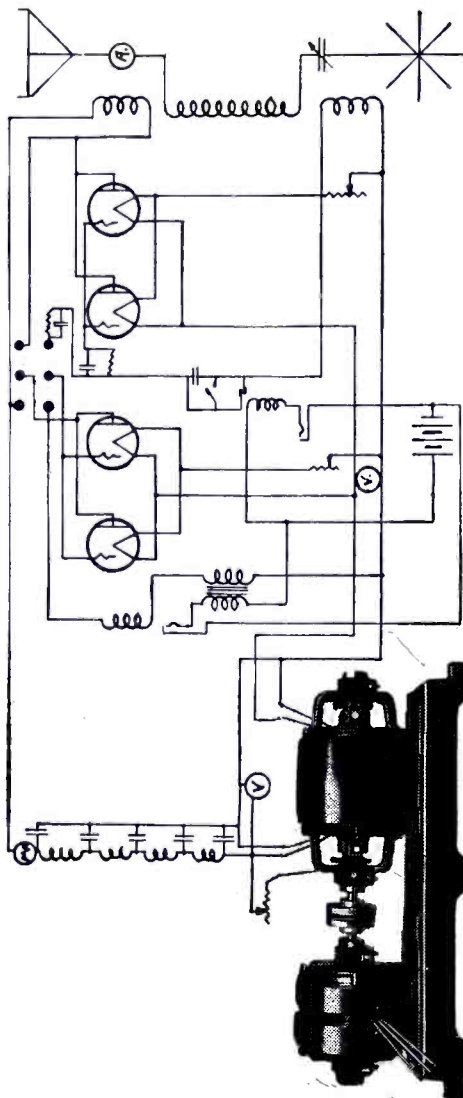
Item 35. Two unit four bearing set. Furnished with ring oiled or ball bearings. Motor to suit local supply. This "ESCO" set delivers 1000 volts, 300 watts for plate supply and 12 volts, 150 watts for filament supply. This set driving two 50 watters will make a good consistent station.



This is Item No. 8 furnishing Power Supply for 4/5 watters in the reversed feed back hook up. Item 8 can be furnished with either AC or DC motors, or as a separate generator. The machine is two bearing, wick oil, and its output is conservatively rated at 500 volts, 150 watts. It's a real little maximum miles per watt DX getter.



Item 11A, Type MG-343S output 1000 volts, 300 watts, an efficient and compact Power Supply for one or two 50 watters. This machine is built ruggedly yet designed to take a minimum of space. It is a machine that not only will stand the kicks of hard usage, but will also give your Station a kick that will turn the Q.R.Z.'s into Q.S.A.'s.



Item 37, 2 unit four bearing set, delivering 1000 volts, 600 watts for plate and 12 volts, 300 watts for filament. The "ESCO" Set is shown here furnishing Power Supply for 4-50 watters in a phone or telegraph set. This is the Item used by CBZ8 in pioneer achievement of the first two way amateur wireless communication between North and South America.

MOTORS—DYNAMOTORS—GENERATORS—MOTOR-GENERATORS

ELECTRIC SPECIALTY COMPANY

267 South Street, Stamford, Conn., U. S. A.

TRADE 'ESCO' MARK

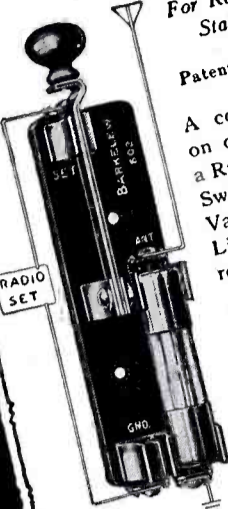
TRADE 'ESCO' MARK

Pioneers in Developing and Perfecting High Voltage Wireless Apparatus

BARKELEW

RADIO ACCESSORIES

LIGHTNING ARRESTER SWITCH
For Receiving Stations
Patents Pending



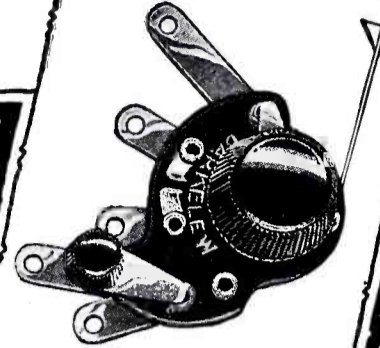
A combination on one base of a Radio Ground Switch and a Vacuum Tube Lightning Arrester.

A distinctive device for those who know and demand the best lightning protection.

No. 602
Price \$2.50

Approved by the Underwriters Laboratories.


ANTENNA SELECTOR SWITCH
For Radiola III and III-A



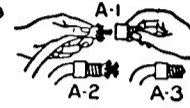
No. 605
Price \$1.00

The entire range of antenna adjustments may be obtained by simply turning the two knobs. The antenna wire attaches to the one binding post on the rear.

Screw Grip Cord Tips!
DONT SOLDER

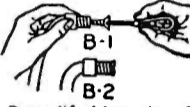


PIN TIP No. 630
Price 5c each



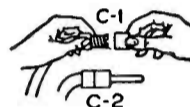
The Universal Sleeve "A" has an internal thread. Screw it on end of wire.

EYE TIP No. 631
Price 7½c each



Expose ¼" of bare wire. Insert wood screw "B" locking wire to sleeve.

FORK TIP No. 632
Price 7½c each



Screw on any of our standard Screw Grip Tips shown at left. A cord tip that requires no solder, no wrapping of the insulation and no tools other than a pen knife and a small screw driver.


FOUR PHONE POST
For Radiola III and III-A



No. 624
Price \$0.50

The prongs on this post fit through phone holes in the face of panel. It takes one to four head-sets in series.


VACUUM TUBE LIGHTNING ARRESTER



No. 606
Price \$1.50

Required on the antenna of every Receiving Station. Approved by the Underwriters Laboratories.


GROUND SWITCH



No. 600
Price \$2.50

Required on all Transmitting Stations—Built of 60 Ampere Copper.

"LEAD-IN" INSULATOR
For Receiving Stations



No. 612
Price \$0.60

Spaces the "Lead-In" Wire 5 inches out from the wall.

PORCELAIN PEDESTAL
Brown Glaze



No. 611
Price \$0.50

An insulator with a rigid clamp for the lead-in wire. A pedestal for spacing Ground Switches or other apparatus, 5 inches clear of the mounting surface.

CONFIDENCE

THE annual increase in the number of dealers selling Barkelew Accessories expresses the confidence of the Radio Public in our product.

Special attention is called to the No. 605 Antenna Selector Switch and the Screw Grip Cord Tips. Both items were introduced late last year but will have their best run during the present season.

All radio material is packed in paper cartons and well labeled, making excellent shelf stock.

The design is good, materials are carefully selected and workmanship by skilled mechanics.

Prices and discounts are right for a fast moving line. This means a profitable stock.

For full description of each item, see our new Radio Catalog at your dealer. If he hasn't his copy, we have one for him.

The Barkelew Electric Mfg. Co.

- Middletown, Ohio, U. S. A.
- NEW YORK, 157 Chambers St.
 - BOSTON, 31 Bedford St.
 - WASHINGTON, D. C., Mills Bldg.
 - ATLANTA, GA., 180 Spring St.
 - CHICAGO, 15 S. Clinton St.
 - DENVER, Denham Bldg.
 - MINNEAPOLIS, 1017 Lumber Exchange
 - SEATTLE, 1041 Sixth Ave. S.
 - SAN FRANCISCO, 75 Fremont Street
 - LOS ANGELES, 443 S. San Pedro St.
 - TORONTO, 20 Bloor St., W.
 - MONTREAL, 296 St. Paul St. W.

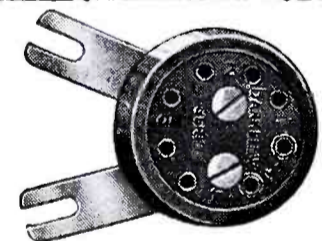
FOUR PHONE PLUG



No. 616
Price \$1.00

Connects one to four head-sets in Series to any Radio set using telephone jacks.

FOUR PHONE POST



No. 628
Price \$0.50

For binding post mounting. Connects one to four head-sets in series to the more common types of brass phone posts.


CORD TIPS
With Solder Inserted



No. 623
Price \$0.05 ea.

The wire hole is tinned and half full of solder. Heat and insert the wire.

PLAIN CORD TIPS



No. 627
Price \$0.01 ea.

A nickel plated tip for those who can do their own soldering.

Tell 'Em You Saw It in the Citizens Radio Call Book

AMPERITE

REG. U.S. PAT. OFF.

The "SELF-ADJUSTING" Rheostat

A BASIC Need in Every Circuit

BECAUSE—AMPERITE not only modernizes any set—it keeps it modern

- 1—Eliminates Hand Rheostats, thereby simplifying control.
- 2—Permits use of the latest types of tubes or any combination of tubes.
- 3—Simplifies and reduces set-wiring, thereby making for greater compactness and avoids losses.
- 4—No moving parts, hence no grinding noises; clear and full tones.
- 5—Prolongs tube-life by keeping filaments at a constant temperature.
- 6—No filament meters needed.
- 7—Brings the most out of each individual tube—automatically—no guessing.
- 8—Makes every set-owner a master operator, no knobs to turn.

Write today for
FREE
Hook-Ups



Sold Everywhere
\$1.10 complete with mounting (in U. S. A.)

AMPERITE is used in every popular present-day construction set. Why? Because of its many outstanding exclusive features, and because it solves the perplexing problem of tube-control—COMPLETELY and AUTOMATICALLY.

For the new tubes:

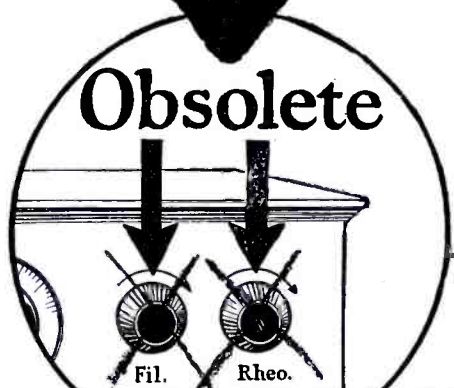
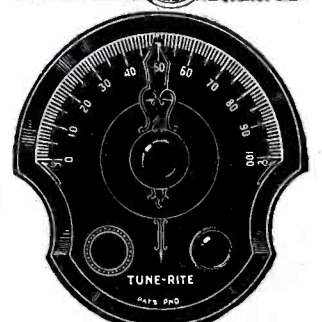
Amperite No. 112—for the UX-112 and CX-112
Amperite No. 120—for the UX-120 and CX-120

Radiall Company

Dept. R.C.B.-3, 50 Franklin Street, New York City

Be sure that the set you buy or build is equipped with AMPERITE

Manufacturers of
TUNE-RITE
TRADE MARK
5% STRAIGHT LINE
FREQUENCY Dial



There's only one *safe* way to build the Counterflex

“THE successful operation of the Counterflex depends just as much upon the design of the parts used in its construction as upon the hook-up itself. The parts must conform exactly to my specifications: otherwise the receiver will be unbalanced and will not operate satisfactorily. The best and safest way is to build it with the complete kit of balanced parts which I have designed for the purpose. The set you build with this kit will be an exact duplicate of my own and will perform in the same unusual manner, affording you the receiving range, volume and selectivity of a costly receiver at moderate expense.

“Genuine Harkness Counterflex Kits are manufactured *only* by the Kenneth Harkness Radio Corporation, under my personal supervision. No other manufacturer is authorized to make parts for my circuits, or to use my name in any manner in connection with the sale of radio products. You can recognize genuine Harkness kits by my signature and the words ‘Manufactured by Kenneth Harkness Radio Corporation, Newark, N. J.’ which appear on the labels of the only genuine Harkness products.”



Kenneth Harkness, President Kenneth Harkness Radio Corporation; Associate Editor of Radio in the Home



Complete 3-Tube Counterflex Kit with new type counterformers and all latest improvements, \$36.00.

Kenneth Harkness

With this complete kit of genuine Harkness parts the construction of the 3-tube Counterflex receiver is made surprisingly simple. You can assemble the set in just a few moments—with only a screwdriver. You don't have to lay out the positions of the mounting holes or do any drilling. The panels are completely drilled and engraved, all ready for you to assemble the parts. To wire the set no previous experience is required. It is not even necessary to understand the usual type of circuit diagram. Special “step-by-step” wiring diagrams accompany the kit, drawn from actual photographs of the set itself. The first diagram shows how to connect the first five wires; the second gives the next five wires, and so on. Heavy lines clearly illustrate the exact positions of the wires themselves and indicate how to connect them to the terminals of the apparatus. You can't possibly make a mistake. When you connect the last wire your set will be 100 per cent perfect. Ask a reputable dealer for the genuine Harkness Counterflex Kit. If he does not stock genuine Harkness kits, send your order directly to us.

KENNETH HARKNESS RADIO CORPORATION
 Dept. C2, 727-739 Frelinghuysen Ave., Newark, N. J.
Sole Manufacturers of

Mail this coupon for **FREE Book** now! →

KENNETH HARKNESS RADIO CORP.
 Dept. C-1, 727-739 Frelinghuysen Ave., Newark, N. J.
 Please send my free copy of your booklet explaining the new Harkness Counterflex Circuit. I enclose 25c (coin or stamps) to cover cost of mailing.

Name.....
 Address.....

Tell 'Em You Saw It in the Citizens Radio Call Book



The Nation's Music at the Turn of a Switch!

WITH this beautiful five tube Tuned Radio Frequency Receiver in your home, distant reception is easy. A slight adjustment of the dials tunes out a high power local station and brings in the strains of music from your favorite orchestra or entertainer from any station you may desire.

This set offers you the best in radio reception results and is a decorative piece which will harmonize with the furniture in your home. The console is constructed of highly polished five-ply walnut. Has beautiful toned loud speaker and compartment below with ample room for storage of all batteries.

Complete with all accessories, no extras to buy, \$135.00.

The other Atec model shown below is the same set without the console cabinet. It sells complete with all accessories for \$85.00.

Have your dealer demonstrate the ATEC five tube to you. If he does not handle them, write us direct and we will arrange for a demonstration.

Dealers—Write for exclusive proposition

ATEC PRODUCTS

Manufactured by

ABLE TOOL & ENGINEERING CO.

536 West Elm Street

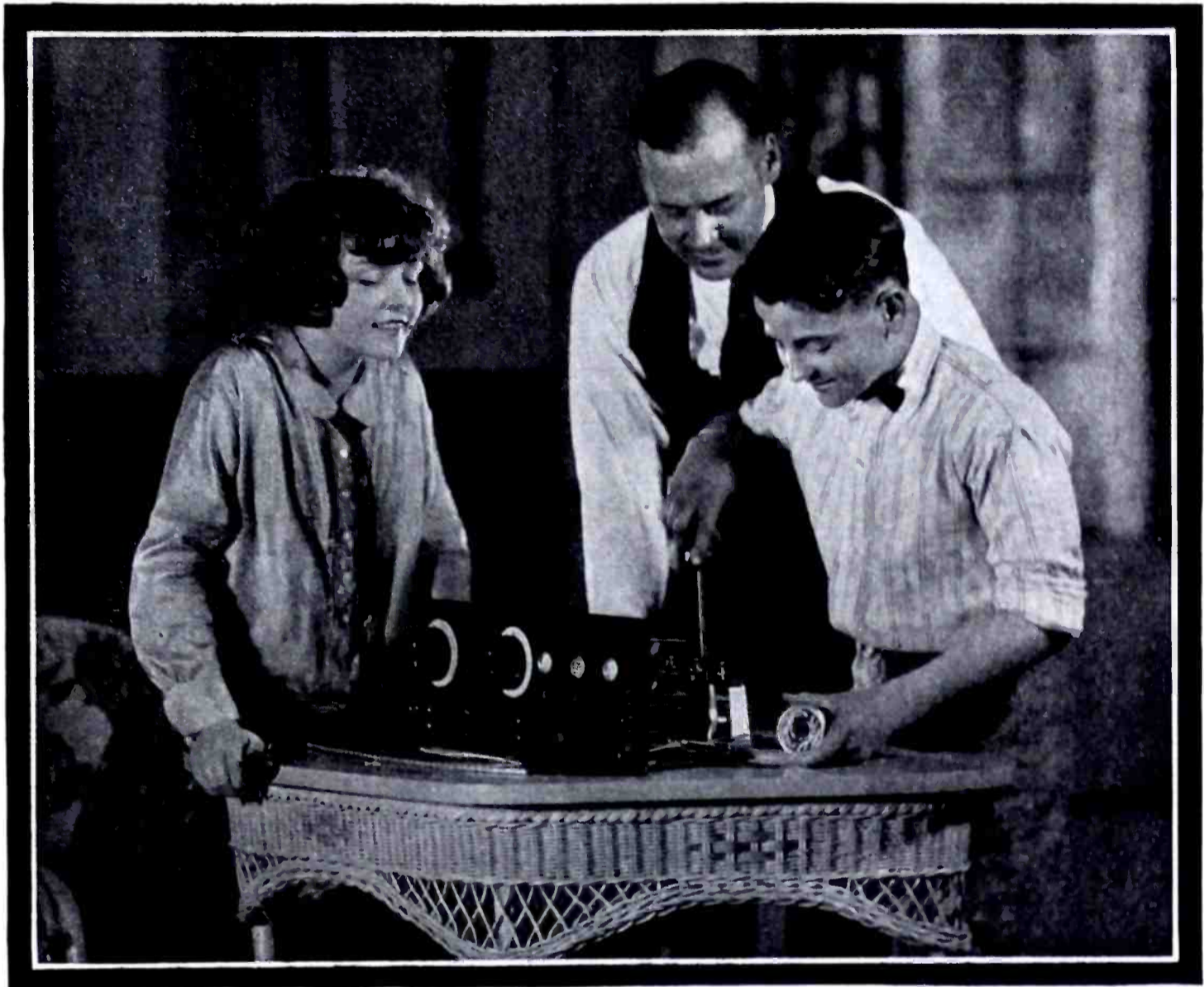
Chicago, Ill.



Tell 'Em You Saw It in the Citizens Radio Call Book

KESTER *Radio* SOLDER

(Rosin Core)



Oh boy!

It Sure is Safe and Simple

"Requires Only Heat"



Approved by
Radio Engineers

IF YOUR DEALER CANNOT SUPPLY YOU

Chicago Solder Company
4226 Wrightwood Ave., Chicago, Ill.
Gentlemen: Send me one can Kester Radio Solder, for which I enclose 25c in stamps.
(Postpaid anywhere in U. S. A.)

Name.....
Address.....
City..... State.....
Dealer.....

LIBERTY TRANSFORMERS

A Recognized Triumph of the Radio Age

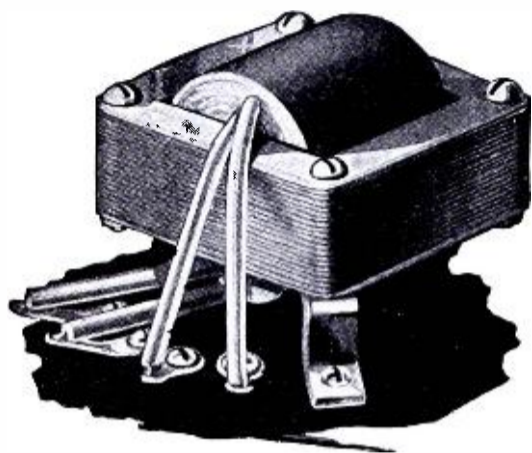
Liberty Transformers have earned the respect and confidence of the radio world through repeated demonstrations of their superior merit and absolute reliability. Strict adherence to the most scientific principles known to advanced radio engineering—exact care in every detail of manufacture—watch-like precision of construction—ruggedness—ease and simplicity of mounting—plain marking of terminals—freedom from all assembly troubles, combine to provide the most perfect type of transformer it is possible to produce.

Reference to page — of this issue will give you a very clear conception of the use of Liberty Transformers in new circuits.

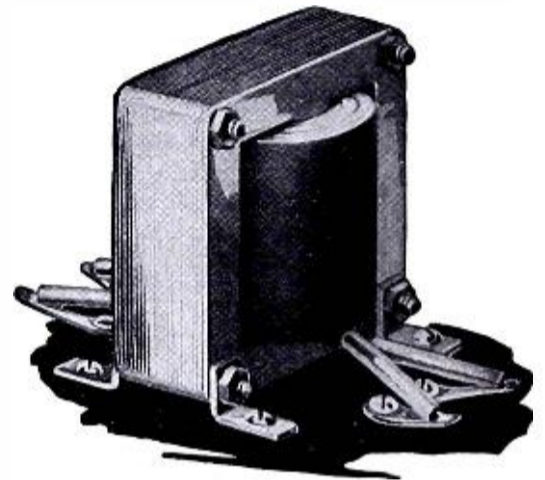
The Liberty Transformer Co. is one of the oldest and largest manufacturers in the country. The efficiency and the value of Liberty transformers are reflected in the fact that they are employed by many of the most prominent manufacturers of radio Receiving Sets. Special transformers produced in accordance with your specifications at an economical cost in any quantity and with absolute assurance of prompt delivery. Expert consulting engineers are ever at your service. Radio manufacturers, technical men and jobbers are invited to investigate the many merits that have won leadership for Liberty Transformers.

LIBERTY TRANSFORMER COMPANY

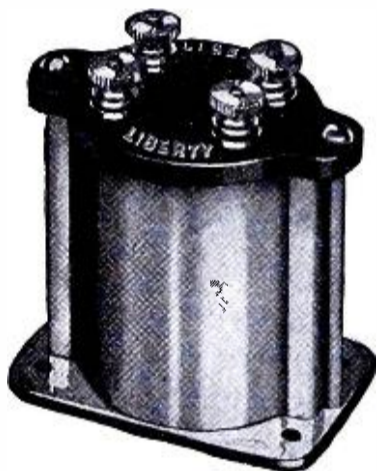
123 No. Sangamon St., Chicago



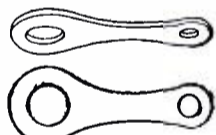
L-32A Transformer with L-41 Mounting Brackets



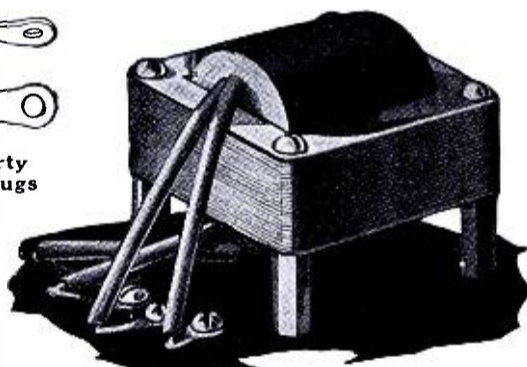
L-31 Transformer with L-41 Mounting Brackets



L-1, L-5, L-6, L-8 Encased Audio Frequency Transformer. All Ratios. Base Mounted



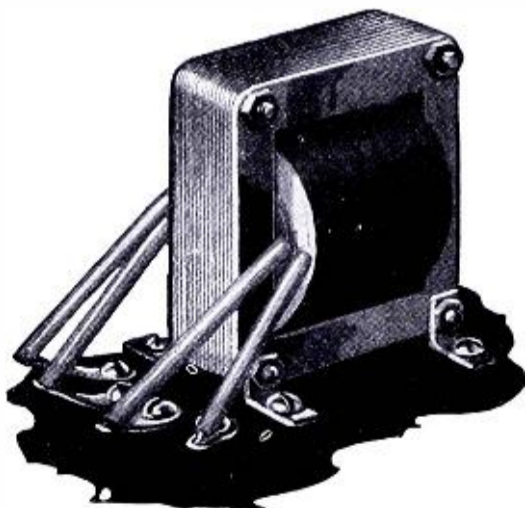
L-60 Liberty Terminal Lugs



L-31 Transformer with L-40 Mounting Studs



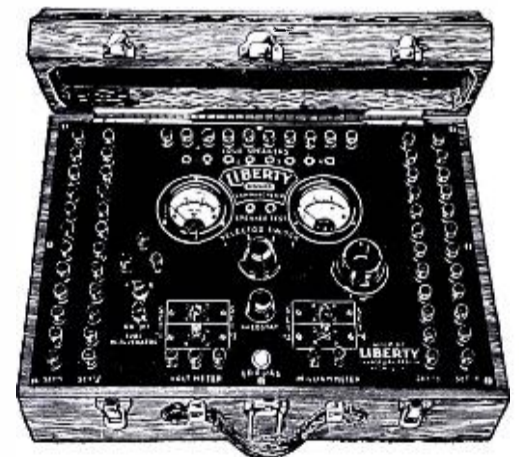
L-50 Special Air Core Radio Frequency Transformer



L-31 Transformer with L-41 Mounting Brackets



L-19, L-20, L-21, L-22 Encased Audio Frequency Transformer. All Ratios. Panel Mounted



LIBERTY COMPAROMETER

A positive necessity in determining and demonstrating the comparative value of Radio Receiving Sets and ascertaining their economy in consumption of B battery current.

