

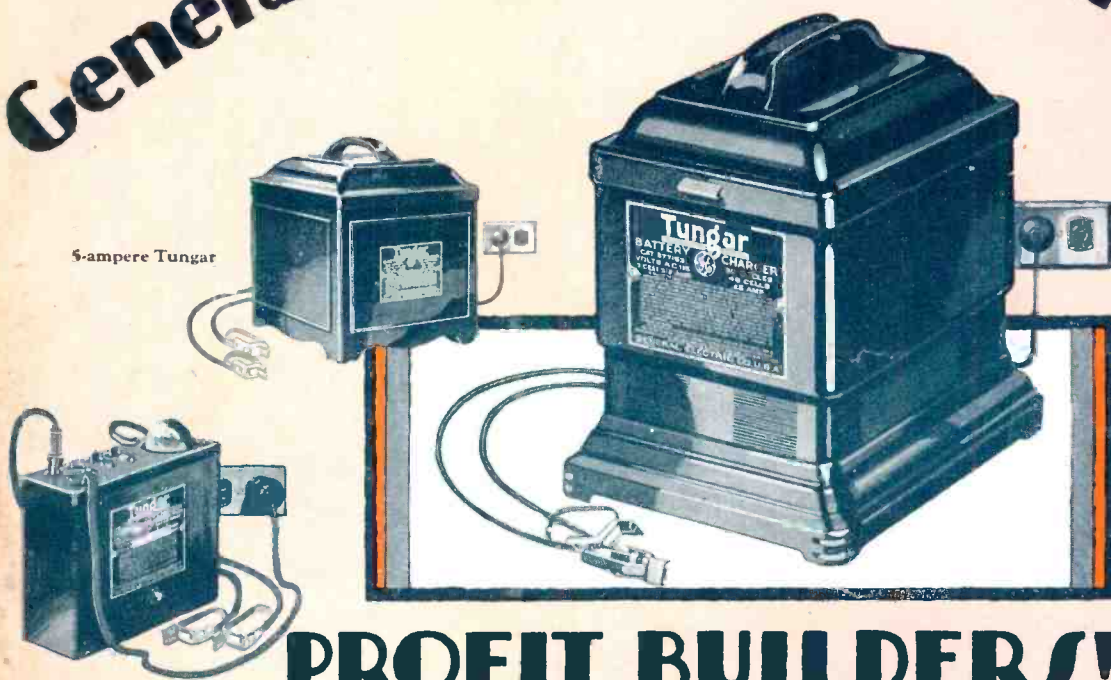
# Radio Retailing

*The Business Magazine of the Radio Industry*

A McGraw-Hill Publication

JANUARY, 1928

## General Electric Battery Chargers



5-ampere Tungar

G-E Trickle Charger

The two-ampere Tungar has a special post which makes it a trickle charger, too.

### PROFIT BUILDERS!

Hundreds of thousands of sets are now battery operated. For them, there's nothing like a General Electric Battery Charger for constant power. If it is permanently connected, throwing a switch at night means fully charged batteries in the morning. Tell your customers this—and sell them a Tungar—the original bulb charger, made and guaranteed by General Electric.



Merchandise Department  
General Electric Company  
Bridgeport, Connecticut

Tungar—a registered trademark—is found only on the genuine. Look for it on the name plate.

East of the Rockies  
2-ampere Tungar—  
\$14  
5-ampere Tungar—  
\$24  
Trickle Charger—  
\$10

# GENERAL ELECTRIC

# Cunningham

## RADIO TUBES

CX326



C327



Answer  
AC  
requirements  
in modern  
Electric



## Radio Reception

**T**HE popular demand for the latest and most improved AC power receivers calls for the latest development in AC tube construction.

Cunningham AC tubes CX-326 and C-327 are outstanding in their performance and will bring the AC power receivers you sell up to their highest efficiency. See that these two tubes are doing their duty with other new Cunningham tubes in the A. C. receivers you are selling.

E. T. CUNNINGHAM, INC.

NEW YORK

CHICAGO

SAN FRANCISCO

With A. C. Power  
Receivers Use  
Cunningham  
A. C. Tubes



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# Radio Retailing

The Business Magazine of the Radio Industry

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## What A.B.P. Membership Means

IN ADDITION to membership in the Audit Bureau of Circulations, *Radio Retailing* is now a member of the A.B.P., the Associated Business Papers, Inc.

What membership in the A.B.P. means can best be expressed by the following extracts from the A.B.P. constitution:

The advertising columns of A.B.P. publications must be open to all reputable advertisers in their field furnishing copy acceptable to the publisher.

They must not be owned directly or indirectly by any trade, class or professional association.

They must not be organs or mouthpieces of any house or combination of houses to further its or their special interest as against the joint interest of the trade.

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself:

1. To consider, first, the interests of the subscriber.
2. To subscribe to and work for truth and honesty in all departments.
3. To eliminate, insofar as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns and to make his criticisms constructive.
4. To refuse to publish "puffs," free reading notices or paid "writeups"; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real News?"
5. To decline any advertisement that has a tendency to mislead or that does not conform to business integrity.
6. To solicit subscriptions and advertising solely upon the merits of the publication.
7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements, subject to proper and authentic verification.
8. To co-operate with all organizations and individuals engaged in creative advertising work.
9. To avoid unfair competition.
10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

## Statistics Number in March

OWING to the unsettled condition of the radio industry at this time, it has been impossible to compile statistics on 1927 sales with any degree of accuracy.

Publication, therefore, of "Radio Retailing's" annual statistical review is postponed until March.

Member Audit Bureau of Circulations and Associated Business Papers

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LONDON, E. C. 8 Bourverle St.



THE STROMBERG-CARLSON HOUR, TUESDAY EVENINGS, 8 TO 9. EASTERN STANDARD TIME THROUGH THE NBC AND ASSOCIATED STATIONS WJZ, WBZ, WBZA, KDKA, KYW, WJR, WBAL, KFVE AND WHAM.

## Superb Receivers for Your Discriminating Trade

PEOPLE of culture—people who love fine things—people whose patronage a dealer encourages—are attracted by Stromberg-Carlson A.C. Receivers.

The tone quality of these magnificent instruments is unsurpassed—the result of scientific shielding and superlative design of audio system and Cone Speaker. Operation is simplicity itself—all power being taken direct from the A.C. house lighting circuit; without the use of batteries or liquids, and tuning being with a single dial.

Their cabinetry is exquisite—Console models in American Walnut, some with panels of inverse French marquetry; Table models in mahogany.

*A.C. Stromberg-Carlsons range in price: East of Rockies, Radio Sets, equipped with phonograph input jack, \$295 to \$755; Radio and Phonograph Combined \$1245; Rockies and West \$315 to \$1299; Canada \$390 to \$1650.*

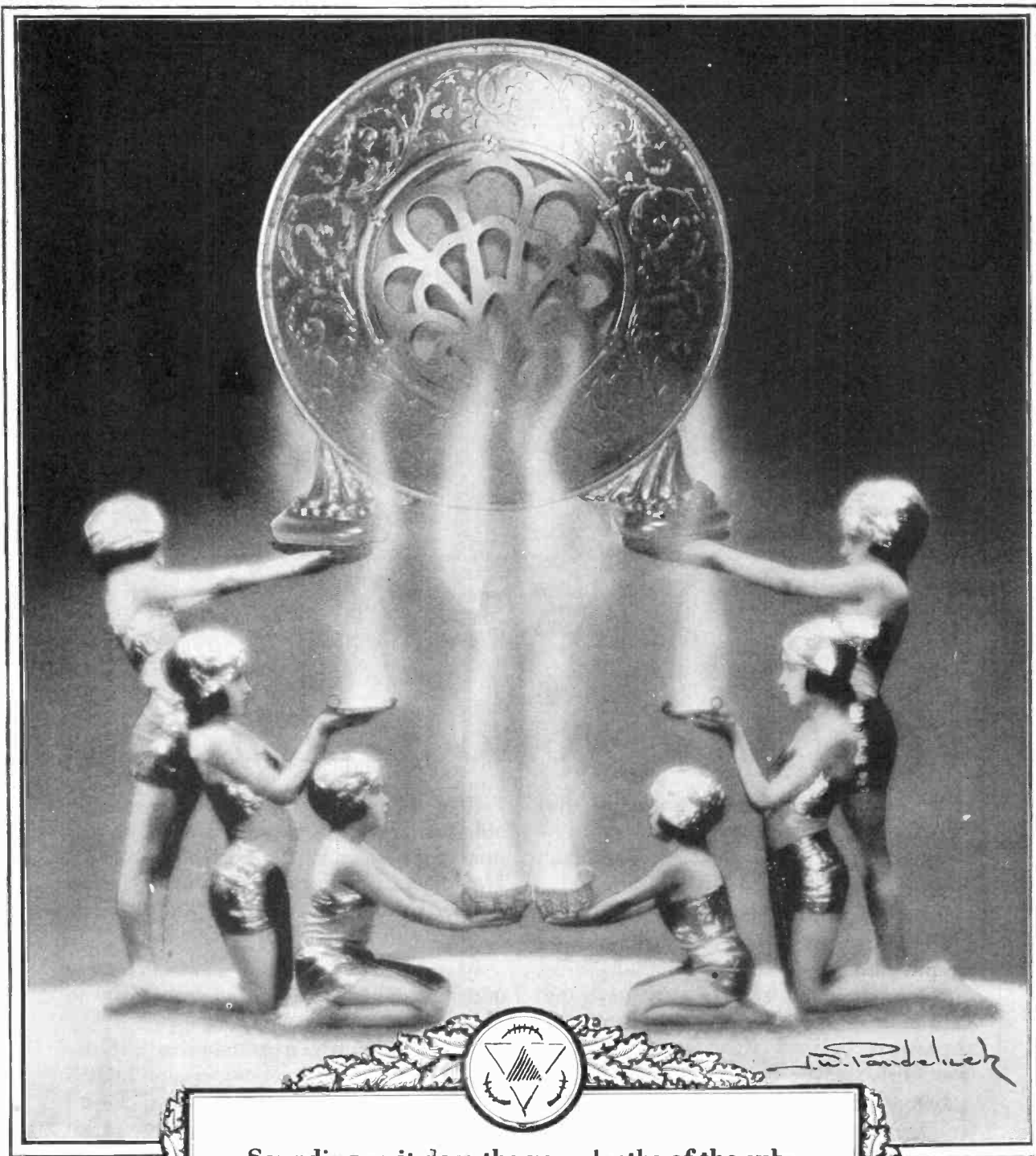
STROMBERG-CARLSON TELEPHONE MFG. CO.  
ROCHESTER, NEW YORK



NO. 734 A.C. RECEIVER  
Price with Socket-Power Unit and 11 R.C.A. Tubes—but not including Cone Speaker or Envelope Loop; East of Rockies, \$755; Rockies and West, \$795; Canada, \$1000.

# Stromberg-Carlson

Makers of voice transmission and voice reception apparatus for more than 30 years

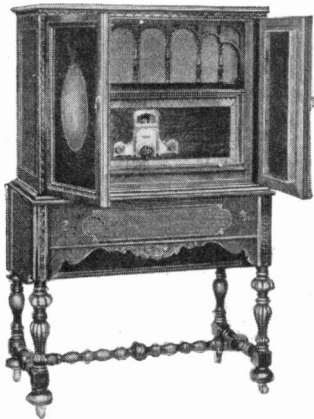


Sounding as it does the very depths of the sublime, reception with the Utah Speaker brings into being those mystic qualities of reproduction for which so many strive but so few ever attain.

*The most complete line—ranging from \$10 to \$100*  
UTAH RADIO PRODUCTS CO., 1615 S. Michigan Ave., Chicago

**UTAH**

# A good product is the prime factor in retail success



F-40 7 tubes. For operation with batteries or eliminators. Built-in loop. Without tubes or accessories. . . . . \$450

F-40-60 Operated from light socket. Built-in loop. Without tubes. . . . . \$560



E-10 6 tubes. For operation with batteries or eliminators. Without tubes or accessories. . . . . \$165

E-10-60 Operated from light socket. Without tubes. . . . . \$275

E-10-25 Operated from light socket. Without tubes. . . . . \$290

E-5 Console. . . . . \$40



E-45-60 6 tubes. Operated from light socket. Without tubes. . . . . \$460

E-45-25 Operated from light socket. Without tubes. . . . . \$475

## Federal is a wonderful product!

Here is radio recognized the world over for its tonal superiority and its beauty—every set a precision instrument—and built up to a standard, not down to a price.

Federal Ortho-sonic Radio is designed and built by responsible manufacturers with a reputation to protect—by manufacturers with more than a quarter of a century's specialization in fine electrical communication apparatus behind them—and here to stay.

Incomparable in tone—selectivity—operative simplicity—beauty of cabinet design. Design alone makes Federal stand out—win quick approval.



The Sign of the Designated Federal Retailer

Federal AC radio sets give the same remarkable results as the famous Federal battery operated machines. No hum or distortion. No batteries, liquids or adjustments. Uses standard 201A type tubes. Simple—safe—quiet—always ready to go!

Many models—for loop or aerial, battery or socket operation. Priced from \$100 to \$1250 (higher in Canada).

Here is a product that with the right kind of co-operation DOES insure a retail success! Don't wait for demand to prompt an investigation. Anticipate the demand. Write your wholesaler—or us—today.

FEDERAL RADIO CORPORATION, Buffalo, N. Y.

(Division of The Federal Telephone Manufacturing Corp.) Operating Broadcast Station WGR at Buffalo  
FEDERAL ORTHO-SONIC RADIO, Ltd., Bridgeburg, Ont.

# FEDERAL ORTHO-SONIC<sup>★</sup> RADIO

Reg. U. S. Pat. Off.

Licensed under patents owned and/or controlled by Radio Corporation of America, and in Canada by Canadian Radio Patents, Ltd.

★Federal's fundamental exclusive development making possible Ortho-sonic reproduction is patented under U. S. Letters Patent No. 1,582,470

# “GREBE”

a name on which you can build business, strengthen reputation, and make real profits —

FOR nineteen years Grebe apparatus has been the radio standard.

Grebe knowledge, ability and unswerving purpose to make only the best in radio, have contributed much to the development of the industry.

The sound construction and dependable performance of Grebe products have enabled dealers to build business, strengthen reputations, and make real profits.

*Booklet RR gives all details of the Complete Grebe Line*

A. H. Grebe & Company, Inc.  
109 West 57th St., New York City

Factory: Richmond Hill, N. Y.  
Western Branch: 443 S. San Pedro St., Los Angeles, Calif.

*Makers of quality radio since 1909*

Grebe Natural Speaker \$35



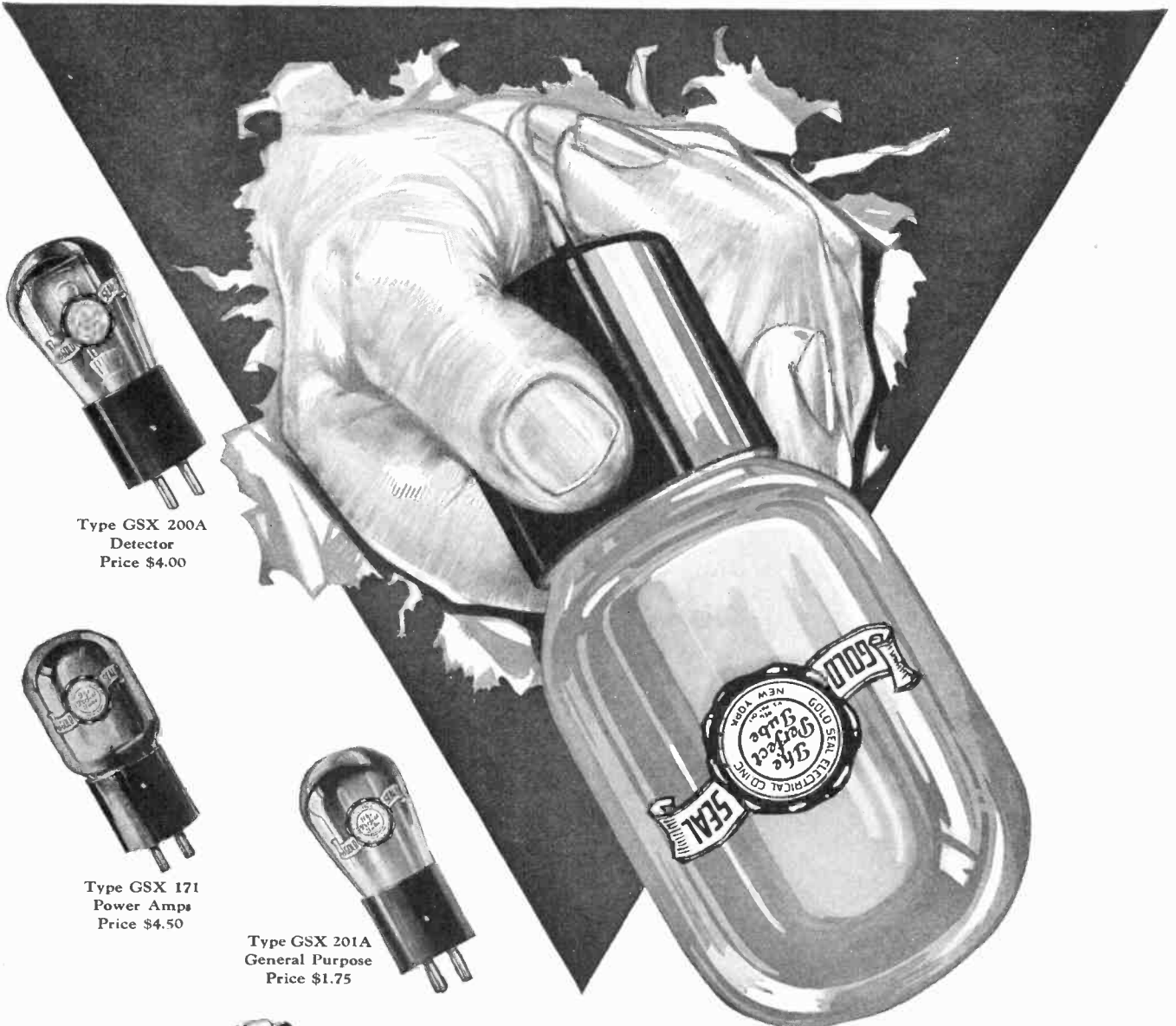
Grebe Synchronphase Seven \$135

## GREBE SYNCHROPHASE RADIO



Grebe Socket Power, Type 671-B for "B" and "C" power supply (less tube) \$50

# Sooner or later—better now!



Type GSX 200A  
Detector  
Price \$4.00



Type GSX 171  
Power Amps  
Price \$4.50



Type GSX 201A  
General Purpose  
Price \$1.75

Registered Trade  
Mark, symbolic of  
the sturdy depend-  
ability of Gold  
Seal Radio Tubes



## Gold Seal Radio Tubes

ALL STANDARD TYPES

**GOLD SEAL ELECTRICAL CO.**  
INCORPORATED

250 PARK AVENUE, NEW YORK

Jobbers—some valuable territory still open.  
Write for details of our attractive proposition.

## A live one—GRAB IT!

**G**OLD SEAL means business. The most profitable and satisfactory proposition for the jobber and dealer in the field today.

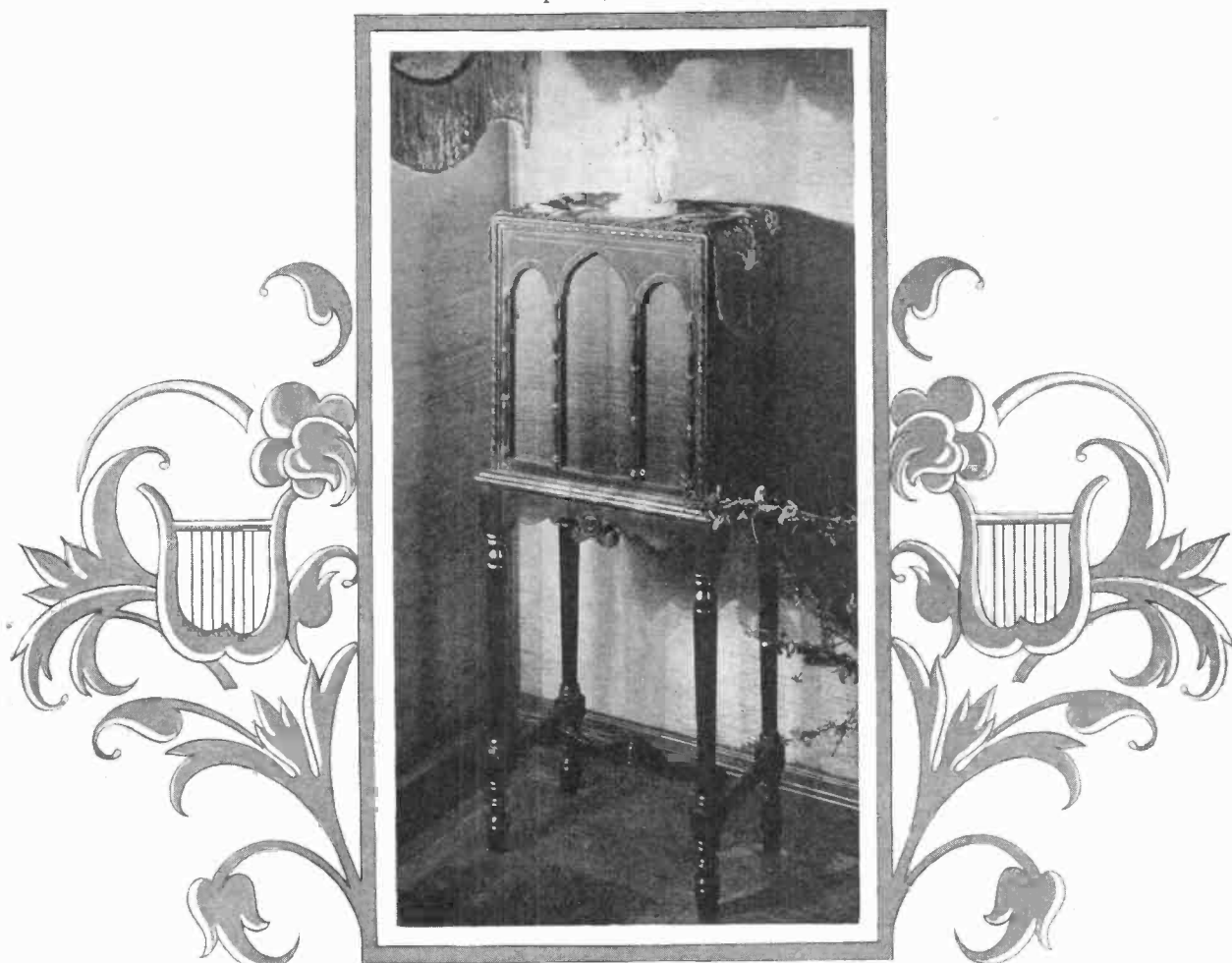
It is the right combination—careful planning and aggressive action to make business *move* for everybody who links up with us.

First of all we make the tubes *right*—a full line of highest quality in all standard types. Then an outstanding, complete plan of cooperation in selling—national and local advertising, window and counter attractions, sales builders including a sure-fire, popular style of booklet which is a “find” for radio users, and above all, a Policy of definite principles that will make you our friend forever.

**Write today for details**



New Cabinet Speaker, Model 17 . . . . \$55.00

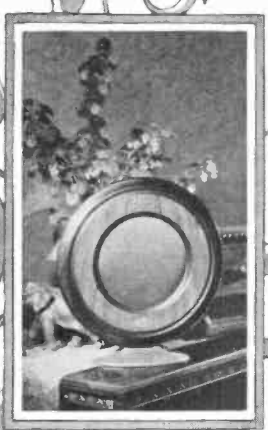


# Rola Gives Incomparable Performance

With the development of the light, free-floating, cone type reproducer, *Rola* first achieved the true *fundamental bass*—the range of “lost tones.” Now *Rola* has conquered the baffling problem of uniform resonance-free reproduction over the entire musical scale.

The result is a quality of reproduction utterly unknown in radio until this year. ☞ When listening to the new *Rola* you will be profoundly impressed by its superb softness and richness of tone, and its perfect articulation and tone shading of music and speech. ☞ *Rola* represents the most beautiful, complete and salable radio speaker line today.

*Write for the name of a Rola jobber near you.*



New Table Speaker  
Model 10, \$32.00



**THE ROLA COMPANY**  
612 North Michigan Avenue  
Chicago, Illinois  
Forty-fifth and Hollis Streets  
Oakland, California



New Pedestal Speaker  
Model 12, \$37.50

# for 1928

## a new

# FRESHMAN EQUAPHASE

## ELECTRIC RADIO

The Cabinet of Model G-10, illustrated, is designed in such proportions that it conforms with the furniture in the average home. The panels are of genuine mahogany, attractively inlaid.

A large cone speaker of great volume and superb tone—screened attractively with silk—is built right in the cabinet. A desk-type drop lid encloses the panel of the set when not in use.

Freshman Electric Radios are free from bother—there are no batteries to replace or to charge. Not even an eliminator that needs watering or that requires periodic changes of acid. The power is supplied direct from the light socket. Every Freshman Equaphase is mechanically and electrically right—and embodies refinements which are not found in sets selling at much higher prices.

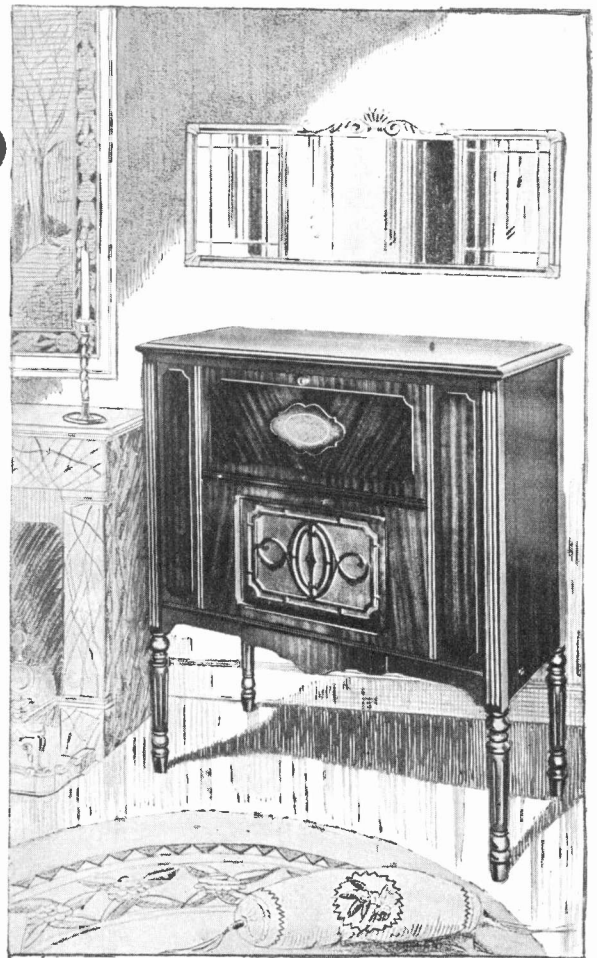


MODEL G-10, Illustrated

# \$195

COMPLETE

*Ready to operate*



The entire line of Freshman battery and electric radios are sold only to Authorized Freshman Dealers. They range in price from \$54.50 to \$500.00

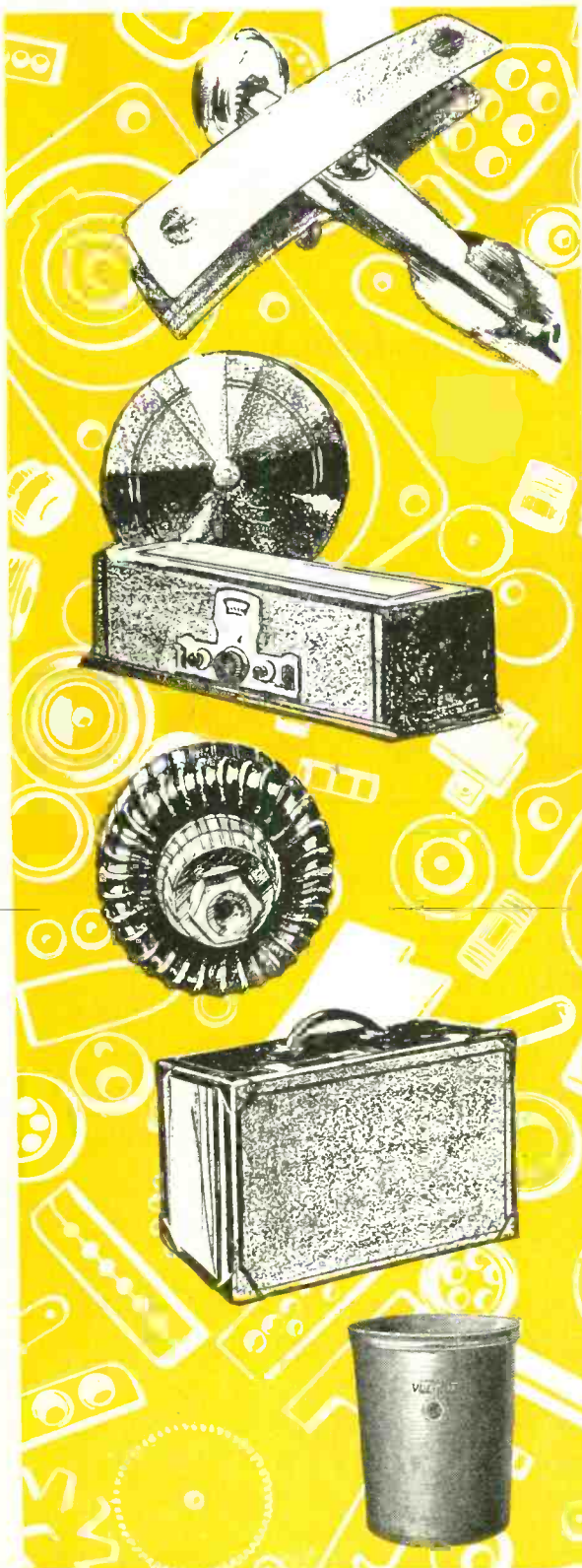
*Complete Information On Request*

## CHAS. FRESHMAN CO., Inc.

Freshman Building, New York, N. Y.

2626 W. Washington Blvd., Chicago, Ill.

# can you make it out of this?



Every day in thousands of plants throughout every department of industry, National Vulcanized Fibre is playing a vital part.

It runs the gamut from electrical bushings, cleats and switch bases to brakebands, discs, gaskets, packings and silent gears.

They make bearings, brakeshoes, friction straps and pulleys out of National Vulcanized Fibre—sheaves, wheels, washers and wastebaskets.

They make overcoat buttons of National Vulcanized Fibre—and counters for shoes, trunks, bags, trucks . . .

And just when it seems that industry has exhausted the possibilities for its use, along comes a new problem and a new market is opened to National Vulcanized Fibre—the material with a million uses!

National Vulcanized Fibre is produced in three basic forms—sheets, rods and tubes—and in varying grades, weights and thicknesses, scientifically built to meet the exacting demands of specific use.

It can be sawed, bored, drilled, tapped, threaded, milled, turned, punched, bent and formed.

It is tougher than leather, hard as iron and lighter than aluminum. It will not dent, crack, split, break or splinter.

Can you make it of vulcanized fibre?

An important part of our service to industry is our highly organized testing department where chemical and mechanical experts give their undivided time to the study of vulcanized fibre and to problems covering its use.

Write us today about it.

NATIONAL VULCANIZED FIBRE CO.  
WILMINGTON, DEL., U. S. A.