Tests four sets or loud speakers at one time—exposes the slightest variation in operation.

It also tests and rejuvenates tubes and for that purpose alone is worth its cost.

Manufacturers of the famous Liberty Sealed Five Receiving Sets

Tell 'Em You Saw It in the Citizens Radio Call Book

BE A RADIO EXPERT!

The Opportunity of a Lifetime

Amazing money-making possibilities—Big Salaries—yes, even fortunes and independence await wide-awake ambitious men entering the Radio field.

Earn \$3,000 to \$10,000 a year



Everyone knows that the men who got in on the ground floor opportunities of the locomotive, the telephone, electricity, the automobile, moving pictures, etc., have been handsomely rewarded—many of them made millions. Now science contributes the greatest opportunity of the age—a discovery so marvelous and so easily within the means of all that even the humblest home seeks its possession and benefits.

From a business and money-making standpoint Radio fairly staggers the mind of anyone who gives it a moment's thought. Even men with little or no knowledge of its principles are making \$3,000 to \$10,000 a year. Radio is the fastest growing industry in the world. Everywhere people are crying for radios. Manufacturers are swamped with orders that cannot be filled. And yet anyone of average intelligence can learn at home in spare time how to construct, install, repair and sell dependable sets.

Train at Home in Three Months

If you are in a routine job with poor pay and no future, here is truly *the chance of a lifetime*. Don't miss it. In a few short months at home by mail we can make you an expert representative of our Association. Become the radio expert of your town or neighborhood. Find out how the Radio Association of America throws the doors of opportunity wide open for you. We will show you the way to swing big salary jobs or to get into business for yourself and be your own boss.

No Previous Experience Necessary

Get your share of the big money to be made in the most rapidly growing business of all time. Mail the coupon below for our big free book, which tells how in your spare time at home, without giving up your present position or losing a dollar of pay, you can become a thoroughly

trained radio expert in a few short months.

No previous experience is necessary. For the man who prefers a salary, big pay jobs are waiting with the U. S. Government, Steamships, Railroads, and thousands of corporations and business houses. For the man who wants to start in business on a full or spare time basis, with little or no capital, grow and become independent, Radio offers an easy way to unlimited money-making opportunities. In no other line can ambitious men find an easier road to success.

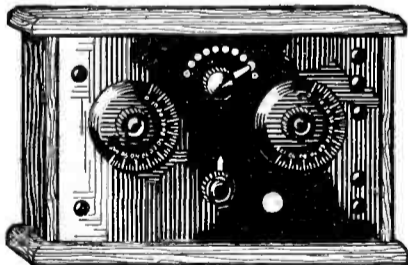
You can train under one of America's leading Radio authorities. Read Mr. A. G. Mohaupt's offer to train you personally in everything about constructing, installing, repairing and selling Radio Sets and Accessories. By enrolling with us now, you get the benefit of the direct personal guidance of this well-known Radio expert.



A. G. MOHAUPT, B. A., M. S.

Head of the Radio Association of America, Graduate Electrical Engineer, University of Wisconsin. Former Radio Instructor for U. S. Government. Author of "Practice and Theory of Modern Radio."

"I give my personal attention to every student taking my course. Your individual problems and questions are answered by myself. I work with you at every stage of the course, guiding you, directing you to your goal to be a Radio Engineer in the big-pay class. My course prepares you to successfully pass Gov't examination for Operator's License."



FREE—1000 Mile Radio Outfit

This set when completed has a range of over 1000 miles. Right now we give it free to each member taking our course of training. Mr. Mohaupt's clear, simple instructions will show you how to build

similar sets to sell at a big profit. When you have finished the course, you can sell this free set at a price that will practically pay the cost of your training.

Get the Facts—Mail Coupon

Our training is not only easy and interesting, and supplies knowledge you can always use in operating your own set, but is the most cashable knowledge a man can possess. Let us prove to you that there is nothing difficult about Radio—that any intelligent person can easily learn it right at home by mail under our simplified and approved methods. Mail the coupon now for our big, free Radio Book, which gives all the facts. Let us prove that Radio is easier to learn and offers bigger money than any other business or profession you can get into. Don't wait—act while our Free Offer of a 1000 mile radio outfit is still in effect.

A. G. MOHAUPT, Radio Engineer
RADIO ASSOCIATION OF AMERICA

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Please send me your free book telling all about Radio opportunities and your Expert Home Training Plan and offer to representatives, also your offer of a 1000 mile Radio Set FREE.

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YAXLEY

APPROVED RADIO PRODUCTS

Yaxley Radio Products Improve Reception

Rheostat



With Knob,
\$1.35

Etched Dial Plate
15c extra

Operates at constant co-efficient of conductivity. The many turns, with an unusually long contact surface permits filament voltage to be built up slowly and held at just the right point to facilitate tuning and develop perfect reproduction. Quarter-inch shaft fits same size hole as jack and requires a single nut mounting. Air-cooled Coil; Adjustable Contact Sliding Lever; Bakelite Base; Coil Exposed on All Sides; No Vernier Required. 2, 3, 6, 10, 15, 20, 25, 30 and 40 ohms.



Price, \$1.00
Lamps extra

Pilot Light Switch

A combination of Pilot Light and Midget Battery Switch. Constantly indicates whether the radio set is "on" or "off." The pilot light bull's-eye is furnished in a choice of red, green or amber.

Ask your dealer, or send his name with your order to

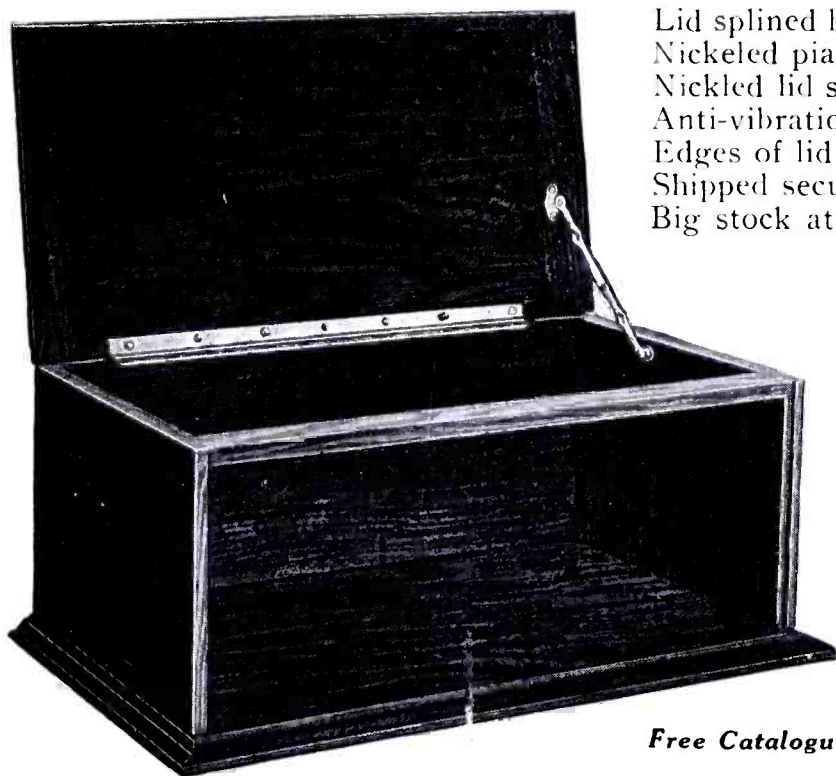
YAXLEY MANUFACTURING COMPANY

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Dept. C

Chicago, Ill.

A Radio Cabinet of Beauty and Elegance Direct to You at Lowest Cost



Lid splined both ends to prevent warping.
Nickled piano hinge—Full length.
Nickled lid support of artistic design.
Anti-vibration cushion feet (not visible in cut).
Edges of lid moulded to match bottom.
Shipped securely packed in strong carton. Prompt shipment.
Big stock at all times.

	Hardwood Rubbed Mahogany Finish	Solid Black American Walnut
7x18x7½ or 10 in. deep.....	\$3.50	\$5.00
7x21x7½ or 10 in. deep.....	3.75	5.25
7x24x7½ or 10 in. deep.....	4.00	5.50
7x26x7½ or 10 in. deep.....	4.75	6.25
7x28x7½ or 10 in. deep.....	5.50	7.00
7x30x7½ or 10 in. deep.....	6.00	8.00

Add 25c, for "E-Z" Fone plug.

CASH WITH ORDER or C.O.D. if ¼ of price is sent with order.

Prices F.O.B. Hickory, N. C.

Order express shipment, often cheaper than mail and much safer from damage.

FREE WITH EACH CABINET a glued-up stock non-warping ½-inch BASEBOARD.

We sell Loud Speaker Cabinets with grille, ready for your Unit.

Free Catalogue

THE SOUTHERN TOY COMPANY, Inc.

Department H

Hickory, North Carolina

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Product of over 30 years' experience

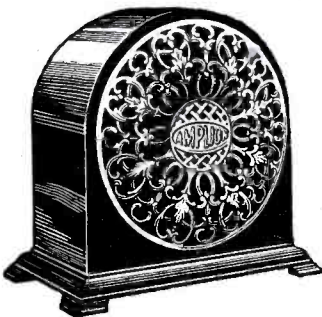


*The Favorite
Voice of Radio
in All Tongues*

HO hear an Amplion in comparison with any or all other loud speakers is to appreciate at once why Amplions are internationally the leading favorites.

The actual originators and oldest makers of loud speakers, Alfred Graham & Co., London, England, evolved The Amplion. Its superbly life-like reproduction and supreme clarity on all notes give eloquent testimony to Graham's more than thirty years' experience.

Announcing the **Radiolux
AMPLION**



CLEARER, louder, more sensitive and more realistic in tone, by actual comparison, than any other existing type of radio reproducer, this newest addition to the Amplion family—the beautiful Radiolux-Amplion—is, in every acoustic and artistic sense, a revelation! Outwardly resembling the distinctive English bracket clock, inwardly the Radiolux-Amplion is a radical and complete departure in acoustic design. Hear the Radiolux-Amplion in

comparison and you will agree it gives the most realistic reproduction of radio you have ever enjoyed. Illustrated above is Model RS-1. Height 15 7/8 in. Beautifully finished metal cabinet and grille. Price \$55.00



Phonograph or Console Units in Two Sizes \$17 and \$25

Amplions, of the Dragon type illustrated at top of page, at \$12.00 to \$42.50 are surpassed only by the Radiolux-Amplion. All Amplions are equipped with cords and panel plugs. Write for the "Amplion Pedigree."

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Executive Offices: Suite N, 280 Madison Ave., New York City

Chicago Branch: 27-29 No. Morgan St.

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STUDY RADIO!

Radio, the field of unlimited opportunity, calls for more trained men.

Prepare yourself for a high salaried position by using your spare time to study radio at home.

Radio Institute of America, the world's oldest radio school, has graduated more than 7,000 students. The value of RIA training is universally recognized—and graduates readily secure positions.

This coupon will bring you a wealth of important and interesting information.

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Please send me full information about your Home Study Course of radio instruction.

I am interested in the complete course, including code instruction, which qualifies for the U. S. Government Commercial or Amateur Radio License.

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How to get the most out of your set



Learn the principles of radio from this remarkable book

514 PAGES

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Formerly with the Western Electric Co., and
U. S. Army Instructor of Radio
Technically edited by F. H. DOANE

STOP turning the dials blindly. Learn what happens when you turn them and why. Then you will get greater distance, greater volume, most enjoyable quality.



The I. C. S. Radio Handbook will help you to get more enjoyment out of radio. It clears up the mysterious—tells you just what you want to know. Written by nationally known radio authorities in language that you can understand. An absolute necessity for every radio fan. A wonderful bargain at \$1. Note this partial list of contents—

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Send only \$1 with the coupon today and get this 514-page I. C. S. Radio Handbook.

Money Back if Not Satisfied

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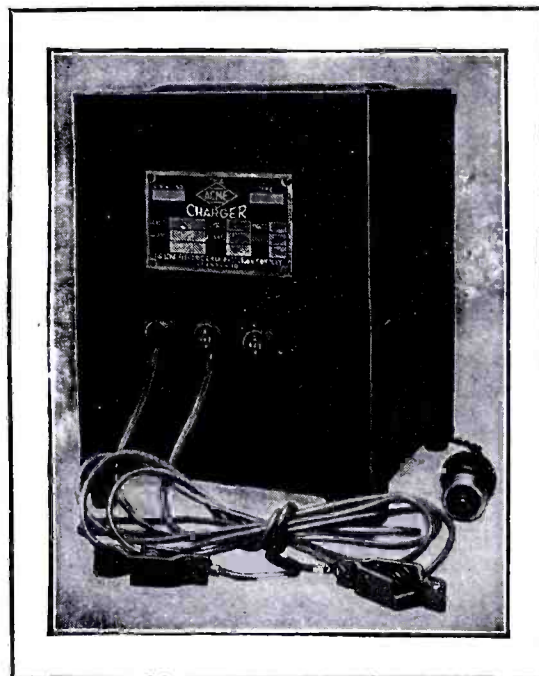
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Check here and enclose \$1.50 instead of \$1 if you wish the De Luxe Leatheroid Edition

You Need An Acme Double Duty Charger

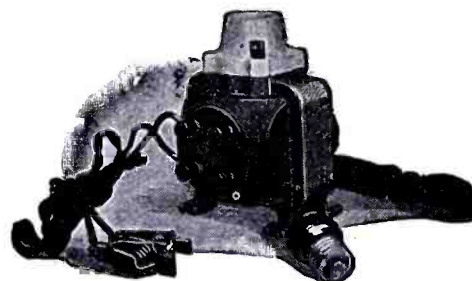


Acme Universal Charger

ACME Double Duty Chargers are designed to properly recharge both "A" and "B" Batteries. Wonderfully durable and efficient. With the type illustrated above 1, 2, 4, or 6 volt battery may be charged and also 48 cells of Radio "B" battery. Type AU-120 (without bulb)\$13.50

Type A. B. M.-5-120. A five ampere charger with battery clips, extension cord, meter and plug attachment to charge "A" and "B" batteries. Will charge 120 volt "B" battery in series without grouping. Price.....\$20.00
Without meter.....\$18.50

Acme Directo Type DM-110. For charging batteries where direct current is used; 5 ampere, with meter, clips and extension cord attachment. Price.....\$12.00
Chargers to operate on 32 volts D. C. can be supplied. Price\$12.00



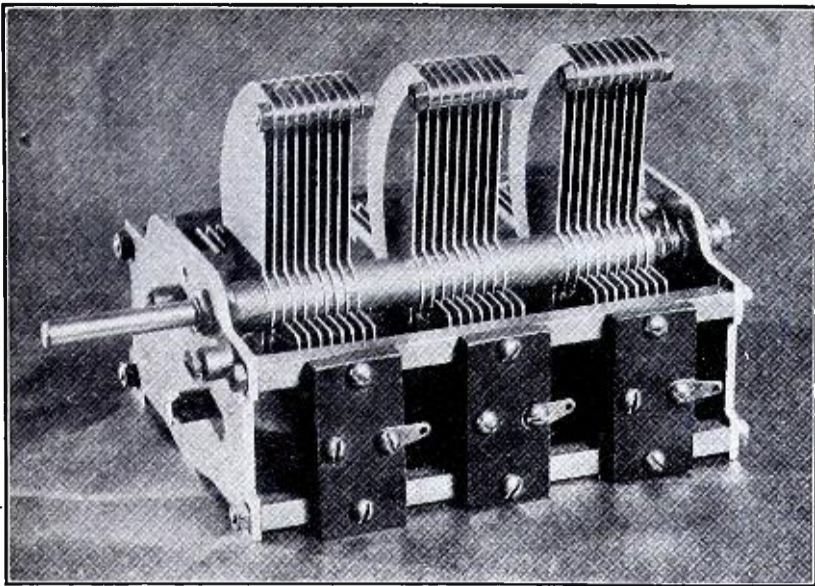
Two Ampere Acme Jr.

Operates from your light circuit by simply connecting plug. Charges "A" battery at 2½ ampere rate, "B" battery rate ¼ to ½ ampere, 120 volt "B" battery in series without grouping or paralleling.....\$10.50
Type A-2 for "A" batteries only..... 8.50

See Your Dealer Today

THE ACME ELECTRIC MFG. CO.
1501 Hamilton Ave. Cleveland, Ohio

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Everlasting Accuracy

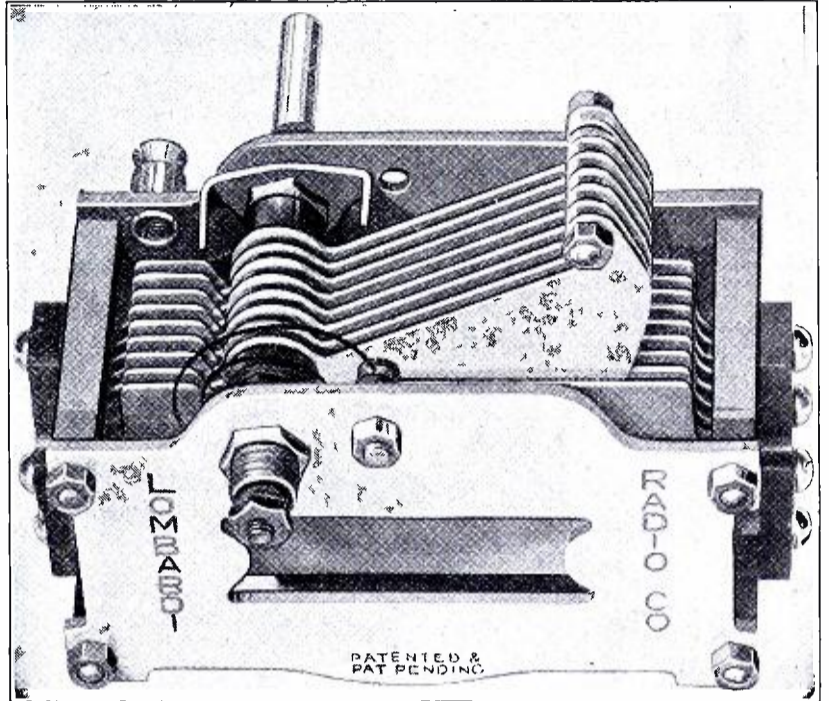
THE requirements for sharp tuning of short wave stations are completely and accurately met in our line of low loss condensers—designed and built with utmost precision, with straight line wave length or straight line frequency, and minimum loss and variation from rated capacity.

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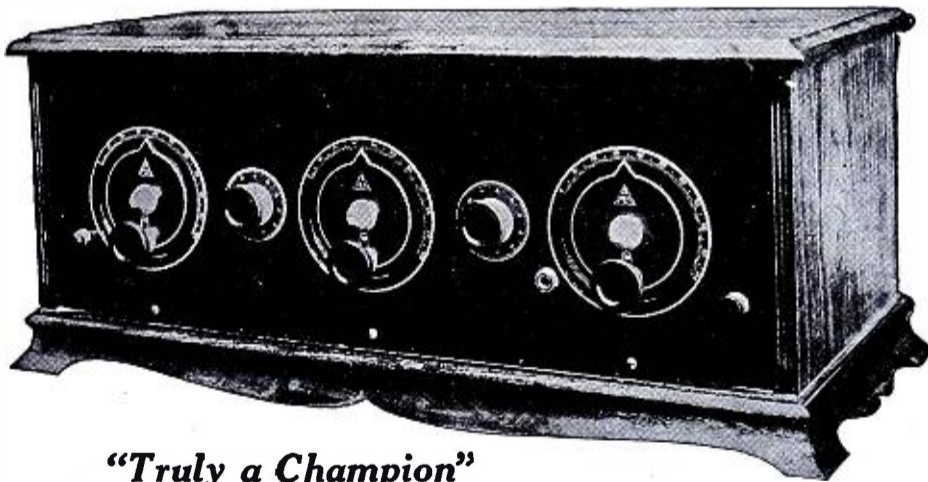
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67 Minerva Street Derby, Conn.

CHAMPION FIVE



The Greatest Achievement in Radio

"Truly a Champion"

Specifications

- Five Tube
- Tuned Radio Frequency
- Low Loss Straight Line Condensers
- Low Loss R. F. Transformers
- Sub Base Panel Construction
- Highly Finished Engraved Panel
- Standard Colored Cable for Battery Connections
- Beautiful Walnut Cabinets

Our new type absolutely LOW LOSS Radio Frequency Transformers insure you the most wonderful tone, volume, range and extreme selectivity, but so easy to tune that the most inexperienced operator can successfully handle it from the beginning, bringing in all stations clear and distinct, always on the same dial settings without any annoying squeals or noises.

You cannot appreciate good Radio Reception without hearing a CHAMPION FIVE.

Ask your nearest Champion Dealer to demonstrate one of our models to you, or write direct for descriptive literature.

Champion Prices Range from \$42.50 to \$400.00

CHAMPION RADIO COMPANY, 13223 Detroit Avenue, Lakewood, Ohio

DEALERS!! A Champion Contract for this season means profits to you. Write or wire for our dealers contract and discounts

Tell 'Em You Saw It in the Citizens Radio Call Book

2200-OHM
HEADSET \$1.89
PLUS POSTAGE

They embody precision in adjustment, accuracy of balancing, nicety of spacing.

Special alloy magnets, 4 in a cup.

No. 40 best enameled wire coils, triple strength leads.

5 ft. 24 strand cords, polarity indicating.

Extra light weight head-band.

Ear caps best insulating material, moulded to ear. Metal parts heavy nickel plated.

Loud, clear, permanent, with plenty of volume. Regular \$5.00 value.

Sent on receipt of price, \$1.89 plus 10 cents postage.

The Union Sales Co.
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Centralab Modulator
for
Volume Control



Designed for use in audio circuits with any transformers, with the Thordarson "Auto-former," or with any form of choke coil amplification, the Centralab Modulator provides noiseless control of tone volume, from a whisper to maximum. And it doesn't affect the tuning of your set in any way. Has a maximum resistance of 500,000 ohms. Takes the "rough spots" out of "locals" as well as smoothing out "DX." Price, \$2.00.