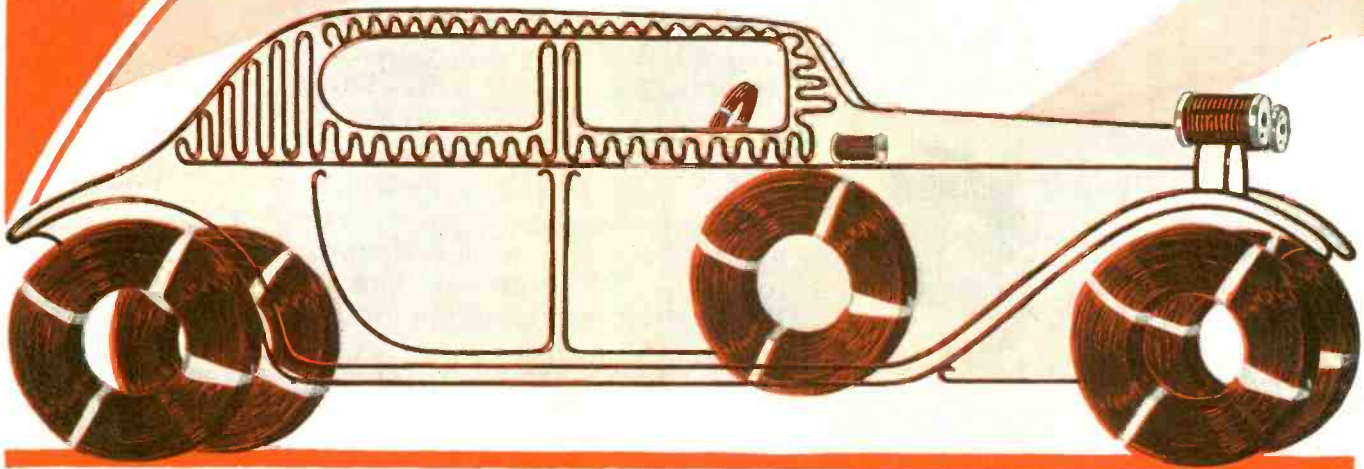


# NATIONAL VULCANIZED FIBRE

"~the material with a million uses"

# Announcing a New Model

*A Far Reaching Improvement of Vital  
Interest to Every Electrical Manufacturer*



This new "model" of enamel insulation for magnet wire means as much to the Electrical Trade as the greatest new model ever announced has meant to the Automobile Trade.

While the remarkable features of this improved insulation are not visible to the eye, as in the case of a new model car, nevertheless electrical engineers, the world over, will be quick to grasp the full significance of these five outstanding characteristics:

*More Flexibility*

*Greater Resistance to Heat*

*Greater Dielectric Strength*

*Better Ageing Qualities*

*Improved Resistance to Oil,  
Other Liquids or Moisture*

The problems of many manufacturers and engineers will be simplified by this remarkable improved wire. It will play an important part in the plans of those wise manufacturers who feel an insistant pressure being brought to bear upon them for increased efficiency and lowered cost.

# DUDLO

# DUDLO

# Enamel Wire

No electrical apparatus or instrument is any better than the wire used in its coils, and no magnet wire is any better than its insulation.

A more perfect enamel insulation on the wire you use in the manufacture of your product, therefore, means volumes to you as well as to your dealers and customers. Here are a few of the benefits:

- Improves the quality of your product.*
- Less waste of time and materials.*
- Less service expense—therefore*
- Better satisfied dealers and users.*

No automobile manufacturer ever announced a new model with more satisfaction and pride of accomplishment than Dudlo announces this improved enamel magnet wire because, as the world's largest producers of coils and windings for every purpose, Dudlo is in a position to recognize its great advantages from both engineering and manufacturing standpoints.

The need for a more rugged and more efficient enamel, especially on the larger wire sizes, has long been felt and it was logical that Dudlo should be first to meet this requirement of the electrical industry.

The Dudlo reputation for quality, efficiency and dependability is your warrant for prompt action. Dudlo offers nothing that has not passed the severest practical tests in actual use as well as in the laboratory.

**To Electrical Engineers and Manufacturers:**

You are invited to write us for samples and information.

**DUDLO MANUFACTURING COMPANY, Fort Wayne, Ind.**  
 Division of The General Cable Corporation



# FOUR MILLION SETS WAITING FOR THIS Get your share of this profitable "A. C. Business"!

Converting storage battery sets to A. C. operation is creating a lot of new business—a small investment in Alden "CONNECTORALDS" is all you need.

THE public's interest in the new "Electrified" sets is phenomenal. This definite and important trend towards A. C. operated sets is having its effect on the owners of battery-operated sets.

They want the advantage of A. C. operation, but they don't want to scrap their investment in the sets they now own.

Alden engineers sensed this demand and met it with a complete set of accessories that enable any set to be converted to A. C. operation with the minimum of expense. Merely insert Alden "CONNECTORALDS" in the present UX or UV sockets as per instructions.

**EVERY BATTERY-OPERATED SET OWNER IS A WALKING OPPORTUNITY**

Practically any set can be changed over—special provision has been made for neutralized or balanced sets that tend to oscillate when A.C. Tubes are used.

Directions are packed with each adapter and standard harnesses are made for Atwater Kent (model No. 30-32-35) and Crosley Bandbox, Radiola No. 16, Kolster, etc.

Alden CONNECTORALDS are electrically perfect, the result of long experience in socket manufacturing. Their parallel, constant pressure contacts, take all grief out of A.C. conversion. The differently colored locator rings make directions easy to follow.

Don't delay! Make up your order from the parts shown. If in doubt what to order, ask us to make up an assortment.

**Extra parts desirable to stock are:**

- No. 905 Complete Kit for 5 Tube Set..... \$9.00
- No. 906 Complete Kit for 6 Tube Set..... \$10.00
- No. 907 Complete Kit for 7 Tube Set..... \$11.00

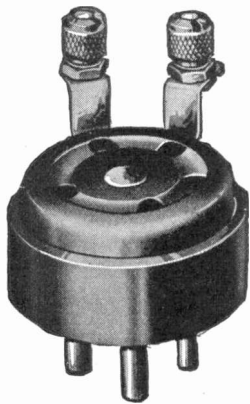
Above Kits Do Not Include Oscillation Control, Resistors Or Volume Controls.

- No. 601 Volume control with series Resistance for Sets with one untuned stage..... \$3.00
- No. 602 Volume control with center tap for tuned Radio frequency and similar sets..... \$3.00
- Oscillation control Resistors (See values at Right)..... .25 each
- Na-ald special 500 ohms Y tap resistance RY 500..... .75 each
- Na-ald special 1000 ohms Y tap resistance, RY 1000..... .75 each
- Na-ald Midget By-pass Condensers..... .50
- Any good make of filament transformer either as separate unit or part of "B" Eliminator or Amplifier.

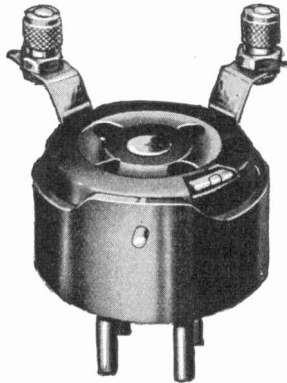
If you wish to make your own harness the standard equipment for tuned radio frequency sets that are wired for a power tube is:

- 1 No. 926 GT Connectorald with 1000 ohm Y tap resistance for power tube.
- 1 No. 926 GT Connectorald with 500 ohm Y tap resistance and two Midget by-pass condensers for the first audio tube.
- 1 No. 927 Connectorald for the five prong detector tube.
- Put No. 926 Connectoralds in all other sockets.
- 1 Na-ald volume control.

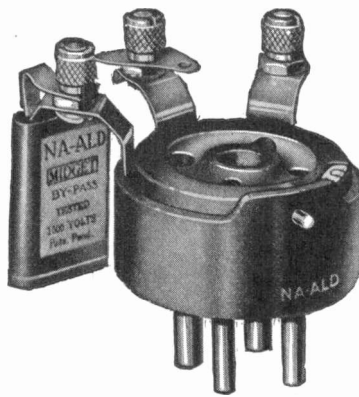
This equipment does not require mid taps on transformers or any external resistances. It is self-contained. The connecting wires should be of No. 16 gage.



No. 927 UY  
For 227 and 327 Tubes



No. 926  
For 226 and 326 Tubes



No. 926 GT for 1st Audio Stage  
and Last Audio or Power Stage

**Alden Mfg. Co.**  
Springfield, Mass.



Y TAP RESISTOR FITS ON  
THREE PRONGS OF NO. 926GT



No. R 500 Resistor	500 ohms
No. R 600 Resistor	600 ohms
No. R 700 Resistor	700 ohms
No. R 800 Resistor	800 ohms
No. R 900 Resistor	900 ohms
No. R 1000 Resistor	1000 ohms

The Numbers of the Na-Ald A. C. Connectoralds are:

No. 926 Red, all purpose.....	Price \$1.00
No. 927UY Green, Detector.....	Price \$1.00
No. 926GT Red, with Resistor Slot.....	\$1.25
No. 926GT Orange, Power.....	\$1.25

GT indicates "ground tap" used for attaching C batteries, By-pass, Condensers or Center or Y Tap Resistors.

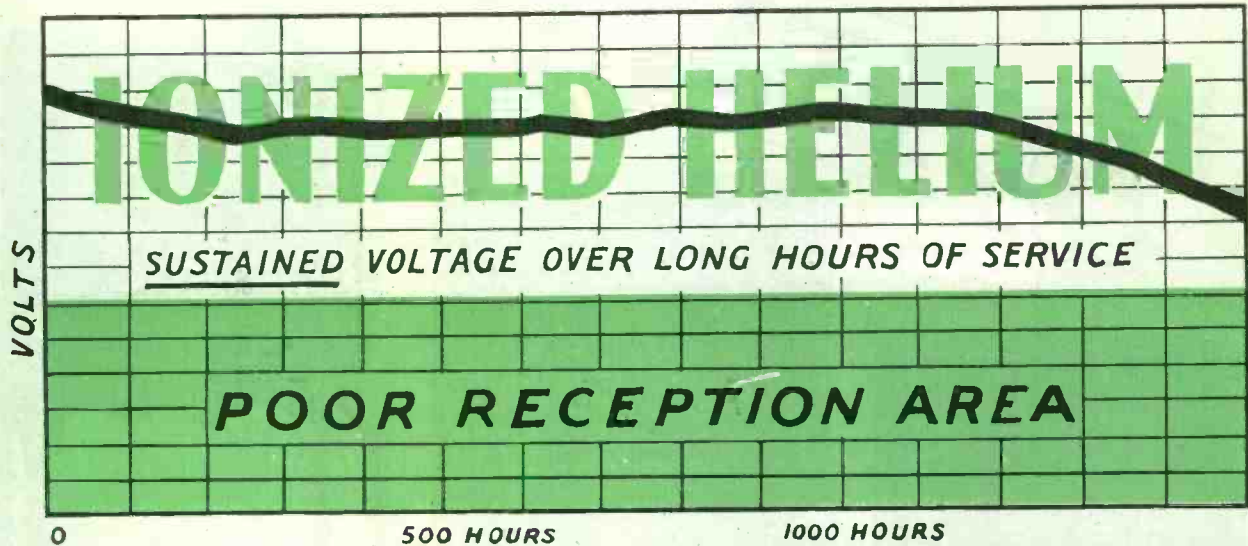


TRADE MARK  
REG. U. S. A. PAT. OFF.

# ALDEN "CONNECTORALDS"

for electrifying sets with the new A. C. Tubes

# The Reason Behind that Long Life Line



The efficiency of any rectifying tube is measured by the number of hours it can deliver a *sustained* voltage.

In Raytheon the active principle is ionized helium gas, instead of the old style filament operating in a vacuum.

The fact that this gas *cannot* break or burn out results in the longest life of any rectifying tube on the market.

The greatly superior conductivity of ionized helium results in a *sustained* voltage from first to last.

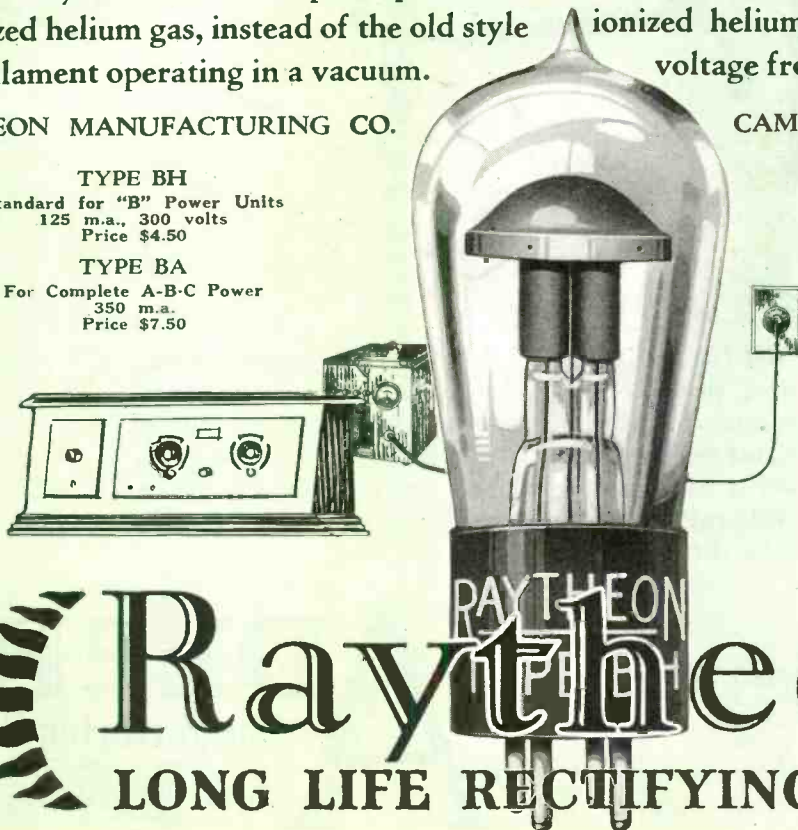
RAYTHEON MANUFACTURING CO.

CAMBRIDGE, MASSACHUSETTS

TYPE BH  
Standard for "B" Power Units  
125 m.a., 300 volts  
Price \$4.50

TYPE BA  
For Complete A-B-C Power  
350 m.a.  
Price \$7.50

40 leading makers of power units and rectifying devices equip with Raytheon. This seal on any instrument marks it as "Raytheon equipped."

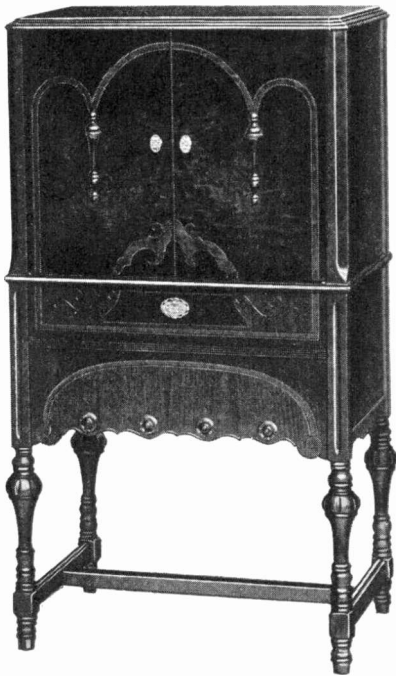


# Raytheon

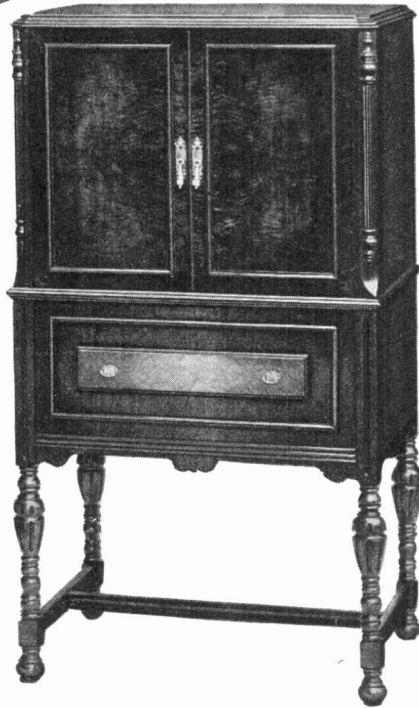
LONG LIFE RECTIFYING TUBE

THERE is no selling argument in your salesman's vocabulary stronger than—  
 "Cabinet Work by ADLER-ROYAL"

# ADLER-ROYAL



No. 101



No. 102



No. 103

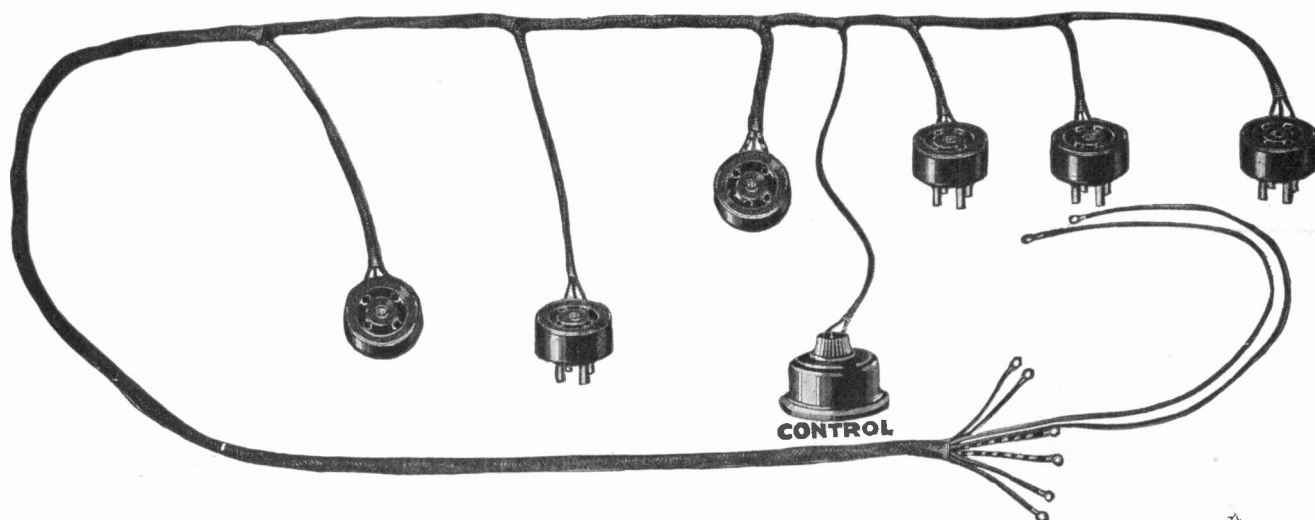
ADLER-ROYAL CABINETS are being used in exclusive designs for the finer sets of nearly every nationally known Radio, for the reason that every Adler-Royal cabinet portrays the distinguishing technique of its famous artist designer, and the *visible quality-mark* of Adler-Royal craftsmen. It contributes a distinctive sales advantage to the set.

A BEAUTIFUL line of Adler-Royal stock models is now being shown by leading Radio Distributors. Write or wire your nearest jobber or this office for particulars.

**ADLER**  
 Manufacturing Co.  
*Incorporated*  
 LOUISVILLE  KENTUCKY



# Here's something **NEW** to **SELL**



## Now you and your customers can use AC Tubes in battery operated sets without rewiring

It's the EBY AC Adaptor Harness. The adaptors fit into the sockets of battery operated sets. The AC Tubes fit into the adaptors. The harness is connected to a standard step-down transformer. The B and C Supplies are left alone and the A Battery or Eliminator is forgotten forever—*without rewiring*.

The EBY AC ADAPTOR HARNESS is available for five and six tube sets and makes it possible to use AC Tubes in almost any standard sets (except super-heterodynes) provided with separate B Battery and C Bias leads for the last A.F. Stage without rewiring. Model numbers are listed in our instruction booklet. Write for it.

Each harness is equipped with a volume control and full instructions are included in each package.

### LIST PRICE

Five tube Adaptor Harness..... \$9.00  
Six tube Adaptor Harness..... \$10.00

### Move Battery Operated Sets in Stock.

Any new or traded-in battery operated set in stock equipped with the EBY AC Adaptor Harness can be sold as a complete modern set using AC Tubes.

### Over 3,000,000 Hot Prospects!

Every battery operated set owner is a good, live prospect for the EBY Harness—even the ones who haven't paid their last installment yet and particularly the ones who have expensive sets which they want to bring up-to-date. Here's something new for dealers to sell to everybody who ever bought a set from them—and sell right now.

### It helps sell A. C. Tubes and Transformers

The EBY AC Adaptor Harness not only sells itself but each one sells a transformer and a complete set of AC Tubes. It helps sell B Eliminators, too.

It's here and it works and we're taking orders for January 15th delivery and filling them in the order received.

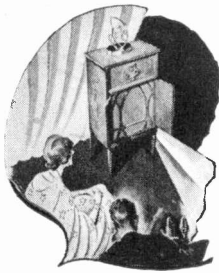
**The H. H. EBY Mfg. Co., Inc.**  
4710 Stenton Ave., Philadelphia, Pa.

In the radically different Eveready Layerbilt the cells are flat, and the battery is assembled under pressure into a solid block, eliminating waste space, packing a maximum of active materials within the battery case, and making those materials more efficient.



# In the EVEREADY LAYERBILT

## we have put the holes to work



### Radio is better with *Battery Power*

*There is a kind of radio reception that is radio at its very best. Clear. Hum-free. True in tone, faithful. Reliable. Reception from a receiver that is working under exactly the conditions for which it was designed. For such reception, use batteries. For batteries provide pure D.C., Direct Current, the only kind of current that is silent and unnoticeable in radio. For utmost delight, undisturbed enjoyment, and unalloyed delight, use Battery Power.*



**T**HE ordinary dry cell "B" battery is full of useless holes—waste space between the cylindrical cells. In a battery using large-size cells the wasted space may amount to as much as 30 per cent of the total.

A number of years ago we set about correcting this state of affairs. Dry battery traditions were dropped. An entirely new kind of dry cell was developed. It was flat and square like a book instead of cylindrical. Such cells were pressed together into a solid battery block with no waste spaces. The new invention was patented, thus making it exclusively Eveready. Such, briefly, is the history of the Eveready Layerbilt "B" Battery that embodies the first radical changes and improvements ever made in the dry cell.

But before this remarkable battery was ever sold, it was tested and retested for several years in the laboratory. Then it was put on trial in home service in all parts of the country. Several

remarkable things were discovered in this way. The battery contains more active materials than a cylindrical-cell battery of the same outside dimensions—and it gives over 30 per cent more service! The Layerbilt construction puts the active materials in closer contact with each other, and makes them produce considerably more electricity.

This is why the Eveready Layerbilt "B" Battery No. 486 is the longest lasting of all Evereadys. It is a heavy-duty battery for use on all loud-speaker receivers. Hundreds of thousands of people have found it to be the most economical radio battery they ever used.

You give a new degree of satisfaction to your customers when you sell them the Eveready Layerbilt. Order from your jobber.

NATIONAL CARBON CO., INC.  
New York  San Francisco  
Atlanta Chicago Kansas City  
Unit of Union Carbide and Carbon Corporation

# EVEREADY Radio Batteries

—they sell faster

*Illustrated to the left is the cylindrical cell type of B battery construction. Each cell is a unit connected to the others by soldered wires. The space between the cells is wasted, useless.*

# AC28—A New Standardyne All-Electric Table Model for Less Than \$100



*AC 28  
One Dial  
Control  
Using Six  
AC Tubes*

*Retail Price*  
LESS A C TUBES  
**\$99.50**



[[ Height, 9½-in. Length, 21-in. Width, 13-in. ]]

*The* **Standard RADIO CORPORATION**  
WORCESTER, MASS.  
~ USA ~

BEN FINK, President

**I**N this new A C Model 28, Standardyne meets the growing demand for ALL-ELECTRIC radio at a popular price.

It is mechanically perfect, tunes all stations sharp and clear, brings in distance with a volume and clarity that is amazing and has met the most rigid laboratory and factory tests both as to performance and construction.

Completely contained in a rich hand rubbed mahogany finished cabinet, it is truly an ALL-ELECTRIC radio using the new AC tubes. Operating direct from the electric light current, it eliminates the use of batteries, acids and other makeshifts. Cost of operation is trivial—less than one-third of a cent per hour.

This new A C Standardyne Model 28 assures the sort of customer satisfaction that means increased sales to your radio department.

**Wire or write  
for one of  
these sets  
on our  
trial  
plan  
offer**

Please send me details of your trial plan. Of course, there is no obligation on my part.

Name .....

Address .....

City .....

# STEINITE—America's Fastest Selling ELECTRIC RADIO—because

it is **TIME-TESTED** and  
gives **EXTRA value!**

## \$100

**T**HE combination of true electric radio—time-tested—and sensational value at \$100, has swept Steinite into public favor to stay! Steinite dealers are enjoying a turnover never before experienced and are setting a new high-mark for profit-takings. In addition, Steinite dealers sell without fear of comeback—Steinite is the pioneer electric radio that was introduced as far back as the 1926 Radio Shows, and uses *no batteries, no liquids, no outside attachments.*

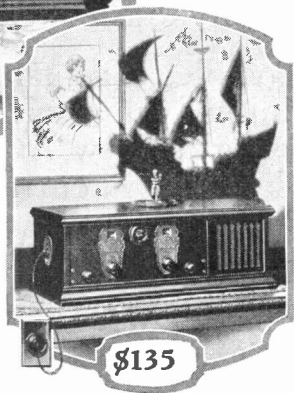
*No attachments  
—complete in 1 unit*

**NOW—  
write for the  
STEINITE  
PROPOSITION!**



The famous Steinite tone is a musician's delight—living, rich and mellow. Its performance amazes—distance with ease and without distortion! Three beautiful models in cabinets of solid genuine Philippine Mahogany. Six tubes, 2 illuminated dials.

*Have you noticed Steinite's strong, consistent National Advertising?*



# Steinite

*There is a  
Steinite jobber  
in your territory*

**STEINITE RADIO COMPANY  
506 SOUTH WABASH AVE., CHICAGO**

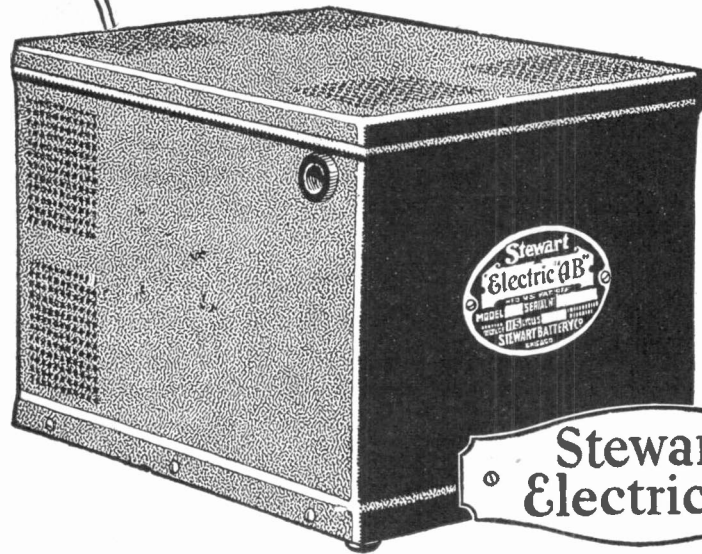
*Licensed under R. C. A.  
patents and under  
Pat. No. 1014002*

# NOW - for all time

# Electrify

any Radio  
with the famous

# Stewart Electric 'AB'



The Stewart Electric "AB" will help you sell the standard battery receivers you have in stock by converting them into AC operated sets.

These sets equipped with Stewart Electric "AB" will prove by all tests to be the most satisfactory and quiet method of AC Electric Radio Operation.

Stewart  
Electric 'AB'

*all Dry!*

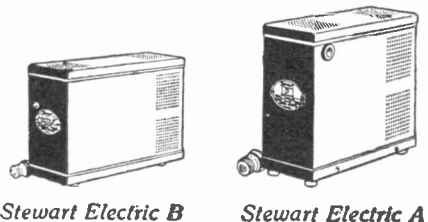
The Stewart Electric "AB" gives a dependable and reliable D. C. current without batteries, acids, liquids, or special A. C. tubes in the set—an *all dry* unit. It operates standard tubes, inexpensive to replace, now used in sets most efficiently. It supplies an even, constant, hum-free power when you want it as long as you want it. Operates on and off from the radio set switch.

**A REAL GUARANTEE**

The Stewart Electric "AB" is fully guaranteed in writing—it will give you all you can possibly demand in permanent Electric operation—with standard time-proven Tubes.

**not** a battery  
**not** an eliminator  
**not** a socket power  
**not** an AC tube

Install Stewart Electric "AB's" in battery-operated sets of your old customers, thus converting them into A-C sets. No re-wiring or changes of tubes necessary for the installation of the Stewart Electric *All-Dry* unit.



**STEWART COMPANY**  
125 North Peoria Street  
**CHICAGO**

**STEWART COMPANY**  
125 North Peoria Street  
Chicago, Illinois

Gentlemen:  
Please send me, without obligation on my part, complete literature on the Stewart Electric "AB."

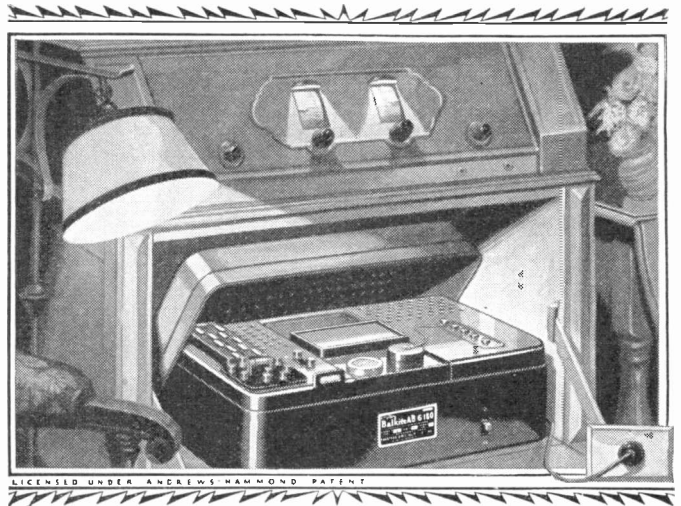
Name .....

Address .....

City .....

Jobber  Dealer

# The clearest and truest Electric Radio



Licensed  
under  
Andrews-  
Hammond  
patent

## Balkite "A"

Like Balkite "AB" but for the "A" circuit only. Enables owners of a "B" eliminator to make an electric installation at very low cost. \$35.



## Balkite "B"

The accepted tried and proved light socket "B" power supply. Three models: \$22.50, \$35, \$42.50.



## Balkite Chargers

Standard for "A" batteries. Noiseless. Can be used during reception. Trickle or High-Rate, 3 models, \$7.50, \$9.50, \$17.50.

Special models for 25-40 cycles at slightly higher prices. Prices are higher West of the Rockies and in Canada.

## Is a standard radio set equipped with Balkite Electric "AB"

Now you can give your customers an AC electric receiver and still keep your sales in tried and proved devices.

Simply by equipping the sets you sell with Balkite Electric "AB." Balkite Electric "AB" replaces both "A" and "B" batteries and supplies radio power from the light socket. It contains no battery in any form. It operates only during reception. It makes any receiver an electric set.

This method makes possible the use in electric reception of

standard sets and standard type tubes. Both are tried and proved, and give by far the clearest and truest reproduction. The same high standard of reception to which set owners are accustomed.

In this method there is nothing experimental, nothing untried. It consists of two of the most dependable products in radio — a standard set and Balkite.

By all means sell electric operation. As shown by Balkite sales figures, that's where the volume is in radio today. But let the AC sets you sell be standard radio sets equipped with Balkite Electric "AB." Then the profit on each set will be clean.

### Chicago Civic Opera

on the air Thursday Evenings, 10 P. M. and 10:30 P. M. Eastern time over WJZ and fifteen associated stations on the Blue Network of the National Broadcast Chain.

BALKITE HOUR

Two models—  
\$64.50 and \$74.50.

Ask your jobber.  
Fansteel Products  
Co., Inc., North  
Chicago, Ill.

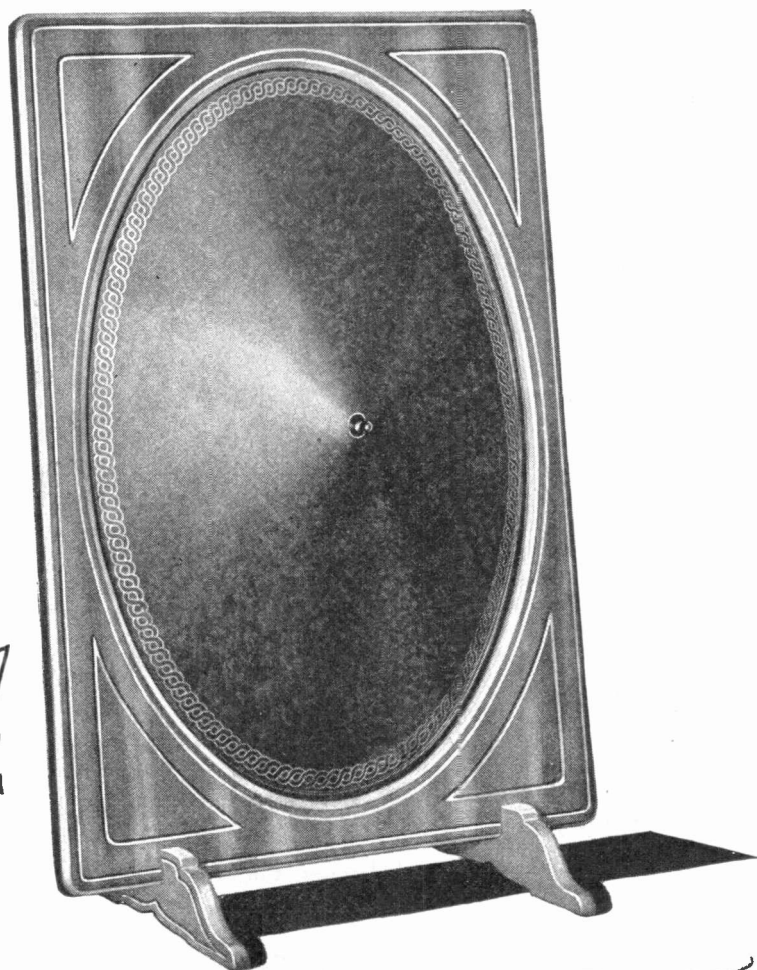
# Balkite ELECTRIC AB

⌈contains no battery⌋



# A NEW FARRAND SPEAKER

Again a Farrand advancement in speaker design . . . the Farrand *Concert* Speaker. Greater tonal depth than ever before . . . richer, clearer bass tones, with all the pleasing treble retained. Exquisite in design and finish. Already a "best seller". Don't wait. Place your order now with your nearest Farrand distributor.



\$35.00  
*Slightly higher in  
Far West and Canada*

*Farrand*  
**CONCERT**  
S P E A K E R

---

FARRAND MFG. CO., INC., LONG ISLAND CITY, NEW YORK

# The New Excello Consoles



No. 37 Closed

for  
**RADIOLA-17**  
**ATWATER KENT**  
**CROSLEY**  
**FREED-EISEMANN**  
*J and other Standard  
 A.C. Receivers*



No. 37 Open

## BEAUTIFY *your set!*

On your display floor these quality consoles will attract favorable attention. They will display your A.C. sets to best advantage and increase sales.

The cabinet work throughout is of true Excello quality: doors are of 5-ply matched butt walnut. Consoles finished in rich piano finish.

Dealers and distributors—write for particulars of the full Excello line. Also for details of attractive franchise proposition.

## EXCELLO

*Radio Consoles*

*Nationally advertised—Sell the Excello—Nationally preferred.*

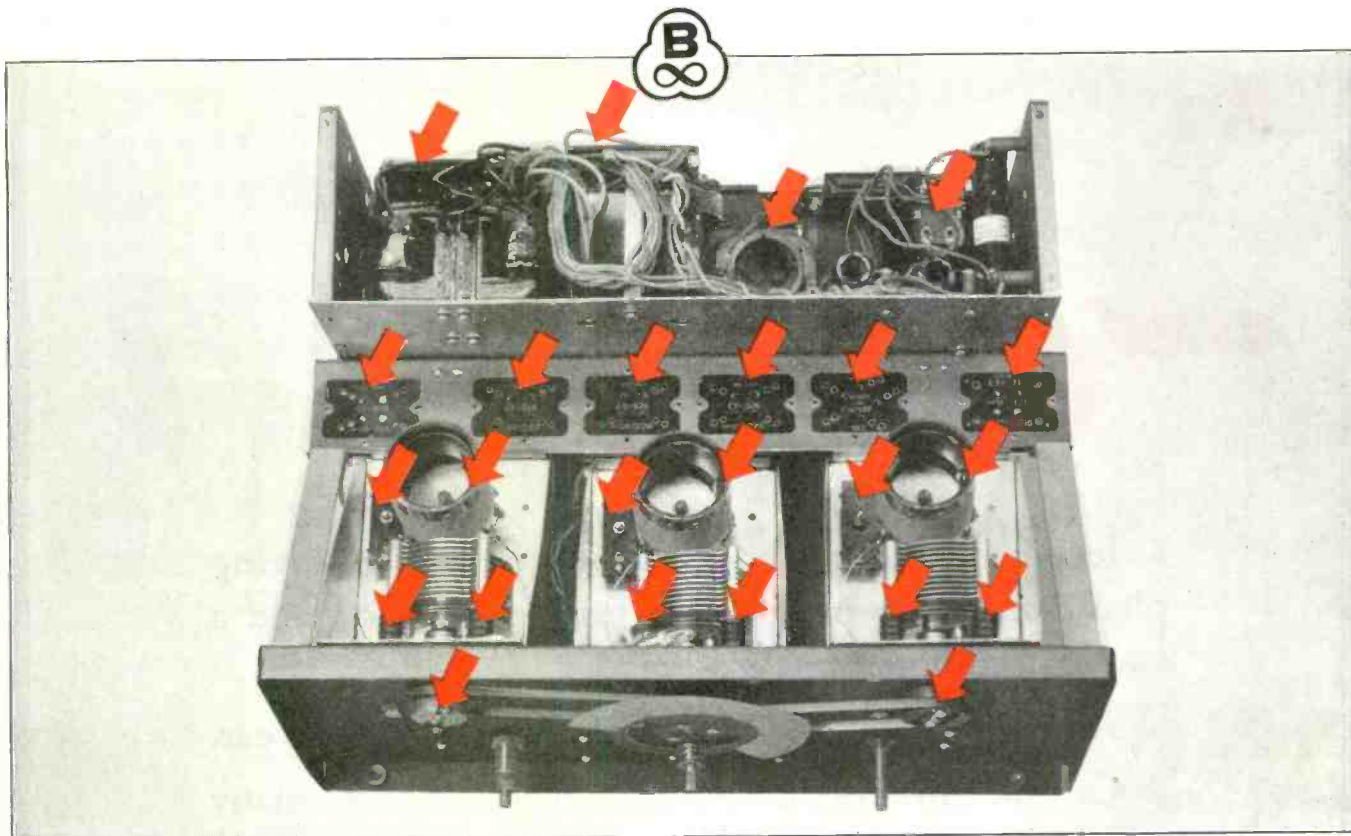
**EXCELLO PRODUCTS CORPORATION**

4834 West 16th Street, Cicero, Ill.  
 (Suburb of Chicago)



No. 36 Closed





Chassis of Freed-Eisemann Receiver. Bakelite Materials indicated by arrows. Made by Freed-Eisemann Radio Corp., Brooklyn, N.Y.

## “We will not compromise with Quality”— so Freed-Eisemann uses Bakelite Materials

**F**REED - EISEMANN, whose receivers were awarded a Gold Medal at a recent European Radio World's Fair, make extensive use of Bakelite Materials in building their justly famous receiving sets. A glance at the illustration with the arrows indicating a number of the applications of Bakelite Materials tells but a part of the story. Many other Bakelite insulated parts are hidden by the metal shields.

The unanimous approval of Bakelite

Materials by the leading builders of Radio Receivers shows how important it is for the Radio Trade to make sure that the receivers and parts which are offered to their customers are insulated with Bakelite Materials. It means customer satisfaction because it assures freedom from troubles due to faulty or deteriorated insulation. Write to us for Booklet No. 39, describing the advantages of Bakelite Materials for Radio Receivers.

### BAKELITE CORPORATION

247 Park Ave., New York, N. Y. Chicago, Office: 635 West 22nd St.  
**BAKELITE CORP. OF CANADA, LTD.,** 163 Dufferin St., Toronto, Ont., Can.

# BAKELITE

REGISTERED U. S. PAT. OFF.

THE MATERIAL OF  A THOUSAND USES

\*The registered Trade Mark and Symbol shown above may be used only on products made from materials manufactured by Bakelite Corporation. Under the capital "B" is the numerical sign for infinity, or unlimited quantity. It symbolizes the infinite number of present and future uses of Bakelite Corporation's products.\*

“  
—and in

— leaders in almost every industry are laying plans for bigger production, finer production and a swelling volume of sales.

All signs point to 1928 as the biggest radio year.

Careful surveys in the past forty days in many markets reveal the name Kolster as prominent in millions of minds. The star of Kolster Radio is firmly in the ascendancy.

“  
In markets where battery sets will still dominate, and in markets where electric sets will lead, the name Kolster has a new and powerful selling authority.

**KOLSTER**

---

Enjoy the KOLSTER FAMOUS COMPOSERS HOUR  
over the nation-wide Columbia Broadcasting System.  
*Every Wednesday 9 to 10 P. M. Eastern Time*

# 1928”

The most salable radio merchandise in 1928 will be Kolster. The keenest dealers will have Kolster, talk Kolster and use the Kolster Advertising and Merchandising Plan to the limit. The reason is quicker turnover and the evidence is coming.

**Use the coupon.**

AUTHORIZED



Kolster  
Radio

DEALER



# STER

FEDERAL-BRANDES, Inc.  
200 MT. PLEASANT AVENUE  
NEWARK, N. J.

© 1928, Federal-Brandes, Inc.

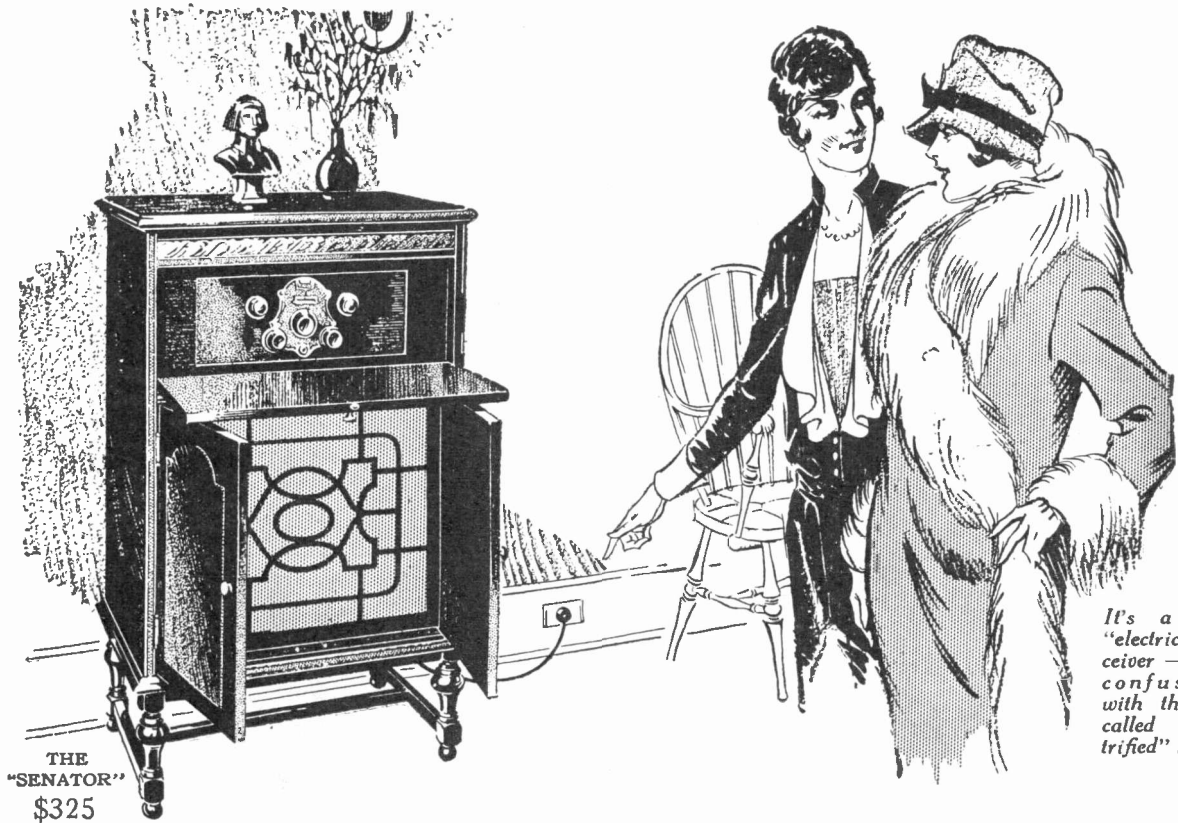
Please let me know if there is room for another Kolster dealer in my locality.

Name .....

Street .....

City ..... State .....

51



*It's a true "electric" receiver—don't confuse it with the so-called "electrified" set.*

THE  
"SENATOR"  
\$325

## Cleartone Dealers Enjoyed Excellent Holiday Sales

Our dealers had a splendid holiday business—they report a satisfying "turn-over" of their invested capital.

The prompt deliveries we made on their orders was a decided advantage to them—foresight last summer, in buying large stocks of parts and AC tubes, kept our production at top speed with the result that quick shipments were a certainty.

But the main reason for their success is the intrinsic value of the Cleartone Electric Radio Receiver. It is a true AC electric, self-contained set. It has an efficient radio unit, giving distance, selectivity and wonderful tone. Its cabinet-work is the product of master craftsmen. It sells easily—installs quickly—and stays sold!

*Write us*—let us tell you about our attractive selling plan and our newspaper advertising campaign. Remember that winter has just started—with the Cleartone Electric there are real selling months ahead of you. Don't delay—write now!

The Cleartone Radio Co. Division of

THE CINCINNATI TIME RECORDER CO.

Established 1896

Cincinnati, O., U. S. A.

### An AC Tube Tester for \$37.50

We are now ready to ship a Tube Tester for Kellogg-McCullough AC "Heater" Tubes. It is efficient, practical and, we believe, is the only one of its kind now available. The price is only \$37.50.

*The New Cleartone Electric Radio Receiver is made, and guaranteed, by The Cincinnati Time Recorder Co. for 30 years builders of precision time recorders, fine hall clocks and electric assemblies.*

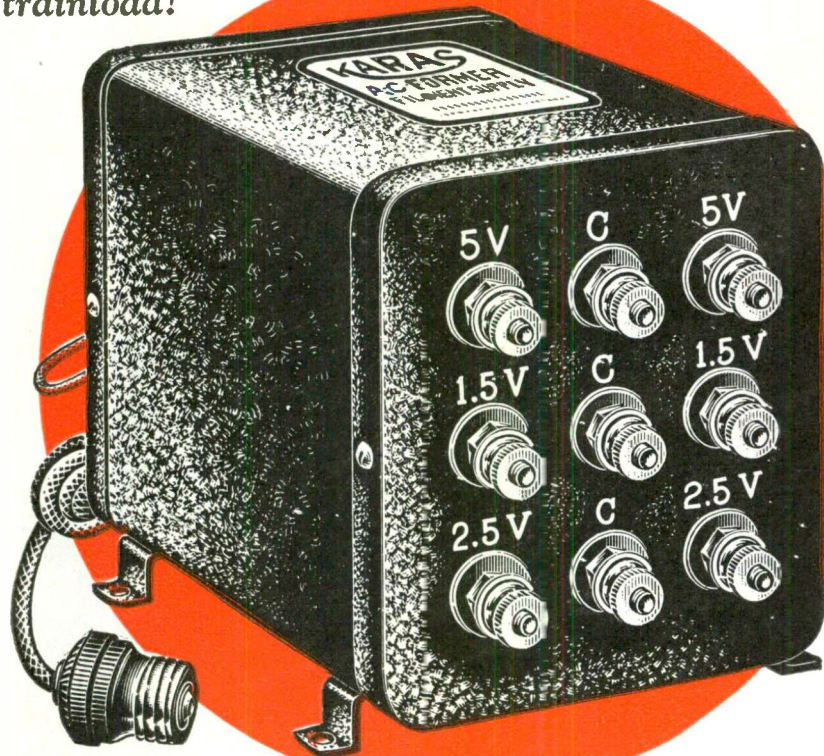
The New **Cleartone**

Electric Radio Receiver



# Convert your battery-operated receivers to A. C. operation with the **KARAS A-C-FORMER FILAMENT SUPPLY** in conjunction with the Carter Converting Cable Harness

Not a hum in a trainload! **TYPES 12 and 13**



H. H. Eby of Philadelphia and Carter Radio Co. of Chicago can supply cable harnesses for the A. C. Former. Send for list of fifty receivers now ready to be converted.

**NO REWIRING:  
NO OVERHEATING:  
NO HUM:**

**Y**OU can quickly convert your entire stock of battery-operated receivers to A.C. operation and thus turn them into dollars by using the Karas A-C-Former Filament Supply in conjunction with the Carter Converting Cable Harness. And it is easy to do! No rewiring is necessary. Just take out your present tubes, insert the adapters which come with the Carter Cable Harness, attach the other end of the Harness to the Karas A-C-Former, put in the A.C. Tubes and you have an A.C. operated receiver—not merely an electrified receiver, but a *genuine A.C. operated set*. The entire process takes but a few minutes, and is so simple that a ten year old boy can make the change.

Think what this means! You can convert every obsolete battery-operated receiver you have on hand—you can change over the battery-operated sets of your customers—regardless of make of receiver, or whether factory or custom built. You can turn slow-moving stocks into dollars quick with the Karas A-C-Former and the Carter Converting Cable Harness! But you must use the Karas A-C-Former with this new harness, for it was designed especially for the A-C-Former and cannot be used with other forms of filament supply.

We have developed Harness connections for various receivers. Just tell us the name of your receiver or receivers, how many tubes and what model and we will tell you how you can change them to A.C. for less than the cost of a good battery and charger, and have a *constant, unvarying filament potential long after the average battery is worn out!*

Voltage and current fluctuations are ruinous to A.C. tubes, as the slightest variation in the building or windings or any appreciable surge or overload in the A.C. supply line will bring trouble every time, showing the necessity for the Karas A-C-Former which protects A.C. tubes and insures their long life.

**Type 12**  
Supplies filament potential for 12 tubes, as follows: 8 1½-volt Type 226 or 326 tubes, 2 2½-volt Type 227 or 327 tubes, and 2 5-volt Type 171 tubes

List price  
**\$13.50**

## The NEW KARAS A-C-FORMER

The new Karas A-C-Former delivers the correct voltage for the new standard A.C. tubes such as Cunningham, RCA and CeCo — and there is *not a hum in a whole trainload*. This marvelous Karas invention removes the last drawback to A.C. operation from any 110-volt alternating current house lighting circuit.

The A-C-Former needs no separate device for center tap. It has a convenient extra loop of wire for connecting the A-C-Former to the control switch on the panel. It is

designed for mounting all connections beneath sub-panel, if desired, or it may be mounted on separate feet as shown in illustration. It is sturdy, compact, powerful, silent, does not heat up, and it always delivers an unvarying, absolutely correct filament voltage. Has plug-in connection for "B" eliminator.

This is an A. C. winter! Everyone wants A. C. operation. Meet this demand by having ample stocks of the new Karas A-C-Former. Order a supply for converting your own stocks of battery-operated sets, as explained elsewhere on this page. Don't delay. Get in touch with your jobber NOW, and write us today, using coupon to obtain full details regarding conversion of your sets to A. C. operation.

**Type 13**  
Supplies filament potential for 10 tubes, as follows: 8 Type 227 or 327, 2 ½-volt tubes, and 2 Type 171 5-volt tubes, or 2 Type 210 tubes.

List price  
**\$13.50**

**MAIL COUPON TODAY FOR FULL DETAILS**

Karas Electric Co.  
4040-A North Rockwell Street, Chicago, Illinois

Tell me how I can convert my present stock of battery operated receivers to A. C. operation with the Karas A-C-Former and the Carter Converting Cable Harness. Send me list of fifty Receivers now ready for conversion to a.c. by means of a.c. Farmer and Cable Harness.

My receivers are .....

.....Tubes, and Model No. is.....

Jobber's Name .....

My Name .....

Address .....

City ..... State .....

**KARAS ELECTRIC CO.**  
4040-A North Rockwell Street, Chicago

# Slagle Radio

## Announcing the New and Incomparable AC 10-Tube De Luxe

First of all, it is a matchless musical instrument. Even the most thrill-proof veterans of the radio engineering field find new cause for enthusiasm when they listen to the marvelous performance of this master receiver. Its superb tone quality has never before been approached in the reproduction of sound produced either by musical instruments or the human voice.

For the home where only the best is acceptable there is just one Radio Receiver—the new Slagle 10-Tube Console A. C. Inbuilt loop—no ground; uses two 171 power tubes in push-pull amplification.



Licensed Under Patents  
of  
Radio Corporation of  
American and Associated  
Companies  
Also  
Technidyne Corporation

True All-Electric  
No Aerial or Ground  
Unusual Value At  
\$600



### Slagle Radio Company

Fort Wayne, Indiana

Division of

## UNITED STATES ELECTRIC CORPORATION

---

*Everything In Radio — Everywhere In America*

---

# La Salle

**ANNOUNCES**  
**HIGH-VACUUM**

**A. C. RADIO TUBES**  
**for Socket Power**



With great resources and facilities for thorough, exhaustive scientific research, it was inevitable that La Salle would offer to the trade an A. C. Radio Tube that solves the problem of A. C. operation.

### **Important New Features**

A special designed cathode assuring comparative instantaneous reception. Line variations are offset by special features in construction. The "humming" ordinarily experienced in A.C. operated sets is eliminated completely with La Salle A. C. Radio Tubes.

*Now Ready for Delivery*  
*Write for Prices and all Details*

*Two Types:*  
*L.S. 227*  
*L.S. 226*



*Manufacturers*  
**LA SALLE RADIO CORPORATION**

149 West Austin Avenue, Chicago, Illinois

*Sole Distributors*

Matchless Electric Company, 145 West Austin Avenue, Chicago, Illinois

# CARRYOLA Offers a marvelous **NEW** product!

*Every radio owner will want one on sight*

**S**UPPOSE that you could offer every radio owner in your community a complete outfit that would enable him to play phonograph records on his radio.

Suppose that the whole outfit including turntable, motor, electric reproducer, volume control, all necessary wiring, enclosed in a trim fabrikoid case could be profitably sold at \$23.50!

You **KNOW** you could sell them—a **LOT** of them.

**CARRYOLA PORTO PICK-UP** is the name of this amazing new development. And it's going to make history. It's going to give **EVERY** radio-equipped home the kind of music that only the finest homes have been able to afford. And it's going to give phonograph and radio dealers a profit opportunity such as they never had before.

But even **THAT** isn't all the Carryola Company of America offers you today.

Many of your customers have both radio and phonograph. For them we have developed the **CARRYOLA ELECTRIC PICK-UP**—a means of reproducing records electrically. It is so simple that anyone can install it—yet so complete that nothing more is needed to combine phonograph and radio into an electric phonograph—and its list price is only \$10.50. It is a typical Carryola value—high quality, low in price and with limitless

possibilities for dealer profit. Here are two sensational money makers.

Next month we will have another big development to announce—another brand new Carryola product. Watch for it.

In the meantime get in touch with us. Write us for the name of your nearest Carryola distributor. Let us tell you something of our plans for 1928. Get our complete story—and you'll see for yourself that Carryola offers you the biggest profit opportunity you ever had.

THE CARRYOLA COMPANY  
OF AMERICA  
647 Clinton Street, Milwaukee, Wisconsin



**CARRYOLA  
Porto Pick-Up**

To attach, simply replace the detector tube of radio set with adaptor plug. That's all. Play records in usual way—hear them from the loud speaker with all the added volume and richness of tone that is characteristic of electric reproduction.

The Carryola Porto Pick-up is equipped with single spring motor. The pick-up or electrical reproducer is attached to a curved throw-back arm which makes it easy to change needles. Volume control conveniently located on motor-board enables operator to regulate volume anywhere within limits of receiving set and speaker. Box is beautifully finished in neat, durable fabrikoid with nickel-plated fittings.



**\$23.50 list**

*East of the Rockies*

**CARRYOLA**  
beyond this you buy furniture

*World's Largest Makers of Portable Phonographs*



**\$10.50 list**

*East of the Rockies*

## CARRYOLA ELECTRIC PICK-UP

The pick-up itself replaces the reproducer of the phonograph. By simply removing the detector tube of the radio set and inserting adaptor plug in its place, records may be played on the phonograph and electrically amplified. Volume may be controlled by merely turning the volume control knob.

This attachment may be used with any standard make of radio set and any phonograph—either portable or cabinet type.



# YOUR MARK!

**P**ERMANENTLY placed right on your product—to identify you, to sell for you, to accumulate good will for you.

Novar Transfer Nameplates are doing that for many radio manufacturers and for hundreds of other manufacturers throughout the nation. These transfer nameplates in full color go on your product to stay—to bring repeat orders—the final link in all your advertising that keeps the customer you make.

**INEXPENSIVE  
EASILY APPLIED  
DISTINCTIVE  
DURABLE**

These transfer signs that now identify so many nationally known products are easily applied to wood, glass, metal and other substances. Made in any size, design, color and quantity.

# **NOVAR**

## **Transfer Nameplates**

Let us send you samples or a sketch to fit your product. No obligation.

**Palm Fechteler & Co.**  
67 Fifth Avenue, New York

*Largest Decalcomanie Manufacturing Organization in the World*  
ESTABLISHED 1856

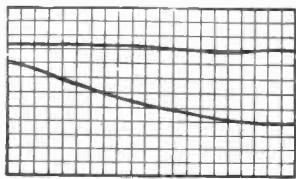
*Some of the  
Radio Manufacturers  
we serve:*

- Sonora
- Columbia
- Garod
- Freed-Eisemann
- Federal Radio
- Radio Corp. of America
- All-American
- Bosch

# More Tube Mileage



Chart showing longer life and steadier performance of CeCo Tubes



**CeCo**  
TUBES  
AVG. OF  
27  
OTHER  
MAKES

Your money will buy more tube mileage if you demand CeCo radio tubes from your dealer.

Buy tubes as you do other merchandise—on a basis of value. You want clearer reception, full volume, natural tone. These CeCo tubes will give, to a greater degree than any other tubes you have used in your set. IN ADDITION, CeCo tubes will give extraordinarily longer life of steady, unflinching performance. (See above graph.)

CeCo is the scientifically engineered tube, the laboratory tested tube, the tube endorsed by great radio authorities, including Browning, Lynch, Cockaday, Harkness, Hurd, Best, Bernard, Henney, Millen, and others.

Your radio dealer will help you select the types of CeCo tubes best suited for your receiver. Ask him.

Write for complete data Sheet of CeCo tubes.

*There's a CeCo Tube for Every Radio Need*

- General Purpose Tubes
- Special Purpose Tubes
- Power Tubes
- Filament Type Rectifiers
- A. C. TUBES

ORDER FROM YOUR DEALER THIS SPECIAL COMBINATION OF CeCo RADIO TUBES

for Maximum Efficiency in the New "IMPROVED ARISTOCRAT" Circuit, as Specified by the Designer, Arthur H. Lynch

- 1 Type "K" Spec. R.F.
- 1 Type "H" Spec. Det.
- 2 Type "G" Hi-Mu 20
- 1 Type "F" Power (112)

**\$14<sup>50</sup>**

Complete



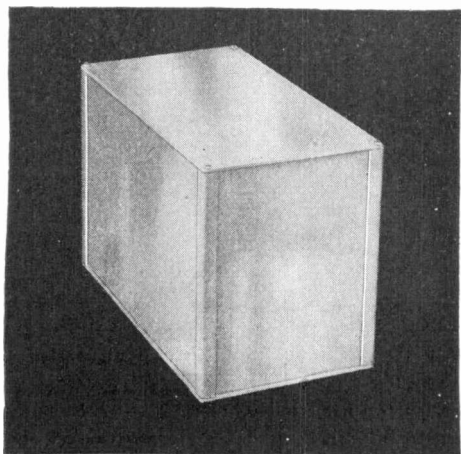
C. E. MFG. CO., Inc.

Providence, R. I., U. S. A.

Largest Exclusive Tube Manufacturers in the World

# ALUMINUM

*The mark of  
Quality in Radio*



**Aluminum Box Shields**  
*Essential in many  
popular amateur sets*

**A**MATEURS are securing greater selectivity, longer life and lighter weight by using Aluminum Box Shields in the sets they build—they look for Aluminum Shielding.

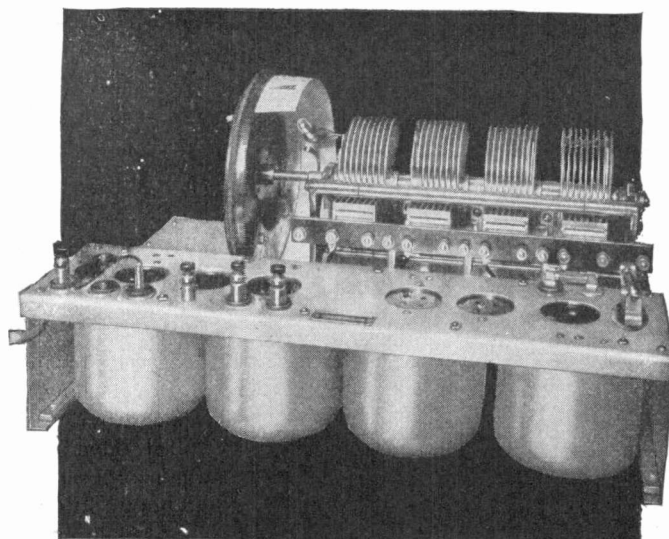
Designers agree on the superiority of Aluminum for shielding. It has become an established factor in radio design—recognized alike by advanced amateur set builders and engineers responsible for commercial production.

Aluminum Company of America's box shields, designed especially for amateur sets, are made of heavy Alcoa Aluminum with satin-dip finish. The standard size is 5 in. x 9 in. x 6 in. high. The "Junior" size, 4½ in. x 4½ in. x 5 in. high, is specified for Cockaday's L. C. 28 Receiver. These shields fit the L. C. 28 Aluminum sub-panel which is drilled for them. They are easily adapted to smaller sizes. They require no soldering.

Dealers should stock Aluminum Box Shields. They are specified in many existing circuits and new circuits about to be released. Be prepared to supply the demand for them. Send for a copy of the new edition of "Aluminum for Radio." It will interest you. It is free.

**ALUMINUM COMPANY  
OF AMERICA**

2462 Oliver Building Pittsburgh, Pa.



*Aluminum Shields and Other Parts  
Zenith Radio Corporation*

**M**ANUFACTURERS are using more and more Alcoa Aluminum because of the efficiency with which this one metal meets the widely differing conditions encountered in radio design.

Alcoa Aluminum Shielding is used in many modern receivers because of its great effectiveness at radio frequencies. Millions of condenser blades are made of Alcoa special Aluminum sheet because of its narrow limits of tolerance, its uniformity and its lightness. Alcoa Aluminum foil is preferred for fixed condensers. Countless screw machine radio parts of Alcoa Aluminum are being used.

Sand castings and die castings of Alcoa Aluminum make the finest chasses, sub-panels and loud speaker frames, both because of the combined lightness and strength of Aluminum and because of its permanence and finish. Aluminum, decorated in a variety of rare wood grain effects, is ideal for front panels.

Take advantage of the properties of Aluminum in your new receivers. More and more, the radio public is coming to consider Aluminum as the outstanding metal for radio construction.