Radiohm for Oscillation Control

This device is used for plate circuit control of oscillation. It enables you to hold that sensitive regenerative position which just precedes the oscillation point, without distortion or loss of selectivity. Price, \$2.00.

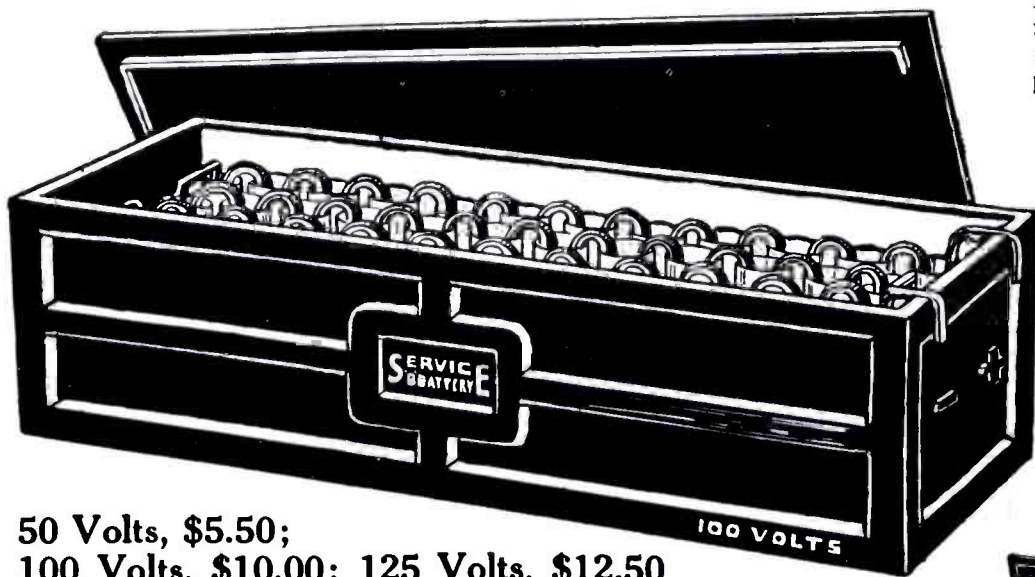
At your radio dealer's—or mailed direct.
Write for literature describing these
and other Centralab controls

CENTRAL RADIO LABORATORIES
26 Keefe Ave. Milwaukee, Wis.

Centralab

Service Rechargeable "B" Batteries

Indestructible, Rubber Cases



50 Volts, \$5.50;
100 Volts, \$10.00; 125 Volts, \$12.50

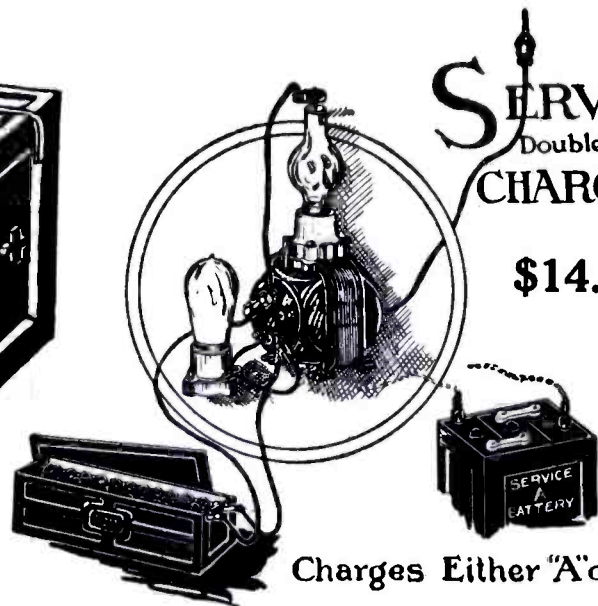
Quiet Operation

Negative and positive plates are cast in one piece, eliminating burned-on connectors, the potential noise-makers of radio batteries. Cells are spaced far apart, preventing inter-cell leakage and the hard-rubber case prevents shorting between terminals.

For three years SERVICE BATTERIES have maintained an enviable position in the minds of radio buyers who demand *quality* in addition to price.

SERVICE
Double-Duty
CHARGER

\$14.50



Charges Either "A" or "B"

No more changing of connections and paralleling of batteries. This charger charges anything from 22½ to 125 volts in series. Charging rate is controlled by ordinary lamp.

COMPLETE with battery leads, resistance lamp socket and leads, extension cord, and 2-amp. rectifying bulb..... **\$14.50**

Service "A" Batteries
Indestructible rubber case.
Two year guarantee.
6 volt, 100 amp. hr. **\$14.00**
6 volt, 120 amp. hr. **\$16.00**

Service Battery Co.
704 East 102nd Street Cleveland, O.

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RELIABLE RADIO RECEIVERS

"Built for Excellence—Tested for Accuracy"

THE
RELIABLE PARTS
MANUFACTURING
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RADIO PRODUCTS

CARTER

RADIO PRODUCTS



Quarter Size Vernier Control Rheostats, 3, 6, 10, 20, 25 and 30 ohms\$1.75

"IMP" Jack, 30c

Quarter Size Potentiometer 200 or 400 ohms, \$2.00



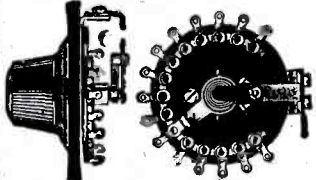
Half Size "IMP" Rheostat\$1.00
3, 6, 10, 15, 20, 30, 40 and 50 ohms.
"IMP" Potentiometer 200 or 400 ohms\$1.25



New Fixed Resistance Unit, 3, 4, 6, 10, 15, 20, 25 ohms, 15c each



"IMP" Plug.....15c



Inductance Switches
15 Contact Single Arm \$1.50
15 Contact Double Arm 1.60
9 Contact Single Arm 1.35



"FLAT" Plug.....75c



New "IMP" Loop, \$7.50

Year after year the sale of Carter radio products increases. Insist on genuine Carter products, for the "just as good"—and "just the same"—may not be here tomorrow. As Lincoln said, "you can't fool all of the people all of the time."



"TU-WAY" Plug.....80c



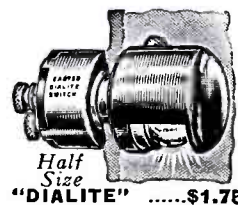
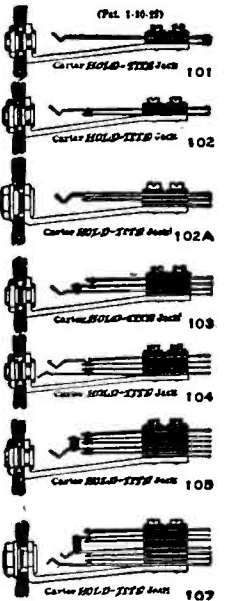
"ONE-WAY" Plug.....50c



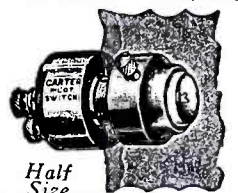
Portable Jack.....75c



Jack Switches, 4 Combinations of Springs, \$1.00 to.....\$1.80



Half Size "DIALITE"\$1.75



Half Size "IMP" Pilot Switch\$1.50



"IMP" Battery Switch65c



Detector



Jack Name Plates5c



Look Switch.....75c



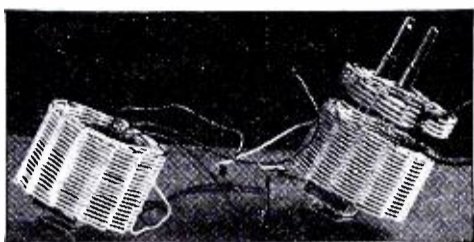
Receptacle Jack\$1.00

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New Roberts' "Supercoils" using Capacity Feed Back



Higher Amplification
Zero Coupling

Per Set Complete **\$7.00**
P. P., C. O. D. if desired

Mail Postcard for Details

PERFECTION RADIO MFG. CO.
24th and Race Streets
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NOW \$3.50 C.O.D.

Direct from factory to you

THE RABAT SENIOR
4200 MIL. AMPS. CAPACITY

A Two Year Guarantee

We guarantee this battery to have a capacity of 4200 mil-amps. at a 30 mil-amp. per hour discharge. It will operate on any set from one to nine tubes, and will give service from four to eight weeks on a five tube set without recharging.

More volume, clearer and more distinct reception and greater distances are assured by using Rabat Senior Batteries. Batteries are shipped out fully charged and ready to use when received.

Built in Two Sizes:

12 cell, 24 volt size.....\$3.50
24 cell, 48 volt size..... 7.00

Rabat Super Charger for "B" Batteries.....\$ 3.00
Rabat Double Duty "A" & "B" Charger..... 11.00

THE RADIO RABAT CO.
1253 Oregon Avenue Cleveland, Ohio



-it's in the Tube

Your receiving set can be no better than its tubes. CECO Tubes give maximum results in clarity of tone, rich volume and long life.

Our charted test (results confirmed by laboratories of national reputation) PROVE CECO TUBE SUPERIORITY—as detectors, as amplifiers.

Buy CeCo Tubes whether your set takes one tube or eight.

Every CeCo Tube backed by a guarantee that's backed by a company of established reputation and responsibility.

A complete plant, modern in all respects, with an experienced technical staff, is devoted exclusively to the manufacture of perfect tubes under the registered trade mark "CeCo."

Insist on "CeCo" Tubes for Results. Approved by Recognized Authorities.

Now ready! CeCo Tubes with new type Long PRONG BASES. Also, Power Amplifier Tubes, E (Dry Cell Type), F (Storage Battery), for last stage of Audio Frequency.

Set manufacturers: Ask about our SPECIAL MATCHED tubes. Trade supplied only through jobbers.

C. E. Mfg. Co., Inc.

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Providence, R. I.

C.E. Mfg. Co. Plant

Laboratory where tubes are tested

CECO TUBES

Tell 'Em You Saw It in the Citizens Radio Call Book

A revolutionary step forward~

\$9.75

Complete, nothing else to buy.
 Operates at maximum efficiency at all times on either direct or alternating current, any frequency. Noiseless—no hum.
 Delivers unlimited current to any receiving set, regardless of number of tubes.
 Delivers 100 volts to any set.
 Cost of operation less than 50c a year.

FERBEND "B" ELIMINATOR

Now you can supply plate voltage to your Radio Set at a price scarcely higher than new "B" Batteries! Your electric light socket and the new "Ferbend "B" Eliminator furnish the permanent means of efficient "B" current supply for any set. No need for you to pay more than \$9.75 for a "B" battery eliminator for Ferbend guarantees theirs to be equal or superior to any on the market *regardless of price*. Our price was fixed with the interests of the radio buying public in mind. The result is efficient and permanent "B" current now placed

It lasts indefinitely.
 All parts are specially designed and manufactured by us for this purpose only.

Unconditionally Guaranteed

to be equal or superior to any eliminator on the market, regardless of price.



FERBEND Wave Trap
 This company also manufactures the famous Ferbend WAVE TRAP—the instrument which has been widely imitated but never equalled. It is the only original and genuine.

Within Reach of All

The price of this remarkable new unit is spectacular in more ways than one. Besides saving you from \$15 to \$50 it is amazingly low considering the quality and superiority. Surely it marks a revolutionary step forward in radio. Equip your set NOW with this marvelous instrument, and be convinced.

Ask Your Dealer, or Send Direct

Until nation-wide distribution is completed it is possible that your dealer hasn't stocked the Ferbend "B" Battery Eliminator as yet. So you will not have to wait, we will make shipment direct to you upon receipt of \$9.75, or C.O.D., if desired. Remember, *superior results are guaranteed* or your money back. Be one of the first to own and use the *Ferbend Maxmin "B" Battery Eliminator*. Use the coupon NOW!

FERBEND ELECTRIC COMPANY

426 W. Superior St.

Chicago, Illinois

FERBEND ELECTRIC CO.
 426 West Superior St., Chicago
 Send at once. I am enclosing \$9.75.
 Send C. O. D.
 Send Literature.

Name.....
 Address.....
 City.....
 State.....

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No Hum— No Distortion!

AT LAST it's here! A "B" battery eliminator that is positive in action, will not hum or distort, and requires no attention once it is installed.

Aero B is a perfected "B" battery eliminator of the rectifying tube type, developed and perfected by the builders of the famous radio equipped Martin Bombers.

Aero B furnishes a steady, dependable plate current for *all* types of sets. It insures consistently good reception—the best of which your set is capable—with clear, full-toned volume.

The amplifier voltage on Aero B is variable from 90 to 150 volts and detector voltage from 0 to 75 volts. Aero B is equipped with four taps so that it can also be used with power tubes and resistance coupled amplification.

Aero B is simple, compact, sturdy, and attractive. It is easily attached to any set, and, when attached according to instructions will actually improve the set's reception.

They are sold on a "performance guaranteed" basis, at a cost of \$42.00.

See an Aero B at your dealers—if he hasn't them in stock write us.

The Glenn L. Martin Company
Radio Division
Cleveland, Ohio

AERO B
B BATTERY ELIMINATOR



TRADE MARK

RETAIL PRICE

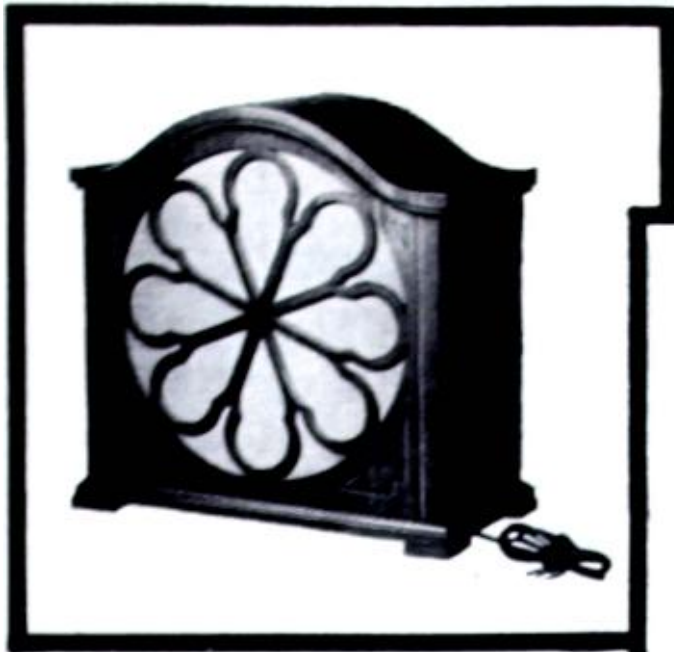
\$42.00

*Sold only through the
best recognized
jobbers*

Tell 'Em You Saw It in the Citizens Radio Call Book



SECTION of the New Acme FREE-EDGE CONE Loud Speaker, showing the two free-edge cones



THE "Cabinet Model" of the new Acme "double free-edge cone" loud speaker. A charming piece of furniture as well as an exact reproducer of the human voice or musical instrument. Price \$35.

THE "Round Model" of the new Acme "double free-edge cone" loud speaker is illustrated below. Price \$25. Identical in its exactness of reproduction with the "Cabinet Model."



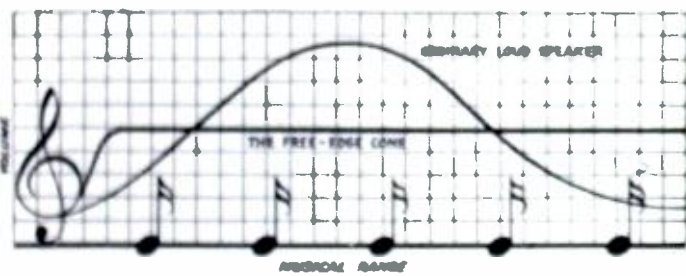
After 5 years and 256 experimental models—ACME is proud to put its name on this Loud Speaker

HERE in our laboratories at Cambridge, our radio engineers and sound experts have been at work, ever since broadcasting started, striving to perfect an ideal type loud speaker.

Two years ago, after having made, studied and tested 203 models, we obtained a very good horn type loud speaker. But our radio

and sound engineers determined to go even further. After 23 months more of experimenting; making and testing 53 additional loud speaker models they at last developed the ACME Free-Edge Cone Loud Speaker.

As far as it is humanly possible to judge we feel certain that we have the finest loud speaker ever produced. This new type loud speaker does away with inherent resonance common in other types. Because of this improvement the new Acme now brings out the low notes and soft overtones never before obtainable in any loud speaker.



NOTE the equal volume over the musical range with the free-edge cone in contrast to the ordinary loud speaker.

The latest development in radio reproduction is the cone type loud speaker, but the double Free-edge Cone is a further advancement because resonance is eliminated and faithful reproduction obtained over the whole musical range.

Claude Hains

President

ACME APPARATUS COMPANY

Send for the new edition of our famous book, "Amplification without Distortion," telling the why and the how of perfect radio reception.

ACME
~for amplification

ACME APPARATUS COMPANY,
Dept. 06, Cambridge, Mass.

Gentlemen:

I am enclosing 10 cents (U. S. coin or stamps) for your booklet "Amplification without Distortion."

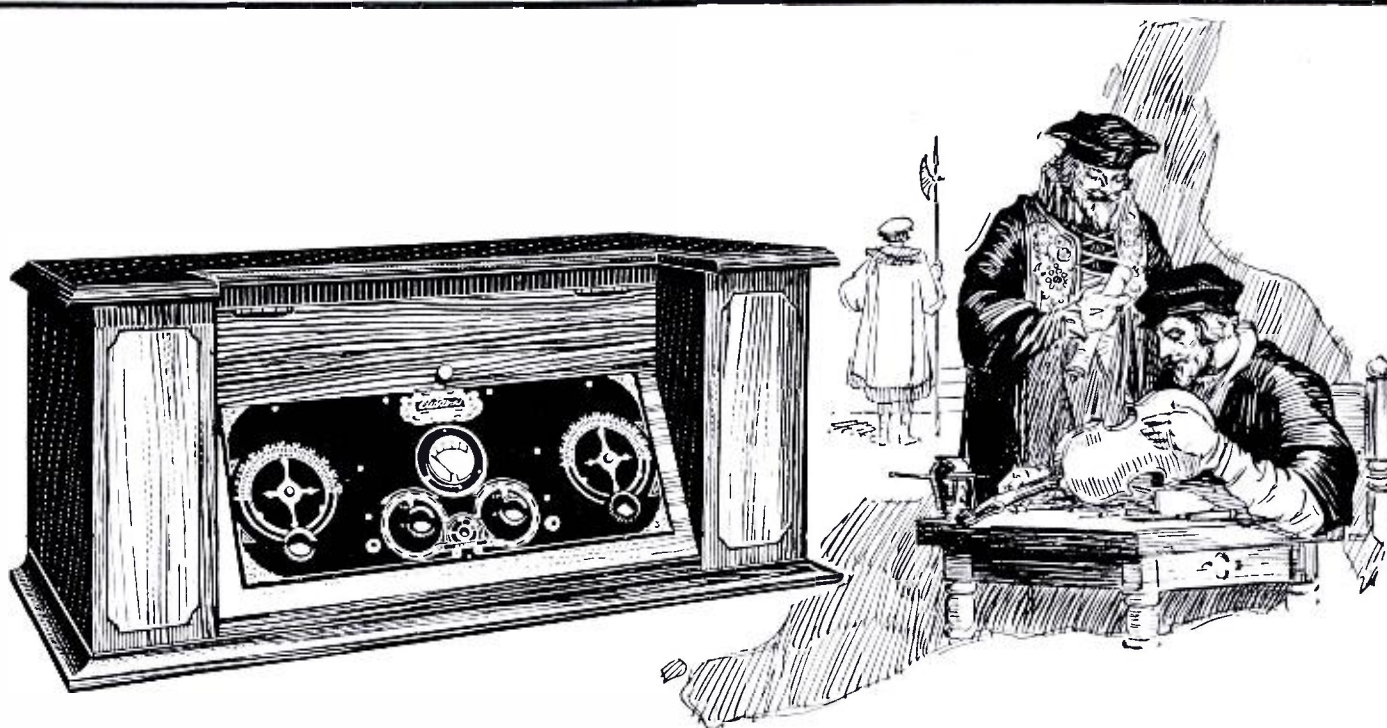
Name

Street

City

State

Tell 'Em You Saw It in the Citizens Radio Call Book



As the Old Masters would have made it!

THE spirit of old-time musical instrument makers pervades the Cleartone factory. Here every set is built as a masterpiece would be built. Quality is never sacrificed to quantity. No set is released until it reproduces with perfect tone and fidelity.

But perfect tone is not the only virtue of the Cleartone seven-tube set, Model 90. It possesses marked convenience because it will operate anywhere without aerial or ground. This solves the problem of the apartment dweller who can't erect an antenna. It uses dry cell batteries, and is thus an ideal outfit for set owners who have no charging equipment.

Its acute selectivity, its range and volume, constantly bring surprises and new pleasures to the owner. The cabinet, too, is designed exquisitely.

Model 90
Seven tube
Complete
\$185

To know the pleasures of a Cleartone Seven Tube Set after trying ordinary sets brings a sense of satisfaction that always attends the discovery of something you have long sought. Let your dealer arrange a demonstration for you.

Price, \$185.00, completely equipped, including UX tubes.

Dealers: Model 90, at this price, is an extraordinary value. Easy to demonstrate. Easy to sell. The perfect proposition for the great apartment building and farm markets. Write for our helpful sales plan.

The Cleartone Radio Company

2431 Gilbert Avenue

Cincinnati, Ohio

CLEARTONE Complete
RADIO SETS

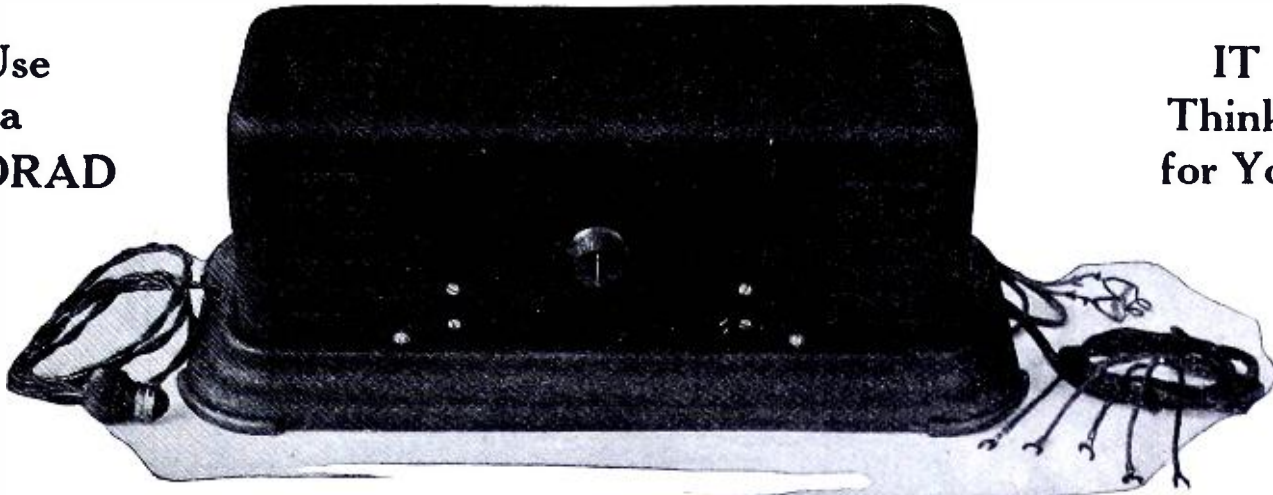
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STORAD

AUTOMATIC POWER UNIT

Controls Both "A" and "B" Power Circuits

Use
a
STORAD



IT
Thinks
for You

"The Most Complete Unit on the Market Today"

The Storad Automatic Power Unit simplifies your power problem. Put one on your set, connect it with the house lighting circuit and forget about both "A" and "B" circuits. Your set switch is all you operate.