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**ALUMINUM COMPANY OF AMERICA**  
2462 Oliver Building Pittsburgh, Pa.

# ALUMINUM

*The mark of Quality in Radio*

# ATWATER KENT RADIO

THE NEW  
A. C. SET

\$88

## Model 37

Operates wholly from house-current (110 to 115 volts, 60-cycle, A. C.). Self-contained. Three stages of R. F. A., detector, two stages of A. F. A.  $7\frac{1}{8}$  inches high,  $17\frac{1}{4}$  inches deep. New all-satin finish—upper panel in antique gold, rest of cabinet in rich brown or golden bronze (optional). Price, without tubes . . . \$88



*Now all in one!*

**A** TRULY electric set, using A. C. tubes, with the power supply built in.

**COMPACT**—actually smaller than many old sets of the battery type—can be placed anywhere.

**TONE**—exquisite—no disturbing power noises—the hardest problem of A. C. operation is SOLVED.

**VOLUME**—can be reduced to a whisper or raised to the fortissimo of a brass band.

**SELECTIVITY**—a highly selective set.

**FULL VISION ONE DIAL**—read at a glance—programs instantly selected or changed.

**DESIGN**—cabinet is shielded against outside electrical interference. Built-in power supply, a new marvel of engineering, doubly shielded.

**ACCURACY**—every working part of every receiver matched for that particular receiver. All parts true—some of them to two one-thousandths of an inch—and protected from deterioration.

**FINISH**—new satin finish. Your customer's choice of rich brown and antique gold or golden bronze and antique gold.

**MANY EXCLUSIVE FEATURES** *which cannot be copied without infringing on Atwater Kent patents.*

**PRICE**—startling, until you remember the 15-acre factory where we have learned to make *many* sets as carefully as we could make one.

ONE Dial Receivers licensed under U. S. Patent 1,014,002

ATWATER KENT MANUFACTURING CO., *A. Atwater Kent, Pres.*, 4733 Wissahickon Ave., Philadelphia, Pa.

# Radio Retailing

The Business Magazine of the Radio Industry

McGraw-Hill Publishing Co., Inc.  
JAMES H. MCGRAW, President  
EDGAR KOBAK, Vice-President

EARL WHITEHORNE  
Editorial Director  
WILLIAM C. ALLEY  
Managing Editor

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JANUARY, 1928

No. 1

## Seven Years of RADIO

SINCE 1921, the radio industry has passed through only seven years of actual history. *But, during these few short years, it has seen a lifetime of industrial experience.*

From 1921 to 1924 were the "groping" years, when a young industry, with its eyes hardly open, was seeking to find its place in world economics. With the coming of 1925, the roadways became more clearly defined and radio began to assume its position among the industries of the country.

The past three years, however, have witnessed startling changes. It has been a period of readjustment. We have seen the weaker companies fall by the wayside and the stronger ones emerge, and apparently this "shaking down process" will continue for a few years longer until radio establishes itself upon a solid foundation.

Many things have happened. We have seen the old horn type speaker pass out of the picture and come back in again in the form of the orthophonic type cabinet speaker. We have seen the table type receiver replaced to a large extent by the furniture model, with the speaker and power supply built in. We have seen the development of strong industry associations, bringing new stabilizing influences, commercially and technically.

The past twelve months have probably recorded greater progress than any previous year in radio's history. For 1927 produced the "Radio Law" creating the Federal Radio Commission, which set to work to untangle the confusion of wavelengths. O. H. Caldwell, up to then the editor of this publication, became a member of the Radio Commission. During 1927, also, the radio industry's first trade show was held, bringing with it an attendance greater than has ever been enjoyed by a convention or trade show in any industry.

The development of the alternating current tubes and the receivers designed for them is perhaps the outstanding trend of the past few months. And if the trade winds which arose last year can be studied and their direction followed, many pathways to the future will be revealed.

WITH this issue, *Radio Retailing* completes three years of service to the radio industry. Amid all the strife and turmoil of this period in which radio has been trying to find itself and to learn where it is headed, *Radio Retailing* has worked for the advancement of the prosperity of the industry through an editorial program of consistent aid to the retail trade in solving its problems.

Looking back over the records, there is hardly a topic concerned with the conduct of a retail radio business that has not been brought into the light for discussion in the pages of *Radio Retailing*. Of greatest importance, undoubtedly, is the question of whether or not retail stores can sell radio at a satisfactory margin of profit. To ascertain the answer to this important question, *Radio Retailing* has made four studies of retail selling costs—three independent surveys and one in co-operation with the Music Industries Chamber of Commerce. The last independent survey, published in July, 1927, indicated that the average net profit of a retail radio business was four and a half per cent. More such cost analyses will be made in the coming months.

IT IS interesting to note some of the problems which were pressing for solution at the time that *Radio Retailing* began its work—to quote from the first issue, January, 1925—these subjects included:

- Stabilization of prices.
- Offsetting seasonal slumps.
- Financing for business expansion.
- Selection of balanced stocks.
- Installment-plan sales.
- House-to-house selling.
- Store methods.
- Pricing policies.
- Store operating costs.
- Installation, service and repairs.
- Style designs.
- Interesting women buyers.
- Timing the advent of new models.
- Reaching the great farm market.
- "Trade-ins" and the second-hand problem.
- Wired outlets in hospitals, hotels and homes.
- Standardization and simplification.
- The service problem.
- Extent of market, local and national.
- Trends in future radio development.

Each one of the subjects received editorial analysis in these pages. During 1928 this policy of guidance will continue—to help the trade to greater profits and prosperity.

*Such subjects as trade-ins, time payments, service, specialty selling, store and window display, merchandise control, cost accounting, advertising, purchasing and the other every-day problems that arise in store management are all slated for editorial discussion in the months immediately ahead.*

# LOOKING AHEAD

*Merchandising trends and conditions during the coming months as indicated by past experience*

THE radio season 1927-28, which has just reached its peak with the conclusion of holiday selling, has been one of many surprises and strange developments. Unfortunately for manufacturers and retailers alike, few of these surprises have been pleasant ones, and the majority of these have come in the form of rude shocks to one's self-complacency. Fortunately, however, at least a part of the self-confidence which has characterized the radio industry from its beginning is now being restored.

Certainly, December 31 is not the date upon which can be marked "finis" to any radio selling season. Beginning actively in September the radio selling year ordinarily reaches its peak in December and then extends on actively until late Spring, the last few months generally following the same direction and volume established during the first half of the season.

But unlike previous years, it is impossible at this time to indicate exactly what the complete story of the present radio season will finally develop.

## LESSONS OF 1927

IT IS not even certain that the peak in retail selling was reached during Christmas week. It is not altogether unlikely that a secondary peak almost as great will be reached again in February. There is evidence on every hand that the radio industry as well as the buying public, temporarily disorganized by the tremendous sweep in the direction of A.C. operated sets, is reforming its lines, based upon the experience of last Fall, and is preparing to attack again in greater force.

It is wise, however, in laying plans for 1928 to draw a few lessons from 1927. Let us consider for a moment, therefore, exactly what has happened in the past six months.

We will consider the present season as having its beginning following the first trade show at Chicago in June, 1927. Things certainly opened with a bang so far as the trade was concerned. Attendance at the show was far greater than expected. Exhibitors occupied every available inch of space, and enthusiasm for the new products ran at fever pitch. Having heard much of the new A.C. tubes, dealers were somewhat surprised to see how relatively few manufacturers displayed sets using them. It was even then generally conceded that A.C. tubes would be a factor this year but few expected them to give battery sets more than an even run in public favor. It was not until several months later that the industry generally came to a realization of the true importance of the A.C. tube development.

Returning home, dealers found the summer selling season altogether satisfactory. Definite indications appeared that radio was being used more and more during the hot months, and there was every reason to believe

that with just a normal Fall season sales for the calendar year 1927 would be well ahead of 1926.

In September the active season opened early and vigorously and for those who followed comparative sales charts it began to look like a season such as we have never seen before. But along about October 1 there appeared almost a complete reversal of form. Radio gave every symptom ordinarily exhibited by a big balloon in which a small pin prick had been made. Slowly but surely things began to slow up. Sales became increasingly harder to close, advertising showed little or no pulling power. Simultaneously the public began to show less and less interest in battery operated sets and demanded to see those using A.C. tubes only. These A.C. sets were hard to get, not many manufacturers had them ready in quantities, and the initial eagerness of the buying public was diverted to other interests, and a policy of watchful waiting made its appearance.

In sales, therefore, the months of October and November were a dismal disappointment. Many retailers reported that their sales for November were materially less than their sales for October.

But again, in December, the tide seemed to turn. A.C. sets had by this time become generally available. The public began to accept them with confidence and radio retailers were off again on the crest of a wave of intense consumer interest plus the normal holiday purchasing, in which radio has always shared to a large extent. It is too early as yet to determine definitely if the rush of business in December was sufficient to offset the drop in sales during October and November. Probably not. Only so much business can be done in a few hectic days, and deliveries, while large, do not appear to have been altogether ample.

## BUSINESS WILL EQUAL LAST YEAR

THIS brings us, therefore, to January 1, and a forecast of what lies ahead for the next twelve months.

Present conditions would indicate that business following the turn of the year will, for the first time, be as great or greater than that which was experienced during the first half of the radio season. The public acceptance of A.C. sets has reached a peak, and we are in the midst of a great and unfilled demand.

To participate in this wave of A.C. selling will require courage and conviction on the part of every retailer, large or small. Briefly, it means pushing and selling that which the public wants and forgetting for the moment that which the public is not inclined to be interested in.

There are thousands of battery sets still in the hands of many manufacturers and many more thousands unsold in the warehouses of distributors. Eventually these will be sold, there is no doubt about that. A slight, and

# into 1928

probably temporary, swing-back will appear for battery sets sooner or later, but for the moment the public is accepting practically nothing but A.C. sets.

The public has just begun to realize that a good all-electric set can be bought for about the same price that they were ready to pay for a battery set of equal merit a year ago. Throughout 1928, every time a present set owner's batteries run down, he becomes a prospect for a new A.C. set, not just a customer for a new set of batteries.

The public is far slower to learn and appreciate significant changes in an industry than are those intimately connected with it. For years everyone has realized that the ultimate in radio sets would be one which works direct from the house current. Whereas the radio industry realized at the trade show six months ago that this day had come, only now has the buying public been convinced that the type of set they have looked forward to for years is actually here, that it is thoroughly practical, and costs no more than the battery set they were looking at last year.

Just as the enthusiasm of dealers last June resulted in a rush of orders to wholesalers and manufacturers in the early Fall, so an equal enthusiasm on the part of the public is liable to result in a rush of business to the individual retailer in the months immediately ahead.

#### DEMAND REGULAR AND CONSISTENT

**B**UT in all things we must take the bad with the good. Substantial investments in battery sets will, for the moment, become frozen. Power units of all kinds, storage batteries, and other accessories which go with battery sets will be harder to move. But a far greater danger lies in trying to sell the public what we have instead of what they want. Indications are that the demand for these items will be slow, but nevertheless regular and consistent.

Any normal stock of these items can be liquidated over the course of a few months, and probably a year from now the majority of dealers will still be re-ordering them, although in far less quantities than they did this year. The important thing is not to stew and fuss about the fact that the demand for these items has fallen off sharply, but to use this energy in selling those other items which the public is proving itself willing to buy faster than they can be supplied.

*ALL-electric receivers and adaptation of d. c. sets to use a. c. tubes are among factors which are expected to bring excellent radio business in early months of new year.*



**T**HE radio parts business is invariably better after Christmas than before. This will be true again this year. Several parts manufacturers are bringing out an item which is bound to create great public interest and result in added sales for stores specializing in radio service.

#### A.C. ADAPTATION NEW FACTOR

This item is the new wiring harness with adapters enabling any present battery set to be operated with the new A.C. tubes. By the use of this harness these battery sets will then derive their filament supply from the house current; and, by means of a B-unit, their plate supply will be taken from the same source. Thousands of present set owners will want to convert their sets in this manner.

The trade believes the demand for A.C. tubes and power transformers will be widespread. In this development also will be found a revival of interest in B-units and they will probably sell better than they have sold for several months.

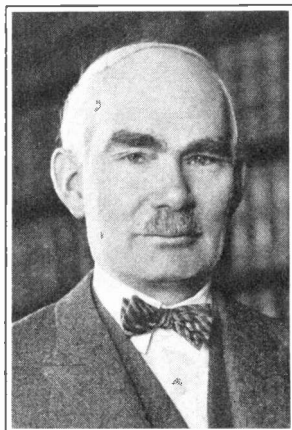
It has been customary, whenever radio men have gathered, to mention the premature announcement last Spring of the coming A.C. tube as having done more to slow down the radio business than any other piece of advance publicity. It would appear now, however, that the radio business is about to find in this tube its most potent sales stimulus, and that this stimulus is to come to the radio industry at a time when increased sales are most needed and least expected.

# Confidence *Reflected*

*All-electric operation and faithful tonal reproduction of good music are among important factors for 1928*

## Radio Pioneer Foresees Definite Trends for New Year

By DR. LEE DE FOREST



Dr. Lee de Forest

great mass of radio listeners are rapidly becoming educated to the fact that the very best they can obtain by radio anywhere comes from nearby stations.

It is a source of immeasurable gratification to me to observe the very marked increase in quality of musical programs now being broadcast as compared with that of two years, or even one year, ago. Today's radio is abundantly making good my prediction made many years ago, that radio would be instrumental, as no other institution of man's creation possibly could be instrumental, in a rapid development of the public's taste for good music.

As to the technical developments awaiting us in 1928—very rapid progress has been made by a number of leading manufacturers in the solving of the problem of applying raw AC to the filaments of the tubes. There is no question that the trend of the industry is entirely in this direction.

I am sure also that great strides will be made in the matter of improved quality of reproduction in 1928. The better type of console radio with built-in speakers, particularly the higher priced ones with phonograph combined, will be more and more in demand. And as prosperity becomes more widely distributed, and particularly as the educative influence of radio, above mentioned, works its benefits, more and more will discard their cheap "noise-boxes" in favor of the more expensive and properly designed amplifiers and speakers.

Much progress will be made in 1928 in the field of

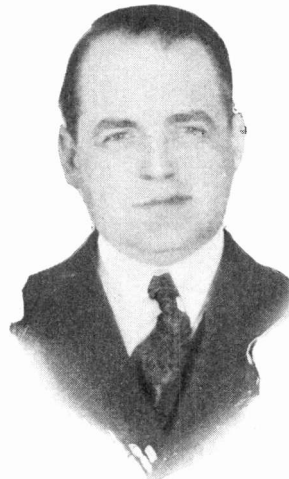
CONSIDER that the most important radio developments in 1927 come under the heads of rapid elimination of batteries and progress in the development of short wavelength broadcasting. Great progress has also been made during the past year in the simplification and standardization of tuning devices; so much so that for all local work the single dial control gives fine selectivity and adequate volume. The DX fan still wants individual stage control with vernier condensers; but the

broadcasting with short wavelengths below 50 meters; but it will take more than one year to successfully iron out the intricate difficulties involved in building reliable receivers for operating on such short waves. It will be a long and slow process of infiltration that short-wave broadcasting must undergo before it can invade, to any large degree, the popularity which the present range of broadcasting channels now enjoys.

## Commission's 1928 Plan Will Extend Radio's Potential Market

By O. H. CALDWELL

Member, Federal Radio Commission



O. H. Caldwell

UNDER the Radio Law of 1927, the Federal Radio Commission will, on March 14, 1928, wind up its activities as the administrative authority for radio and transfer all supervisory functions to the Department of Commerce. After that date (the anniversary of the Commission's first meeting), the Commission continues under the law only as an appellate body to which appeals may be taken in issues between station owners and the Commerce Department.

In the short administrative period which is left before March 14, the Commission will continue energetically its work of clearing the channels for better reception, along policies already well demonstrated, and which have the unanimous and determined backing of all its members.

Early in January through hearings and other actions, radio reception will have been put in the best condition possible, with the present number of stations on the air. Further improvements will then have to come through the elimination, either virtual or actual, of stations not rendering service corresponding to the interference they cause. From this time on, the Commission, therefore, can devote itself to clearing up the remainder of the broadcasting band by transfers and denials of licenses, completing its task of bringing back once more a fair measure of good radio reception to every group of America's population both urban and rural.



# in New Year Statements

*Service of broadcasting expected to broaden if trade will merchandise to the public the excellent programs now available*

## Radio Industry will Adequately Meet Public Demand in 1928

By C. C. COLBY

*President, Radio Manufacturers' Association  
President, Samson Electric Company*



C. C. Colby

IF one could surely estimate what will take place in the future, it is safe to say that he would have little cause for worry. There are, however, always certain trends of thought, market conditions and buyers' requirements which furnish a fairly accurate basis for judging business conditions in advance.

There can be no doubt, from the present condition of the radio market, that the buyer is insisting upon purchasing a complete, electric instrument that will add beauty to his home, and which can be operated with equal ease by his wife, children, or himself. This has been his ultimate aim from the beginning of radio, and the manufacturer of receiving equipment has had ample notice in the last few months of 1927 of what will be required in this particular in 1928.

I can see nothing, therefore, except a large buyers' demand for a certain class of radio material and an equally large supply of this type of equipment.

Add to this the clearing of the air by the Federal Radio Commission, and with the exceptional programs which the better stations are giving, I can see no other picture than a busy and satisfactory radio year from every angle.

## Broadcasters Are Striving to Perfect Service to the Public

By EARLE C. ANTHONY

*President, National Association of Broadcasters*

A YEAR ago we faced the opening of 1927 with high hopes and many plans for the progress to be made during the year, but, as may be admitted now, with certain trepidation because of the lack of adequate Federal control.

With the Radio Act of 1927, for which we had all worked so arduously, becoming effective early in the year, the way was cleared and I believe the record now revealed shows a realization of the high points of attainment sought.

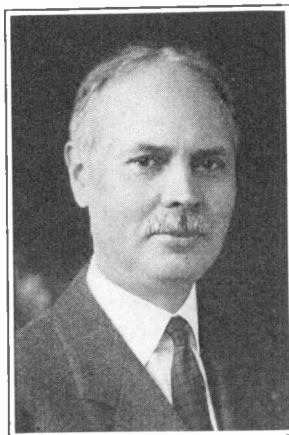
We face 1928 with new and more ambitious plans, laid upon a much more stable foundation. We have time and opportunity to study our own problems and perfect the broadcasting structure, which, of course, is the life-blood of the radio industry.

In the New York office there has been established an Information Bureau, which is busily engaged in studying and assembling data on almost every conceivable subject pertaining to radio. An Engineering Department is being organized to work with the individual stations and with the Federal authorities in bringing into practice the best technical means for holding stations on their assigned frequencies, synchronizing the carrier waves to eliminate interference in sidebands between stations on the same wavelength, and assuring to the listener undistorted programs.

## The Warnings Given in 1927 Should Be Heeded in 1928

By LOUIS B. F. RAYCROFT

*Vice-President, National Electrical Manufacturers' Association  
The Electric Storage Battery Company*



Louis B. F. Raycroft

OF the broader policies requiring the most careful study of the radio retailer during 1928, two, perhaps, are outstanding. First and foremost is the dealer's responsibility to the prospective purchaser of radio sets as to the facts in regard to present-day radio.

Just as 1926 taught us the serious dangers from chaos in broadcasting, so 1927 has its lesson in the equally disastrous chaos from lopsided propaganda as to radio power supply. The fact that another form of filament current supply is available is one thing. That it is the only desirable form, and consequently that all other forms are obsolete, is quite another.

Obviously all radio receivers are operated by one or

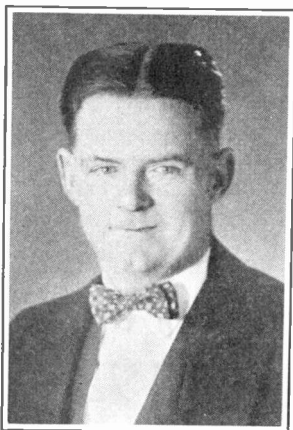
another form of electric energy. It is equally true that however convenient a later form of application of electric power may be, it certainly cannot supersede the other forms except where usable and when available. The failure to recognize these simple facts cost the radio industry a great deal of profit and prestige which were needlessly and wantonly sacrificed in 1927.

The other outstanding policy requiring more earnest attention is that of the fundamental appeal in the merchandising of radio. Price, convenience, and power supply are, after all, secondary to the basic appeal of radio in the home. That appeal is found in the pleasure in receiving good broadcasting. It is the dealer's job to sell broadcasting and reception first, last, and all the time.

## Bigger Radio Season Forecast by Dealers for 1928

By HAROLD J. WRAPE

President, Federated Radio Trades Association  
President Benwood-Linze Company, Inc.



Harold J. Wrape

THE outstanding feature of the radio year is the remarkable improvement in broadcasting. The tonal excellence, high calibre of entertainment, and unusual educational features broadcast are such that no truly representative citizen should miss the many advantages derived through the ownership of a modern radio receiver. There is positive evidence now of the value of broadcasting as a medium for the creation of public good will, and there are also definitely established meth-

ods of getting the best benefits from this medium. This assures wide publicity in the exploitation of broadcasting—a permanent and increasing financial support to broadcasters.

There is a marked improvement in the design and simplicity of radio sets which adds to their convenience, and a great improvement in reception, tone quality and eye values.

In merchandising, our distributing problems are better comprehended. The old scheme of things will not do for the coming year. Definite selling plans must be formulated to meet the highly competitive market, always resulting in a rapidly developing industry.

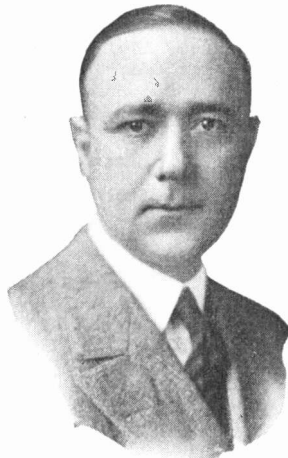
There is a need for closer co-operation between all branches of the industry. Thoughtless, vicious, and destructive advertising during the past year threatened disaster. Much can be done to prevent the recurrence of such a crisis through co-operation. If a small part of the advertising would be appropriated to better acquaint the public with the many advantages of radio and generally exploit radio broadcasting, there would be a large market immediately opened which would tax the production facilities of the industry.

Radio looks BIGGER—BETTER—BRIGHTER for 1928.

## Broadcasting Will Develop on Wider Scale

By M. H. AYLESWORTH

President, National Broadcasting Company, Inc.



M. H. Aylesworth

IF the development of broadcasting to a permanent institution in the United States is any indication of the stability and progress of radio generally, the year 1928 looks bright for the advancement of the art and the success of the industry.

Broadcasting service in the United States is laying a permanent foundation for the progress of the manufacturing industry. Splendid programs of music, entertainment, and education are being developed on a wider

scale. Sponsored programs vie in excellence. The fine work of the Federal Radio Commission has cleared the air for real service to the home, and the manufacturing industry, stimulated by continued popular interest in the art, is placing on the market radio receiving equipment which is constantly creating new strata of listeners, heretofore untouched by the appeal of radio.

## "Intelligent Selling" Is the Keynote for the Coming Months

By HAL P. SHEARER

Sales Manager, Splittorf Radio Corporation

WITH the advent of the inherently electric receiver, radio merchandising entered a new stage in its evolutionary cycle of development. The far-sighted will catch this trend and organize to follow it, the short-sighted will pass out of the picture. The year 1928 will determine which manufacturers, which jobbers and which dealers are capable of reading the signs of the times in this respect.

Radio has now become highly specialized from the selling angle and those who succeed in 1928 will have to recognize this assertion.

It comes to this: Radio jobbers, radio dealers of all classifications, including those in the electrical field, hardware, auto, music and furniture dealers and all of those dealing in radio apparatus, will have to organize their efforts to meet the present situation. They must emerge from any provincial field of selling to the broader requirements of radio as it is today.

The public knows what it wants and immediately sensed in the inherently electric receiver the fulfillment of its hope as to the kind of set that ultimately would be fashioned, but this does not make the 1928 job easy. For, out of all the confusion into which electrification has been cast, intelligent selling must guide the way.

## Handling Radio Parts *will* Continue Lucrative *to* Dealers

By ARTHUR MOSS

*Treasurer and Sales Manager, Electrad, Inc.*



*Arthur Moss*

THE future of the parts and accessory business is secure. The writer has always been "bullish" on the future of the radio parts business and regardless of temporary set-backs due to weather or any other cause, believes that there is no reason for gloom when looking at the future.

Merchandising radio parts at a profit is entirely different from merchandising sets. We cannot bring out too strongly the point that there is no problem of Parts versus Sets. They represent two

entirely different fields. Each fills and will continue to fill a separate and distinct want in the industry.

There should be an increasing call for radio parts especially in the less populated districts. Usually, good programs must be received from long distances. Therefore there is every incentive for rural boys, most of whom like to tinker, to build their own receivers and make them selective, sensitive distance-getters.

Our message to the trade for 1928 is simply to consider parts and accessories a distinct field which calls for study and careful application backed up by 100 per cent service. The business is there and needs only to be gone after properly.

## Paths of Progress More Clearly Defined for New Year

By JOSEPH D. R. FREED

*President, Freed-Eisemann Radio Corporation*



*Joseph D. R. Freed*

ANY prophecy as to developments in radio in 1928 must be predicated on the substantial advances which have taken place in 1927 in the various factors that contribute to the success of the radio industry. The radio public as well as the radio manufacturers owe a debt of gratitude to the Federal Radio Commission for the tremendous progress which it has made in the face of seemingly discouraging conditions. The wavelength situation has been tremendously improved and with the

continual improvement in the quality of broadcast pro-

grams, the full benefit of the Radio Commission's efforts will certainly be manifest during this coming year.

Leadership in radio is becoming more clearly defined and by the end of 1928 the names of the makers of the finest radio receivers will become household words. I foresee 1928 as a much more prosperous radio year with greater benefits both to the trade and to the listening public.

## 1927 Has Written the Final Chapter for the "All-Purpose" Set

By MAJOR HERBERT H. FROST

*Past President, Radio Manufacturers' Association  
General Sales Manager, E. T. Cunningham, Inc.*



*Major Herbert H. Frost*

FROM 1921 through 1927 the radio manufacturer has been interested principally in supplying the market demand. Very little effort has been made to do anything more than produce an "all-purpose" radio receiver to be sold in all parts of the country regardless of operating conditions, available power supply, and similar factors.

The first "special purpose" type of tube appeared on the market about two years ago and since that time other special purpose tubes have become part of the industry.

The successful radio set manufacturer will build for special purpose markets. Market analysis will be the backbone of the radio business in 1928. There are now four distinct markets for radio receiving sets which may be classed as follows:

1. 110-volt, 60-cycle current supply.
2. 110-volt, D.C. supply.
3. "Odd" frequencies current supply.
4. Unwired market.

Each of the four markets requires special analysis in order to determine the proper kind of merchandise and the sales possibilities. 1928 will be the first year of "specialized radio sets," that is, of radio receivers built specifically to meet market conditions in various parts of the country.

## Radio Sets Must Be Sold on the Basis of Performance

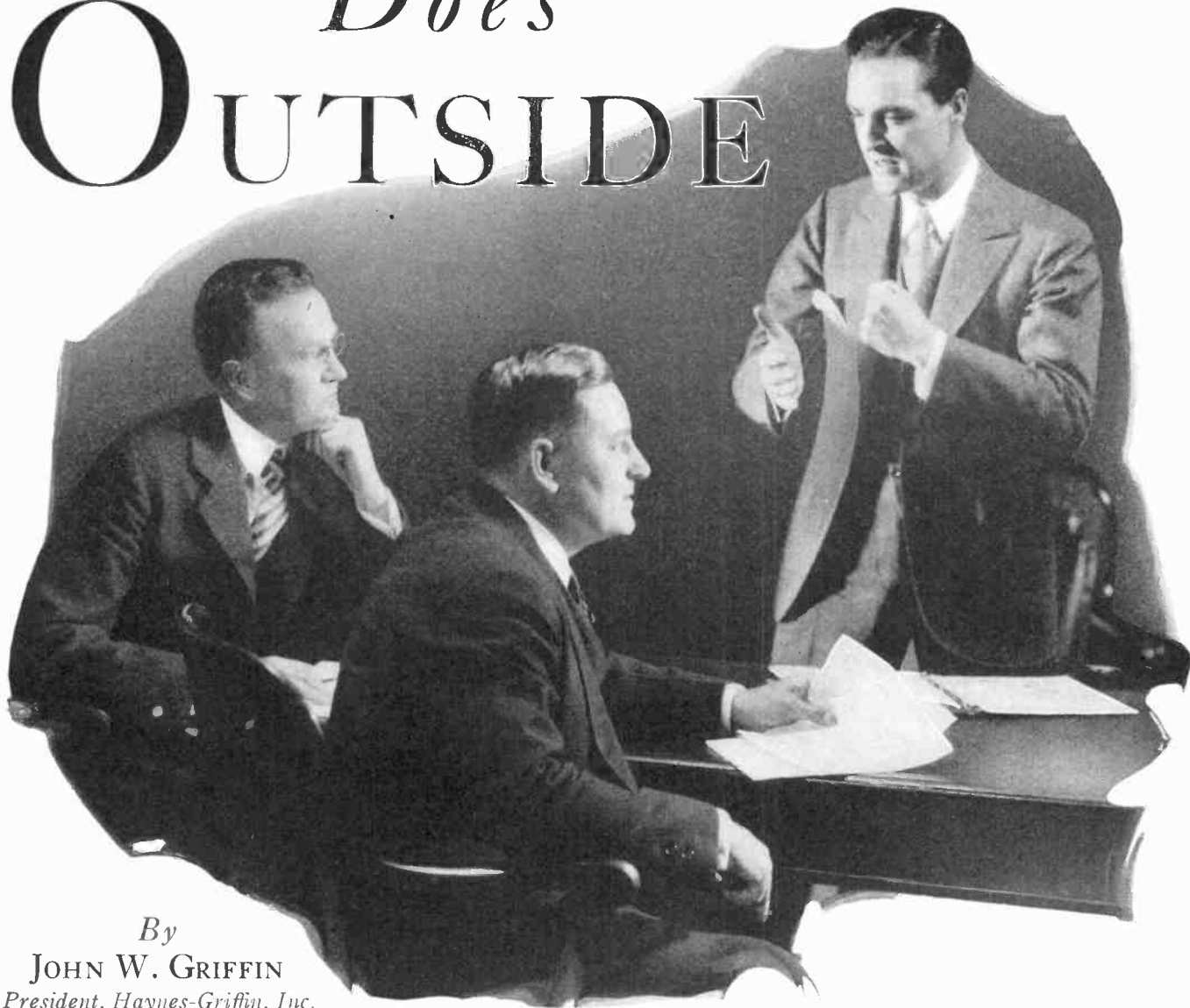
By HUGH H. EBY

*President, H. H. Eby Manufacturing Company*

A LITTLE over a year ago the competition of radio caused the manufacturers of phonographs a considerable amount of concern. Wisely, these manufacturers practically revolutionized the phonograph industry.

*(Please turn to page 58)*

# Does OUTSIDE



By

JOHN W. GRIFFIN

President, Haynes-Griffin, Inc.

I AM not at all sure that specialty selling, as applied to radio, can be made a profitable undertaking for the average radio merchant.

When the editor of *Radio Retailing* and I got together to discuss a theme for this article, he suggested that I devote it to the subject of specialty selling and outline a sales campaign which might be adopted by other radio retailers.

Now, ordinarily the editor and myself get along rather well, but in this case I had to disagree. My reply was just this, "Mr. Editor, I've had several unfortunate experiences with outside selling and I cannot conscientiously recommend it to other radio dealers."

The editor's reply was short and to the point. He gave me carte blanche to go ahead and express whatever opinions I have concerning specialty selling, whether or not they agree with his own viewpoint.

He expressed one thought, however, with which I do agree and which I would like to record, and that is the fact that my own experience with outside selling did not turn out profitably should not be construed as a universal condemnation of sales campaigns carried on outside the store. What resulted unprofitably for me may have turned out successfully for somebody else.