The Storad controls the "B" circuit automatic-

ally, as it contains a complete "B" power unit. The Storad contains an automatic "A" Battery charging device for use in connection with your present Storage "A" Battery, or with a special "A" Battery designed for use with this machine.

Write for Complete Information About the Storad Power Unit

STORAD RADIO BATTERIES



STORAD "A" Battery

Exceptionally well built full capacity Radio "A" Batteries. Made with best quality rubber case and non-corroding rubber terminal nuts. Storad Radio "A" Batteries are furnished in three sizes: R3—60 amp. hr.; R4—80 amp. hr.; R5—100 amp. hr.



STORAD "B" Battery
Made in Two Sizes

No. 4548—4500 milleamp. hr.,
48 volt

No. 4524—4500 milleamp. hr.,
24 volt



STORAD "B" Battery Charger

A chemical rectifier that will charge 48 volts of "B" Batteries at a time. Inexpensive to operate. Complete instructions with each charger. Ask for part No. 4R.

*Insist That Your Dealer Supply You with **STORAD** Products*

THE STORAD MANUFACTURING CO.

(Formerly The Cleveland Engineering Laboratories Co.)

1401 West 25th Street

Cleveland, Ohio

Tell 'Em You Saw It in the Citizens Radio Call Book

Progress

We take pride in meeting and serving you in our new home.

However, any pride we may feel in our growth and expansion is overshadowed by the thought that this progress has been due to the whole-hearted support of our dealers. This support has been the basis of our success.

We have chosen the lines listed below with great care. Every item has been correctly designed and manufactured, backed by national advertising to help you sell it and sold with an unconditional guarantee of satisfaction to our dealers and their customers.

AALCO	DAVEN	JEWELL
ACCURANTUNE	DUBILIER	JONES
ACME	EBY	KESTER
AERO	EKKO	MADISON-MOORE
ALL-AMERICAN	FADA	MATHIESEN
ALLEN-BRADLEY	FARRAND	PHILCO
BALKITE	FIAT	REMLER
BELDEN	FORMICA	SANGAMO
BENJAMIN	FRANCE	SIGNAL
BRANDES	FROST	STERLING
BURGESS	GENERAL RADIO	TUNGAR
CARTER	GILFILLAN	WALBERT
CUNNINGHAM	HAFNER	WESTON
CUTLER-HAMMER	HOWARD	X-L

Service is our aim, therefore we carry an ample diversified stock. This insures prompt delivery of every order, be it for a complete Receiver, Accessory or some "hard to get" part.

Dealers: Write for Catalogue

Phone
Harrison
8867

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LEONARD LYNN RADIO CO., Inc.
302 South Wells Street Chicago, Illinois

Tell 'Em You Saw It in the Citizens Radio Call Book

Build your own Neutrodyne Receiver

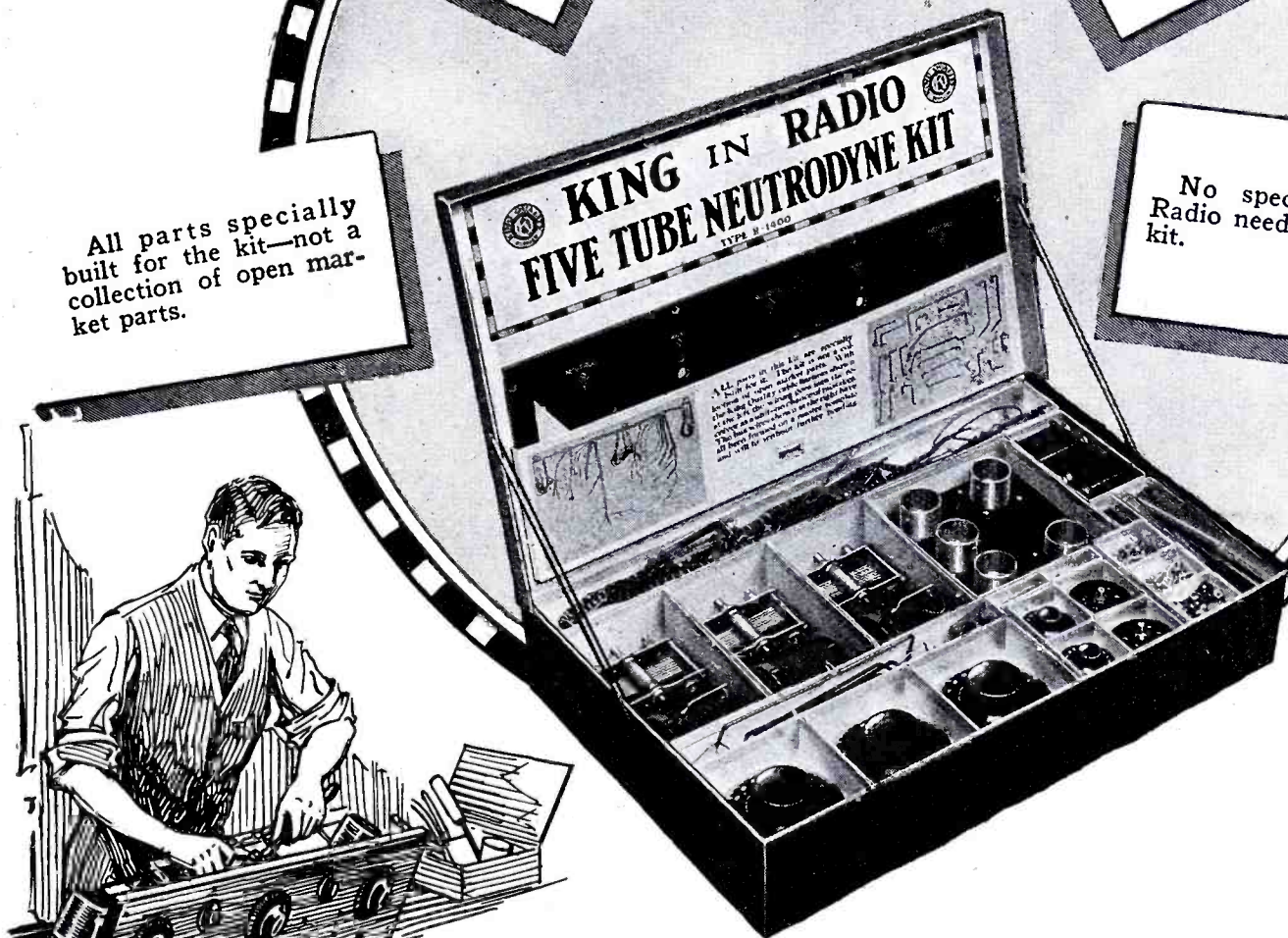
All wiring goes into the set as a unit—no chance for mistakes. Jacks soldered in place.

Templates and full instructions make the kit easy to assemble.

The kit is complete—even the bus wires cut to length and bent to shape.

All parts specially built for the kit—not a collection of open market parts.

No special knowledge of Radio needed to assemble the kit.



This kit gives you a Neutrodyne Receiver of high quality, plus the fun of building it

King Neutrodyne Kit R-1400 makes it easy to build a Neutrodyne Receiver of high quality—a receiver which will be appreciated everywhere for its tone, its selectivity, its performance in every way.

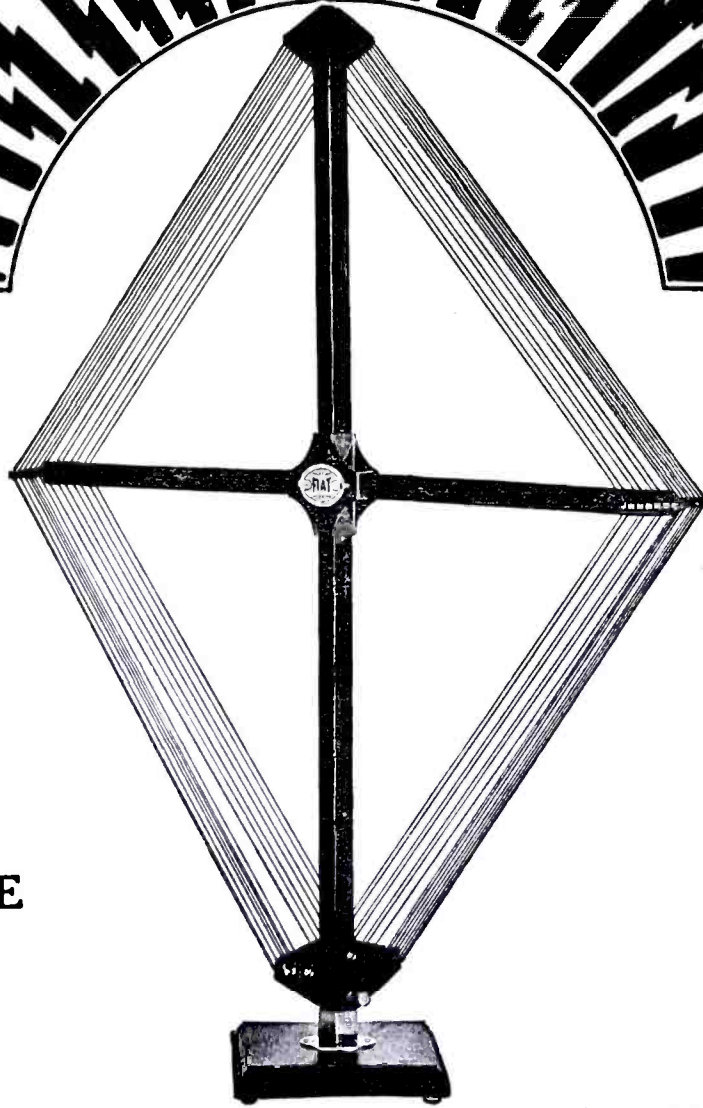
It has all the advantages of Neutrodyne. No uncertainty in tuning—it brings in the station you seek every time, no "fishing around." The reception is remarkably free from "squeals," "howls" and other distortions—every word and note comes in clearly and distinctly. The receiver is easy to operate, always dependable.



KING QUALITY PRODUCTS, Inc., Buffalo, N.Y.

KING IN RADIO

Tell 'Em You Saw It in the Citizens Radio Call Book



**TYPE
A**

**PRICE
\$12.50**

“Remarkable Efficiency Combined With Unusual Beauty”

The trend in radio is toward the use of the loop antenna for reception. This seems logical when its advantages over the outdoor antenna are considered.

Selectivity is an inherent property of the loop which enables the selection of stations separated by narrow wave bands and also the elimination of interference from powerful local stations. Greatly reduced static interference is due to its being directional and offering far less medium for picking up stray and static currents. Consistent performance, distance with volume and improved tone are the outcome of these properties.

The FIAT exemplifies this combination to the utmost. Beauty and symmetry, built into the FIAT together with high efficiency, place it above all others. Numerous letters from satisfied users as to the excellent performance, beauty and convenience of the FIAT loop antenna are its greatest recommendation.

Captain H. J. Adams, Signal Corps, U. S. A., enroute from New York to Honolulu, H. I., via the Panama Canal aboard the S. S. Cambrai, using a FIAT loop with a St. James supertetrodyne, reported good reception of U. S. stations when off the southern coast of Honduras, a distance of over 3,000 miles, under unfavorable conditions. The following is quoted from an unsolicited letter by Capt. Adams:

“... the FIAT Loop is, I know from actual test on board ship, far more sensitive than several other well known makes that I took along or were in use on other sets on the ship. It also appears to be much more directional.”

The FIAT is built in genuine walnut or mahogany, highly finished. It is guaranteed to meet with complete satisfaction.

The standard model is arranged for use with a .0005 M.F. condenser and has a center tap for circuits requiring this connection. Suitable for use with such sets as the following: St. James, Victoreen, Madison-Moore, Remler, Ultradyne, Acme and Erla Reflex, Oriole, Grimes, Mu-Rad M.A.-13 and 15, Marathon, Cleartone, Monarch, Silver-Marshall and Haynes-Griffin. Browning-Drake and Neutrodyne sets can be easily converted to loop operation by a slight circuit modification with surprisingly good results (circuits upon request).

Laboratory Test

Self inductance 0.00019 HENRIES
Distributed capacity 17.38 M. M. F.
Natural wave length 108 METERS

Resistance at 1,000,000 cycles 8.8 OHMS
Wave band covered when shunted by .0005 M. F. condenser 180-600 METERS

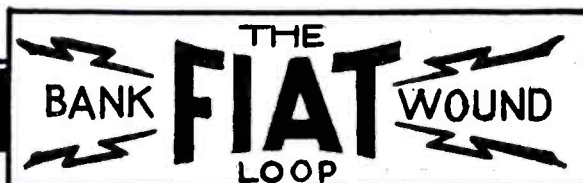
Price Twelve-Fifty West of Rockies, Thirteen Dollars. Canadian and Foreign Prices on Application

Designed and Manufactured by

RADIO APPLIANCE LABORATORY Dept. “A” 4884 NO. CLARK ST. CHICAGO, U. S. A.



Patd. Oct. 27, 1925
Small folded size convenient for portable sets.



The New **MODERN** *Symphony* **No. 740**
TRANSFORMER
AUDIO FREQUENCY



When **MODERN** Symphony Transformers replace the ordinary type of transformers in your set, the effect is as if a "fourth dimension" had been added to the music. The curve of the new Symphony is high at the lower frequencies, quickly reaches the top, where it is strictly flat, insuring even volume of all notes and overtones.

Turn ratio 4 to 1; core 41/64 inches square; steel 4% high silicon; coils, layer wound with No. 40 wire, vacuum impregnated and further sealed on end against moisture; primary impedance exceptionally high. All transformers tested at 500 volts for breakdown. Complete shielding eliminates all interstage coupling.

Ask your dealer or write direct for complete information.

MODERN ELECTRIC MFG. CO.
Manufacturers of Standard Radio Equipment
TOLEDO, OHIO

Tell 'Em You Saw It in the Citizens Radio Call Book

To Build Finer Sets —Always Precise Instruments



Precise Syncrodenser
Prices, \$4.00-\$4.50



Precise Bracket No. 99
Price per pair, \$2.00



Precise Filtoformer
Price \$4.50



Precise Super-Multiformer
Four accurately matched transformers
in one. Price, \$20.00



Precise Super-Size No. 480
Audio Transformer
Two ratios—5 to 1, 2½ to 1.
Price, either ratio, \$7.50



Precise Comet
Ratio, 3½ to 1
Price, \$3.25

Set-builders may come and set-builders may go, but PRECISE goes on as long as discriminating set-builders demand quality parts.

There is a PRECISE Instrument to meet every set-builder's needs. The PRECISE Line includes the most complete line of quality transformers in the world. The new monster PRECISE No. 480 Audio Transformer brings

in a range of tones and overtones heretofore unknown to radio.

Hear the Precise Syncrodenser perform in any well-built set. It combines straight-line frequency and straight-line capacity so as to get a uniform station separation at all wave lengths. There is no crowding of stations.

Write us for further information on PRECISE Instruments.

PRECISE MANUFACTURING CORPORATION ROCHESTER, NEW YORK

BRANCH OFFICES

126 Liberty Street
New York City
205 W. Harrison St.
Chicago, Illinois

821 Market Street
San Francisco, Cal.
454 Builder's Exchange
Minneapolis, Minn.

1127 Pine Street
St. Louis, Mo.
701 A. O. U. W. Bldg.
Little Rock, Arkansas

Canadian Distributors: Perkins Electric, Ltd., Toronto—Montreal—Winnipeg

Quality Merchandise at REAL PRICES

Our FREE Big New Catalog is just off the press. Send for it and see the enormous savings we offer on all your radio needs.

Hundreds of standard quality parts, sets and kits are shown in this big new catalog at the lowest prices in America. Write today.

We are an old reliable house and specialize in Radio only. The name of Western Radio Mfg. Co. stands for satisfaction from Coast to Coast.

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Radio
Big
Catalog
Mfg. Co.**

Only the finest advertised merchandise is shown and is backed by an absolute guarantee of satisfaction or money back. Write for FREE Catalog NOW.

134-136 W. Lake St.
CHICAGO, ILL.

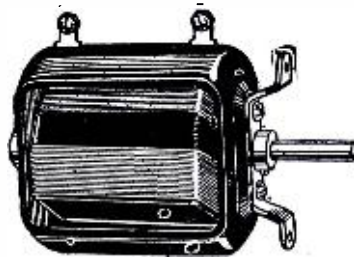
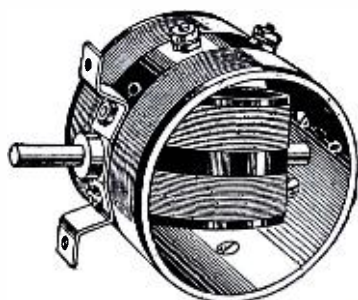
Tell 'Em You Saw It in the Citizens Radio Call Book

OLDEST EXCLUSIVE RADIO JOBBER IN THE MIDDLE WEST

CHI-RAD

Recommends the Following
NEW EQUIPMENT *IN STOCK FOR IMMEDIATE DELIVERY*

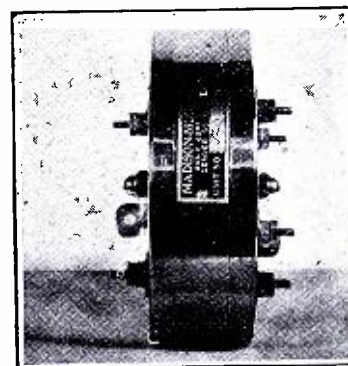
General Radio Co. Apparatus



Type 268 Variocoupler, designed to cover a range of wave-lengths from 150 to 600 meters. Stator coil has but a single tap. Simplifies installation, operation, and reduces losses. Bearings are accurate and very smooth running. Stator and Rotor forms are of genuine moulded bakelite wound with green silk covered wire. Price, \$2.75.

Type 269 Variometer. Compact and efficient. Has a maximum to minimum inductance range of 660 to 60 microhenries. Stator and Rotor forms are of moulded bakelite wound with green silk covered wire. Soldering lug provided for use in circuits requiring split variometer connections. Price, \$5.00.

Madison-Moore Parts

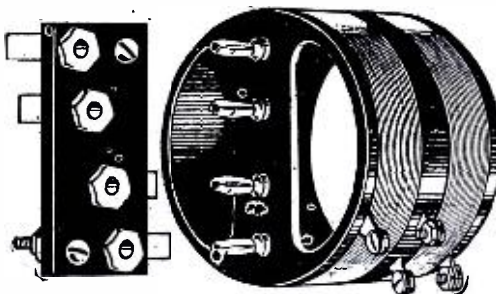


Complete parts to build the Madison-Moore Superheterodyne including the new Madison-Moore Intermediate Frequency Transformer in stock. Write us for prices and descriptive bulletin.

Type 365 Rectifier Transformer and Type 366 Filter Choke for use in the new General Radio Company's "B Battery Eliminators." Complete parts for constructing the above are in stock. Write us for bulletin 923-R for complete description.

Type 365 Rectifier, \$10.

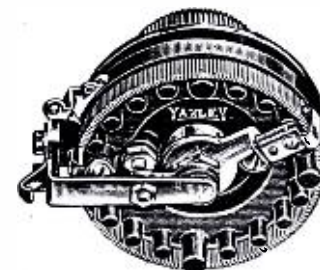
Type 366 Filter Choke, \$10.



Type 277 Low Loss Coils. Models A, B, and C are inductance coils with single windings tapped at centre covering various wavelength ranges from 50 to 600 meters. Model D has primary and secondary winding very closely coupled. Models C and D may be used with excellent results as oscillator and antenna coupling coils in superheterodyne circuits. Model D may also be used in sets employing tuned radio frequency.

- 277-A 50 to 150 meters.....\$1.25
- 277-B 100 to 300 meters..... 1.25
- 277-C 200 to 600 meters..... 1.25
- 277-D Coupling Coil, 200 to 600 meters 1.50
- 277-D 1/2 Coupling Coil, 100 to 300 meters..... 1.50
- 277-D 3/4 Coupling Coil, 50 to 150 meters..... 1.50
- 277-U Unwound Coil Form..... .75
- 274-A Mounting Base with 3 sockets90
- 274-B Mounting Base with 4 sockets 1.00
- 274-C Mounting Base with 2 sockets75
- 274-P Contact Terminals, each.. .15
- 274-J Jacks, per pair..... .25

Yaxley Parts



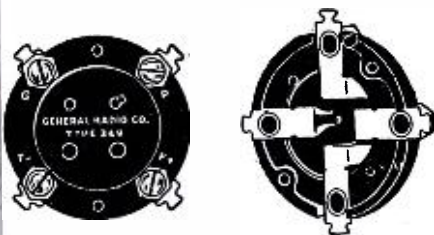
We carry complete stock of the well-known Yaxley parts for immediate shipment. Write us for descriptive bulletins and prices.



Type 285 Audio Amplifying Transformers. They provide a high and even amplification of all tones common to speech, instrumental and vocal music. Completely shielded in metal case, with black japanned finish. Accessible terminals individually marked for proper connections.

Type 285, Amplifying Transformer, ratio 1 to 6. Price \$6.00.

Type 285-L, Amplifying Transformer, ratio 1 to 2. Price \$6.00.



Type 349 Tube Socket, constructed especially for UX base tubes. Genuine moulded bakelite. Contact blades are of nicked phosphor bronze and make a wiping contact on both sides of the four tube prongs. Price, 50c.

We have all the parts in stock for the new "Radio Broadcast Universal Receiver" (January, 1926). Write us for prices.

CHICAGO RADIO APPARATUS CO.

Radio Jobbers Exclusively Representing

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|---------------------------------------|--------------------------------------|--|---|--|---|
| General Radio Co. Complete Line | Corning Glass Works Pyrex Insulators | Fleron-Insulators | Kurz-Kasch Co. Dials | Rel Low-Loss Tuners | Vesta Storage Batteries |
| Benjamin Electric Mfg. Co. Sockets | Dubilier Condenser & Radio Corp. | Formica-Insulation Co. Sheets, Tubing | Mica Insulate Co. Tubing | Remler Mfg. Co. Condensers, Transformers | Western Electric Co. Loud Talkers, Tubes |
| Burgess Battery Co. "B" Batteries | Dubilier Condensers | Jewell Instrument Co. Jewell Meters | Mu-Rad Laboratories Receivers | Reichmann Co. Do-Nut Coils Thorola Talkers | Weston Electric Inst. Corp. Meters, Plugs |
| Allen D. Cardwell Mfg. Co. Condensers | H. H. Eby Mfg. Co. Eby Binding Posts | Jones Multiplug | National Co. Condensers, Coils, Dials, Regenerator Kits | Thordarson Transformers | Yaxley Mfg. Co. Complete Line |
| | Fiat Loops | Kellogg Switchboard & Supply Co. Sockets, Fixed Condensers | | | |

Dealers—Write for Our Loose-Leaf Catalog

415 S. Dearborn St., CHICAGO, U. S. A.

Tell 'Em You Saw It in the Citizens Radio Call Book

Tube Rejuvenator

Makes old tubes new!



\$3.65 Why pay \$7.50?

Pays for Itself Immediately

Keep your radio tubes like new instead of throwing them away. Do it yourself with the wonderful D-X Tube Rejuvenator and insure for your set satisfactory reception throughout the year. Especially made for home use, to keep radio tubes at top efficiency and to greatly increase their length of useful service.

Weak tubes mar reception just like weak batteries, besides being a drain on the batteries and causing them to run down quickly. Especially beneficial for summer use after operating your set the winter months. Increases the pleasure of radio reception, adds to volume, increases range and selectivity. Brings back the life in old tubes in a few minutes. Just attach to any convenient electric light socket, either A. C. or D. C. 110-120 volts. Used once a month it will add months, even years, to the life of your tubes. It's simple and easy. Anyone can use it.

Costs but little more than a new tube, yet saves all your tubes for months and even years. Pays for itself the first time you use it. You can even use it to rejuvenate tubes for others and make money so doing. Useful for set owners, set builders, dealers and all radio fans.

Complete with simple directions for operation. Each D-X Rejuvenator carries with it an absolute guarantee of satisfaction. Guaranteed to do the work or money cheerfully refunded.

Made in two models for type 201A tubes or 199 tubes. State which you desire. Order direct from this advertisement and save money during this special offer. Why pay \$7.50? Order today—NOW—and know the real satisfaction of keeping your tubes lively at all times.

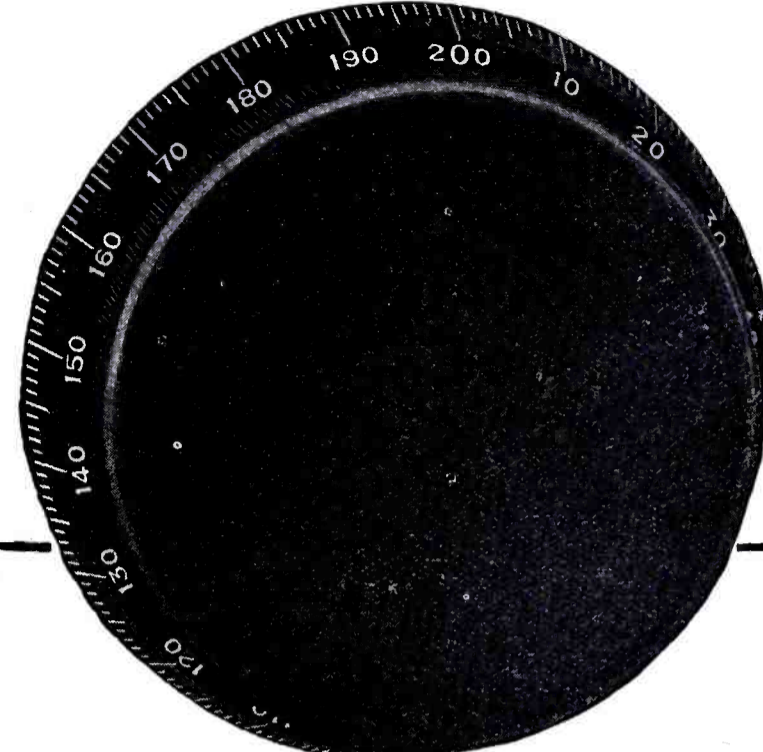
MAIL THIS COUPON TODAY

D-X RADIO ENGINEERS,
Dept. CR, 1010 Hearst Sq., Chicago.

Dear Sirs: Please send me your guaranteed D-X Tube Rejuvenator, postpaid, as per your special offer. Enclosed is \$3.65 in full payment. Or, if you wish, send no money. Pay postman on arrival plus postage.

Your Name.....
Street or R.F.D.....
Town..... State.....
Please check type desired—201A type.....199 type.....

D-X RADIO ENGINEERS
Dept. CR 1010 Hearst Square Chicago, Ill.



Separate All Stations Evenly

It is not necessary to tear down and rebuild your present set in order to separate the stations evenly on the dials. By merely substituting Rathbun Straight Line Frequency Converters for your present dials—you will be able to secure real S. L. F. tuning.

Here is a variable vernier control that provides a ratio of 50 to 1 down where the stations are crowded—gradually and smoothly decreasing in uniform ratio over the full 360° of the dial. The stations are evenly separated around the entire circle. There are only two moving parts—a cam and a lever. The action is dependable and accurate—without a particle of backlash. Easier tuning and immeasurably better logging are obtainable from straight line capacity condensers with these new converters.

Remember that we build the Rathbun Single Hole Mounting Condenser with genuine Bakelite ends. This year's models are enclosed with transparent pyralin dustbands which preserve their high efficiency for life. They are small, light and rugged—always reasonably priced.

Ask your dealer for Rathbun Straight Line Frequency Converters. He has them in stock or will get them for you promptly.

Price \$3.50

Rathbun Manufacturing Company
Incorporated
Jamestown New York

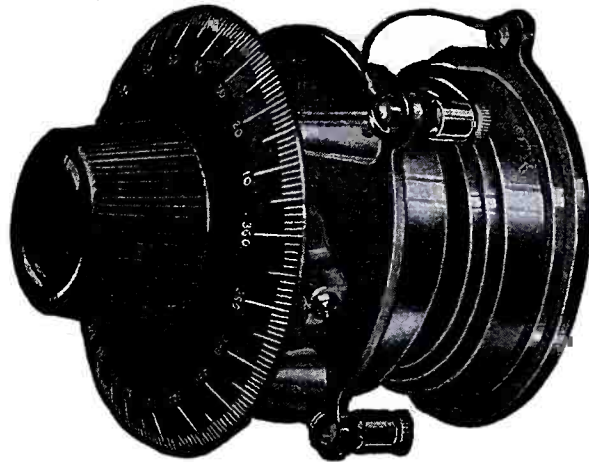
Complete and equal separation of stations over the entire dial with the Rathbun Straight Line Frequency Converter.

Stations indicated in kilocycles and wavelengths showing crowding with an ordinary capacity condenser.

Stations partially separated and tuning slightly improved with a Straight Line Wave Length Condenser.

Practically even separation over half the dial with a Straight Line Frequency Condenser.

Tell 'Em You Saw It in the Citizens Radio Call Book



Patents Pending

At Last! A New and Improved Type of Condenser!

A revolutionary improvement in condenser design has recently been evolved by a well known engineer, whose success in the condenser field is universally recognized.

The Furnell Condenser is a straight line, low-loss unit, unusual in design, and incorporating features which are not to be found in any other condenser. It has no projecting plates, gears or racks, to get out of alignment—to become loosened or jammed from jars and rough usage—to be warped by heat from vacuum tubes. No soldered parts. No washers. Nothing to wear or get out of order.

Through its unique design, the Furnell Taper Coil Condenser overcomes losses so commonly found in other types of condensers. It distributes the stations

evenly over its 360 degree dial, affording a simplicity and sharpness of tuning heretofore impossible. The entire tuning range is absolutely usable, affording almost a true vernier adjustment.

With two stations of known wave length located on the Furnell dial, other stations separated by the same number of meters are the same number of degrees apart on the dial. As a result, a set equipped with the Furnell dial may be calibrated with the highest degree of accuracy.

Radio experts praise the Furnell Condenser because it represents the finest condenser workmanship available today—because it gives to radio reception a degree of tuning perfection heretofore unattainable. Made in various capacities, with 4-inch dial.

If your dealer cannot supply the Furnell Condenser, write us giving his name, and we will see that you are promptly supplied.

Write for Interesting Folder

JOBBERS and DEALERS—National Advertising soon to appear in leading fan magazines and newspapers, will make Furnell Condensers known to millions of buyers everywhere

Jobbers wishing to secure protected territory write

FURNELL

360° TAPER COIL

CONDENSERS

Set Mfrs. interested in testing the Furnell write

THE FURNELL MANUFACTURING CORPORATION

Main Offices, 889D Broad Street, Newark, N. J.

Tell 'Em You Saw It in the Citizens Radio Call Book

Use the Condenser That's Made For the Job

The Filter Condenser

For "B" battery eliminators

Specially designed for the high voltages developed in the filter circuits of "B" battery eliminators, giving a permanent life when operated continuously at voltages up to their maximum working ratings.

Use this condenser in building any type of battery eliminator. Dubilier Filter Condensers are specified for the "B" battery eliminator described on P. 85 of this issue.

The By-Pass Condenser

For use across "B" batteries

To shunt radio frequency currents around the high internal resistances of "B" batteries, to insure an even flow of battery current, and cut down battery noises—use a By-Pass Condenser across your "B" battery.

Don't use By-Pass Condensers in the filter circuits of "B" battery eliminators—use the Filter Condenser especially designed for that work.



Dubilier

CONDENSER AND RADIO CORPORATION



Each Dubilier device is built to do its own job best.

Grid Leak Tester

With our model 239 meg-ohm meter instant readings may be obtained directly on the instrument scale.

This meter has a range from 0 to 5 meg-ohms (higher reading may be interpolated on the scale).

It is complete with internal batteries and a pair of self adjusting terminals to support all types of grid-leak units—a pair of binding posts are also provided which allows connecting wires for external tests.

This meter is provided with a carrying strap and as it weighs only a few pounds may be carried about with ease.

Manufacturers and dealers are finding this instrument an ideal device for determining the resistances of grid-leak units.

Our Bulletin No. 239 describes this instrument more in detail.

ILLINOIS TESTING LABORATORIES, INC.
Testing Engineers and Manufacturers
143 West Austin Avenue Chicago, U. S. A.



THE BOOK TO GO BY—WHEN YOU GO TO BUY

NEW 96 PAGE RADIO GUIDE **SEND FOR FREE YOUR COPY NOW**

WHOLESALE RADIO SERVICE CO
6 CHURCH STREET—NEW YORK

This is the book to go by, when you go to buy anything in radio. No matter how much or how little you plan to invest in a radio set or apparatus, you are certain to receive one hundred cents worth of value for every dollar you spend and COMPLETE SATISFACTION!

96 pages, compiled by experts, profusely illustrated and crammed full of startling values. From cover to cover it's a display of the newest, standard and up-to-the-minute radio apparatus; parts, equipment and sets to fill every need. Popular, one tube sets to the finest multi-tube outfits. Cabinets in every style and for every purpose and standard, specified parts for every hook-up and circuit builders are constructing.

DEALERS!

Write for Complete Information and Discounts

We Are Headquarters for All Standard Sets and Kits

**HAMMARLUND-ROBERTS
BROWNING-DRAKE
COCKADAY'S LC-26
RECEIVER
McLAUGHLIN'S ONE
CONTROL SUPER
NEW SILVER MARSHALL
RAYTHEON PLATE
SUPPLY UNIT
—AND ALL OTHERS!**

These circuits fully described in our catalog. Complete technical information, list of specified parts, prices, etc. Write for your copy today—NOW!

BUILDERS

WRS is always earliest with the latest. Ask us for full, complete and authentic information about any new circuit.

SATISFACTION GUARANTEED

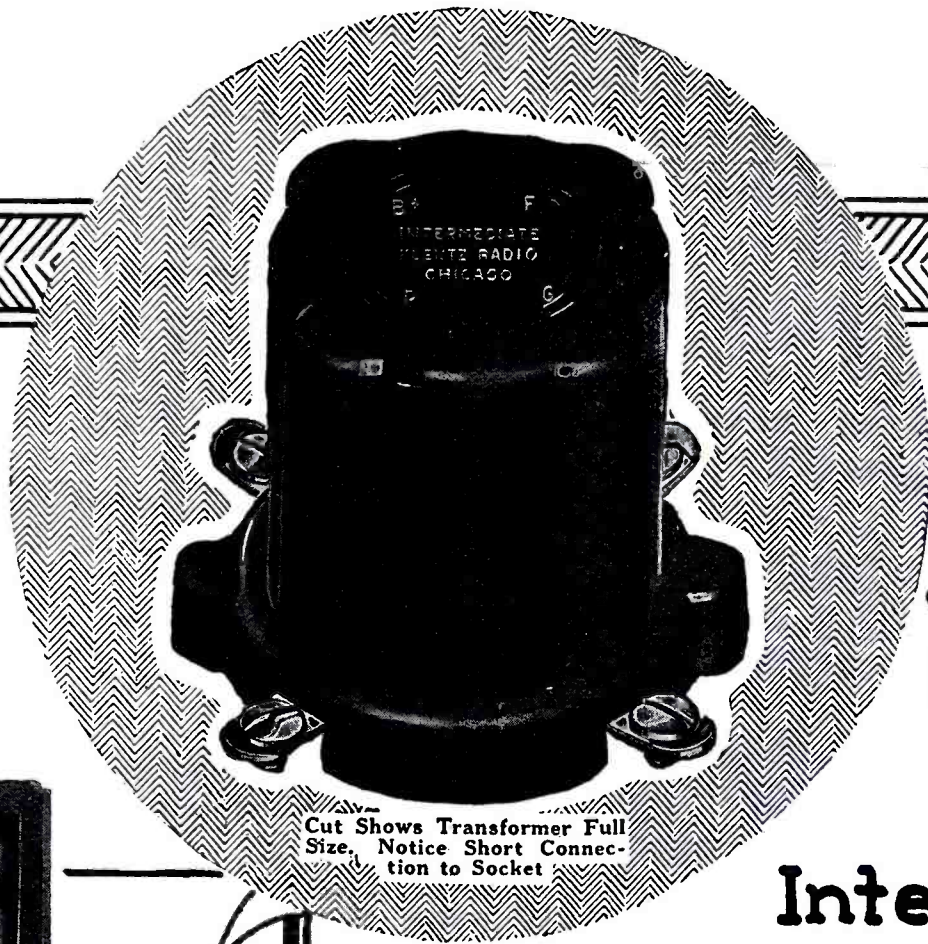
FREE examination allowed on every order.

RIGHT NOW WRITE NOW

Write for your copy now. A postal brings it—it's FREE!

WHOLESALE RADIO SERVICE CO.
CR26 6 Church Street New York City

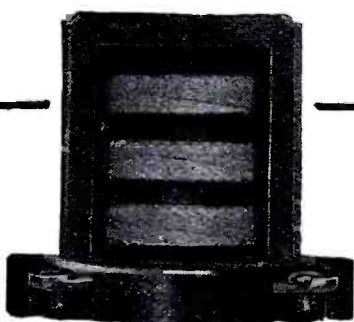
Tell 'Em You Saw It in the Citizens Radio Call Book



Cut Shows Transformer Full Size. Notice Short Connection to Socket

A 100
kilocycle
Air Core

Intermediate Transformer



This "cut-away" view of the Klentz Transformer shows the Stagger windings which assure its perfect performance at all times.

Jobbing the following lines:

Jewell Electrical Instrument Co.
Thordarson Mfg. Co.
Yaxley Mfg. Co.
Amsco
Micamold Condenser
Precise Mfg. Co.
Spaulding Bakelite
Belden Mfg. Co.
Potter Mfg. Co.
Pioneer Radio Corp.
Radio Appliance Lab.
Splitdorf Elect. Co.
Televocal Tubes, Etc.

.0001 Matched set of Four \$1.50
.00015 Matched set of Four 1.50
All sizes of Matched Condensers in stock.

COUPON

Please send circular describing Transformers.

.....
.....
.....
.....

The efficiency of your "Super" depends on the quality of the intermediate frequency transformers. Klentz air core transformers are designed to give maximum efficiency.

BLUE PRINTS

No. 1. This sheets shows full size panel layout giving dimensions and can be used as a template. Very handy when laying out apparatus that is mounted on front panel.

No. 2. Shows full baseboard layout so that you can lay out evenly apparatus to be mounted on baseboard. Gives exact dimensions of distance between each instrument.

No. 3. This shows a complete schematic diagram with all electrical connections plainly marked so that receiver will work when it is hooked up.

Complete set of three prints 50c postpaid

Salient Features. 100 K. C. 2-1 ratio air core perfect matching stagger winding. Bakelite construction throughout. Quality of tone, Selectivity, Amplification and Distance. Easily assembled on account of Bottom Connection. Moderately priced. One Filter. Three Intermediate Frequency Matched Transformers. One Oscillator, Four Matched Condensers. One set blue prints. Price \$25.00.

Oscillator coupler is same style as intermediate transformer.

Klentz Radio Co.

Not Inc.

2324 No. Sawyer Ave., Chicago

KLENTZ
TRANSFORMERS

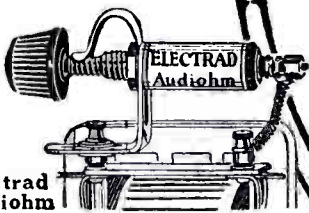
ELECTRAD~GOOD RADIO PARTS

The Fans Circle of Satisfaction

USE Electrad Radio Apparatus—results will justify their choice. Here are six essential parts fans demand. They meet radio's six vital requirements. Fully tested, convenient, sturdy, quiet, moderately priced and fully guaranteed. Each part a standard in its own field. You make no mistake when you ask for Electrad. Supplied by good radio stores everywhere.

The Six Point Pressure Condenser

Ingenious rigid binding and firm riveting fastens parts securely at six different points. Insures perfect electrical contact. Value guaranteed within 10% of calibration. Prices, 30c to 75c.

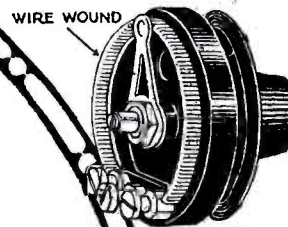


Electrad Audiohm

Specially designed resistance. Eliminates distortion. Hooks across secondaries of audio transformers. Convenient, dependable, easily adjusted. Price \$1.50.

Electrad Certified Grid Leaks and Resistors

Noiseless. Accurate calibration. 1/4 to 10 megohms. Price 50c each. Electrad resistors, all standard capacities, of constant values. Price 50c each.



Electrad Royalty Variable High Resistance

Variable grid leak and variable high resistances, potentiometer and compensators. Solid bakelite, wire wound. Same point on dial gives same resistance always. Non-inductive, noiseless in operation.

Type E

Type A (1/10 to 7 megs) variable grid leak—\$1.50.
Type B—1,500 to 100,000 ohms—\$1.50.
Type C—500 to 50,000 ohms—\$1.50.
Type D—Detector Control for B Eliminators, 10,000 to 700,000 ohms—\$2.00.
Type E—Compensator 500,000 ohms potentiometer—\$2.00.

Electrad Single Mounting

No. 1—Base of genuine bakelite. Clips of spring brass. Price without resistor 35c.

Electrad Resistor Coupler with Condenser Clips

No. 5—Specially designed for resistance coupling. Genuine bakelite base. Spring brass clips. Price without resistors 75c.

ELECTRAD, Inc.

428 Broadway
New York

THE HOUSE of SUPER-SERVICE

Distributors of

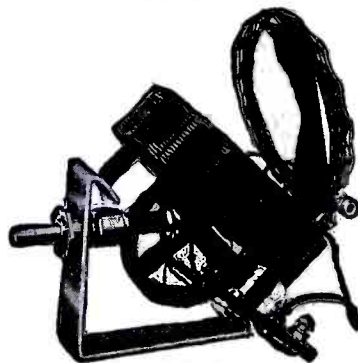
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| Radion | Pacent |
| Cunningham | Premier |
| Balkite | Howard |
| Brandes | Utah |
| Remler | Allen-Bradley |
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Dealers:—Write for a FREE copy of "HARRY ALTER'S POCKETBOOK," the convenient-to-carry Buying Guide listing over 2,500 items.

The Harry Alter Co.
ELECTRICAL and RADIO SUPPLIES
Ogden at Carroll Ave.
CHICAGO ILL.

TUNER



\$5.50

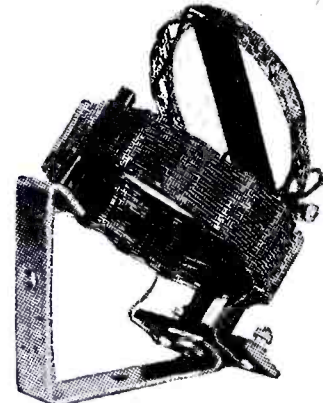
The Gen-Ral Team

Used in the standard four tube set which is, without a doubt, one of the most successful as an eliminator of local interference and as a distance getter.

Gen-Ral Coils have become a favorite in Chicago, where conditions are most severe, due to their ability to go through local stations and bring in the distant broadcasts.

ANTENNA COUPLER

Yours for the asking. We have hook-ups and reprints for the Gen-Ral Coils showing their use in circuits ranging from one to six tubes.



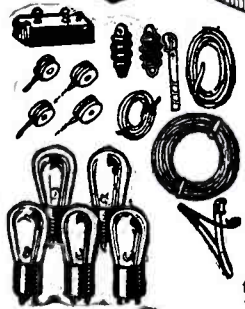
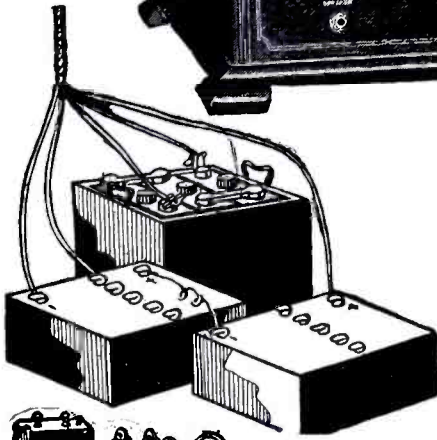
\$3.50

General Mfg. Co.
6637 S. Cottage Grove
Chicago, Ill.

Manufacturers of
Radio Coils and Parts

Tell 'Em You Saw It in the Citizens Radio Call Book

\$32⁹⁵ MARVELO-5-TUBE RADIO SENSATION!!



bronze sloping panel and gold markings and engravings. Marvelo's tone quality is a revelation to everyone. Here is a set giving you all that is necessary for the best radio reception at a cost so low as to be within the reach of all. This set comes to you direct from our own factory and the saving you make is substantial. We guarantee you satisfaction with every purchase. The Barawik Company is the oldest radio specialty institution in America, numbering over 60,000 customers and every item sold is of high standard. Buy here and save money and have your radio needs attended to by experts. Order direct from this page.

A remarkable 5 tube radio frequency set—finer, better built and producing superior results. It is both rich and attractive looking, and for easy tuning, clear, sweet, natural tones, and distant reception, it is everything you will expect. Radio is one of the greatest marvels man has ever devised. It brings to every one that which nothing else can accomplish—instant contact with the entire country. Music by the greatest artists and orchestras, news of the day, market quotations, speeches, lectures, travel talks, church services, athletic contests play by play, and many other features—all are yours, free, right in your own home, with a Marvelo Radio Set.

A MASTERMADE SET—PERFECTLY BUILT!

The interior construction of Marvelo shows new, ingenious engineering features, finest quality component parts, perfect workmanship, all combining to produce the final result of unsurpassed reception. Strong, sturdy construction, no needlessly delicate parts to cause trouble. You can be sure that

every set will reach you in perfect condition and operate efficiently after installed.

PERFECT REPRODUCTION

Marvelo stands alone in tone quality, as comparison with any set at any price will reveal. This fact makes it the choice of expert musicians who recognize the finest distinctions of harmony and tone. Marvelo's beautiful, natural, well-rounded tones reproduce the human voice, whether in song or speech, as clear as a bell. Musical programs are reproduced in sweet, perfect tones, delightfully and harmoniously.

ARTISTIC CABINET

The Marvelo has an exceptionally well finished cabinet of well balanced lines that harmonize well with the finest furniture. An ornament to any room. The model shown above is fine walnut hand-rubbed finish. A truly distinctive, dignified cabinet in keeping with other Marvelo qualities.

THE GREATEST VALUE TODAY—LOOK AT THESE PRICES!