The term "outside selling" is a broad one, and is subject to many interpretations. Consequently, for the sake of clearness I think I should define exactly what, to my mind, constitutes outside selling.

First of all, I exclude from the term "outside selling" such sales effort as is made in following up old customers to sell them additional accessories and new sets. I also most emphatically endorse the plan of following up by telephone or personal calls all prospects who have visited the store, or such prospects as have been recommended to us by other customers and, in general, all prospects whom we know to be definitely interested in the purchase of a radio set. This kind of selling is not in the strict sense outside selling at all, and is an integral part of every retail merchant's very necessary follow-up system.

THE kind of outside selling in which I have little or no faith is that plan which includes house-to-house calls, regardless of whether or not these calls have been preceded by a direct-by-mail advertising campaign or regardless of how carefully the sales plan has been prepared in advance. Involved in this plan of selling is the system of using a number of outside salesmen working

# *Selling* PAY?

*John W. Griffin*

*says not for the average store  
and points out the reasons why*

under crew managers who attempt to develop a list of prospects without previous contact or acquaintance with the customer.

For a long time it never occurred to me to question the soundness of outside selling in the radio business. It appeared to me to be a necessary integral part of radio selling, a sure, safe road to higher sales and increased profits, and that it was only my lack of initiative and energy that had kept us out of a field already ripe and ready for the harvest.

I had come almost unconsciously to this frame of mind. The advisability and necessity of outside selling had been so constantly and thoroughly dinned into my ears that I accepted it blindly as a necessary maxim of successful retailing. I would sooner have questioned the old adage that honesty is the best policy in the very long run.

**I**T was not until I had finally acquired the leisure and the energy to give some real thought to the subject and to make a few practical experiments in the field of outside selling that any doubts arose in my mind. Only then did it come to me with a distinct shock that most of the enthusiastic "experts" on the subject were men who had made startling successes in selling practically everything in the world except radio.

I am convinced that there is no problem which the average radio retailer should approach with more caution. It is a path fraught with perils and hardships that radio manufacturers have been reluctant to point out, and which I think at times have been deliberately glossed over in their enthusiasm to find a broader market for their products at the expense of inexperienced retailers. However, it is quite conceivable that a year from now I will be actively engaged in house-to-house selling of radio. It is not hard to believe that many of the difficulties which now seem insurmountable will melt away with the advancement and perfection of radio itself. But right at this moment, I think outside selling is the toughest job the radio dealer can undertake.

Too much has been written on the theory of outside selling and too little said on the peculiar difficulties of the actual job. Too many shining examples of successful specialty selling of everything from silk stockings to vacuum cleaners have been quoted, with the immedi-



ate inference that the same can be duplicated in radio.

I do not wish to put myself in the position of saying that a plan should not be tried simply because it requires hard work and imagination. All I ask for is a simple, workable plan that will leave me a fair margin of profit when the work is done. It is quite possible that the difficulties of outside radio selling which we have encountered are peculiar to our own methods and locality.

It is quite possible that other retailers have discovered ways in which these obstacles can be avoided and have a record of sales expressed in terms of net profit which is most satisfactory. I am expressing my own views on the subject with the hope that this article will bring to light methods which we ourselves have not yet discovered.

But to start out cold to call from house-to-house with no previous information except possibly the prospect's name—that's the rub.

I state that I am opposed to this kind of outside selling

for radio notwithstanding that this is the way vacuum cleaners and washing machines, as well as many other similar items, are sold for the most part nowadays. But I do not think that radio can be sold profitably in this manner. Not, at least, until radio itself is more stabilized in the results it achieves, but more important, not until the attitude of the buying public has also changed in its conception of what radio is and should do. The cleaner salesman has one person to sell—and that is the person he sees first. The radio salesman must sell the whole family and must keep coming back and back again until he has seen them all.

Radio is totally new to many people but once their interest is aroused, it almost immediately becomes the subject of their most intense curiosity. Neighbors must be consulted. Other makes and kinds of sets are at once recommended. Friends and relations are willing to devote hours to prove to the prospect that he should have a radio, certainly, but by no means should he select the particular one the salesman has chosen to demonstrate. Only too often the outside radio salesman develops a new radio customer for some other radio dealer. Some day, possibly, people will buy radio as they do a vacuum cleaner, and say no more about it. But that day has not arrived yet.

When a customer enters a store of his volition to make a purchase, the dealer to an extent retains the upper hand in the transaction. In case service troubles develop after a sale, the customer will co-operate with the dealer in case the latter shows the proper spirit in making a reasonable adjustment. Not so in outside selling. The attitude of the customer indefinitely remains, "You talked me into this against my will, it is up to you to make good."

**M**OST things sold by outside salesmen require little or no servicing or adjustment after the sale and this attitude on the part of the customer is not a factor. With radio, as we all know, service is a real consideration. Customers must be handled with kid gloves, and all demands, reasonable and unreasonable, must be met if payments are to be made as scheduled.

Radio can be sold by a cold canvass, but such points as these bring up the question as to whether it can be sold in this way at a profit, and that, after all, is what we are most interested in.

In all fairness, I must say that the timeliness of radio and the natural curiosity which most people have about it makes it easier for the salesman to secure an initial interview than if he were selling more prosaic articles on which the point of saturation has been more nearly reached. That is his sole advantage, however, and from that point he has every difficulty to overcome what every other specialty salesman encounters. Over and above this must then be added difficulties peculiar to radio itself, all of which raise sales costs to a point that makes this method of selling a dangerous experiment.

As pointed out, the curiosity in radio which makes it easy for the salesman to get an interview, reacts against him when he comes actually to closing the sale. Too

many people are interested. Too many opinions must be reconciled. The ordinary house-to-house salesman works fast and intensely. His is a hit-and-run proposition. The radio salesman may have to come back four or five times with appointments both day and evening. Our experience has shown that the prospect seldom buys the model first demonstrated. The choice is so wide and opinions vary so widely that frequently three or four different sets must be set up in a customer's home before he finally decides. The trucking charges, together with wear and tear on the merchandise, is a very considerable item.

Two days' work will train a raw man to sell and demonstrate a vacuum cleaner perfectly. I doubt if anyone can train a new radio salesman in this time, particularly if he must deal with a variety of makes and models. The labor turnover among outside canvassers is terrific. One of the most successful and experienced houses in New York, selling an electric appliance by cold canvass, maintains a selling staff of 150 men, and in order to do this must employ and train an average of 60 new men each month.

I am convinced that no plan of outside selling has as yet been developed that can be arbitrarily put into practice by a normal radio retail business already operating successfully in good location with the normal factors of retail expense and overhead definitely established. This factor of expense is, in my opinion, the strongest argument operating against outside selling by the retail radio merchant.

Outside radio salesmen must be paid a minimum of 15 per cent, much more than inside radio salesmen ever rate. And to this high initial sales expense must be added every other cost that attaches to a straight inside sale.

Installation and service costs are every bit as high on a set sold by an outside salesman as they are on a set sold in the regular conduct of a retail business. To make up for the extra compensation to the outside salesman, the dealer theoretically should close up his expensive retail location, curtail his advertising, and make other necessary economies. Few of us are ready to do this yet, in spite of how green these distant fields of outside selling may at first appear.

**B**OTH the editor and myself are keenly interested in learning what experiences, whether successful or unsuccessful, other merchants selling radio have had with this outside selling idea. The editor believes a well-planned, well-heralded specialty sales campaign without necessarily resorting to house-to-house canvassing, can be made to pay. My own experience would indicate that it cannot.

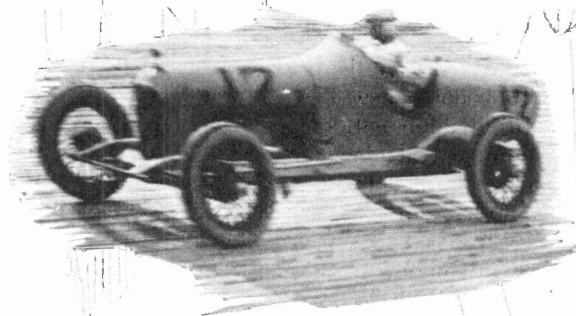
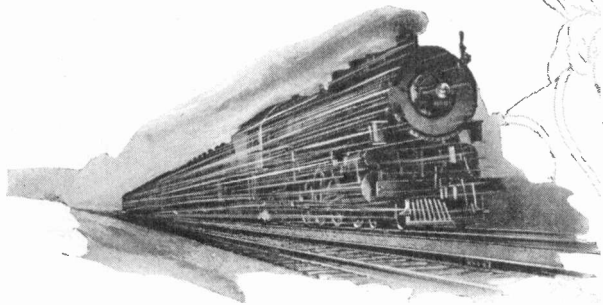
However, I am open-minded on the subject and am eager to get the viewpoint of brother merchants who have tried this type of selling. If you can spare a few moments from the day's rush to drop me a line about it, either at my store, 41 West 43rd Street, New York City, or in care of *Radio Retailing*, it will help to throw additional light on this perplexing subject.

## Yes or No?

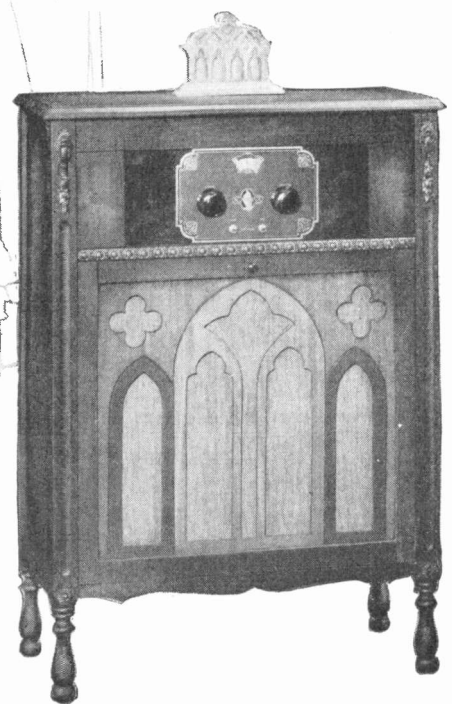
*The editors of Radio Retailing, agreeing with the majority of radio manufacturers, believe that specialty selling methods are necessary if radio is to achieve its widest distribution to the public.*

*But John W. Griffin, practical radio merchandiser, says not. This article tells why he disagrees with that belief. With which opinion does your experience check?*

# If You Haven't a Radio You're Not Living in 1928



*THE modern railroad, the automobile and the radio are the three symbols of present-day life. The American family which does not boast ownership of a radio receiver is not keeping pace with the times. Here's a slogan to popularize this year—"If You Haven't a Radio, You're Not Living in 1928!"*





*THE most effective method of merchandising out of a heavy inventory position, Ryan says, is not to slash prices on what the public DOESN'T want, but to add a stock of what the public DOES want. Considering the present condition of radio stocks, this article is of unusual significance*

ONCE Upon a Time there was a Radio Retailer who bought all his Holiday Requirements back in September, Sold Out his Entire Stock by Christmas Eve, Making a Handsome Profit and Leaving no Inventory which could Cause him any Loss.

Of course, that's just a fable in merchandising. Strictly speaking such an operation would be too perfect and the dealer would actually have lost potential sales *before* Christmas because his inventory would then be altogether too low and he would have been out of many articles.

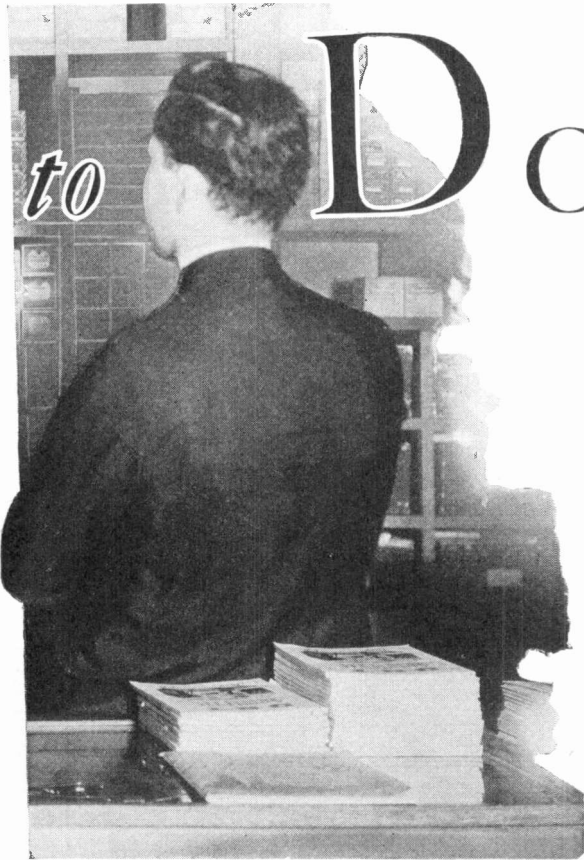
A very common fallacy in merchandising operation is that too excessive inventories can be best reduced by curtailing purchases. They can be reduced all right by such a method—but the merchant may go broke during the process of reduction.

Heavy inventories are very rarely the result of buying too much goods but rather because of buying too much of the *wrong kind* of merchandise.

The most effective method of merchandising one's self out of a heavy inventory position is to *buy goods*—but these goods must be the merchandise the public *wants*. Obviously, if one's inventory consisted of goods the public wanted at the moment, the inventory would not be too heavy.

But how is the merchant with a limited capital or credit line going to purchase more merchandise when he is already loaded up with articles that are not moving? He must tell his story to his source of supply; he must point out that unless he has merchandise which appeals to the public, the public simply will refuse to come into his store. It is only by maintaining a buying traffic through his place of business that he can hope to





# to **D**O when Stocks *Don't* **M O V E**

By S. J. RYAN

*Vice-President, Rines Brothers Company, Portland, Me.*

*Slashing prices is the last resort, Ryan says—How department stores merchandise themselves out of similar situations*

interest purchasers not only in the things that they consciously want at the moment but in the other items in his store which he may be able to sell them.

The above is no generality—it is very specific, it is absolutely fundamental to modern merchandising, and it applies to the stock conditions existing in the stores of probably the vast majority of the readers of this publication.

Despite the exercise of constant care to prevent a too heavy inventory at the end of the season, every line of retailing is confronted by this condition periodically. Eternal vigilance is the price one must pay for a balanced inventory! Contrary to a common belief, however, excessive inventories are not as apt to occur in a seasonal line of business such as radio as they are in the so called "staple" lines. This is because of the inherent fear of an excessive loss that attaches to a high inventory of seasonal goods. A merchant dealing in staples too frequently argues with his better judgment that if he *does* buy too much *this* time, the goods are staple and will sell anyway. As yet, radio has not reached that stage.

**N**OW there is no use shutting our eyes to the fact that sales of radio merchandise so far this season have not been up to our expectations, nor the predictions of many (and the writer is numbered among the latter since he recklessly prophesied a ten per cent increase in the holiday business of 1927).

This condition in radio, however, is not entirely due

to the general state of business and it was upon this that students of the business cycle based their predictions of increased volume for the Fall of 1927. In the specific case of radio, the reason for the failure of the public to purchase more freely is too well understood by men in the industry to need discussion here.

Furthermore, what the reasons *were* is relatively unimportant when compared with the immediate problem of how to *merchandise ourselves out* of a slow-moving stock condition.

Of course the most expensive method, and therefore the less intelligent, is to slice the life out of everything, starve our stocks and thoroughly demoralize public demand.

*There is absolutely nothing new about the present radio situation.* It has occurred in every line of retailing many, many times before. Necessarily, losses will have to be taken, but I for one can see no difference whatever between the prevailing situation in radio today and that which occurs periodically in other lines of business.

*One of the most important things is that the various factors in the industry do not lose their heads.*

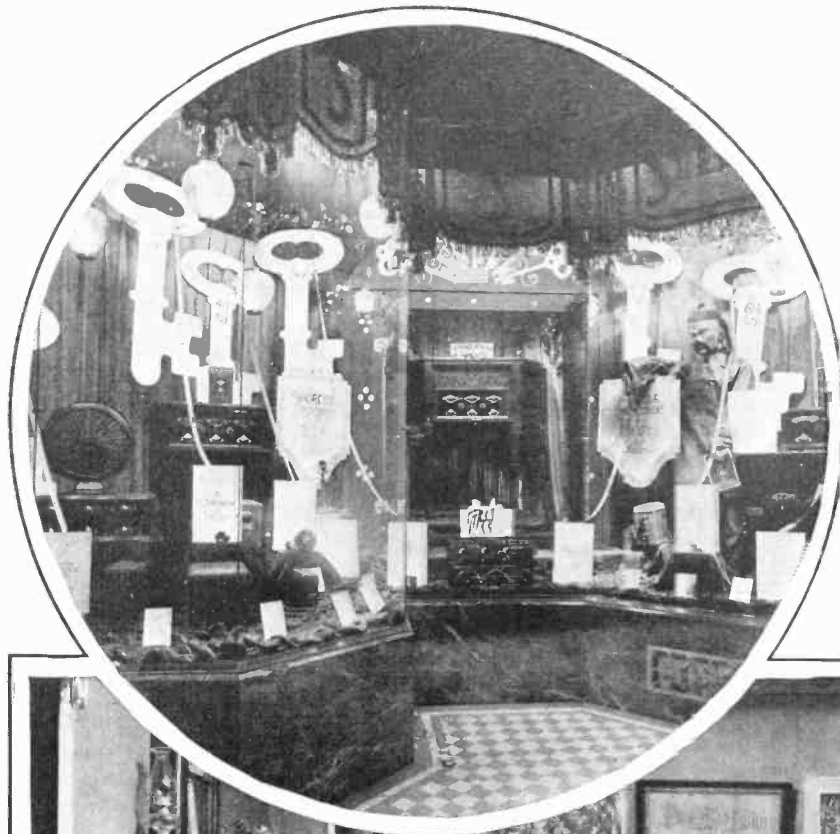
Take in my own business—the department store. We have identically similar conditions prevailing in one or more departments *constantly!* Sometimes it is in an important department—one doing a substantial percentage of our total volume, and again it may be in some

*(Please turn to page 69)*

# USE of Features Radio

## "7 KEYS TO GOOD RECEPTION"

The main idea behind this window (left) of Sully's, Pittsburgh, was the illustration of the "Seven Keys to Good Reception," the receiver on display, of course, incorporating each of the seven keys. The keys in bright colors made the display doubly attractive.

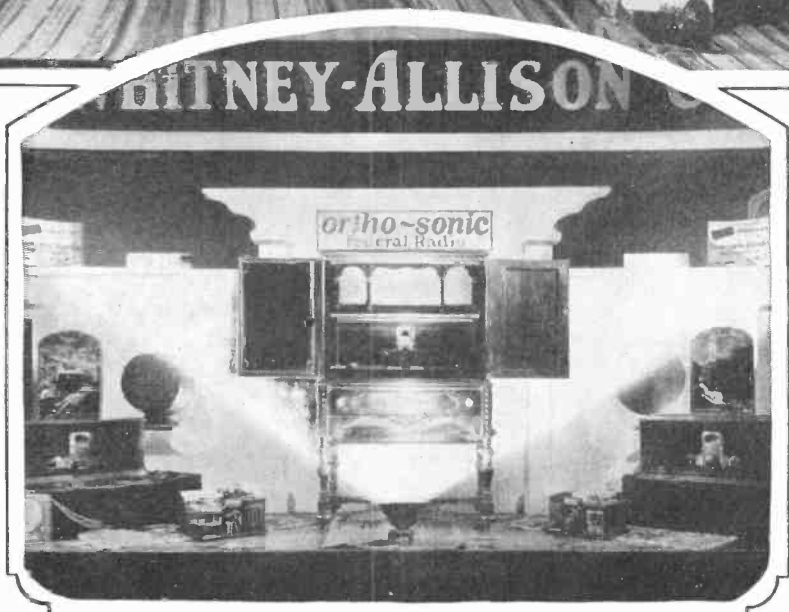


### COMBINING HUMOR AND SALESMANSHIP

The window (above) of the Crouch Radio Company, Oneonta, N. Y., puts across the value of radio to the farmer in an interesting and amusing way. The figures were cardboard cutouts done by a local artist. Its total cost was \$27 and it was the talk of the town for many days.

### SPOTLIGHT!

The Whitney-Allison Company, Terre Haute, Ind., attracted attention to the model featured in this window (right) by means of a spotlight on the floor, focused upon the receiver.



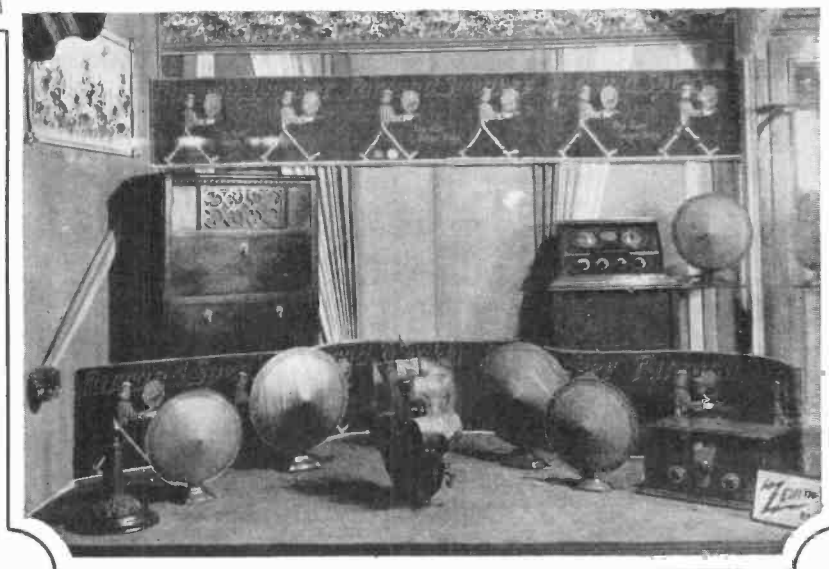
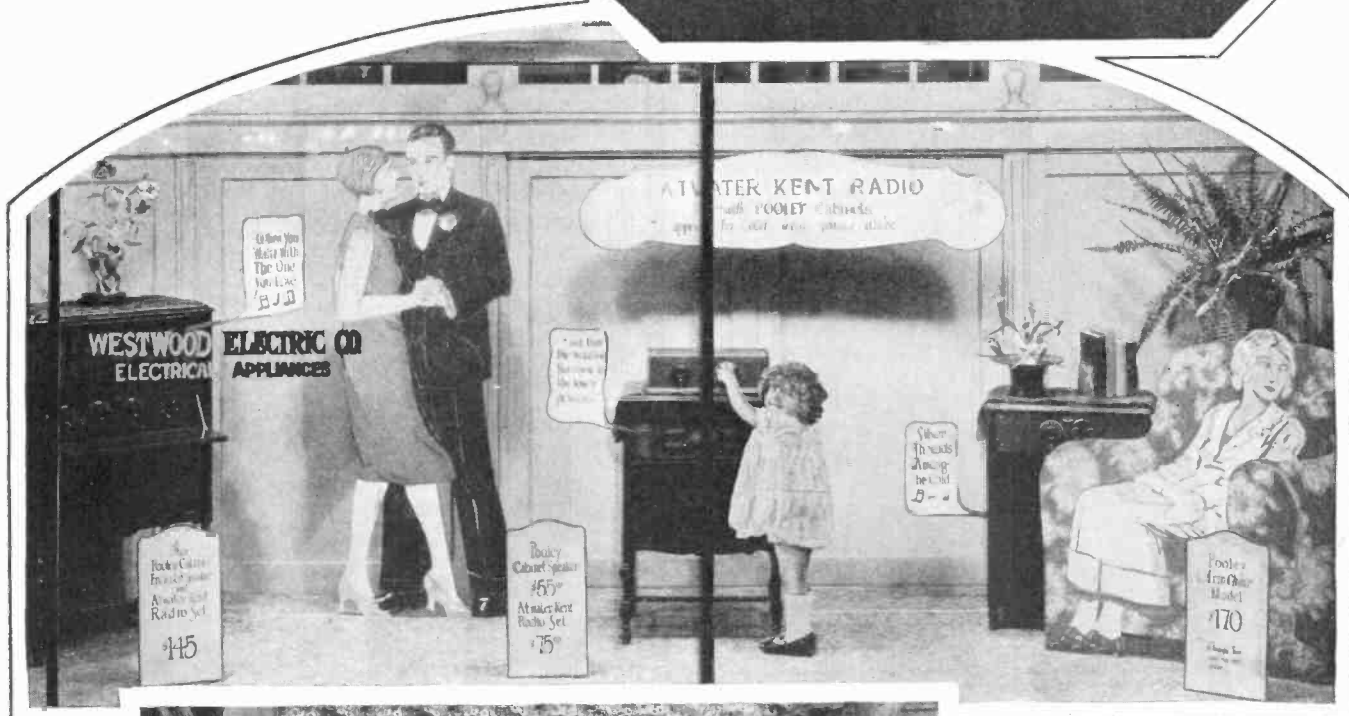
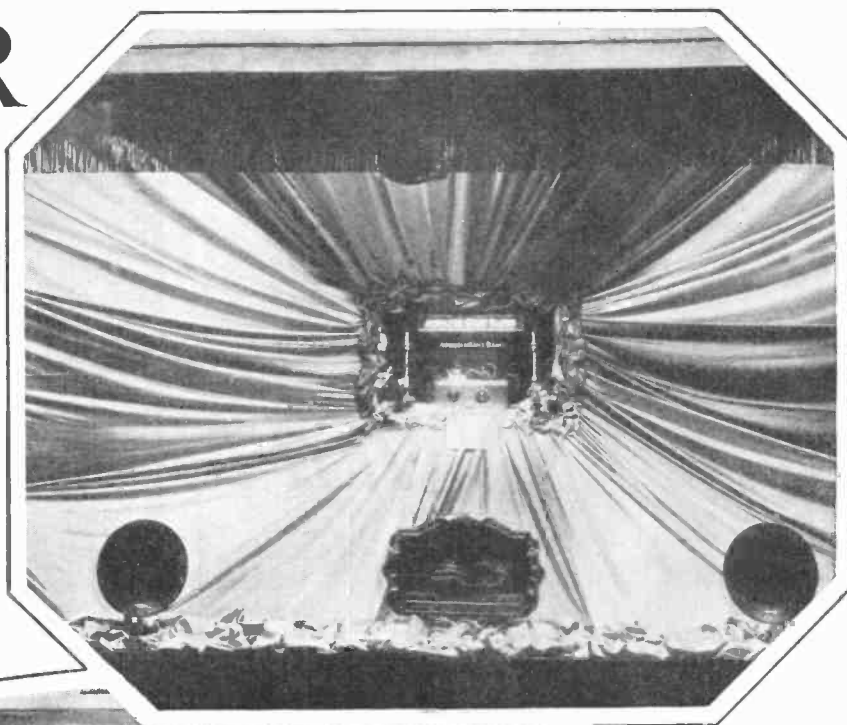
# COLOR

*Latest*

# Windows

## COLORED DRAPES USED EFFECTIVELY

The Thomas Music Company, Scranton, Pa., made an exceedingly effective use of colored drapes in this photo at the right. Not only does it concentrate on one receiver and display it to excellent advantage, but it proved an irresistible magnet in drawing passersby to the window.



## CUTOUTS TELL THE STORY

"A radio program for every member of the family" is the message of this window (above) of the Westwood Electric Company, San Francisco.

## CONCENTRATION ON SPEAKERS

The S.O.S. Radio Shop, Paterson, N. J., recently had this unusually good display of speakers (left).

STOP THINK

# What Are the



**A** GREAT number of merchants fail each year in the United States, and not an insignificant number of them are radio merchants. Some of them, of course, were doomed from their beginning. Too little capital, or no capital at all, very little technical knowledge on the part of the owners, or a questionable stock orphaned by a failing manufacturer. But there are some cases of business sickness, as there are of human ailments, which need never have proved fatal at all. "If we had only recognized it in time"—are words which apply as frequently to a business as a personal tragedy.

How does one recognize the existence of danger ahead? What are the warning signals? What are the symptoms of failure?

"Do you always know when a retailer is going to fail?" This question was asked of A. H. Meyer, vice-president of Leo J. Meyberg Company, San Francisco.

"As a rule, yes," was the answer. "Oh, of course, we get caught some times, but we are always ashamed of ourselves when it happens. The signs are usually there, perfectly clear. It is our business to see them."

"How soon ahead can you tell?"

"That depends," said Mr. Meyer. "Several months as a rule. Sometimes the business will go on for a year or so until some creditor suddenly gets tired of waiting and precipitates the crash. Some stores are doomed to failure from the start."

"What do you judge by?"

Mr. Meyer referred the questioner to E. E. Young, credit manager of the Meyberg company, and what follows are the words of Mr. Young:

In the first place, no radio merchant is a good credit risk who has not an adequate capital. For the man who starts in a non-metropolitan district, \$5,000 is the minimum allowable for his first year. He must have enough to carry him over the first hard period of introducing himself, enough to carry his overhead for six months or more and to cover his fixed investment. As his business grows, the need for capital

*How many radio merchants know whether or not their business is in good health? The credit manager of the Leo J. Meyberg Co., San Francisco distributor, tells how he recognizes the weaknesses in a retail structure*

By C. GRUNSKY

# SYMPTOMS of Failure?

to care for overhead would seem to grow less, but the investment as a rule becomes greater, so that the necessary proportion of capital to overhead still remains. In downtown districts where rents are higher and a larger stock is demanded, even more capital is required. The whole question is related to overhead and can be judged in proportion to that.

THE second prime requisite which every jobber looks for in valuing a man as a credit risk, is his personal ability as a radio expert. Selling radio is not a job which can be handled by one ignorant of the materials he is handling. The first few years of radio saw many failures of those who went into the field without knowing anything about it and who entered it merely because they wanted to be tied up with something which was high in popular favor.

Thirdly, the dealer should be handling nationally advertised goods of standard quality. How many failures are there, which all can remember, of dealers who dropped out because they were caught with their shelves laden with sets which were unsatisfactory in operation, and so found no popular demand, or with "orphans" whose manufacturer had himself failed?

And, he should confine himself to two or three lines only—perhaps one in each price range is enough. One of the most prevalent danger signals which come to the jobber in the radio business is a sudden flood of credit inquiries from other wholesalers. These indicate that the store in question is taking on new lines or buying promiscuously from a large number of radio jobbers.

The reasons for regarding this last as a danger signal are many. The average radio merchant has a very limited capital of a few thousand dollars. If he endeavors to carry three or four lines of radio merchandise having similar price ranges, he will shortly find that his capital is insufficient and that he is unable to do justice to any of the lines.

The wise proprietor selects the line of radio merchandise that he himself is sold on, one which is nationally advertised, is manufactured by a concern of unquestioned responsibility and one which will be in business for years to come.

By confining his purchases to as few houses as possible he can expect better service and more consideration from their departments, particularly the credit department. He will receive a greater amount of credit, fullest cooperation and support, whereas if he buys from a wide field the account is of little value to any jobber. The man who has many small accounts will find that no one is particularly interested to pull him out of a hole, should he get in one—and there is the danger that anyone of them may tie him up for the collection of a few dollars, thus starting the final fatal landslide. On the other hand, with one or two jobbers deeply interested, he has advisers who do not wish to see him fail and who will help him to regain his feet if that is possible.

Another danger symptom which is not always recognized as such by credit managers, is the condition of the dealer's paper, that is, the installment contracts which have been discounted with a finance company.

IN THESE days of installment selling, it is almost an essential to success that a retailer be able to handle time payments. Few can do this on their own capital—and very few have sufficient standing with their banker to be able to swing such a deal. The finance company, on the other hand, is in the business of handling such paper and on reasonable assurance of safety is willing to advance from \$3,000 to \$5,000 on security which would not be considered by a bank.

It pays the credit manager to keep in close touch with the merchant's finance company. He should inquire as freely from the finance company about the dealer's paper as the finance company inquires from him. If the finance company is having trouble with the dealer's paper through collections and repossessions it is an indication that he is undermining his ability to pay his bills to the jobber.