Quality considered our prices are lowest. Nowhere is there value to equal these prices. **1S3031—Set only, no accessories..... \$32.95**

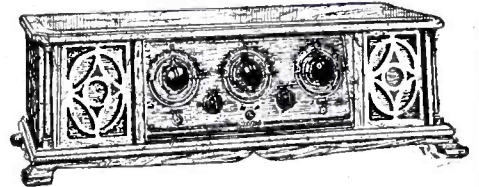
Complete With All Accessories

For Storage Battery Operation Including: 5 201A type tubes, 2 45-Volt "B" Batteries, 1 Fine Loud Speaker, 1 6-Volt Storage Battery, 1 Complete Antenna Equipment, 1 "C" Battery, 1 Fine Head Set, Complete, Shipping weight, 120 lbs..... **\$66.95**

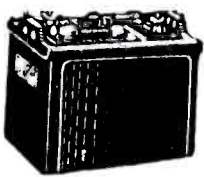
For Dry Cell Operation including: 5 199 type Tubes, 2 45-Volt "B" Batteries, 1 Fine Loud Speaker, 3 Dry Cell "A" Batteries, 1 "C" Battery, 1 Fine Head Set, Complete, Shipping Wt. 45 lbs..... **\$59.50**
Anyone can set up this set in an hour or so.

MARVELO BUILT-IN SPEAKER MODEL

The entire radio set is enclosed in the center portion of the cabinet, one of the outer sections containing the loud speaker, the other housing the two "B" batteries. Only the storage battery need be outside the set. For dry cell operation, space is provided for dry cell "A" batteries. The built-in speaker gives a clear, sweet tone and reproduces every form of entertainment delightfully. **1S3032—No accessories included. Shipping Weight 60 lbs.....\$58.50**
Complete with all accessories for storage battery operation..... **83.75**
For dry cell operation..... **73.75**



RADIO ACCESSORY BARGAINS!!!



Big Value STORAGE BATTERIES

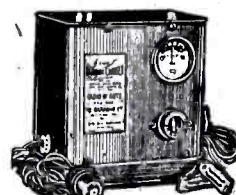
Strong, rugged "A" batteries in finest quality hard rubber cases, designed for strenuous, constant radio service and guaranteed for 3 years. A first class battery at a decided saving to you.

- 7S1592—6 volt 100 amp..... **9.85**
- 7S1593—6 volt 120 amp..... **11.85**

AUTO BATTERIES

- 7S1594—6 volt 100 amp., 11 plate... **9.85**
- 7S1595—6 volt 130 amp., 13 plate... **11.85**
- 7S1596—12 volt, 7 plate..... **15.65**

NEW IMPROVED HOMECHARGER



The new improved model. One of the best known. A fool-proof, shock-proof, self-polarizing battery charger for both A and B storage batteries. Charges at from 5 to 7 amperes.

- 1S201—For 6 volt battery. List \$19.50; Net **\$12.57**
- 7S203 — For 12-volt battery. List, **\$19.50; Net.....\$12.57**
- 7S1634—For 6-volt battery—for use on 110-volt 25 cycle A.C. current. List, \$19.50; Net **\$12.57**
- Shipping weight, 12 lbs. Postage extra.
- 1S1642—Junior Vibrator Charger..... **\$ 8.45**
- 1S1628—Sterling Super Charger..... **19.50**
- 1E1515—Sterling Tube Tester..... **7.35**

ECLIPSE "B" BATTERIES

A great big "B" radio dry battery and an exceptional value. New, fresh stock, uniform quality, noiseless. Here is a real value.

- 1S1553—45 volt, large size, Special **\$2.55**
- 1S1551—22 1/2 volt, large size, Special **1.30**



RADIO TUBES REDUCED!

Shepherd Guaranteed Tubes. Standard \$2.50 tubes at a bargain. The biggest bargain in high-grade radio tubes on the market. The finest, cleanest looking tube you ever saw. The only independent tube we know of that can be rejuvenated. Contains the genuine, licensed tungsten filament with thorium. Guaranteed without reservation—replacements free—you be the judge. Silvered tipless bulb, red bakelite base.

- S1532—0199 Type Tube..... **\$1.55**
- S1530—0201A Type Tube, each..... **1.55**
- Lots of 10..... **1.35**

Ken-Rad Tubes

- S104—Type 199, each..... **\$1.15**
- S103—Type 201A, each..... **1.15**
- Lots of 10..... **1.05**

Postage on tubes 10c each extra

OUR SPECIAL LOUD SPEAKER

No. **1S1727**—Our Special Loud Speaker **\$6.95**

Made to sell at \$10.00 but equal to many higher priced speakers. Its clear tones, great volume and the beautiful design make it ever popular with radio fans. Comes in the smart maroon finish. Has graceful gooseneck horn. Maroon Bakelite Base and adjustable unit.

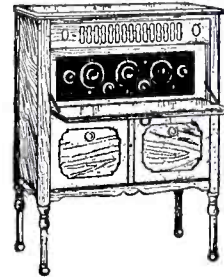


The Barawik Co.
102-107 South Canal St.
Chicago, Ill.

MARVELO CONSOLE MODEL

A De Luxe model of splendid design and craftsmanship in a beautiful hand-rubbed walnut finish. The speaker is contained in the top compartment, being concealed by the handsome silk-backed grille. The lower compartment holds batteries, charger, eliminator, etc. The radio set is the high grade Marvelo V.

- 1S3033—Console Model with speaker, without accessories, special **\$99.00**
- Complete with all accessories for storage battery operation... **\$125.00**
- For Dry Cell operation. Complete equipment..... **\$117.00**



SHERATON TWO-TONE WALNUT CABINETS

Elegantly finished solid walnut top and sides in two-tone effect. Body of cabinet is beautiful brown walnut with darker brown panels relieved with inlaid gold lines. Fine hand-rubbed finish gives these cabinets an appearance equal to that of the most expensive furniture.

Fitted with full-length nickel plated piano hinge and lid stop. Ends grooved for slide-in panel. Full ten inches deep back of panel. Finest grade walnut, guaranteed perfect construction.

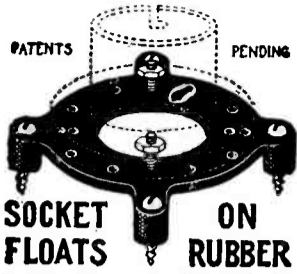
Panel Size, In.	Article Number	List Price	Our Net Price, Each	Shipping Weights
7x18	1S2512	\$11.50	\$ 8.95	16 lbs.
7x21	1S2513	12.30	9.55	18 lbs.
7x24	1S2514	13.50	10.80	20 lbs.
7x26	1S2515	14.00	10.95	21 lbs.
7x30	1S2516	16.50	12.95	23 lbs.

Transportation charges extra.

BARAWIK CO., 102-107 S. Canal St., Chicago, U.S.A.
MAIL THIS COUPON FOR FREE RADIO GUIDE

Name.....
Address.....
Name of Radio Fan.....
Address.....

ILLINOIS SOCKET CUSHION



SOCKET ON RUBBER FLOATS

Failure or Success in eliminating undesirable tube noises and obtaining clear tones depend upon the kind of tube mounting.

Illinois Cushions are moulded of pure gum rubber that absorb vibrations that would otherwise reach tube and are the best shock absorbers, practically indestructible.

Rubber feet raise the socket off of panel and suspend it like a suspension bridge. Cushions are not a mere pad or washer, but moulded to form to easily attach to any socket, round or square, for large or small tubes. Held to socket by 2 small screws and nuts. Price 35c each or 3 for \$1.00 Postpaid.

Illinois NEW Vise-Grip Connectors

(V-G)



V-G No. 1 "Series" Connector for any use in Radio sets. Also very popular for connecting Loud Speakers or two or more Phones in series. Insert cord-tip, stranded or solid wire in ends of connector and the Knurled screws lock it in a vise grip. Only 10c each.

V-G No. 2 "Two-in-One" Connector is a late addition to the series. Two-ways of connecting wires in series or in parallel. Used also for making a connection to any point on a Loop without cutting loop wires. Only 13c each, 2 for 25c.



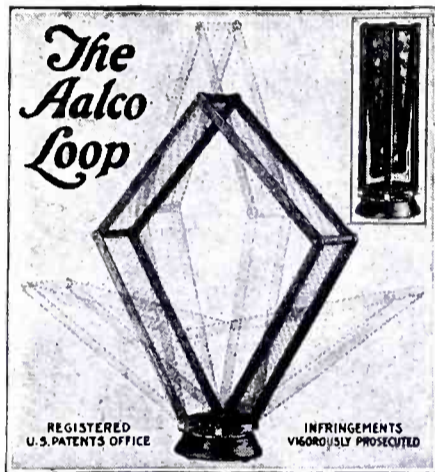
V-G No. 3 "Cord Tip" Connector for attachment to end of cords or wire. No soldering necessary with any of the V-G Connectors. This simple cord tip fits any jack for cord tips. Thousands have been sold the World over. Only 10c each.



V-G No. 5 "Phone Cord" Connector for attachment to end of flexible cords. Skin the end of cord and pass it through the Sleeve Nut and out through the slot in the connector. Tighten Sleeve Nut against wires and the nut grips the ends securely. Only 13c each, 2 for 25c.

ILLINOIS RADIO CO., Springfield, Illinois

The Famous AALCO Loop



folds to any position without wire becoming loose

The Newest

addition to the line of Quality Radio Accessories. Of genuine walnut, handsomely finished, with all metal parts highly nicked, the artistic appearance of the Aalco Loop is only matched by its masterly design and its exceptional performance. Length 24 in., Normal Height 30 in. Wavelength range 180 to 570 meters.

The Aalco Folding Loop

is different in both appearance and operation—adjustable to any position with wires always taut—You will find this exceptional loop adds greatly to the performance of your set. The Aalco rotates freely and has exceptional directional effect, and is guaranteed for a lifetime.

This is not one of the many freak types of antennae now before the public, but is a carefully prepared laboratory product, designed after painstaking study of Government direction-finding and radio compass work.

\$15.00 List Price

If your dealer cannot supply you send money order and we will ship direct. Circulars upon request.

Jobbers—Write for Discounts

AALCO RADIO LABS.

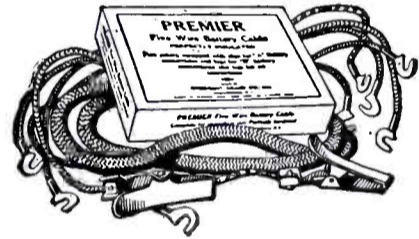
1914 S. Wabash Ave., Chicago

Owners of Real Sets Need These Specialties

THE PREMIER 5-Wire Battery Cable insures proper hook-up and keeps wires untangled and out of sight. \$1.00.

The PREMIER "Blue Ribbon" 20 ft. Extension Cord is a necessity with a loud speaker. The highest grade extension cord made, \$1.75 with plug.

You can take your loud speaker anywhere in the house using our Quick-As-A-Wink connector plug.



PREMIER, JR., Extension Cord (with plug) —25 ft., \$1.50; 35 ft., \$1.75; 50 ft., \$2.00.

At your dealer's—or write and we'll see that you are supplied

Crescent Braid Co., Inc.
Providence, Rhode Island

Makers of Premier "Blue Ribbon" Extension Cords, Premier, Jr., Extension Cords and Phone Cords for headsets and loud speakers.

Death Valley SEMATECT



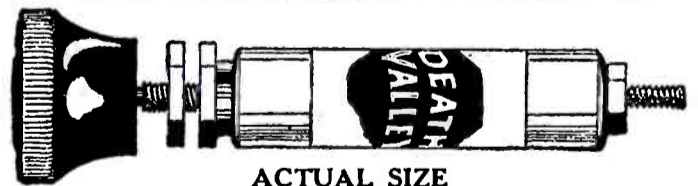
RADIO FANS

Have you trouble with your crystal detector? **IF SO**



Crystal, 30c everywhere

Here is a semi-fixed crystal detector with single knob—double control and single hole—panel mount that is superior to all others for reflex circuits or crystal sets. Will stand all plate voltages.



ACTUAL SIZE

Death Valley Sematect, each.....\$1.25
Death Valley Crystals, each..... .30

The Death Valley products carry an absolute guarantee and will be replaced if not found to be entirely satisfactory.

Sold by mail or through dealers.

Distributors for the Delgro Electric & Mfg. Co.,
Manufacturers of Lightning Arresters,
Lead in, Ground Clamps, etc.

Pacific Radio Specialty Co., 17 So. Orianna St., Philadelphia, Pa.

Tell 'Em You Saw It in the Citizens Radio Call Book



IRWIN J. MENDELS
Radio Engineer



FREE THIS GENUINE A. R. E. TWIN SUPERDON

LONG DISTANCE RADIO RECEIVER

You need serve no apprenticeship. I have done that for you. In my 15 years' experience, I have met and coped with every electrical and radio problem. In fact, so broad has been my experience that I doubt if there is a single principle of radio that I have not had to apply in some manner or means in the conduct of the various manufacturing and research enterprises with which I am associated. It is this great, broad practical experience which I have gained from contact with all phases of the radio industry that you are going to benefit by. And I will impart my knowledge to you with the skill of an instructor who has not only trained thousands for the bigger positions in radio manufacturing, but with the experience of one whose privilege it has been to teach in one of the world's largest technical schools. Experience is the greatest of teachers. I offer you 15 years of experience.

No matter what your present occupation is, I can qualify you in a few weeks' time to write your own income ticket in the fascinating, fast-growing, big-pay, long profit field of Radio! And, not only am I able to give you a better, more complete knowledge of Radio itself, but I will go still farther with you. I will show you how to apply your knowledge to turn it into big money quickly!

\$2,000 TO \$10,000 A YEAR
BE YOUR OWN BOSS

Hundreds of radio manufacturers, thousands of transmitting stations, big research laboratories and more than 15,000 ships are dividing millions of dollars a year among radio men. They are paying \$2,000 to \$10,000 a year to men not so well trained as I propose to train you, and they are constantly bidding for the men with the better, broader training. Do you want your share of this big money in salary, or do you want to take it in profits from a business all your own? Either way, I'll show you.

YOU WILL KNOW THESE THINGS

I do not propose to make you a mere radio mechanic, or just a repair man. Out of my training you will learn not only "How to do it," but "Why it's done that way." I am going to train you to handle the big problems of Radio because that's where the big money lies. And I am going to give you this broad training in such simple language that you can't help but grasp it. You will learn how to construct, install and operate all kinds of radio transmitting and receiving equipment—on land or sea; you will learn the functions and requirements of all parts and apparatus used in all types of radio transmitting and receiving equipment. In short, you will be qualified in every branch of Radio—theoretically and practically. And, as I stated above, *I am going to show you how to turn your knowledge into quick cash!*

LEARN QUICKLY—AT HOME!

No need for you to leave your home or your present employment to take this complete course of training. You need only to apply yourself diligently in easy, spare time study, under my personal direction. Don't wait to think this over. Mail in the coupon now—and when I have laid all details and particulars before you, then will be the time to give my offer and your future—some real serious thought.

Instant CASH FOR YOU A Big Advantage

When I answer your coupon, I'll tell you about a *big special advantage* you will gain from your association with me, which will enable you to make some real money as soon as you start the course. So mail in the coupon now—today.

The Wonderful A. R. E. Twin Superdon

All broadcast stations within a 3000 mile circle are within the easy reach of the A.R.E. SUPERDON. Voice and music come in strong and with unmistakable, natural tone. This is not a one tube, cheaply made experimental set, but a high grade, twin super-powered professional type instrument, made up of only high quality parts. The A.R.E. Twin Superdon is beautiful to look at, too. Its artistically marked panel and large dials with their deeply cut white engravings present a very pleasing appearance. Cabinet in which the efficient A.R.E. Twin Superdon is contained matches best of furniture.

MAIL THE COUPON at once so that I can tell you more about the A.R.E. Twin Superdon and how you can get it FREE. Don't wait! MAIL the COUPON NOW—Today!

Irwin J. Mendels, Director

AMERICAN RADIO ENGINEERS

1010 Hearst Square

Dept. 29

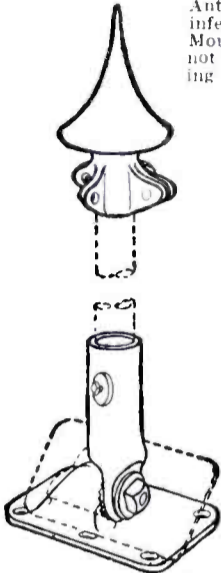
Chicago

Irwin J. Mendels, Director, American Radio Engineers
 1010 Hearst Square, Dept. 29, Chicago
 Send me your big catalog and full particulars of your course of training which will enable me to earn \$2,000 to \$10,000 a year working for someone else or from a business of my own. Also tell me more about the A. R. E. Twin Superdon Long Distance Receiver and how I can get it.
 Name.....
 Address.....
 City.....
 State.....

Tell 'Em You Saw It in the Citizens Radio Call Book

Universal Radio Mast Equipment Gives Better Results

Eliminate all your Antenna troubles by using Universal Radio Mast Equipment. Poor installation, incorrect length of Antenna and make-shift masts give you inferior radio results. Order Universal Mountings from your dealer. If he cannot supply you write us direct, mentioning his name.



Model 1000
To fit 1 in. mast pipe—Universal base, highly polished aluminum spiral top; center collar for guy wires. Price \$3.50 each.

Model 1100
Same as above, with black enameled ball top. Price \$2.50 each.

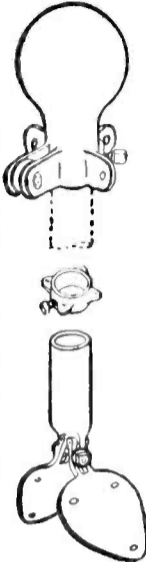
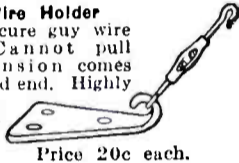
Model 2000
To fit 1/2 inch mast pipe. Universal base and top black enameled. Center collar for guy wires. Price \$1.00 each.

Universal Mountings Fit Every Type of Roof—Easily and Quickly Installed by Anyone

Guy Wire Collar
In two sizes, to fit 1/2 inch or 1 inch masts. Adjustable to any position on mast between top and bottom. Price 20c each.



Guy Wire Holder
A safe, secure guy wire holder. Cannot pull out as tension comes from curved end. Highly enameled. Without turn-buckles. Price 20c each.



Model 1300
To fit 1 in. mast pipe. Adjustable black enameled hip roof base. Black enameled ball top. Center collar for guy wires. Price \$2.50 each.

Model 1200
Same as above, with polished spiral aluminum top. Price \$3.50 each.

Model 2100
Same as No. 1300. To fit 1/2 inch mast pipe instead of 1 inch. Price \$1.00 each.

BROWN, STRICKLER & BROWN, Inc.
108 North Jefferson Street Chicago, Illinois
Largest Manufacturers of Radio Aerial Mast Holders

FREE — Our Latest 100 Page RADIO CATALOG

Just off the press—waiting for you. All the latest sets with special kits to build them. Parts and accessories by well-known manufacturers. Every fan needs this latest guide-book to the best in radio. Write for your FREE copy.

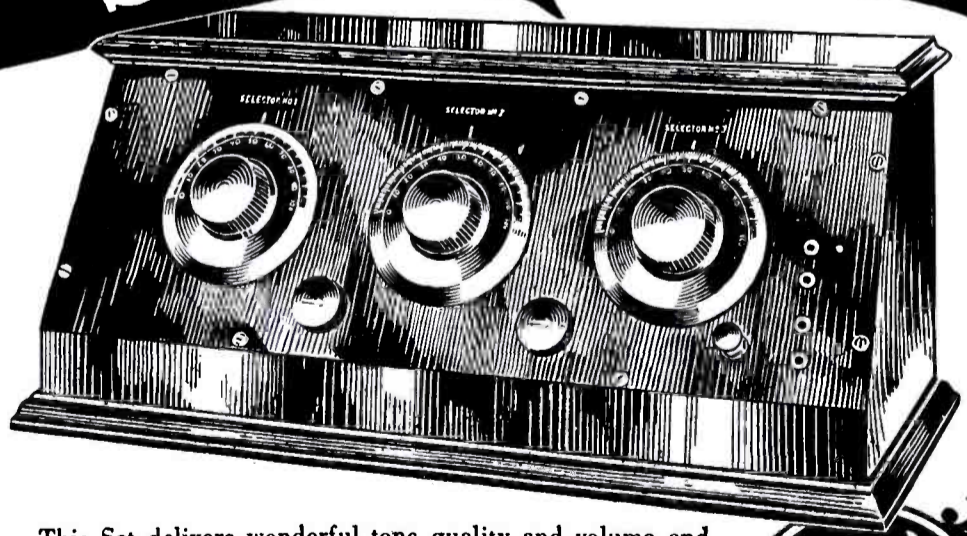
Chicago Salvage Stock Store
509 S. State Street, Chicago, U. S. A.
Dept. RC



The New CHELSEA SUPER FIVE

A Dependable Set

Chelsea offers—at moderate cost—EVERY worth-while feature you could desire in a modern receiver. Fine mahogany finish cabinet with graceful sloping panel and large dials for easy tuning. Convenient cord leads (no unsightly binding posts). Fool-proof, dust-proof inside panel to protect delicate parts. Rugged bus-wiring, hand-soldered connections, and other refinements only found in sets costing two or three times as much.



This Set delivers wonderful tone quality and volume and is one of the most selective sets on the market. Choose Chelsea and save the difference.

See Your Dealer or Write Us for New Descriptive Folder

CHELSEA RADIO CO., Chelsea, Mass.



Tell 'Em You Saw It in the Citizens Radio Call Book

You Can Now Build With Assurance of Complete Success

Great fun and satisfaction is obtained in building your own set. With Citizens Laboratory Blue Prints failure is impossible. They are carefully drawn to scale, full sized and all sets built and carefully tested in our laboratories. Come in complete kits containing baseboard, panel layouts, graphic illustrations, schematic diagram and complete list of parts necessary.

- 45 Kilocycle 9 Tube Superheterodyne, \$1.10.
- Browning Drake 4 Tube Audio Amplification, \$1.10.
- Browning Drake 5 Tube Impedence Coupled Amplification, \$1.25.
- Aero 6 Tube Tuned R. F. Set, \$1.10.
- An Economical Two Tube Set, \$1.10.
- Martin Copeland Marcodyne 4 Tube Set, \$1.10.
- Bremer Tulley Counterphase Six, \$1.25.
- Harper 6 Tube T. R. F. Set With Oscillation Suppressor Coils, \$1.25.
- Madison Moore 8 Tube Superheterodyne, \$1.25.
- Precise 8 Tube Superheterodyne, \$1.10.
- Short Wave Tuner, \$1.10.
- Raytheon "B" Battery Eliminator, \$1.10.

Full size graphic illustrations of the following will be mailed for 60 cents each, stamps or coin.

- Nine Tube Superheterodyne 45 K. C. With Raytheon "B" Eliminator.
- All American Toroid Coil Receiver.
- Five Tube Non-Reradiating Regenerative Set With Resistance Coupled Amplification.
- General Radio Universal Receiver.
- Silver Marshall Improved 7-Tube Superheterodyne.

Prices on Laboratory Tested Kits

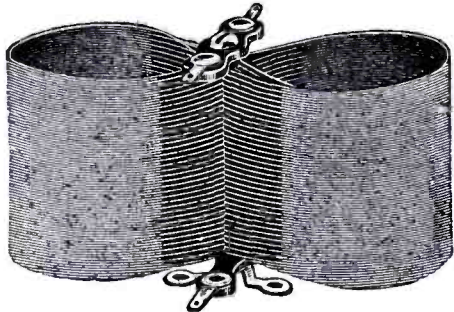
All necessary parts for any of the above circuits will be quoted upon request, if you are unable to purchase them in your locality. If we supply the kit to you, every piece of apparatus will be tested in our laboratory without charge, insuring the best operation of your set.

Consultation Free — We are at Your Service.

CITIZENS RADIO LABORATORIES

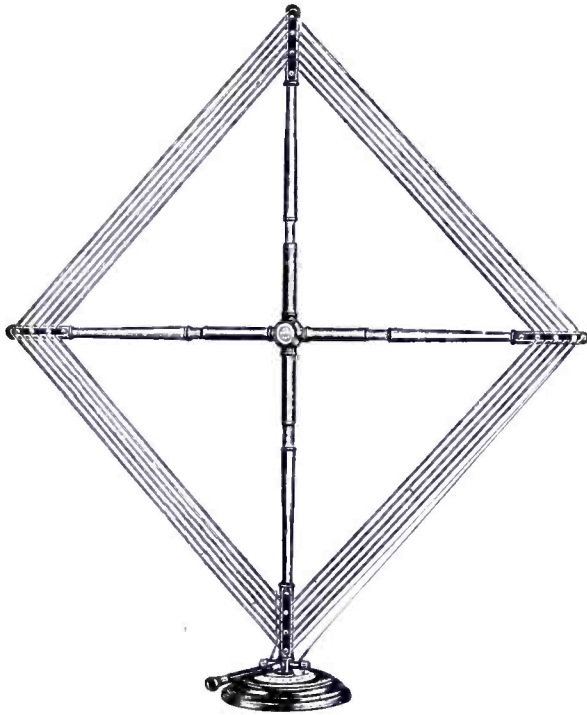
508 South Dearborn Street
Chicago, Ill.

For 1926— THE BODINE Twin Eight Coil



New Type Tuned Radio Frequency Transformer Gives Remarkable Results

Here is the coil that gives the utmost in perfect undisturbed amplification—more volume, clearer tone, complete elimination of all squeals and howls. Self-contained field prevents all possibility of magnetic interference with adjacent parts of the set, thereby giving absolute freedom from distortion. Its concentrated field and close coupling of primary and secondary windings gives greater amplification than is possible with any type of toroidal or doughnut coil. It is exceedingly compact and makes the set easier to assemble. Price each \$3.00, set of three matched transformers \$9.00.



For Better Loop Results

The Bodine folding loop with its basket weave method of winding results in the unusual selectivity and distance, greater volume and clearer tone. It is attractively finished in mahogany and is wound with green silk wire. Satin silver calibrated dial for logging, concealed hinges, fully collapsible folding to fit in a box 3½" x 6" x 18". Price \$8.50 to \$10.

BODINE ELECTRIC CO.

Manufacturers of Fine Electrical Equipment for 20 Years

2256 West Ohio Street

Chicago, Illinois

CASE RADIO APPARATUS

1926

Announcement

INDIANA HYPERDYNE RADIO

WILL HEREAFTER BE MARKETING UNDER THIS
NEW NAME "CASE RADIO APPARATUS"

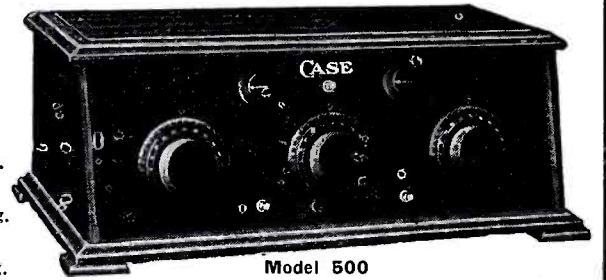
Nothing Changed but the Name!

If you haven't heard this set—do so! It will surprise you, as it has others. Selectivity, distance, volume and tone quality unequalled in any Radio near the price. Every part and set complete, built in our own modern plant, keeping down price. Jobbers, investigate our attractive proposition.

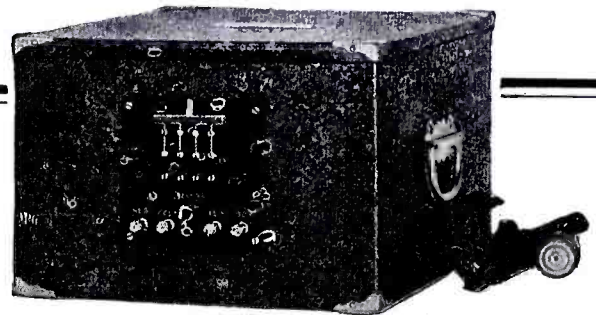
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Dept. C, 550 Case Block Marion, Ind.

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Description No. 500—
Five tubes using Tuned
Radio Frequency—no
howls or squeals. Solid
Mahogany cabinet 24x8
x12; 15° Sloping panel
of black Crystal Lacquer
on Aluminum. Best ma-
terial throughout. No
exposed wires and many
other good features.
\$65.00 List.



Model 500



"B" Battery Power From Your House Lighting Line

"B" ELIMINATOR SIMPLICITY

The greatest value in a Power Supply System for eliminating dry cell "B" batteries ever offered the radio public.

Guaranteed Two Years

Line hums are impossible. No costly bulbs or transformers are contained to burn out. No harmful acid—shipped ready for use. Units supplied for 110 volts A. C., D. C. or farm lighting plants.

Jobbers! Dealers! Get Our Proposition!

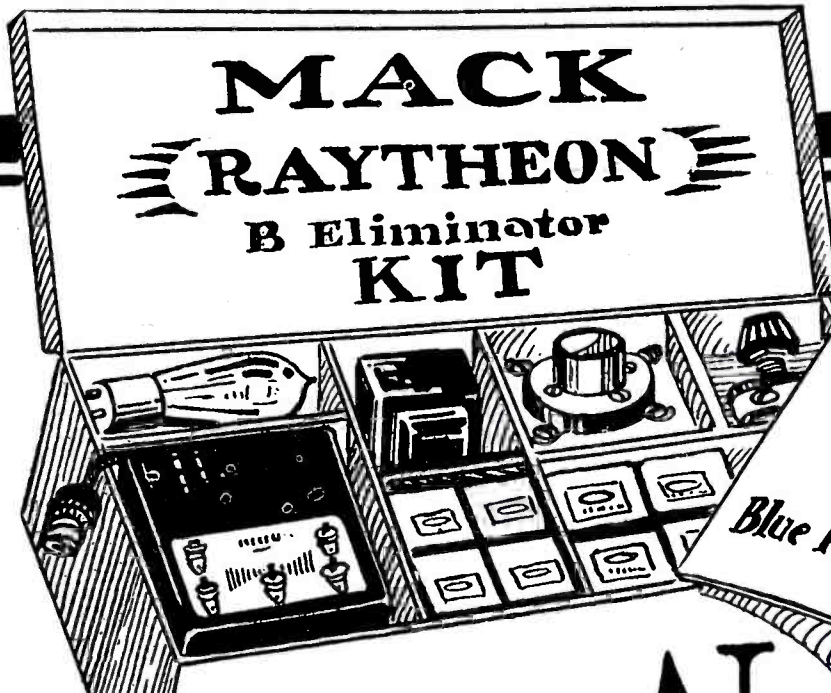
PRICE 90 Volts Type MX, \$30.00
135 Volts Type MX, \$37.50

Made by

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2665 Main St. Buffalo, N. Y.



Tell 'Em You Saw It in the Citizens Radio Call Book



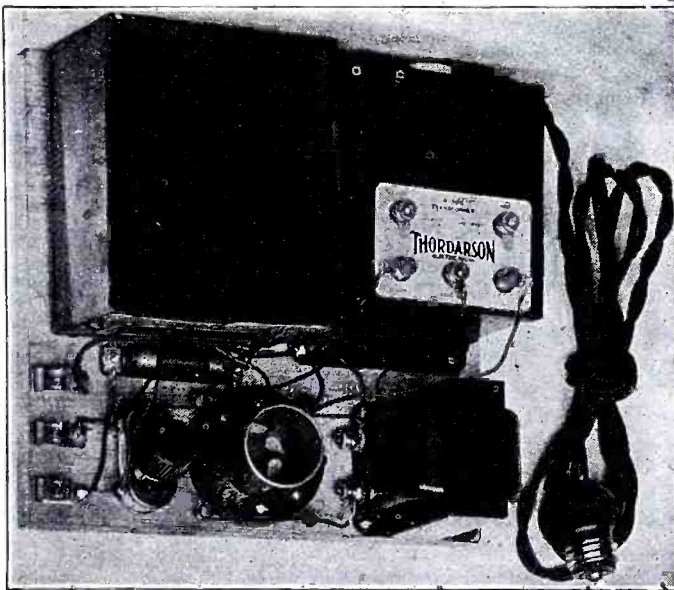
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\$28⁹⁵

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Build the Famous Raytheon B Eliminator

Simple
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Anybody can build this Eliminator in 30 minutes — and save \$20 or more in doing it. Complete kit of Blue Prints, Graphic Illustrations and Base Board Layout accompany each complete kit.

REMOVING THE BUNK *from this* ELIMINATOR-BUSINESS

If you can handle a screw driver and solder a wire you can build the famous Raytheon "B" Eliminator with this kit—and it will work—no hum—constant, unvarying voltage. Lasts indefinitely. Will deliver 140 to 190 volts to the amplifier circuit and 20 to 140 volts for your detector at 50 milliamperes.

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CONTAINS everything required—genuine Raytheon Tube, Thordarson Transformer, Thordarson Choke, Condensers, all mounted in one block unit with leads marked, Socket, Cord, Wire, Base Board, Bradley Ohm, etc., all complete ready to mount. Simply follow construction drawing—which is supplied—plug into nearest 110 volt 60 cycle socket and your "B" Battery problems are over.

FULLY GUARANTEED

The Mack Kit is guaranteed to contain only first class, nationally known parts—guaranteed to do same work any manufactured Raytheon Eliminator will do and is fully guaranteed to work or your money cheerfully refunded. Why experiment?

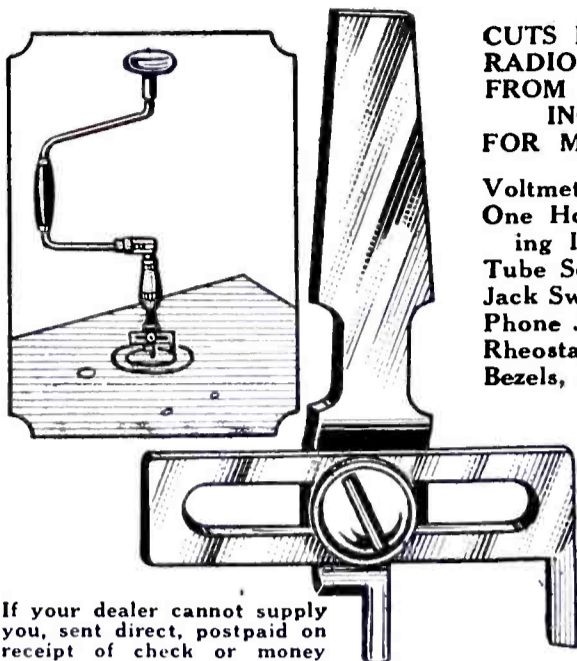
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THE G-R CIRCLE CUTTER



CUTS HOLES IN
RADIO PANELS
FROM 3/8 TO 3
INCHES
FOR MOUNTING

Voltmeters
One Hole Mount-
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Tube Sockets
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If your dealer cannot supply you, sent direct, postpaid on receipt of check or money order.

A simple adjustable tool designed to cut mounting holes in either Bakelite or hard rubber panels.

On holes 3/8 inch or larger—the sizes usually used for one hole mounting instruments—the cutter does better and neater work than does a twist drill.

Fits into an ordinary carpenter's brace.

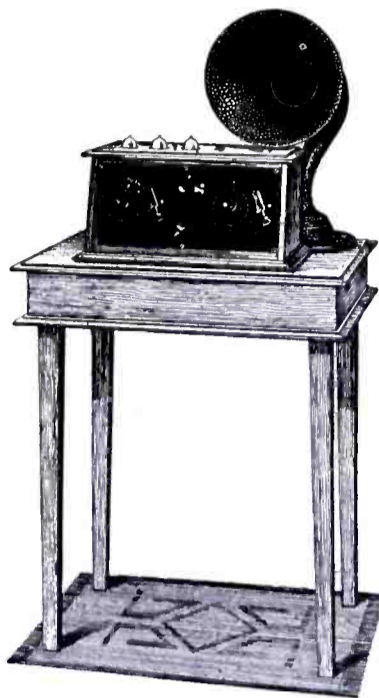
Takes the place of a set of large twist drills, yet costs no more than one of them.

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3020 SHERIDAN ROAD

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A. C. H. \$24⁸⁰— ALL PARTS COMPLETE



Knocked Down

Price Includes
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Direct to You
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Wood Work
Guaranteed
Solid Mahogany
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Directions for assembling free with check or money order. No C. O. D. You save dealer's and jobber's discount.

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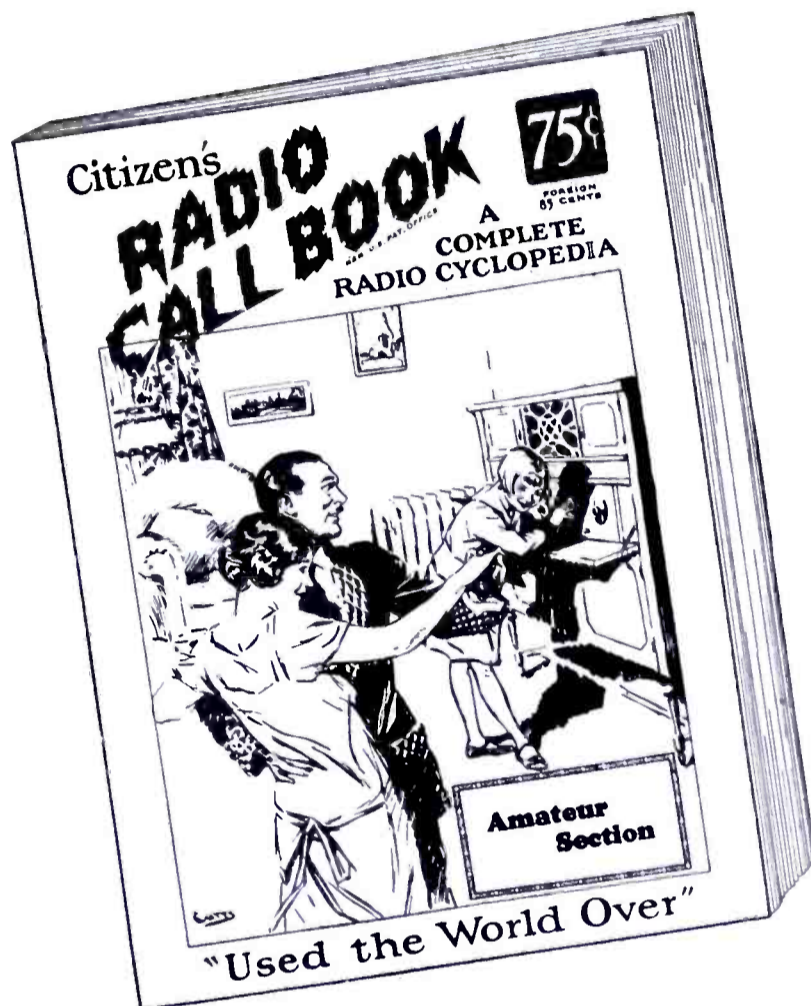


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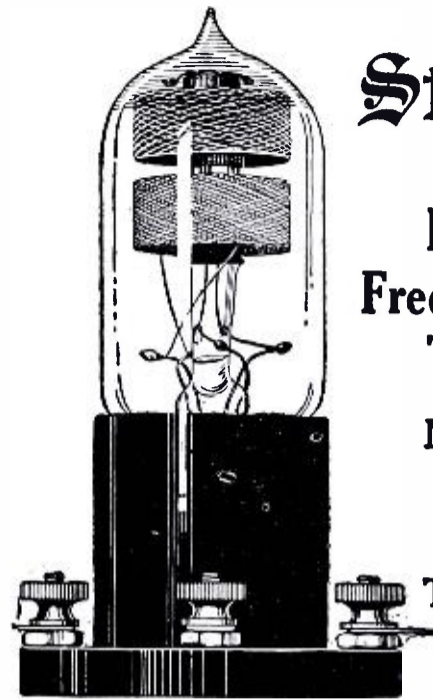


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Radio Fans who build their own will find this tool to be exactly what they have been looking for.

Forms loops or eyes for No. 4, 6, 8 and 10 screws, makes easy radius and sharp right angle bends, has flat jaws and wire cutters.

If your dealer does not handle them send us your check and we will mail you one today.



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Intermediate Frequency Vacuum Transformer

Now Accepted as Standard After Two Years' Proving Because They are Matched

Windings are Dehydrated. They Stay Dry Under All Conditions of External Moisture and They Stay Matched

Full Constructional Data Sheets are Ready for Latest Circuit. Price \$1.00

Write for Free Folder and Diagram

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Your Radio enjoyment depends largely on the tubes. If they do not function properly, you cannot get a full clear tone. They can be made "just like new"—the Rhamstine* Tube Booster renews their youth with all that the word implies—pep, freshness, a true, full round tone which carries the message as "clear as a bell."

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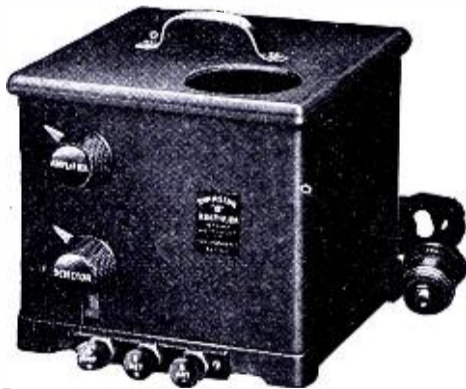
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The Rhamstine* "B" Rectifier is a quality product which furnishes an always dependable source of "B" power. It eliminates "B" battery troubles such as chemical action, dead cells, recharging, and gives a continuous and uniform current, reproducing perfectly the original sound.

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CONTROL YOUR TUBES WITH

UNITROL

"THE UNIT FILAMENT CONTROL"

WHY?

Because it simplifies the operation of your set by eliminating panel controlled rheostats. It is non-inductive and makes for clearer tone quality.

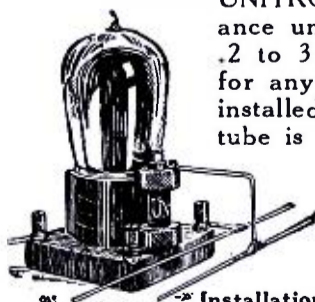
Banishes the bugbear of matching tubes; working each tube at its most sensitive point.

UNITROL is quickly and easily installed without drilling panel.

A space saver; mounts upright on the tube socket.



Pat. Pending



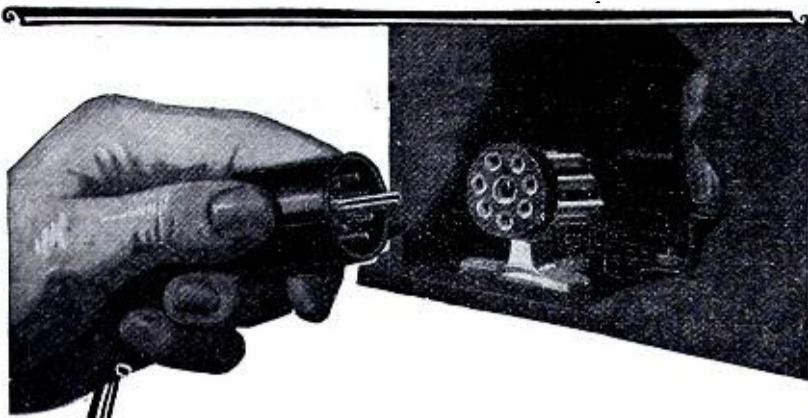
Installation

UNITROL is a compact, variable resistance unit with a continuous range from .2 to 35 ohms. It is instantly adjustable for any type of receiving tube and once installed can be left untouched until the tube is changed. Its small size, simplicity and smooth variation of resistance make it the ideal filament control.

Price, \$1.00 each at your dealers or sent direct by the manufacturers, parcel post prepaid.

THE UNITROL COMPANY

1009 Victory Bldg., 1011 Chestnut St. Philadelphia



A plug and socket between the radio and the batteries is as essential as the plug and socket on an electric iron. Buy a radio Multi-Plug equipped or buy a Multi-Plug for the set you now have or are building. See your dealer or write for descriptive circular G.

TYPE BM—For Set Builder.....\$4.50
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Jones MULTI-PLUG

THE STANDARD SET CONNECTOR



A practical coded cable furnished with anchor to hold cable and soldering lugs to connect set leads.

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ASSURE PERFECT CONNECTIONS



Single plugs and sockets for quick disconnections. Practical for battery, antenna, and ground leads. Especially adaptable to loop connections. Furnished in seven colors. 25c each.

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VICTOREEN SUPER-HETERODYNE SUPREME

THE wonder set of 1926, unlimited range, tone perfect, greatest possible selectivity, terrific power, can be used either for loop reception or on the antenna and ground, change can be made by simply inserting plug in double circuit jack.

DEALERS WANTED EVERYWHERE! LIBERAL DISCOUNTS! IMMEDIATE DELIVERIES!

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List of necessary parts to complete this unequalled set, for most satisfactory results, as follows:

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| 3—No. 170 Victoreen Intermediate Transformers | 8—Kurz Kasch Universal Sockets |
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| 1—Victoreen Potentiometer, 400 ohm | 1—4½ volt "C" Battery |
| 1—No. 10 Yaxley "A" Battery Switch | 2—2 to 1 Thordarson Audio Transformers |
| 1—7x24 in. Black Lignole Panel | 7—X. L. Binding Posts, Ant., Grd., "A" plus, "A" minus, "C" minus, "B" 45, "B" 90 |
| 2—.00025 Muter Fixed Condensers with Clips | 12—Lengths Celetsite Bus Wire, any color |
| 2—2 meg. Muter Grid Leaks | 1—Box Hardware, Screws, etc. |
| 1—.001 Muter Fixed Condenser | 1—7 in. Binding Post Strip |
| 1—.006 Muter Fixed Condenser | 1—3 in. Binding Post Strip |
| 1—1 Mfd. Muter By Pass Condenser | 1—8¼ x 23 in. Mahogany Baseboard |
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Anyone who can solder a joint and read a blue print can make this perfect superheterodyne, without the services of an expert, as all the laboratory work has been done at the factory and the best skill and the greatest care is taken to place perfect instruments in your hands.

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\$3.00

Phonograph makers have spent years perfecting the acoustic properties of their phonographs. Use an AMPL-TONE Unit and make a real Loud Speaker in an instant or use it in your horn and get better results.

After all, speakers are as good as their unit. We make a real unit at a real price. Money gladly returned if you are not entirely satisfied.

We make units for manufacturers

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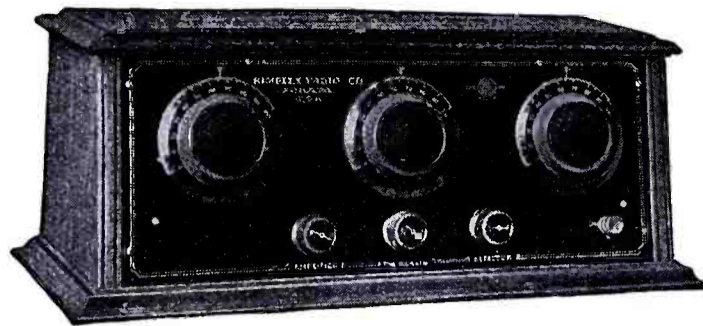
Makers of the Excellent French AMPL-TONE Headset

Please send me an AMPL-TONE Unit for which I enclose \$3.00.