For these reasons it is also of the utmost importance that the dealer keep on good terms with his finance company. Unfortunately, finance companies do not generally look upon radio paper as particularly desirable, and the radio merchant's success with them is a good indication of his business health.

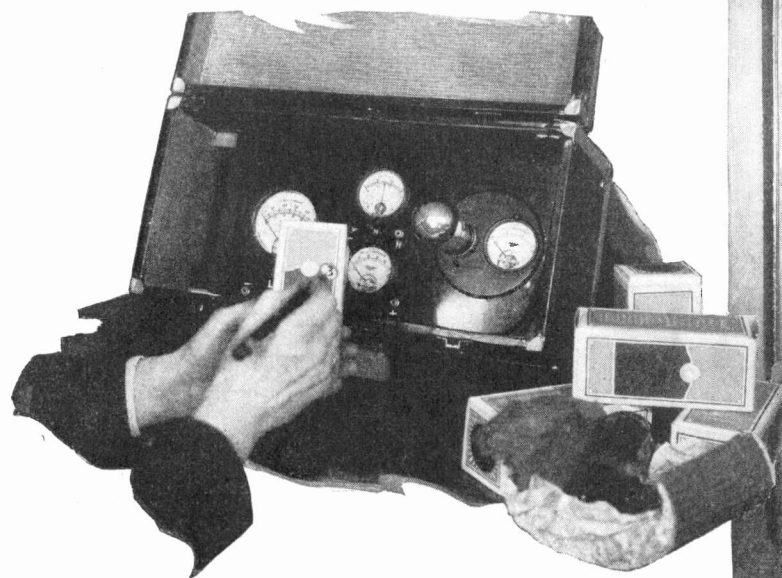
One crucial test for the dealer  
(Please turn to page 58)

## Look Out for Trouble If . . .

- . . . *your capital is out of proportion to your overhead.*
- . . . *you carry too many lines in the same price range.*
- . . . *you buy from too many jobbers.*
- . . . *you cannot pay bills promptly in the peak season.*

To stop his tube leakage, Thomas—

1. Sends a man to the jobbers' warehouse to test all tubes bought.
2. Keeps the tubes in the safe and records every receipt and delivery.



# Saving \$700 a Year on

WHEN the Thomas Electric Company of Des Moines, Iowa, analyzed the profit and loss statement of its radio department for the year ending Dec. 31, 1926, it discovered that the sum of its purchases plus operating expenses and estimated net profits exceeded its actual gross sales by almost \$2,000.

"Obviously," states Victor Thomas, the owner of this concern, "something was wrong and it was up to me to ascertain the cause. I decided that I would let the employees run the business for a week or two while I spent my time as an observer. Accordingly I sat back in my chair, took a few deep breaths and indulged in a little intensive thinking. Where were the leaks, if any, and why? It is surprising the things one discovers when he gets away from details for a while. I heartily recommend this practice to other dealers. It wasn't long before my attention was directed to the tube counter and as tubes run into money very quickly, I determined to track down a few things I overheard there. 'Give me four tubes for Brown's new set, these tested low.' 'This tube's busted, let's have another one,' or 'Here's two burnouts for replacement, Jones says it

wasn't his fault and we'll have to come across or he won't pay.' I noticed also that customers, set-builders in particular, had a habit of demanding new tubes on the slightest provocation. I retired in dismay to my office to do a little figuring.

"HERE are some of the startling facts I forced myself to face about those gold dollars more often referred to as radio tubes: A free replacement job on a six-tube set represents, at cost, the bank interest on a large sum of money; it represents the net profit on a fairly large radio set. I asked myself how hard we had to work to sell a set and how much time, if any, were we spending in guarding the flow of tubes? From what I saw and heard those first three days I figured that it was not only perfectly possible, but highly probable, that I was losing from eight to twenty dollars a day during the busy season—not due to theft, although that wouldn't have surprised me with the temptations I had placed before my employees—but because of lax employees, lack of a definite system and general 'softening' on tube replacements. Unquestionably there was a leak-

*FEW dealers realize the many possibilities for costly losses in their tube department. Victor Thomas of the Thomas Electric Company, Des Moines, Iowa, awoke one day to the true situation in his store, located the leaks and stopped them*



3. Explains all conditions regarding tube sales to the customer BEFORE the sale.

4. Tests all tubes before the customer, who O.K.'s the sales slip.

*Tubes are just so many gold dollars, and much easier to lose. Do you keep your "dollars" in the safe or give them away?*

# TUBES

age here of from \$700 to \$900 a year—according to a careful estimate which I made. Something had to be done about it and done at once."

Mr. Thomas then enumerated the remedial measures that were taken immediately. He divided the tube control problem into two parts: (1) Stock check-up; (2) sales policies. Both are of equal importance.

**U**NDER stock check-up Thomas found three natural divisions for consideration: (1) Losses at source of supply; (2) store leaks; (3) the service department.

"It is worth while to mark each tube the day it is received from the manufacturer or jobber," he declares. "Have an explicit agreement with your source of supply that all tubes not up to an acceptable and agreed standard, or that any found broken or defective may be returned for proper credit if reported within 24 hours from the time the shipment is received. I have even found it advisable to order in slightly larger quantities than heretofore and to send my service man to the local jobber's warehouse, there to test each tube so that the rejects are made before the shipment leaves the jobber's platform. Think of it! A few tubes saved will more than pay for this man's time."

As soon as a tube is tested by this dealer's own instrument its milliamperage rating is marked on its individual container. This marking makes it easy to assemble tubes



of similar rating for a set. Store leaks may largely be prevented, it was found, and the clerk's backbone stiffened so that he will be able to resist the importunities of unreasonable customers, if six tubes only for each of the salesmen are kept in the salesroom. This stock is charged to the accessory clerk. He is responsible for it.

If a tube is broken he must explain the occurrence to Mr. Thomas. "When it is realized that a lot of clerks have habits, some of the things I personally observed, of tapping or playing with a tube while talking to a customer or of letting it roll off the counter,

*Please turn to page 58*

# \$214,000 a Year



## SPECIALTY

Dealers Who Have  
Made Radio Pay—  
No. 13

By RAY V. SUTLIFFE

WHEN a radio merchant credits outside selling with producing 70 per cent of his business, and when that total annual volume exceeds \$200,000, his "modus operandi" becomes a subject of general interest to the trade.

Four years ago the Joslyn Radio Company of Omaha, Neb., was non-existent. Today, it is, admittedly, the largest exclusive radio business in that bustling city of 215,000 persons.

"Because," said C. C. Joslyn, Jr., to the western representative of *Radio Retailing*, "I adopted the policy from the start of going out after business."

Joslyn was interviewed the latter part of October. At that time his organization consisted of sixteen outside salesmen, three field supervisors, thirteen service men, four office workers and two floor clerks. Efficient administration of the time and activities of these 38 employees is Joslyn's biggest job.

"See that table there," he exclaimed, pointing to an enormous piece of furniture having a seating capacity of 20 persons, "that's one answer to this problem of handling outside men. Three times a week the entire sales bunch puts its legs under that table and threshes out the trials and tribulations of the past two days. Keeping close supervision over the men is a mighty important factor."

"How do you do it?" he was asked.

"In the first place," Joslyn replied, "I never hire a man at the original interview. In fact, I purposely discourage him. He must demonstrate his persistence, for we all know how essential that is to successful salesmanship. Once hired, however, the new man is made to feel very much a part of the organization. He is assigned to one of three supervisors for intensive personal and sympathetic training. This training, as with children, begins in the home. He is introduced to the details of set operation and installation in the home of his supervisor. Thus he is immediately made familiar with selling radio in a home atmosphere."

The need and value of careful field supervision was then stressed by this midwestern merchant. Joslyn assigns one supervisor to every six men. With smaller organizations the dealer himself must, of course, perform this function. The danger there, Joslyn pointed out, is that the store owner himself is not always in a position to give the specialty salesmen the time and help which is so necessary to the successful maintenance of outside selling.

"Make the best salesman shoulder some of this responsibility," it was suggested. The tactics of the electrical appliance specialty dealer were given as good examples of the importance of close contact with the sales crew. Joslyn's set-up parallels that of these more experienced merchandisers of commodities which must be sold. With few exceptions the successful members of the washing machine, refrigeration and kindred fraternities practically wake their men up in the morning and tuck them in at night.

"Not that I 'baby' my men," Joslyn stated, "but I do see that they are properly trained, that they are accompanied on their initial rounds by a supervisor, that they are supplied with leads, that the elements of friendly competition for prizes, honors and promotions are present and that they report in detail, every second day, the result of each call."

The supervisor receives a two per cent commission on all sales made by his men. He is held responsible for sets out on demonstration, for collections on sales made by his men and for the general efficiency and maintenance of his own crew.





# Through SELLING

*Outside sales campaigns have been both praised and condemned as a means of selling radio—but Joslyn, of Omaha, is making it show a six per cent profit.*

When a man has demonstrated his ability to stand on his own feet, when, in other words, he has mastered his 20-minute initial sales talk on the merits of the sets he is selling, especially on the nature of the wonderful programs which can be heard in Omaha, he is taught his "Sales Arithmetic Table."

**"EVERY CALL IS 88c. EARNED"**

Based on an analysis of the work of 20 radio sales-

men, over a period of ten months, Joslyn has formulated the following standard of attainments:

#### JOSLYN'S SALES ARITHMETIC TABLE

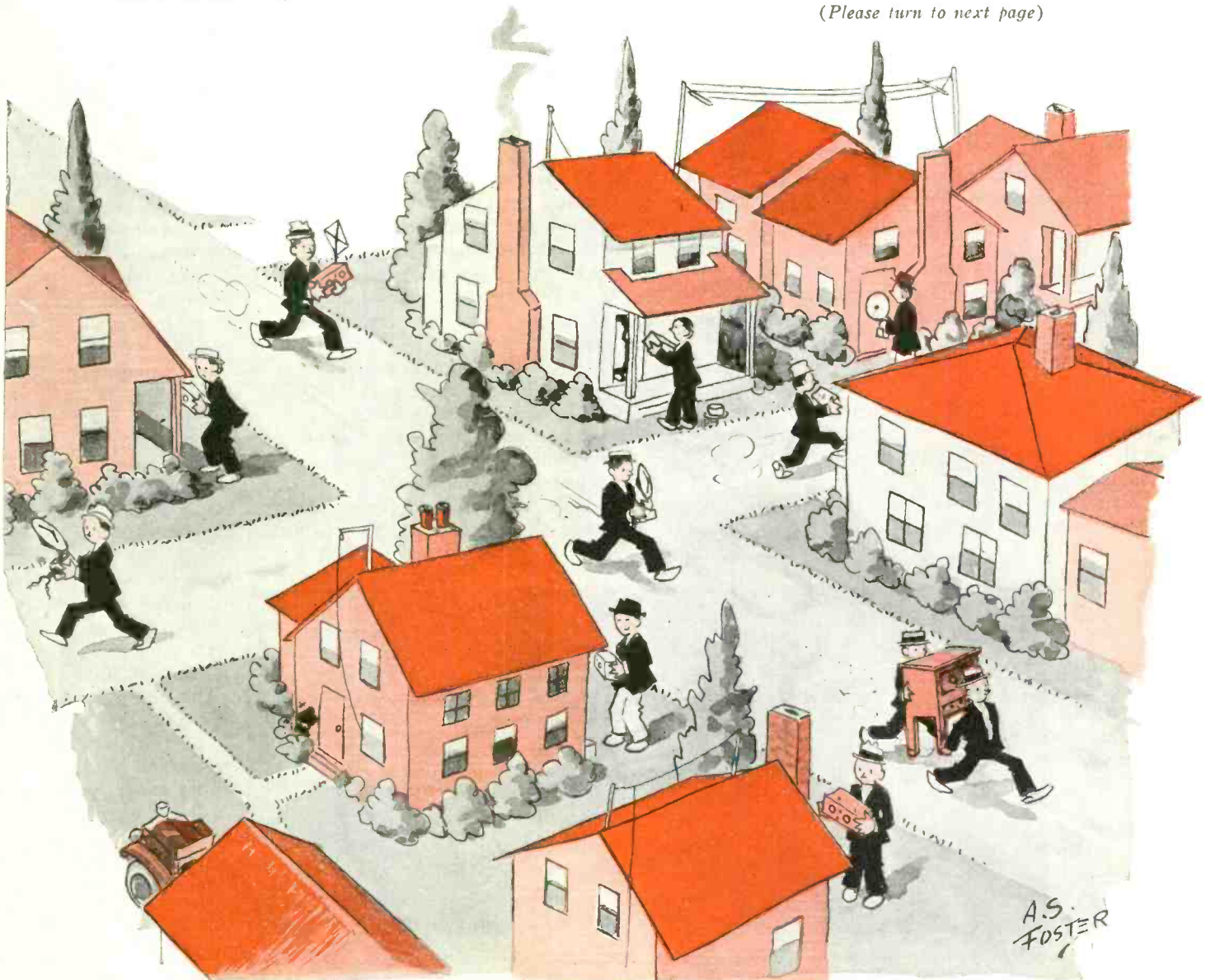
*A 20-minute sales talk = 1 call*

*6 calls = 1 demonstration*

*3 demonstrations = 2 sales*

*6 sales a week (average sale \$150, commission 8 per cent) = \$48 earned*

*(Please turn to next page)*



54 calls, per week = 6 sales

1 call = \$.88 in your pocket

Average, therefore, 9 calls daily

"Every worthwhile call—one during which you get over your twenty minute radio talk," he tells his salesmen, "is just eighty-eight cents added to your income. Think, therefore, in terms of calls, not sales. Conscientious coverage—that's the objective—the orders will take care of themselves."

To these joint policies of personal supervision by someone in a position to devote *all* his time to this one task, and of earning power per call, Joslyn attributes his ability to obtain and *retain* outside salesmen.

He prefers green men. "It doesn't take a radio expert to sell radio nowadays," he declared, "but it does require courage to ring those doorbells and keep ringing them in face of rebuffs. I pick my men, therefore, having in mind one prime requisite—'intestinal fortitude.'"

This problem of merchandising by the so-called "forcing process" is not a simple one. Its angles are involved. Its record of failures numerous. Joslyn's apparent solution of some of these difficulties may best be told, therefore, by presenting verbatim the series of questions and answers that passed between Joslyn and the writer:

Q. How do you obtain your salesmen?

A. By an occasional "want advertisement" supplemented by personal contacts of my supervisors. Remember that one of their jobs is to keep their sales organization intact.

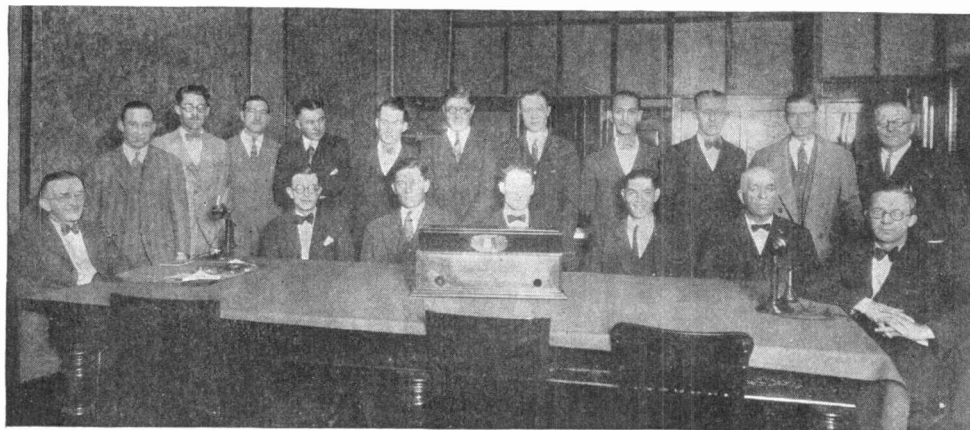
Q. What happens during the summer months?

A. I lose 70 per cent of my force. The remainder earn a living wage and will line up enough future prospects for Fall closing so that their earnings during September to November compensate them for this preliminary sacrifice. They make liberal use of the telephone during these productive months thus obtaining greater coverage. Indicative of the influence on my monthly sales curve of this year 'round solicitation are the following percentages of gross business done during various periods of the year: September to January 1926, 45 per cent; January to May, 1927, 30 per cent; May to September, 1927, 25 per cent. The "slump" months, you see, accounted for one quarter of our yearly volume.

Q. IT HAS frequently been stated that the high percentage of bad accounts and of "reverts" that follow as the result of forcing sales takes all the profit out of outside selling methods.

A. Not with my organization. My net profit, as per a recent statement, is slightly in excess of six per cent.

It is true that I have a heavy overhead and a large organization but I am also obtaining an adequate gross volume to compensate for this setup. The reason bad accounts and returns represent less than five per cent of my gross volume



Tri-weekly conferences, around this table, strengthen the determination of Joslyn's 19 field-salesmen and are the inspiration for sales producing ideas.

is because the supervisor is required to check the responsibility of each purchaser before the set is delivered. He is responsible, morally, if not financially, for the condition of his territory. It is a matter of pride with him, therefore, to show as clean a slate as possible.

Q. What is the percentage of business secured by your field organization as the result of straight "cold turkey" canvassing?

A. At least 50 per cent.

Q. How does the salesman stimulate the prospect to the closing point?

A. He plays up the size of the company he represents and displays photographs of some very attractive cabinets, explaining how much a fine piece of radio furniture improves the appearance of any home. This is a new angle and is sure to interest the average woman. Then he tells about our three-day trial offer and liberal terms.

Referring again to this question of credit losses I employ four clerks who, among other duties, follow collections closely. I have developed a spirit of friendly competition between these four men as to which one can show the fewest losses at the end of each month.

Q. Do you zone your men's territory?

A. To a certain extent. Each man has a territory but it is not entirely exclusive. If another salesman learns of a prospect in territory outside of his own, he is at liberty to close the sale, but he is not supposed to work any territory other than his own.

Q. How about the installation?

A. I charge \$5 for the installation of the aerial and ground. As is customary the customer must buy this equipment whether he retains the outfit or not. I operate two aerial installation crews and two men who do nothing but install demonstration outfits. The result is that the set is in operating order when the salesman calls to verify its performance and close the order.

Unless the circumstances are unusual the trial demonstration is limited strictly to three days. This is necessary when it is considered that I have some 50 to 60 sets out on demonstration throughout the busy season.

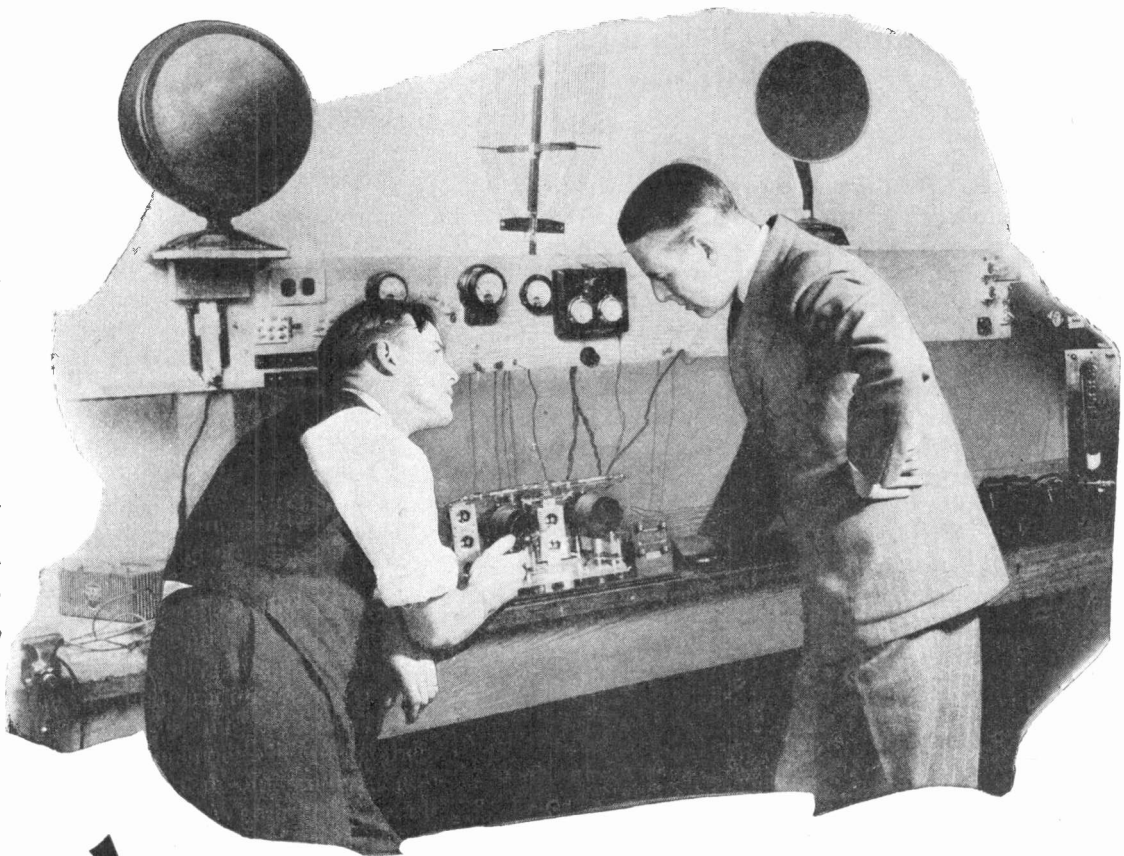
Q. It has been stated frequently that it costs too much to merchandise radio by specialty selling methods. How do you justify, from an economic viewpoint, the maintenance of this extensive personnel?

A. It is mainly a matter of volume. I cannot give you the exact figures, but, in rough numbers, my average organization consists of 25 persons. This includes myself. I grossed \$214,000 for the past 12 months ending November first. This figures \$8,560 per employee. The average yearly earnings, per individual member of my

staff, including my own drawing account, will run approximately \$1,800. This means that 21 per cent of my gross sales goes for commissions, service men's wages, clerical hire and executives. I do not believe that this is excessive.

# Sales and Service

are the two partners in any business — men in each department should know something of the other's everyday problems.



## Get Acquainted with your PARTNER

THE jobs of selling and servicing are inseparably intertwined in every business. Particularly in radio they are so welded together that it is often difficult to know where one stops and the other begins.

Therefore, a natural born salesman and an efficient technical man provide an ideal set-up for the ordinary radio store. Yet, it has been the experience of the Smith-Wolfley Company, Phoenix, Ariz., that each must also have a sympathetic understanding of the other's position and problems if the most efficient service to their customers is to result.

Several years ago, when W. Taylor Smith, radio technician, and Walter G. Wolfley, radio salesman, pooled their resources and became the Smith-Wolfley Company, it was agreed that Smith would attend to the mechanical end of things and Wolfley would act as business administrator. But both men soon realized the necessity of learning the other's job.

"It has been a surprise to me, not only how many radios I can sell, but that I like to sell so well," the technical man declares. "Perhaps if it had been forced on me, I might have rebelled, but as it is, it has just grown with the demands of the business. Everywhere I go, I see a chance, and everywhere I see a chance, I try to sell a radio outfit."

"I didn't know I could even turn a screw-driver," says the sales half of this partnership. "I was interested in selling and I started out to sell radio because I thought it was a great field. But to find myself quoted in the

evening paper as an authority on mechanical construction would be a joke if it were not for the fact that I have done everything that there is to do mechanically on the receivers we sell. I find I like the mechanical end fully as well as the selling end and I have learned to know my line as I never could have otherwise."

"Bigger and better sets are replacing the old styles and people can be sold the worth while installations now with half the work that formerly was necessary to get a \$40 set in. We still count on going out to sell, rather than waiting for the customers to come in to buy, but we are selling from an angle entirely different from that which persisted up until ten months ago," says Wolfley.

"A year ago, we were still, subconsciously at least, directing our efforts to introduce a novelty. That thing is done. We are now very consciously directing our efforts toward meeting the public demand for a radio service that will fill a genuine need, with no idea of novelty in it at all.

"All salesmanship must now be organized to concentrate on selling the idea of a stabilized service. Get the idea of masterly broadcasting of worth while programs firmly fixed in the customer's mind, be ready to demonstrate an improved receiving apparatus, and hope that the bulk of the sales will be made over-the-counter during the next year.

"That," concludes Wolfley, "is the logical next step to work for. But until that day is here, our slogan is, 'Go out and get 'em!'"

## What Are the Symptoms of Failure?

(Continued from page 51)

is the fall of the year, the season when credit managers must constantly watch their accounts, for with the advent of new merchandise and the beginning of the brisk radio season, dealers' accounts seem to shoot up mysteriously over night, exceeding previously determined safe limits. This abnormal condition exists until the first of the year, after which time the accounts usually subside to more reasonable figures, but as sales diminish, collections become increasingly difficult. If accounts are not paid promptly during the busy season, there is usually a large carry over of accounts receivable which require months to liquidate.

CREDIT managers, through constant interchange of information in the autumn months endeavor to watch closely the indebtedness of the various radio stores. If reports indicate that one is slowing up in his manner of payment instead of showing improvement, it is usually a reliable sign that that particular account requires special attention.

The pre-Christmas period, in other words, is the time when the jobber's credit manager is figuratively "on his toes." Decisions he weighs carefully. He must use caution to avoid excessive credit loss and still refrain from any hasty ill-timed action which will result in a loss of valuable business. Like a doctor, his business is to study the symptoms and decide upon a course of action, always endeavoring to help the patient, if possible, and to save him as a customer for his firm.

How many of the failures are avoidable? Of course, not all, for some of the businesses never had a chance from their start and some are the victims of accident or circumstances. But, if the radio retailer were as much on the watch for his danger symptoms as the jobber's credit manager there are many business sicknesses that could be cured and still more that could be prevented.

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## Saving \$700 a Year on Tubes

(Continued from page 53)

or of substituting a used tube for a new one, then the need for a strict accounting is self-evident," says Mr. Thomas, in explaining this ruling.

The balance of the stock is kept *in the safe*. When a sale is made, the store copy of the sales slip serves as an order on the bookkeeper to release the number and kind of tubes called for. When the bookkeeper bills this material she again checks her stock. If the counter sale is a cash transaction and for one or two tubes only, the clerk completes the entire transaction and replenishes his stock, submitting for this purpose his cash sale slips to the bookkeeper during a leisurely moment.

It was in the service department that Thomas discovered most of his tube losses. Every call meant a demand for two or three extra tubes. Sometimes these were billed the customer but more frequently at the discretion of the service man they were "devoted to the cause." Now all is changed.

The repair expert was provided, at a cost of \$2.90, with a cotton-lined tube container. This padded satchel holds, safe and sound, twenty assorted tubes. The service man carries the key and, like the counter clerk, is responsible for his tubes. He must report all tube transactions and have his portable stock checked once a week for tube quality as well as count. Thomas also tests the condition of the tubes on the counter from time to time.

"Contrary to first thought, both men like this innovation. They feel free from any suspicions and take pride in converting as many complaint cases into actual sales as possible."

BUT these savings, although important, do not of themselves account for the prevention of 90 per cent of the losses which Thomas believes he has accomplished. The customer must also be trained, he claims. Since Feb. 1, therefore, these rules have been in effect:

Any arguments about tubes must occur *before*, not after, the sale.

Tubes are not subject to return and are not guaranteed against blow-outs or deterioration.

The decision as to the responsibility for burn-outs, shorts, open circuits, strained or otherwise damaged tubes must be left in our hands.

The margin on tubes, considering losses, is so narrow that we would rather not sell if the customer does not wish to purchase on our terms.

Our service man is obliged to charge for all new tubes or else leave the old one in the socket. Any adjustments must be made with Mr. Thomas.

"In conclusion," says Victor Thomas, "my counter man now tests each tube in front of the customer, secures the customer's O.K. on the sale and explains the preceding rules to him.

"I know that these new rules and methods have wiped out my losses on tubes since they were inaugurated. And I am confident, based on my own observations and calculations, that these leakages can very easily amount to over \$1,000 a year on a \$40,000 gross volume in general radio merchandise."

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## Confidence Reflected in New Year Statements

(Continued from page 41)

and greatly improved the quality of their merchandise.

Today the competition of phonographs with radio sets should give the radio manufacturers something to think about. It is now up to the radio manufacturers to improve the quality of their products with particular reference to the tone.

This movement is already well under way as it is apparent to nearly every manufacturer that Ford merchandising cannot be a permanent success in the radio industry. Radio sets and accessories must be sold almost solely on the basis of performance.

It costs money to build performance into radio receivers and it will be necessary to obtain higher prices. From all indications 1928 will see slightly higher price levels and substantial improvements in the quality of reception.

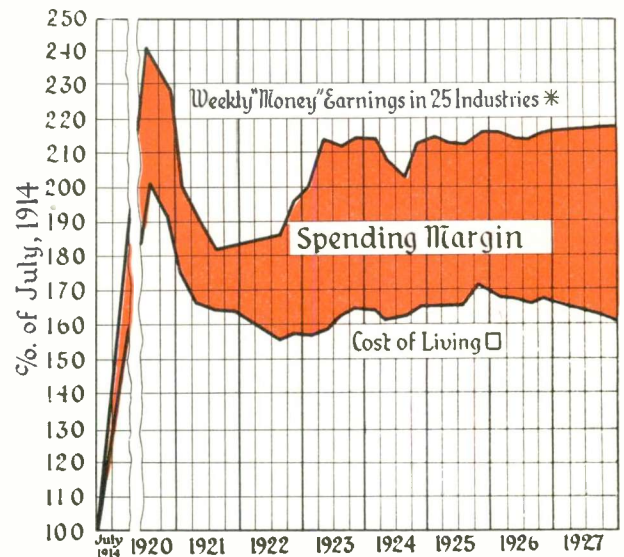
# HERE Are Your Chances to Make MONEY



## What the Average American Family Spends for Various Commodities Each Year

©Radio Retailing

In the chart above, it is significant to note that the American family spends one quarter as much for radio as they do for candy and ice cream. When you think of the unit sale of an ice cream soda as compared to the unit sale of a radio set, we begin to realize the sales opportunity still ahead for the radio trade.

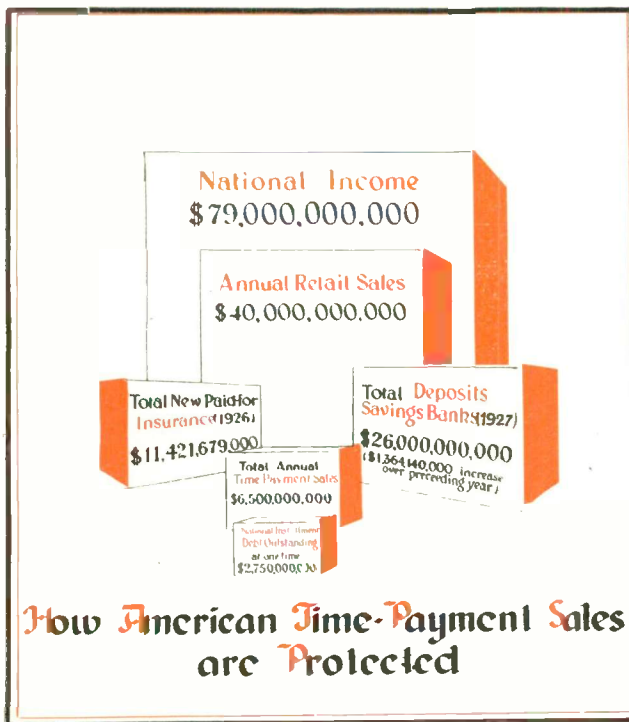


\*-Figures from National Industrial Conference Board  
 ■-Figures from Bureau of Labor Statistics and Natl. Ind. Conf. Bd.

## A Study of the American Family's Spending Margin

©Radio Retailing

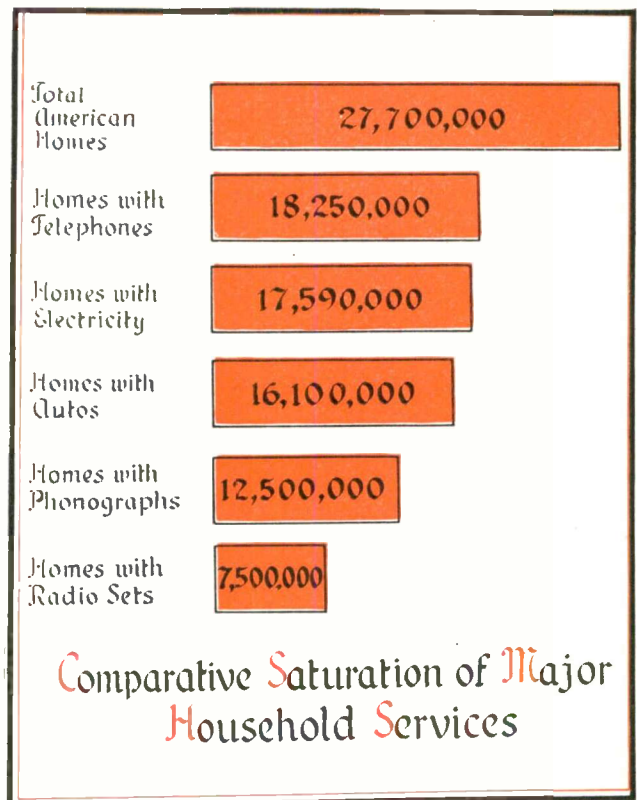
The red portion of the chart above indicates the "spending margin" of the American family; that is, the difference between average earnings and the cost of living. With earnings increasing and living costs decreasing, there remains a constantly increasing spending margin for such commodities as radio.



## How American Time-Payment Sales are Protected

©Radio Retailing

With our annual income \$79,000,000,000, and time payment sales only \$6,500,000,000, it is readily seen that the nation as a whole is financially able to underwrite satisfactorily its entire outstanding installment debt.



## Comparative Saturation of Major Household Services

Figures as of January 1, 1928  
 ©Radio Retailing

Although a million more American homes were equipped with radio during 1927, radio still brings up the rear numerically when compared with the actual number of other household utilities now in use.

# Radio Retailing

A McGraw-Hill Publication

January, 1928

Vol. 7, No. 1

# A.C. Tubes for Offer Latest

## *A.C. Harnesses Are New Sales Producers*

WITH the debut of the A.C. tube comes an additional source of revenue to radio merchants. There are today 4,000,000 owners of battery sets in this country. Of that number thousands, whose homes are wired for electric lights, will welcome an opportunity to have their sets changed to use the new tubes.

Battery sets can now very easily be changed into electric receivers through the use of the new A.C. tube adapters and harnesses together with a small step-down transformer for supplying the filament voltages. The original wiring of the receiver is left untouched as the filament circuit is carried on the harness through the use of the adapters. The various by-pass condensers and resistances necessary for the correct bias on the tubes are all contained either in the adapters or in the harness. Any type of B supply may be used, but of course it is preferable to use a power supply unit. Practically all types of battery receivers can be changed to operate satisfactorily by this method and many manufacturers are announcing this type of equipment.

Here is an opportunity for every dealer to get out his customer list and make a personal call on every customer or prospect owning a battery operated receiver. Show how easy it is to convert the sets and how small the cost. Feature this new plan in advertising and play it up in windows. The idea is sound and above all works satisfactorily as has been proven in tests recently conducted. But you will have to merchandise the idea to your customers. Take it to them, show them how it works and you will profit by this development.

\* \* \*

## *The Time for Co-operation Is Now*

WHAT to do when stocks don't move resolves itself into a problem for the whole industry generally, as pointed out by S. J. Ryan in an article elsewhere in this issue. It is not a situation which can be left entirely to the retail trade to solve by price-cutting or whatever other means may be at its disposal.

When such a situation arises and retailers find themselves overloaded with material for which public demand has stopped, the logical thing for the retailer to do is to increase his stock with the type of merchandise which is selling at the moment.

If his credit is frozen in non-moving stock, that is certainly no time for his source of supply to refuse further credit. Such a problem affects directly the distributor and manufacturer as well and the same spirit of co-operation should be exhibited by all parties concerned until the retailer has merchandised himself out of his overloaded condition.

## *Over-the-Counter vs. Specialty Selling*

TWO articles in this issue of *Radio Retailing* on the subject of specialty selling express two exactly opposite viewpoints. Both coming from men well known in the radio trade, their conflicting opinions are each worthy of careful consideration.

Radio manufacturers have long realized that radio cannot achieve its widest distribution until it is taken to the customer's home and sold by specialty selling methods.

However, reports from the retail trade as to the profits to be derived from this type of selling are not always rosy, as Mr. Griffin indicates in his article. On the other hand, Mr. Joslyn has accomplished an outstanding success in this type of merchandising. Whether the retail trade can make money with outside selling seems to be questionable. It is a subject for serious discussion by every branch of the trade.

\* \* \*

## *Let's End Suspicion*

THE opinion has been voiced by more than one man in the radio industry that the time has come for everybody to bring all the cards up on top of the table. The fact that the two manufacturers' associations have been unable to secure anywhere near a workable degree of co-operation from their members in the preparation of industry statistics indicates a lack of trust that must be appalling to anyone trying to do an honest job and an honest service for the industry.

It has been brought out clearly at recent manufacturers' meetings that suspicion and distrust are encountered by almost everyone who, with all frankness and honesty of purpose, approaches anybody else in the radio industry seeking a frank interchange of information.

Everyone agrees that interchange of information would be a fine thing and very helpful but few seem inclined to do it, and often deliberately give out misleading information. When such a situation arises between a manufacturer and his distributors, the situation passes beyond the "serious" stage and becomes fatal.

As one manufacturer pointedly puts it, "For God's sake let's stop being childish. We're all in this business to make money. Why not be honest with each other?"

\* \* \*

## *Is Anybody Making Money?*

IS ANYBODY in this industry making money? Dealers say "No" and blame the manufacturers. Manufacturers say "No" and blame the dealers. Distributors say "No" and blame them both. We all seem to be expert at passing the buck.

The fact remains that the retail trade generally has not made money out of radio. And if the retailer operates

# D. C. Sets

## Sales Opportunity

*Harnesses, Outside Sales,  
Careless Installations,  
Credit, Suspicion*

and other things  
discussed by the editors

in red ink, it's a foregone conclusion that the distributor and manufacturer will do the same. Let's get that fact clearly in mind—if the retailer doesn't make money, nobody will.

And the fact remains, no matter what the cause or who's to blame, *retailers have not made money*. Maybe that is the greatest weakness in the present situation. Manufacturers are possibly thinking too much about increasing the number of their retail outlets without sufficient thought about whether *present* outlets are making money.

\* \* \*

### Check Up Careless Installations

**D**URING the rush just before the holidays many dealers faced the necessity of making hurried installations in order to take care of their customers' demands that the set be working by Christmas. That many of these rush installations were haphazard, slambang affairs is the inference from reports reaching this office.

It might be a good plan, therefore, if dealers would visit every such pre-holiday job and check it over for possible defects. One service call made during the post-holiday lull may save a number of service calls from disgruntled customers later on.

\* \* \*

### Service by the Manufacturer

**A** SHORT time ago a prominent radio engineer wrote twenty-two well known manufacturers of sets and accessories requesting a copy of their service policy, service manual or repair parts catalog. Fifty per cent of the recipients acknowledged this letter. Nine replies stated that no material of this nature was available. The remaining two mailed a service booklet and spare parts list.

When less than ten per cent of a representative group of radio manufacturers comply with a reasonable request of this nature it indicates clearly that the service department of the producing end of this industry of ours needs overhauling. The retailer and the jobber require, and are entitled to, a greater degree of service co-operation from the manufacturer than the preceding test would indicate they are now receiving.

What is needed is a clear-cut service policy from the factory, tangibly expressed in the form of a service and spare parts manual. There still remains a real job to be performed by the manufacturer's service department. Only when preventative measures are adopted which will materially decrease the present costly practice of returning goods from dealer to jobber to manufacturer and back again over the same route, due to the lack of proper information and necessary repair materials at the point of their most economic application, will that job be satisfactorily performed.

\* \* \*

### A Composite Trade

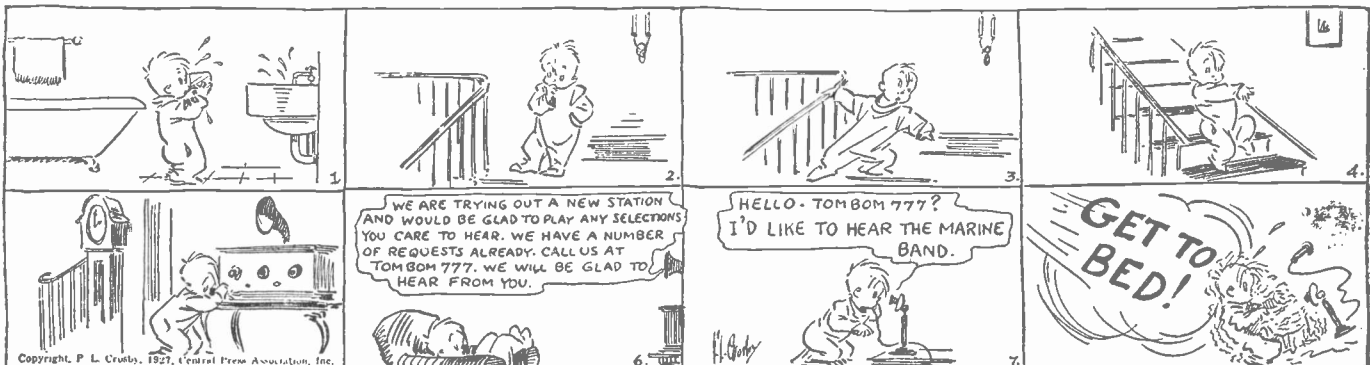
**E**LECTRICAL in its production, musical in its achievements, radio thus becomes a composite article of merchandise. It belongs, at present, to no specific trade. It is manufactured by a variety of companies in many industries. It is sold by a wide range of wholesale and retail outlets.

In the meanwhile, it is slowly building up its own trade and industry, made up of men gleaned from a number of fields who are now devoting the major portion of their efforts to radio, and of men who visualize the future of radio and who are devoting their entire time to it.

Until the time comes when radio will be sufficient unto itself, it must remain, by all the laws of economics, a conglomerate industry.

SKIPPY

By Percy Crosby



Copyright, Central Press Association

RCA newspaper and magazine advertising in 1928 will be the most extensive ever undertaken. Saturday Evening Post, Liberty, Colliers, Literary Digest and other magazines will be used through the year. Leading newspapers throughout the country will give RCA Dealers effective local support. And there will be more and better Sales Helps, Window Displays and other business getters. The Saturday night RCA Hour will be another big advertising feature in 1928.

### Here is the greatest advance in radio since the beginning of broadcasting



The simplified socket-power Radiola that electrical engineers dreamed of has now been achieved.

The new Radiola 17 — from the laboratories of RCA, General Electric and Westinghouse — has rightly been called a "wonder box."

By means of the remarkable new alternating current Radiotron, it takes all its power from your electric light circuit. No batteries or liquid-containing devices. Just plug it in and turn the single knob to select your program.

So simple that a child can operate it in a dark room — but so finely designed and constructed that it reproduces with amazing fidelity the fine programs from the broadcasting stations.

Radiola 17 is the culmination of years of research by the great corps of electrical and acoustical engineers, in the service of the Radio Corporation of America, who are making the "impossibles" of yesterday the commonplace of tomorrow.



All Radiola's broadcast receive, reproduce and reproduce almost perfect fidelity of program. They are made with the best of materials and are built to last.

The new Radiola 17, shown in all photos, is the latest model. It is built to last. It is made in the U.S.A. and is built to last.

**RCA Radiola**  
MADE BY THE MAKERS OF THE RADIOTRON

### RCA, General Electric and Westinghouse have designed these perfected Radiolas



**RCA RADIOLA 10**  
Cabinet-built. Do-it-yourself. Contains all the latest Super-Heterodyne and the new variable-tuning system. 1928. Do-it-yourself. Contains all the latest Super-Heterodyne and the new variable-tuning system. 1928. Complete with Radiotron . . . . . \$187



**RCA LOUDSPEAKER 100A**  
Builds for long life. Rich, reproduction. Amazing clarity and musical range. Equally efficient in all rooms or on outdoor parties. . . . . \$75



**RCA RADIOLA 12**  
Universally recognized as the finest reproduction ever arranged in combination with Radiola 20, it demonstrates all features and provides a great variety of programs. RCA Loudspeaker 100 (D. E.) . . . . . \$275  
RCA Loudspeaker 100 (D. E.) . . . . . \$250



**RCA RADIOLA 20A**  
Cabinet-built. Do-it-yourself. Contains all the latest Super-Heterodyne and the new variable-tuning system. 1928. Do-it-yourself. Contains all the latest Super-Heterodyne and the new variable-tuning system. 1928. Complete with Radiotron . . . . . \$295



**RCA RADIOLA 22**  
The Super-Heterodyne system achievement in receiver design, in its portable cabinet model, found its combination with RCA Loudspeaker 100A. Radiola 22 with Radiotron . . . . . \$349  
A.C. Package for Radiola 22 for A.C. operation with RCA Loudspeaker 100 . . . . . \$25



**RCA RADIOLA 24**  
The new RCA range-hobby set. Very compact. One-half cabinet. The industry standard for accuracy in fit here also. Complete with Radiotron . . . . . \$125

Radiolas and RCA Loudspeakers, the product of the same engineers who built the high-power broadcasting stations, set the standard in the radio art.

Exclusively chosen by Victor and Brunswick for use in their finest instruments, these receiving sets embody the world's knowledge of radio design.

If you are about to buy your first radio, or if you are going to select a new set to replace your old one, ask an RCA Authorized Dealer to demonstrate these wonderful instruments for you.

Be sure that you listen to an RCA Loudspeaker. The performance of the finest receiver can be spoiled by an antiquated reproducer.

All Radiolas are equipped throughout with RCA Radiotrons—the heart of the receiving set.

**RCA HOME EVERYWHERE NIGHT**  
Through the following stations associated with the National Broadcasting Company

City	Time	Station
New York	8:00 p.m.	WJZ
Chicago	8:00 p.m.	WGN
San Francisco	8:00 p.m.	KGO
Philadelphia	8:00 p.m.	WIP
Boston	8:00 p.m.	WJLB
Los Angeles	8:00 p.m.	WABC
Portland, Ore.	8:00 p.m.	WV
Seattle	8:00 p.m.	WV
San Diego	8:00 p.m.	WV
San Antonio	8:00 p.m.	WV
San Jose	8:00 p.m.	WV
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## NEW SETS FOR OLD

More old radio sets will be replaced  
by new and better sets in 1928  
than ever before

Most radio buyers want simplified lighting circuit operation, and most of them want one of the new RCA RADIOLAS.

And a great number of people will come into the market as first buyers, who have been holding off buying a radio set until they could get one that would run off the light circuit as simply as an electric fan.

By carrying the RCA complete line RCA Authorized Dealers will be able to meet the public demand.

RCA Dealers will get the cream of the replacement business, as well as the cream of the big, new business this year.

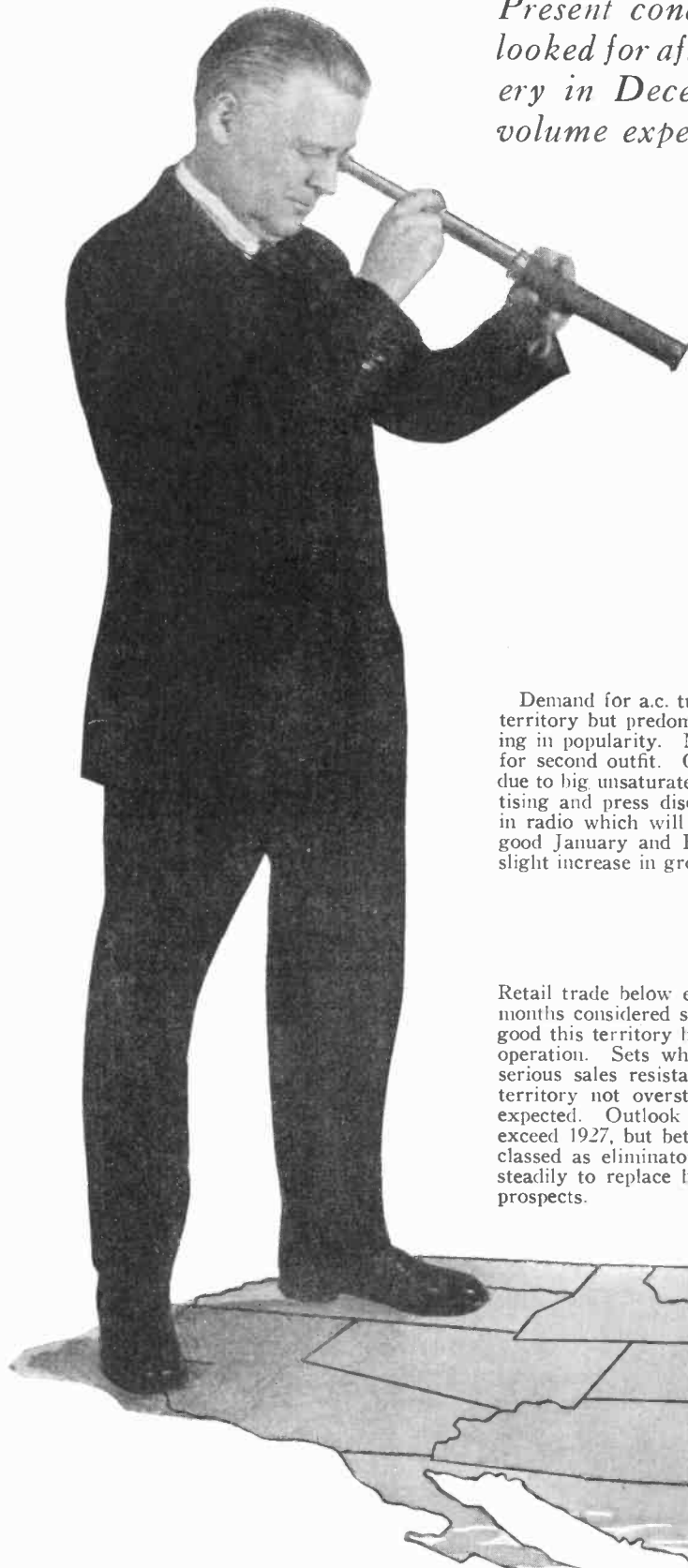
RADIO CORPORATION OF AMERICA  
New York Chicago San Francisco

# RCA Radiola

MADE BY THE MAKERS OF THE RADIOTRON

# Trade UNSETTLED but

*Present conditions spotty but increased business looked for after short readjustment period—Recovery in December after November slump—1928 volume expected to stabilize at about 1927 levels*



## San Francisco *"On the Upgrade"*

Panicky market just before Christmas due to demand for a.c. sets and slow deliveries but trade looks forward to good year. General business conditions, though good locally, have suffered from some depression in agricultural districts but are expected to improve, making for marked prosperity in 1928. Public interest in radio growing. Price drops in accessories for other than a.c. sets anticipated. Both retailers and wholesalers foresee period of difficulty before readjustment is complete. Fewer lines of merchandise per retailer, all accessories built into one cabinet with consequently less servicing are believed to be tendencies of coming year. Local market reasonably firm under present conditions and trade predicts 10 per cent increase in 1928.

## Chicago *"Healthy Demand"*

Demand for a.c. tube sets continues to grow. Battery operated sets will sell in unwired territory but predominant demand will be for line power receivers. Fine cabinets growing in popularity. Many quality sets will be sold this year to those who are now ready for second outfit. On other hand there will be healthy demand for popular priced sets due to big unsaturated market yet available. Total field is broadening. In general, advertising and press discussion of new technical developments has stimulated public interest in radio which will be reflected in sustained public interest. Trade as whole looks for good January and February and for quick translation of present transition period into slight increase in gross sales for coming year.

## Cleveland *"Poor, but Improving"*

Retail trade below expectations during December. Outlook for January and succeeding months considered satisfactory although not brilliant. General trade conditions none too good this territory but slowly improving. Principal feature is insistence on complete a.c. operation. Sets which use power units or batteries are available and should not meet serious sales resistance but are having it, the demand being for a.c. tubes. Cleveland territory not overstocked as much as previous years and less dumping than usual is expected. Outlook for 1928 favorable with several jobbers predicting volume not to exceed 1927, but better stabilized. Not an ideal market for power units, of type usually classed as eliminators, with exception that B-eliminators at popular prices should move steadily to replace batteries in older sets. Battery-makers well satisfied with trade and prospects.

# OPTIMISTIC

## toward 1928 Prospects

### St. Louis

*"Trade Pessimistic"*

Trade has experienced none too healthy period since November 1st. Business fell off and condition has been charged to bad general business conditions, unusually warm weather and listening public's indecision when a.c. advertising was published. Stock has been slow-moving and trade is pessimistic concerning 1928. Opinions doubtful whether it will equal 1927. What will sell in 1928 has no place in trade's mind and only interest is in selling present stocks.

### Los Angeles

*"Hopeful"*

Spirit of doubt pervades trade as to a.c. sets. General retail sales Southern California slower than last year and radio sales worse. Many d.c. sets in warehouses. Prices of socket powers being slashed. Trade not especially pessimistic and it is opinion that if concerted drive is made, 1928 can be made a good year. Little interest is evident in current supply units and chargers. The fight will be between a.c. tubes and power units.

### Kansas City

*"20 per cent ahead"*

October and November approximately twenty per cent better than last year. December showing twenty-five per cent better. Electric receivers just beginning to influence this market and are tremendously stimulating buying. Power units being dumped in considerable quantities but otherwise market remains stable. Dealers optimistic regarding present situation and outlook. Fear is expressed that battery-operated receivers will be dumped into this market but if this is averted present inventories will be easily moved.

### Philadelphia

*"Trade Confident"*

Power line-operated equipment becoming more popular every day and 1928 will be record breaker for this type of set. Trade confident and is purchasing new type sets. Majority of dealers are under impression that ABC power units as well as complete power installations will be in great demand during coming year. Business at present is as good as can be expected.

### New York

*"Variable"*

Trade reports extremely variable due to great concentration of all lines in this territory. Slump in November but general improvement in December, ranging up to 30 per cent above last year. Demand for a.c. sets not as insistent as in other cities due to extensive d.c. district in Metropolitan area and result is steady sales of d.c. sets. Strong demand for fine cabinets. Spotty conditions predicted by some for coming year with slowly rising curve for a.c. and declining one for d.c. receivers.

### Boston

*"Sharp Recovery"*

Slackening in November followed by sharp recovery in December, especially in low priced all-electric sets. Sales of well-known speaker manufacturer indicate present market is as strong as last year. Two great aids have been elimination of broadcasting interference and acceptance of all-electric set. Jobbers say business is spotty. 1928 prospects are good.

### Atlanta

*"Unsettled"*

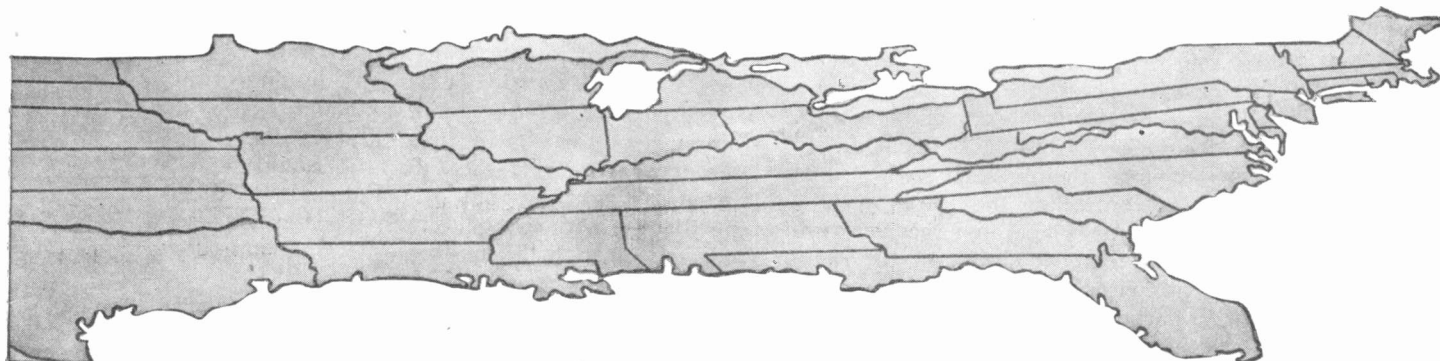
Less activity in radio this season than for the past four years. Unsettled market conditions due to complete change in design of receivers, heavy rains, and extreme warm weather have curtailed dealer and jobber activities. Variety of current supply methods being introduced has destroyed confidence public had placed in stability of radio. Outlook for 1928 is not bright. As a whole the Southern trade is rather pessimistic at present. However, well-designed, satisfactory a.c. operated receivers are expected to revive consumer and dealer interest.

### Pittsburgh

*"Fair"*

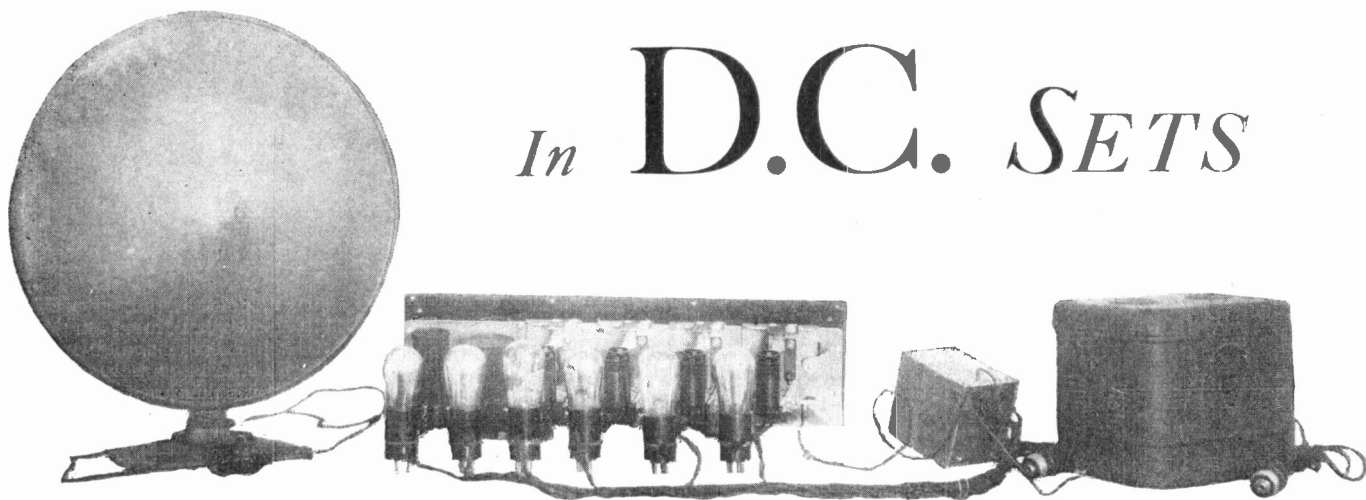
Trade here feels general financial depression and lack of employment. There seems to be fair movement in some high grade merchandise. Most business executives optimistic when approached on coming year. It is opinion that general business conditions will be governing factor. Interest centered about a.c. receivers and devices for turning present receivers into power-operated sets.

*(Please turn to page 69)*



# How to Use A.C. TUBES

## In D.C. SETS



*By utilizing the new harness equipment described in the following article, it is now possible to convert most battery-operated sets to use the alternating-current tubes*

NOW that the A.C. tubes have become a reality, operating from the house lighting mains through a small step-down transformer, what effect will this have on the four million battery operated sets that have been sold? *Radio Retailing*, in the November issue, has already shown the way in which battery-operated sets may be rewired to use the new A.C. tubes. This first suggestion, however, made it necessary to break certain leads, rewire the filament circuit, and to insert condensers and resistances in the proper places.

But—almost overnight, a new idea in adapting these sets has been conceived so that it is now possible, through use of the equipment, herein described, to use A.C. tubes in a receiver built to be operated from batteries or power units, without changing a single wire of the original circuit.

As can be seen in the illustration at the head of this page, the essentials of this equipment are: a step-down transformer, which supplies the proper voltages for the tubes to be used, a twisted cable of heavy, flexible wire, run from the supply transformer to the various tubes and adaptors, making the proper connections for the tubes; (the adaptors pick up the plate and grid connections of the original circuit but leave the old filament circuit untapped. The harness supplies the new filament circuit.) Then we have by-pass condensers and resistors which may be inserted anywhere from the filament supply transformer to the adaptors themselves. Now some means must be found for controlling the output volume of the receiver, for many battery-operated receivers use a variable resistance in the filament circuit of the radio frequency tubes. As this circuit has been disconnected through the use of a harness, another means becomes necessary. A very effective and simple way of doing

this is by the insertion of a variable high resistance in the audio frequency output lead. As for the B-power supply, it is, of course, recommended that some type of power unit be used, although equally satisfactory operation can be had from B-batteries.

#### NEW FILAMENT SWITCH NEEDED

It will also be necessary to find some other means of turning on and off the power as the battery switch on the receiving set has been cut out of the circuit by the harness. Either a new one capable of handling 110 volts may be substituted, or a snap-switch placed nearby. At this point, it is well to remember that it may be fully 30 seconds from the time the power is turned on for the A.C. tubes to warm up sufficiently so that signals will be heard in the speaker.

This new harness scheme presents a wonderful opportunity for selling this type of equipment to clients having battery-operated receivers, and also for the resale of sets that can be taken in as trade-ins. At slight cost, trade-ins can be reconstructed and resold as true all-electric receivers using the A.C. tubes. The most convincing sales argument imaginable is to take a power unit, a filament supply transformer, a set of adaptors, harness, etc., to a customer's house, disconnect all of his battery wires, insert the adaptors, connect it up with the transformers, which, in turn, are connected with the house current, insert the A.C. tubes and turn on the current. Nine times out of ten the sale can be closed immediately, and not only that, but the enthusiasm of your customer will at once be transmitted to his neighbors.

As is usual, when a number of manufacturers interest themselves in the production of a particular type of

apparatus, various models are produced, although the idea in each case is fundamentally the same and equal results are to be had. In the following paragraphs, the apparatus of each manufacturer making equipment specially designed for this harness idea will be taken up in detail. This includes all manufacturers known to us at the present time.

Harold J. Power, Inc., Medford, Mass., has placed several types on the market. The standard power supply unit is a combination of A.C. tube filament supply and B-power unit. Several types of cables with adaptors and control boxes attached are made, designed for use with Atwater Kent Models 30, 33 and 35. A universal type is also made. The control box includes the necessary biasing resistances, by-pass condensers, and mid-tap resistances. A kit package for use of the expert radio fan who desires to rewire his own receiver is also being made, which contains the fundamental parts for making the changes, together with a wiring diagram. The latest model to be made by this company is a combination cable and transformer for the A-supply only. With this model, the transformer case includes all the necessary resistances and condensers.

The Alden Manufacturing Company, Springfield, Mass., is putting out a kit consisting of adaptors, cables, bias resistances, and by-pass condensers and a volume control. The adaptors are equipped with binding posts so that the short lengths of cable may be properly connected and run from tube to tube, and also that the resistances and condensers may be connected in their proper places on the adaptors. The four-prong adaptor is equipped with slots into which can be inserted resistors to go in series with the grid of the tubes to overcome any tendency of the receiver to oscillate. These are designed to be used with Atwater Kent Models 30, 32, 35, also the Crosley Bandbox, Radiola 16 and others.

A more or less standard cable is used from the transformer to the set. This contains the right number of leads for the different voltages used by the various tubes. When the cable arrives at the set a number of short pairs of colored wires varying in length from three to nine inches are used, which connect directly to the end of the main cable and from then on to the various sockets. This method allows the use of as many adaptors as are needed without the use of a special cable. A color code is used throughout so errors in connection cannot be made.