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Embodies the latest refinements of radio engineering—and at a popular price. Five tube tuned radio frequency circuit. Tone modulator gives gradual, noiseless adjustment, from a whisper to maximum volume. Straight line wave length condenser spreads stations conveniently over the dial. Extremely selective. Genuine mahogany cabinet, beautiful Adam Brown finish. Sloping panel makes tuning convenient. Thirty years of manufacturing experience guarantees the highest standards of quality and workmanship throughout.

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BEEDE

They soon save their cost—stop most set troubles, too

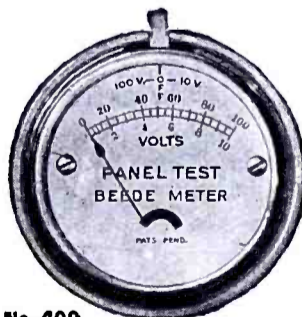
Often a set is thought defective when the only trouble is weak batteries. Also perfectly good "B" batteries are frequently blamed for noises caused by loose connections—and discarded. The price of just one 22½ volt battery will more than pay for a Beede meter.

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High resistance instruments, in a wide variety of ranges. Made in two sizes, nickel plated case, black face. Priced from \$2.50 to \$4.00.

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All BEEDE meters are guaranteed accurate. Write for catalog.

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No. 101

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This Indoor Aerial has smashed hundreds of performance records!



Increase the efficiency of your receiving set with the marvelous new improved Effarsee. Used indoors or out, EFFARSEE has consistently outperformed other types of aerials, inside, outside, or loop. Has given increased range, increased volume, with a richer, clearer tone. EFFARSEE will make any set more selective, enable you to separate stations without heterodyning—it will cut summer static and other disturbing noises to a minimum. EFFARSEE has improved reception in every section of the country in all makes of receivers.

Type IXL has 1,000 Feet of Copper Wire Equipped with Scientifically Designed Condensers

The Improved EFFARSEE is a scientifically designed antenna—100 strands of copper wire insulated from one another and from moisture and equipped with special fixed condensers. Covered with parchment it can be used indoors or out, hidden under rugs, or rolled up in some corner. Once installed it requires no further attention. Write for performance reports of enthusiastic users—then replace your old outdoor aerial with this new efficient antenna.

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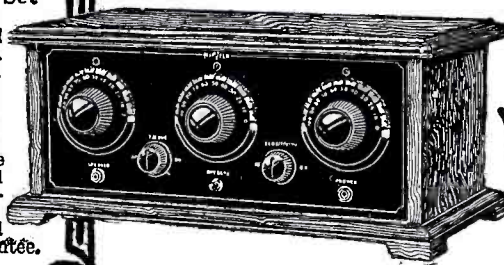
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An unequalled value. Toroidal R. F. Transformers. Straight Line Frequency Condensers, bronze panel, bakelite base, handsome cabinet. The equal of many sets listing about \$150. A big discount and our regular guarantee.



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The Circuit with Impedance Coupled Amplification

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We Also Carry Complete Parts for

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Price Includes
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Note: Raytheon tube delivers 150 Volts B
battery current

SPECIAL TUNED R. F. RECEIVER

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Satisfaction Guaranteed

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Consomello Junior



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We call your attention to the complete
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A binding post that really does excel in looks, action, service and convenience. Just push it down—insert wire—cannot jar loose from vibration. No screwing or danger of shearing off wires.

Furnished attractively plated with soldering lug and the necessary markings. Price each, 15 cents.

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INSIST ON THE WINNER**

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**The Best Semi-Fixed Condenser Made
Tested and Approved by the Leading Radio
Authorities for Use in All the Latest
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Model N, Capacity Range 1.8 to 20 M.M.F.

For balance in Roberts' two tube, Browning-Drake, McMurdo Silvers Knockout, Albert C. Craigs' Radio Frequency Receiver, Neutrodyne and any circuit where radio frequency balance is required. Price, \$1.00.

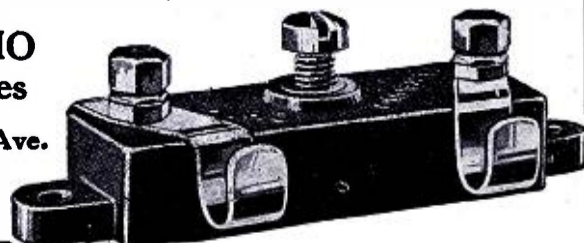
MODEL G For the Cockaday circuits, Jim Wells Link and Bests' 45,000 Cycle Circuit. Filter and intermediate frequency tuning in super-heterodyne and positive grid bias in all sets.

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G-5 .0001 to .0005 MF.
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An Added Charm to Your Home

So many people have condemned radio merely because of its many accessories which makes an otherwise beautiful home look untidy. An ADAPTO RADIO CABINET is the answer to that problem—it is completely wired—accommodates any type of receiver—has ample compartments to take care of all batteries, charger, distilled water, hydrometer, etc. Loud Speaker Horn concealed within the top. Over all, the ADAPTO CABINETS are mechanically superior, more artistic, and better suited for your home.

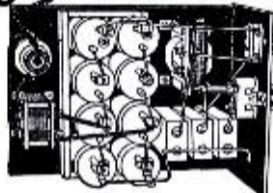
Write for Illustrated Circular Showing Various Models and Prices

L. R. DONEHUE CORPORATION

Perth Amboy, New Jersey

Adapto
 Radio Cabinets by Donehue

The MOLLIFORMER "B" UNIT REPLACES "B" BATTERIES



NO ACIDS

NO HUM

NO TUBES

ANYONE CAN BUILD IT

FREE

Write for descriptive literature and wiring diagrams on the Molliformer "B" unit.

The Molliformer "B" unit uses full wave rectifiers—no tubes nor acids. The perfect filtering action of the Molliformer absolutely removes all hum. The Molliformer is the only B-Eliminator that operates with

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Model FW8 pictured above, will furnish 20 milliamperes at 135 volts or 40 milliamperes at 90 volts. The Molliformer "B" unit is excellent for Supers and all TRF receivers using resistance coupled amplification or power tubes.

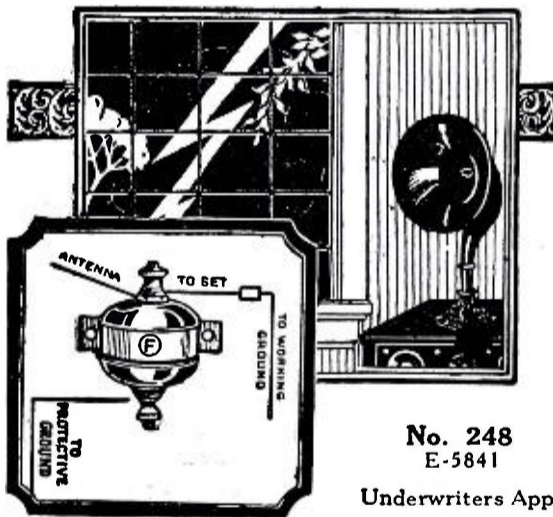
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 (Amplifier voltage can be varied)

FW8 Complete kit 60 cycle..... 22.50
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Kits include full wave rectifiers.
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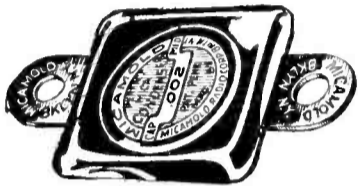
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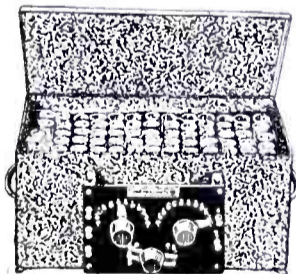
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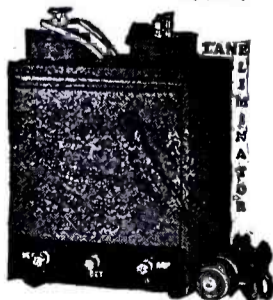
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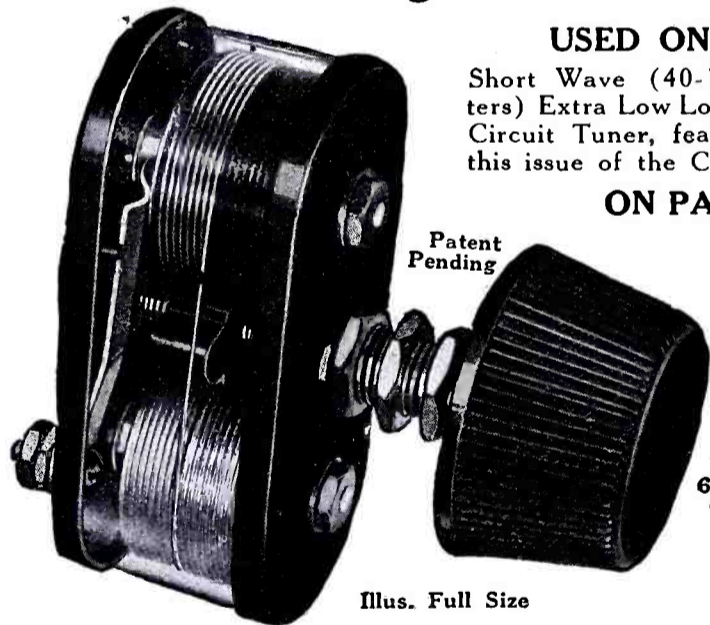
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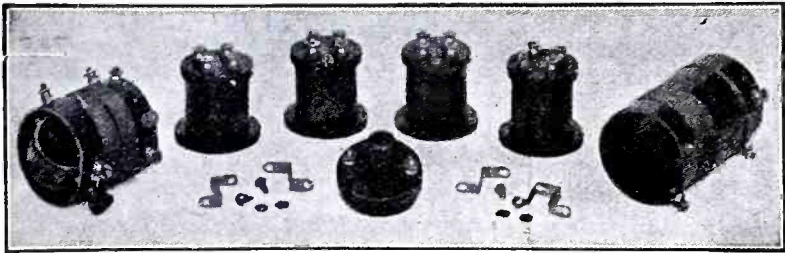
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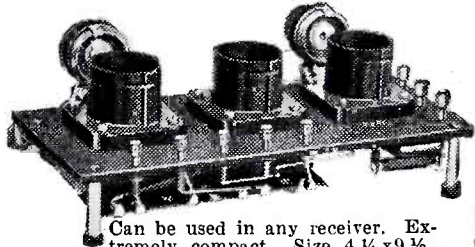
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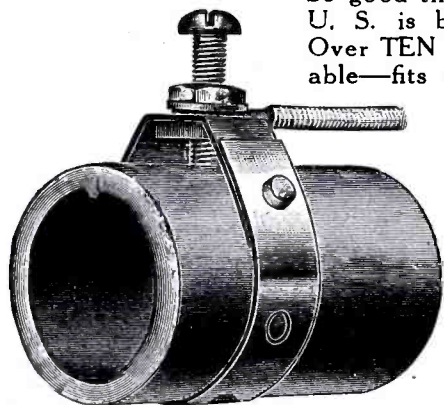
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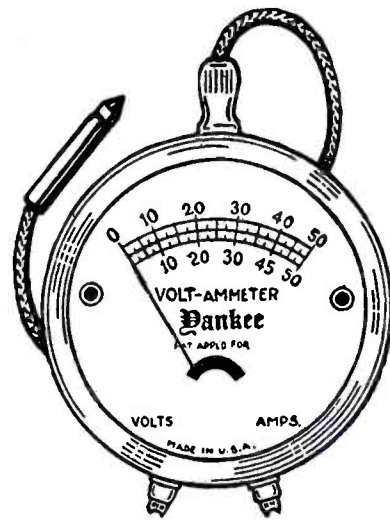
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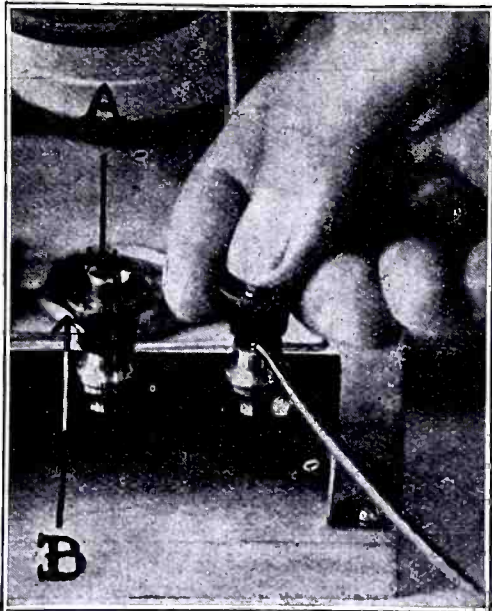
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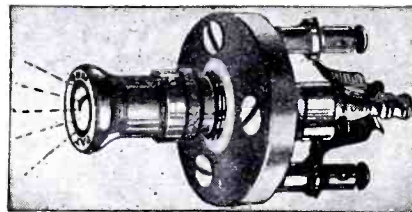
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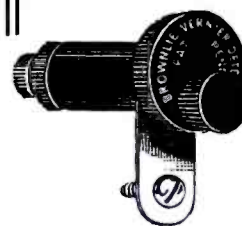
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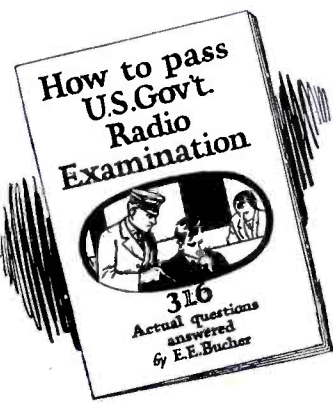
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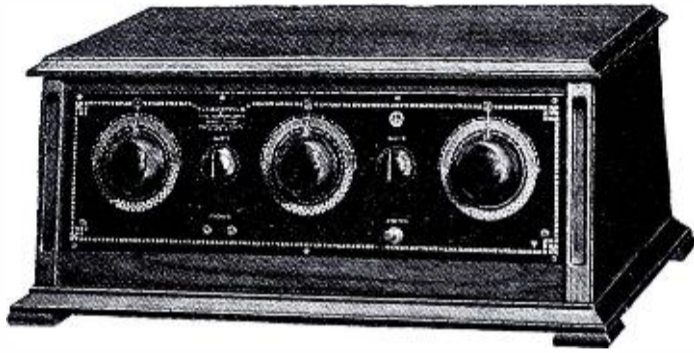
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Tell 'Em You Saw It in the Citizens Radio Call Book

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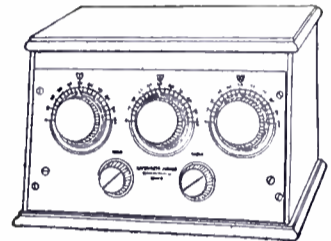
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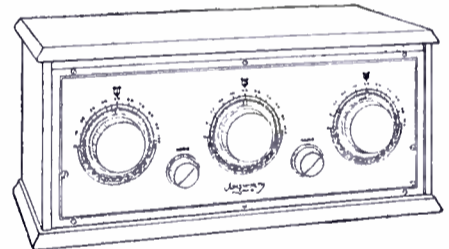
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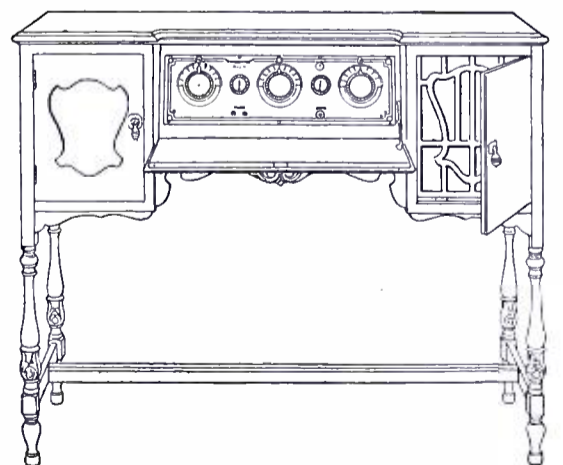
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5 Tubes, \$50.00

Ask your dealer to show you the Ainsworth line or, write us direct

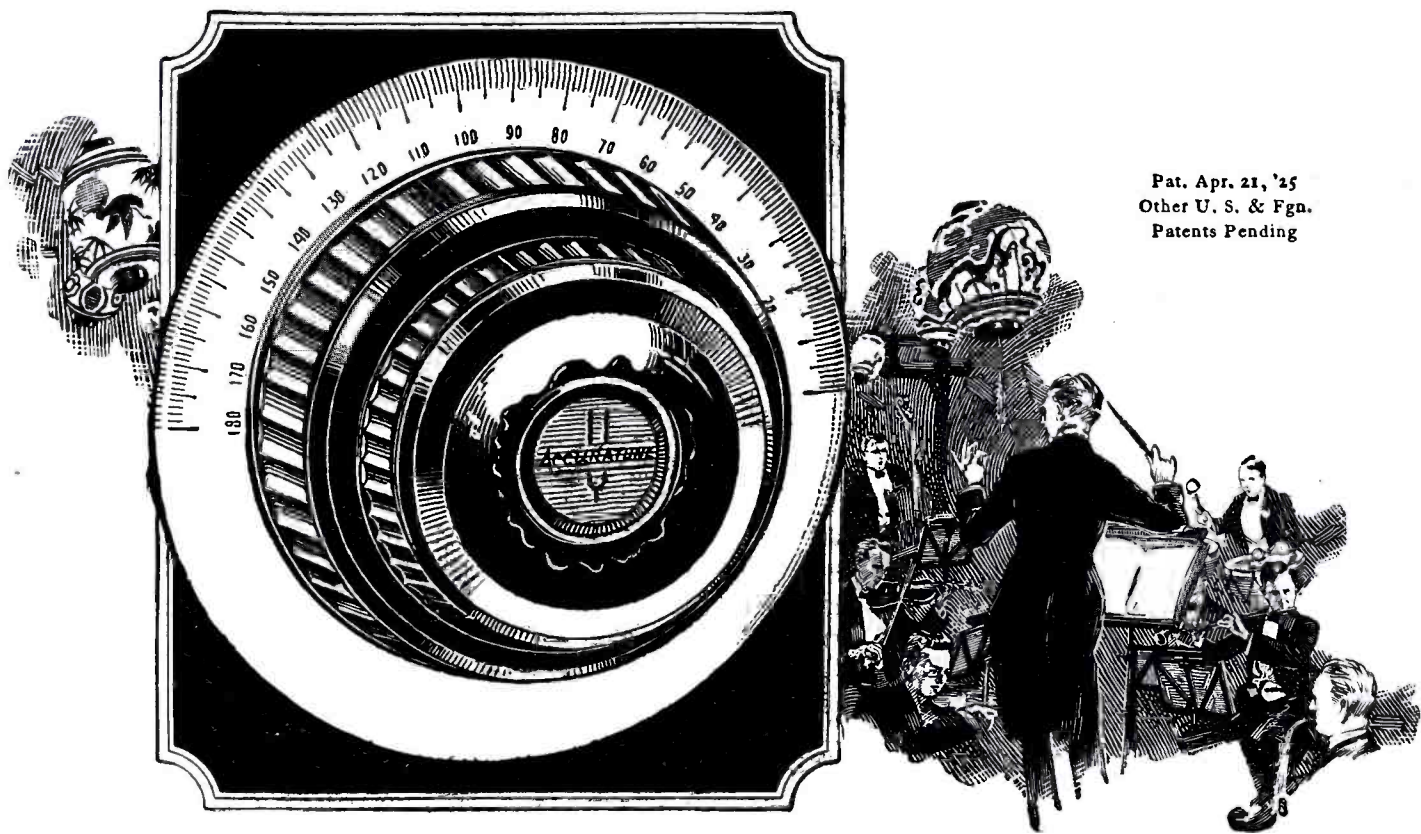
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WHEN there's a particularly fine program at one of the stations within the scope of your set, then if ever do you yearn for precision, and that's exactly what you can be assured of if your set is equipped with the Accuratune.

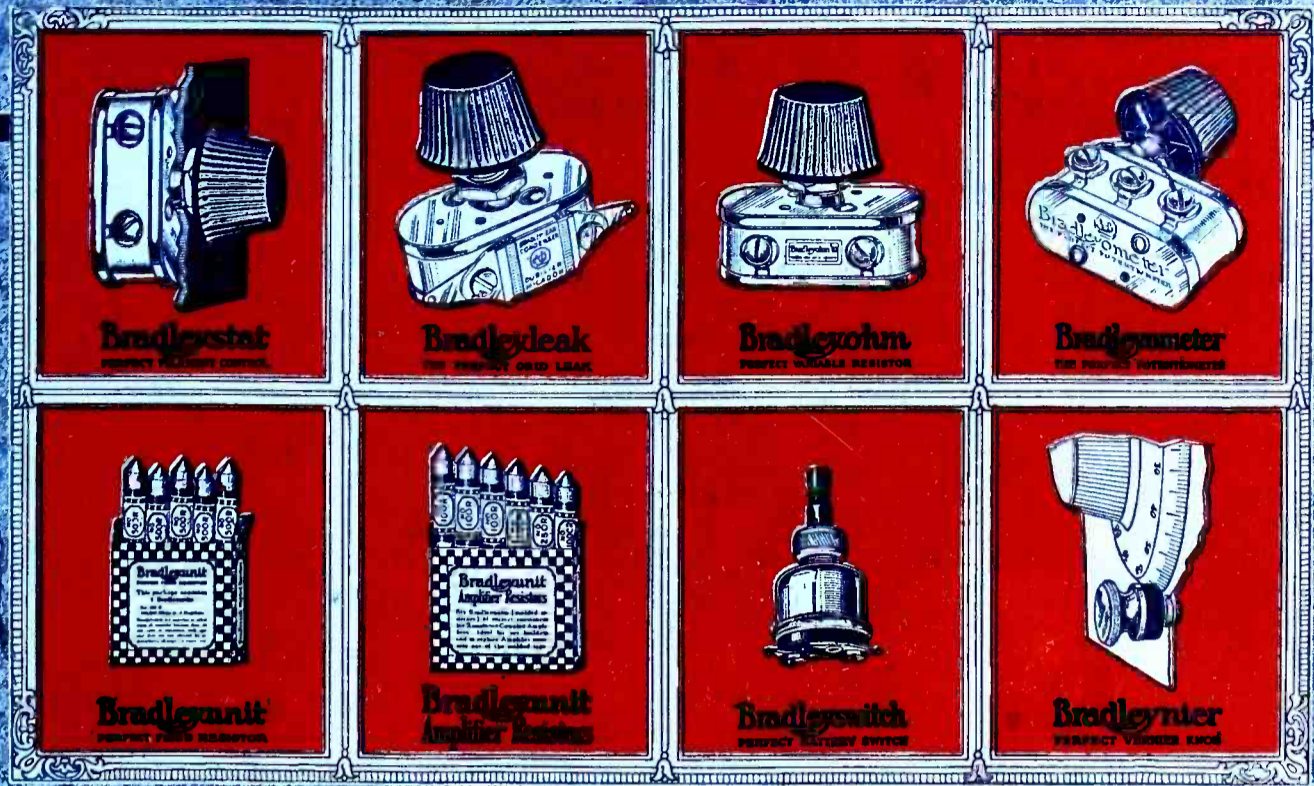
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