#### MAKE A.C. TUBES AS WELL AS HARNESS

The Arcturus Radio Company, Newark, N. J., while placing on the market a harness made specifically for various types of sets, is in a little different position from the two foregoing manufacturers in that this company also makes A.C. tubes. The Arcturus tube uses 15 volts and can be used for R.F. detector and A.F. This somewhat simplifies the problem, as only one voltage is therefore necessary from a small step-down transformer, and therefore only one circuit is utilized. Instead of the usual adaptors for this, we find the ordinary four prong tube base with the exception that the two filament leads

have been brought out on the side of the tubes directly above the pins.

Heavy screws have been securely threaded and anchored in the Bakelite base so that the harness connection may be made directly to these terminals. The fundamental circuit of the set is not altered other than bringing out the grid returns. Special power units supplying A, B, and C current for these tubes are being made by several manufacturers, of which the following have received the approval of the Arcturus company: Briggs and Stratton, Grigsby-Grunow-Hinds, Greene-Brown and Mayolian. The volume control used is a variable high resistance in the speaker leads and a harness is also furnished. Both the cable and the terminals on the tube bases are marked black and red for plus and minus so that no error can be made.

The Radio Receptor Company, New York, is not only making a harness and adaptor for various types of receivers, but is also putting out in combination with this, a unit which supplies A, B, and C power, and is also a power amplifier. Thus the receiver to be changed over, not only adapts the new A.C. tubes, but the audio frequency system is supplanted by the power amplifier. In addition to this, a two-stage amplified with the same unit for the A.C. tubes contained therein is also being made so that an electric phonograph pick-up can be used with this combination.

The Leslie F. Muter Company, Chicago, is making a filament transformer, power rheostat, variable grid resistors, and potentiometers for balancing out the A.C. hum. These are to be used in connection with the various types of harnesses and adaptors made by other manufacturers.

The Central Radio Laboratories, Milwaukee, Wisconsin, are making a volume control to be used in the speaker output leads.

Electrad, Inc., New York, is manufacturing all the resistors necessary to be used in conjunction with the various power sets, and also a volume control. The International Resistance Company of Philadelphia, is bringing out a line of resistors to be used with the harnesses wherever a resistor is necessary. A special type resistor is also being made that can very conveniently be mounted in A.C. sets as well as adapted to the harness.

The Transformer Corporation of America, Chicago, is marketing filament and power transformers to be used with these combinations. Transformers are also being made by the Thordarson Electric Manufacturing Company, Chicago, the Samson Electric Company, Canton, Mass., and Jefferson Electric Mfg. Company, Chicago. The Cornish Wire Company is manufacturing harnesses of various types.

Also, the Enterprise Manufacturing Company of Philadelphia is going into production on a complete kit of adaptors, harnesses, and transformers.

A complete unit for supplying A, B, and C energy to these tubes is being made by the Acme Apparatus Company, Cambridge, Mass., which, when used with a harness, will permit the complete conversion of a battery set.

## Practical Service Methods

*A monthly department of*  
**RADIO RETAILING for dealers**  
*and service men*

*Conducted by*

**HENRY W. BAUKAT**

*Technical Editor*

The General Radio Company, also of Cambridge, Mass., is making individual parts which can be combined to meet any requirements. These parts include transformers, sockets, heavy-current rheostats, and a center-tap resistor made in such form that it can be easily connected across the socket. A center-tap resistor with a variable center-tap will also be available shortly.

Filament transformers of various types and combinations are being made by the National Company, Malden, Mass. The Dongan Electric Manufacturing Company, Detroit, Mich., is also making the various necessary types of filament supply transformers.

The Karas Electric Company, Chicago, Ill., is making transformers designed to be used with the harness and adaptors made by the Carter Radio Company, Chicago, Ill. Different harness arrangements are made for the various types of receivers.

The H. H. Eby Mfg. Company, Inc., Philadelphia, has brought out a harness in two general models, one for five-tube sets and one for six-tube sets, complete with adaptors and volume control.

#### OTHER MANUFACTURERS BECOMING INTERESTED

There are numerous other manufacturers also who are keenly interested in this development, and who have plans formulated for supplying all or parts of the combinations necessary in converting battery operated sets to electric sets, but who are not ready at this time to make announcements.

Some manufacturers are making what is called a Uni-

versal type harness while others claim they have found it more practical to weave the harness specifically for the tube arrangement of individual models of receivers. Both types are equally satisfactory in operation. In the special harnesses the wires branch out from the main cable at the exact point where they are to be used. Some models of harnesses have incorporated a control box in the middle of the main cable, which box can be placed by the side of the receiver, and this contains the necessary resistors and condensers in conjunction with a volume control.

There is one point which should not be overlooked, and that is, with some types of receivers, it will be found that after the adaptors have been inserted in the sockets, and the tubes inserted in the adaptors, this will raise the top of the tube just a fraction too high to allow the cover of the receiver to be entirely lowered. However, in these cases there is always a sufficient thickness of wood in the cover to allow a small fraction to be garrotted away, thus permitting the top of the tube to fit up into the lid of the cabinet.

In the case of some of the smaller compact types of receivers where the tubes are normally upside down, small rubber feet may be bolted on at the four ends of the cabinet. This will raise the bottom far enough from the flat surface upon which it rests to allow clearance.

In the February issue of *Radio Retailing*, it is planned to give complete information, together with prices, of the various models of transformers, adaptors, harnesses, resistors, etc., which will be placed on the market during the next month.

## A Handy Reference Chart of Receiving and Rectifying Tubes

AVERAGE CHARACTERISTICS OF RECEIVING RADIOTRONS																						
GENERAL				DETECTION				AMPLIFICATION														
MODEL	USE	CIRCUIT REQUIREMENTS	BASE	MAXIMUM OVERALL HEIGHT	MAXIMUM OVERALL DIAMETER	WATER SUPPLY	FILAMENT TERMINAL VOLTAGE (AMPERES)	FILAMENT CURRENT (AMPERES)	DETECTOR GRID RETURN LEAD TO	GRID LEAK (MEGOHMS)	DETECTOR "B" BATTERY VOLTAGE	DETECTOR PLATE CURRENT (MILLIAMPERES)	AMPLIFIER "B" BATTERY VOLTAGE	AMPLIFIER "C" BATTERY VOLTAGE	AMPLIFIER PLATE CURRENT (MILLIAMPERES)	A.C. PLATE RESISTANCE (OHMS)	MUTUAL CONDUCTANCE (MICROMHMS)	VOLTAGE AMPLIFICATION FACTOR	MAXIMUM UNDISTORTED OUTPUT (WATTS)			
RADIOTRON WD-11	Detector or Amplifier	Transformer Coupling	WD-11 Base	4 1/8"	1 1/8"	Dry Cell 1 1/2 V. Storage 2 V.	1.1	.25	+F	3 to 5	22 1/2 to 45	1.5	90	4 1/2	2.5	15,500	425	6.6	7			
RADIOTRON WX-12	Detector or Amplifier	Transformer Coupling	Large Standard UX Base	4 11/16"	1 7/16"	Dry Cell 1 1/2 V. Storage 2 V.	1.1	.25	+F	3 to 5	22 1/2 to 45	4.5	135	10 1/2	2.5	15,500	425	6.6	35			
RADIOTRON UX-12A	Detector or Amplifier	Transformer Coupling	Large Standard UX Base	4 11/16"	1 11/16"	Storage 6 V.	5.0	.25	+F	3 to 5	45	1.5	135	4 1/2	5.5	5,300	1,500	8	100			
RADIOTRON UX-199	Detector or Amplifier	Transformer Coupling	UY 199 Base	3 1/2"	1 1/8"	Dry Cell 4 1/2 V. Storage 4 V.	3.0	.063	+F	2 to 9	45	1	90	4 1/2	2.5	15,500	425	6.6	7			
RADIOTRON UX-199	Detector or Amplifier	Transformer Coupling	Small Standard UX Base	4 1/8"	1 1/8"	Dry Cell 4 1/2 V. Storage 4 V.	3.3	.063	+F	2 to 9	45	1	90	4 1/2	2.5	15,500	425	6.6	7			
RADIOTRON UX-200-A	Detector	Transformer Coupling	Large Standard UX Base	4 11/16"	1 13/16"	Storage 6 V.	5.0	.25	-F	2 to 3	45	1.5	Following UX-200 A Characteristics apply only for Detector Connection			30,000	666	20	—			
RADIOTRON UX-201-A	Detector or Amplifier	Transformer Coupling	Large Standard UX Base	4 11/16"	1 13/16"	Storage 6 V.	5.0	.25	+F	2 to 9	45	1.5	90	4 1/2	2.5	11,200	275	8	15			
RADIOTRON UX-222	Radio Freq. Amplifier	Special Shielding (See Note Sheet)	Large Standard UX Base	5 3/8"	1 13/16"	Dry Cell 4 1/2 V. Storage 4 V.	3.3	.132	—	—	—	—	135	1 1/2	1.5	85,000	350	300	—			
RADIOTRON UX-222	Radio Freq. Amplifier	Pressure Coupling (See Note Sheet)	Large Standard UX Base	5 3/8"	1 13/16"	Dry Cell 4 1/2 V. Storage 4 V.	3.3	.132	—	—	—	—	180	1 1/2	1.5	150,000	400	60	—			
RADIOTRON UX-276	Amplifier A-C Filament Type	Transformer Coupling	Large Standard UX Base	4 11/16"	1 13/16"	Transformer 1.5 V.	1.5	1.05	—	—	—	—	90	6	3.5	9,400	875	8.2	20			
RADIOTRON UX-276	Amplifier A-C Filament Type	Transformer Coupling	Large Standard UX Base	4 11/16"	1 13/16"	Transformer 1.5 V.	1.5	1.05	—	—	—	—	135	9	6	7,400	1,100	8.2	70			
RADIOTRON UX-277	Detector or Amplifier	Transformer Coupling	5 Pin Standard UX Base	4 11/16"	1 13/16"	Transformer 2.5 V.	2.5	1.75	C	2-9	45 *	2	180	1 1/2	2	Following UX-277 Characteristics apply only for Detector Connection			10,000	800	8	—
RADIOTRON UX-240	Detector or Amplifier	Resistor Coupling	Large Standard UX Base	4 11/16"	1 13/16"	Storage 6 V.	5.0	.25	+F	2 to 5	135 1/2	3	135 1/2	1 1/2	2	150,000	200	30	—			
RADIOTRON UX-124-A	Power Amplifier	No L.S.C. Required	Large Standard UX Base	4 11/16"	1 13/16"	Storage 6 V. Transformer 5 V.	5.0	.25	—	—	—	—	135	5	7	5,000	1,600	8	120			
RADIOTRON UX-120	Power Amplifier	No L.S.C. Required	Small Standard UX Base	4 11/16"	1 13/16"	Dry Cell 4 1/2 V. Storage 4 V.	3.0	.125	—	—	—	—	135	22 1/2	6.5	6,300	925	3.3	110			
RADIOTRON UX-171-A	Power Amplifier	L.S.C. Except at 90 V.	Large Standard UX Base	4 11/16"	1 13/16"	Storage 6 V. Transformer 5 V.	5.0	.25	—	—	—	—	135	22 1/2	16	2,500	1,200	3.0	120			
RADIOTRON UX-210	Power Amplifier	L.S.C.	Large Standard UX Base	5 3/8"	2 3/16"	Transformer 75 V.	7.5	1.25	—	—	—	—	250	18	10	6,000	1,310	8	143			
RADIOTRON UX-210	Power Amplifier	L.S.C.	Large Standard UX Base	5 3/8"	2 3/16"	Transformer 75 V.	7.5	1.25	—	—	—	—	300	22 1/2	16	5,600	1,450	8	600			
RADIOTRON UX-210	Power Amplifier	L.S.C.	Large Standard UX Base	5 3/8"	2 3/16"	Transformer 75 V.	7.5	1.25	—	—	—	—	400	31 1/2	18	5,000	1,600	8	125			
RADIOTRON UX-210	Power Amplifier	L.S.C.	Large Standard UX Base	5 3/8"	2 3/16"	Transformer 75 V.	7.5	1.25	—	—	—	—	475	35	18	5,000	1,600	8	150			

MODEL	USE	CIRCUIT REQUIREMENTS	BASE	MAXIMUM OVERALL HEIGHT	MAXIMUM OVERALL DIAMETER	PURPOSE
RADIOTRON UX-213	Full-Wave Rectifier	Full-Wave Circuit	Large Standard UX Base	5 3/8"	2 1/8"	Rectification in Eliminator particularly designed for this Radiotron
RADIOTRON UX-216-B	Half-Wave Rectifier	Half or Full Wave Circuit	Large Standard UX Base	5 3/8"	2 1/8"	Rectification in Eliminator particularly designed for this Radiotron
RADIOTRON UX-280	Full-Wave Rectifier	Full-Wave Circuit	Large Standard UX Base	5 3/8"	2 1/8"	Rectification in Eliminator designed for this Radiotron or Rectron UX-213
RADIOTRON UX-281	Half-Wave Rectifier	Half or Full Wave Circuit	Large Standard UX Base	6 1/4"	2 7/8"	Rectification in Eliminator designed for this Radiotron or Radiotron UX-216-B
RADIOTRON UX-874	Voltage Regulator	Series Resistance	Large Standard UX Base	5 3/8"	2 1/8"	Constant Voltage Device
RADIOTRON UX-876	Current Regulator (Ballast Tube)	Transformer Primary of 65 Volts for use on 115 Volt Line	Standard Mogul Type Screw Base	8"	2 1/8"	Constant Current Device
RADIOTRON UX-886	Current Regulator (Ballast Tube)	Transformer Primary of 65 Volts for use on 115 Volt Line	Standard Mogul Type Screw Base	8"	2 1/8"	Constant Current Device

(\*) Note other use of this Radiotron above (below)

o Inner Grid - 1 1/2 Volts, Outer Grid + 45 Volts, .15 Milliamperes

o Outer Grid - 1 1/2 Volts, Inner Grid + 22 1/2 Volts, 6 Milliamperes

1 Applied thru plate coupling resistance of 250,000 Ohms

Note All grid voltages are given with respect to cathode of negative filament terminal

Max. Values not to be exceeded

A. .... Except for Half ampere filament, UX 112 and UX 171 characteristics are identical respectively to UX 112-A and UX 171-A.

B. .... Cathode

H. .... Heater Voltage

L.S.C. .... Loud Speaker Coupling, consisting of either Choke Coil and By-Pass Condenser or Output Transformer of 1:1 or step down ratio, recommended whenever plate current (D.C.) exceeds 10 milliamperes.

M. .... With a screen grid tube, on account of circuit limitations, the actual voltage amplification obtainable does not bear as high a relation to the voltage amplification factor as in the case of three element tubes.

## What to Do When Stocks Don't Move

(Continued from page 47)

of the lesser departments, but the condition is always present with us. It always has been and it always will be as long as human likes and dislikes exist.

**WE** HAVE learned, therefore, from years of interesting and frequently costly experience that the intelligent thing to do when confronted with such conditions is to merchandise ourselves out of them.

To be successful, a retailer must give the people *what* they want, *when* they want it. If you don't, there is no power to compel them to patronize you and they will either go to a dealer in your line who is willing to perform that service for them or they will spend their money for something else.

The other day, a man who should know better, told me that radio is merely a fad and that in a few years' time it will pass out of the picture. Now what was the basis of this man's reasoning, if you can call it reasoning? He had lost money in the radio business! This last season hit him hard. He had plenty of stock and it wouldn't move. Naturally he lost money and because he did so he had decided that he will pocket his loss and get out before radio dies altogether. Instead of buckling down to work and readjusting himself, he quits.

Now if department stores elected to take this attitude there would be no department stores today. Because every time we got into a jam in a certain department we would say the game was not worth the candle and we would close the department out. After a certain number of years we would have no departments left, and some smarter merchants would be using our locations.

**B**UT we don't do that. We immediately endeavor to find out what the public wants *now* in that particular line of goods. *Then we give it to them.* We buy that particular thing more cautiously, it is true, because the department is already top-heavy with inventory, but we try to the outmost of our power to keep the people coming *into* that department.

Then we work, and plan, and experiment with the slow-moving merchandise until we find a method of disposing of it. We do not throw it out on a table at a cut price at once, because we cannot afford to take such losses any more than any other merchant can. The cut price is the *last resort*. I do not mean that it necessarily takes us months to arrive at a decision but I desire to emphasize that when such a decision is reached it is because we have been unable to move the merchandise by any other means.

In most instances where we have to slash prices to move our inventory, we find this artificially-created demand exceeds our supply and we are able to buy more of the identical merchandise at a lower cost from our sources of supply, who, of course, have the same problem that the retailer has and are glad to give us price concessions.

**T**HUS it is often possible for the retailer to turn such a situation to substantial profit. When the retailer creates a demand for slow-moving merchandise in order to move his own stock, usually he finds the demand carries over beyond his inventory and he re-purchases from his wholesalers at substantial price reductions.

This the distributor is usually happy to concede as the solution to such a problem concerns not only the retailer, but every other branch of the industry as well.

## Trade Unsettled but Optimistic

(Continued from page 65)

### Denver "Optimistic"

Denver territory enjoyed healthy season and both wholesale and retail dealers generally optimistic over prospects for immediate future. Retail sales curve has not shown as rapid incline as previous years but has reached the peak with much more smoothness. It is felt that this curve will continue to straighten itself out. Trade tendency is toward a.c. sets and consensus is that there will be great demand for power units and other accessories to equip higher grade battery-operated sets for a.c. tubes. General conditions in farming districts good and indication is radio business for 1928 will experience substantial increase over year just closing.

### New Orleans "Season Delayed"

Sales first two months of 1927 were better than holiday months of November and December. Trade here believes this indicates January and February are best radio months in this territory. Upon this precedent satisfactory business for first part of new year is anticipated. Radio sales in 1927 did not reach expected volume. Market during holiday season comparatively quiet. This attributed to unloading of off-brands. Weaker brands apparently leaving this market and standard brands are expected to enjoy volume sales. Jobbers blame retailers for failure to show aggressive sales action but retailers report people are not buying radio sets as they did last year.

### San Antonio "Prospects good"

Radio entering new year with assurance of good business. Warm weather and lack of rain resulted in late season but present outlook very good. 1927 was spotted with first six months very slow. Improved conditions during last quarter made sales volume greater. General business has shown improvement in last 30 days. November slow with sharp decline in all lines. Holiday buying much better. Control of broadcasting practically saved industry here and dealers look to future with greater confidence. New year will be excellent during first quarter, is prediction.

### Portland, Ore. "Spotty"

Trade conditions spotty, many reporting greater volume than last year, while others are not. Chief causes are price-cutting, premature advertising of a.c. sets, dumping of stocks by large department stores, and too many dealers for the territory. Buying power in territory somewhat impaired and though total volume shows increase over last year, many individual expectations were not reached. Advent of publicity on a.c. set caused public demand that could not be satisfied promptly, and consequent delay in actual purchases by prospects. Overstock of battery and eliminator-operated sets left in the hands of some distributors. Both distributors and dealers optimistic as to business next year.

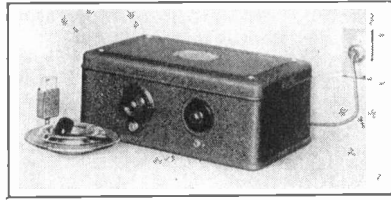
### Toronto "Good"

Trade estimates an increase of from 10 to 25 per cent for 1928 based upon past experience showing an ever-mounting sales curve. Electric receivers with a.c. tubes and simple control will have the call. There will be good market for battery-operated sets as 50 per cent of Canadian homes unwired. December sales below last year with a few extra good days before Christmas. Trade believes January will be better than last year. A longer season with earlier announcements by manufacturers is expected and hoped for in 1928. Public is confused by price differences and cut prices on old model receivers. Current supply units expected to show drop due to a.c. tubes. Trend towards fewer free demonstrations and less free servicing is noticed. Some manufacturers going direct to the dealer.



# What's New in Radio and

This editorial section is prepared purely as a news service, to keep readers of "Radio Retailing" informed of new products.



## Six-Tube Electric Receiver

The illustrated model 37 has just been announced by the Atwater Kent Radio Company, Philadelphia, Pa. This is a 6-tube all electric, self-contained receiver, comprising three stages of radio frequency amplification, a detector and two stages of audio frequency amplification. The stations are selected by means of a single dial control and provision is made for increasing or decreasing of volume by means of a control knob. A metal cabinet is used which completely shields the electrical assembly inside, including a power supply which is in turn surrounded by metal shields. The cabinet is finished in the distinctive Atwater-Kent brown crystalline and at the center of the cover is a gold plated name plate picturing in low relief a full rigged vessel of the old Spanish Galleon type. Decorative rosettes are at the four corners of the cover and are also in gold, as is the small battery switch knob and vernier. This model is designed for use on 110-volt, 60-cycle current. Overall dimensions are, length 17½ in., depth 10½ in., and height 7½ in. Net weight 37 lbs. Retail price of this receiver, less tubes, is \$88.

New speakers designed to go with these sets are also being marketed finished in 6 different colors. Thus the color scheme of any room may be matched with the model E speaker. The speakers retail at \$24 each.—*Radio Retailing*, January, 1928.



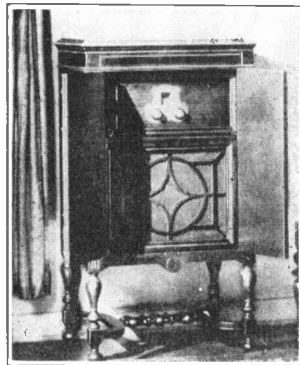
## Console Cabinet with Tone Chamber

The Knoxville Table and Chair Company, Knoxville, Tenn., is making cabinet No. 2057 as illustrated. It is manufactured of genuine Walnut Veneer, Stump Walnut doors and is designed to accommodate the concert grand 86 in. air column tone chamber. This cabinet is especially designed for electric receiving sets without battery compartment. It has a desk drop lid for an arm rest. The dimensions are 57 in. high, 30 in. wide and inside depth of 15½ in.—*Radio Retailing*, January, 1928.

## Eight-Tube Console

The United States Electric Corporation, WorkRite Division, Cleveland, Ohio, is placing on the market the illustrated 8-tube console model receiving set with an all-electric chassis, complete copper shielding, and a single drum type illuminated control with double ball-bearing friction drive. The cabinet is made of walnut with a built-in speaker and A, B, C-power unit. The intended retail price, including chassis, speaker, power unit and cabinet, is \$310.

This company also builds a 6-tube console, with specifications same as the above 8-tube model, with an intended retail price of \$225, which includes chassis, speaker, power unit and cabinet.—*Radio Retailing*, January, 1928.

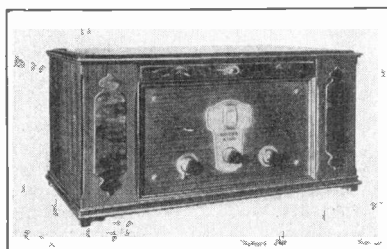


## Electric Receiver

The Farrand Manufacturing Company, Long Island City, N. Y., has placed on the market an electric receiver under its own name. It is completely self-contained and is made in both a table and console model. Complete with tubes the table model has an intended retail price of \$310, while the console model complete with tubes and Farrand speak lists for \$385.—*Radio Retailing*, January, 1928.

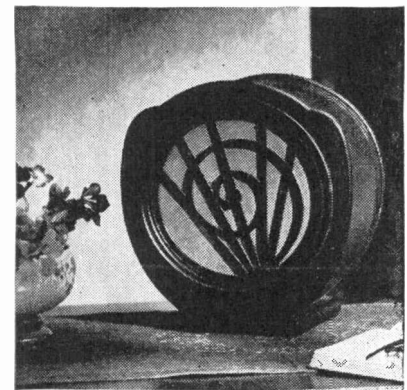
## Two New Electric Sets

The Federal-Brandes, Inc., 200 Mt. Pleasant Ave., Newark, N. J., has placed two new electrically operated sets on the market. One of the new sets is a full console in a walnut cabinet, known as the 6 K, and the other is a small table model in a mahogany cabinet, known as the 6 F. Both are 6-tube receivers using the new ac tubes. The set operates directly from the 110 volts, 60 cycles. Both sets use either an indoor or outdoor antenna. The console model has a special built-in cone speaker. The intended retail prices are, without tubes, \$160 for the small model and \$250 for the console.—*Radio Retailing*, January, 1928.



## Cabinet and Table for Radiola 17

Tables and cabinets designed especially for the Radiola 17 and 100-A speaker are being made by the Knoxville Table and Chair Co., Knoxville, Tenn. Cabinet 2059 is illustrated. The speaker fits behind the elaborate grill shown at the top of the receiving set. Table 2055 is arranged for the same combination, the set being placed on the top, which is slightly larger than the receiving set and the speaker is placed on a specially constructed cross member between the legs. Prices and finishes may be had upon application to the above company.—*Radio Retailing*, January, 1928.



## Cabinet Cone

A cabinet cone speaker of Moorish design has been brought out by the Pacent Radio Corporation, 156 West 16th Street, New York City. This reproducer, type C, is made in antique, English-finish mahogany. The reproducer unit, after adjustment and test, is sealed, thus preventing the possibility of maladjustment or inquisitive tampering. The over-all size is 11 in. high, 11½ in. wide and 6½ in. deep. The suggested retail price is \$35.—*Radio Retailing*, January, 1928.

## Correction

In the November, 1927, issue of *Radio Retailing*, on page 80, the Spartan Electric Model AC-7 Console was erroneously listed at \$175. This receiver is made by the Sparks-Withington Company, Jackson, Mich., and retails at \$375.—*Radio Retailing*, January, 1928.

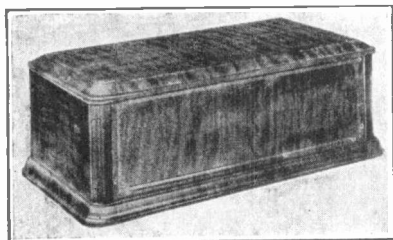


# Where to Buy It

News of the latest products gathered by the editors



All announcements appearing on these pages are published without advertising considerations of any kind whatsoever.

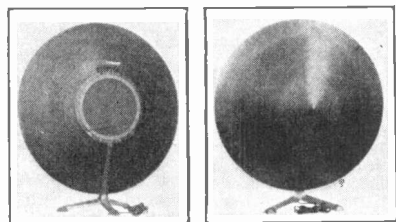


## Metal Cabinets

Metal cabinets in conjunction with metal shields, panels and chassis, are being introduced by the Van Doorn Company, 160 North La Salle St., Chicago, Ill. These all-steel cabinets afford total shielding and are finished in walnut, mahogany, two-tone crackle lacquer or crystalline. They are made for various panel sizes and inside dimensions of a typical cabinet are 23½ in. long, 12 in. wide and 7 or 8 in. high. They are equipped with a hinged top and stay joint, the top and bottom being formed of No. 18 gage steel. Felt foot rests are furnished and rubber stops for the cover. The retail price is \$18.—*Radio Retailing*, January, 1928.

## Lamp Speaker

A number of table and floor lamp-speakers are being marketed by the Apex Electric & Mfg. Co., 1410 W. 59th St., Chicago, Ill. The table lamp-speakers include model No. 100 with wood or heavy gold-plated metal base, which lists at \$35. Model No. 101, with black and gold marble base and gold plated metal lists at \$60. Model No. 102, of genuine onyx and gold plated metal, lists at \$60. The base is 6 in., by 14 in., and the lamp-speaker measures 26 in., over all. The shade is 18 in. wide, and carries a 10-in. cone. The floor lamp-speakers consist of Model No. 110, with black and gold marble base and Spanish gold fittings, listing at \$50; and Model No. 111, with onyx base and gold plated fittings, at \$70.—*Radio Retailing*, January, 1928.



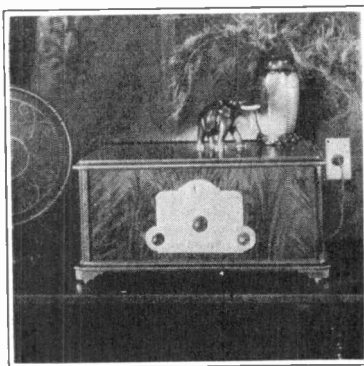
## Double Cone Speaker

The illustrated cone speaker is being made by E. B. L. Inc., 101 West 31st St., New York City. This speaker is a 24-in. double cone, of a balanced armature type, using an extra large and wide armature in the unit, the sloping pole pieces being built up of laminated silicon steel. The surface is rich yet unobtrusive in design, and suggests old Spanish leather. The cone is supported on a trifoot bronze base, having an overall height of 27 in. A 10-ft. cord is provided. The base can be removed for hanging the speaker on the wall simply by taking out two screws and attaching a cord to the two eyelets provided in the back. It is supported in a level position by the carrying handle which is, in turn, protected by a soft rubber handle. The intended retail price is \$32.—*Radio Retailing*, January, 1928.

## A.C. Receiver

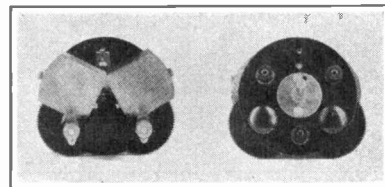
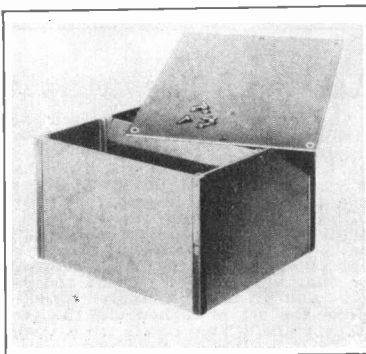
Freed-Eisemann Radio Corporation, Junius Street, and Liberty Avenue, Brooklyn, N. Y., is making the illustrated Model NR-60 electric receiver using the new a.c. tubes. It is self-contained, all the elements being housed inside the cabinet. Individual compartment shielding is used and the set has a single tuning window with an illuminated dial. According to the manufacturer, the audio transformers are of extra large size and an output transformer is also used. The intended retail price is \$160.

Another new model being made is the NR-57 which is also an a.c. receiver using 7 tubes. This set has an intended retail price of \$140. A new speaker is shown, illustrated at the side of the receiving set, which has a retail price of \$20.—*Radio Retailing*, January, 1928.



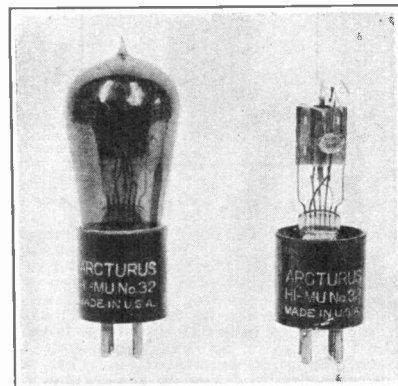
## Shielding Equipment

Knock down shields are being furnished by the Hammarlund Manufacturing Co., 424 West 33rd St., New York, N. Y., both for their new HI-Q receivers and other uses. Heavy sheet aluminum sides, which slide in the grooved aluminum posts and are held firmly together by screws, are used. The shield which is designed for the HI-Q set measures 3½ in. x 8½ in. x 5½ in. high inside. There is ample room for coils, condensers, sockets and tubes. These shields are supplied in knock-down form but are easily assembled. The retail price is \$6. Other sheet-aluminum shields, which are clamped together by aluminum corner pieces which slide into place and make positive contacts, are furnished in 6 in. x 7 in. x 6 in. size and the retail price is \$2.—*Radio Retailing*, January, 1928.



## Twin Rotor Condenser

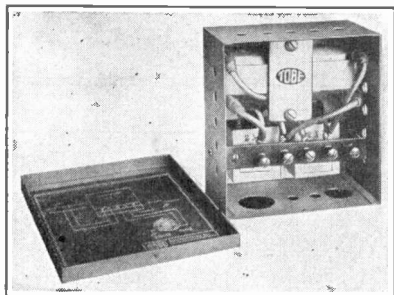
The "Remler Twin-Rotor" condenser is unique in that both sets of plates are entirely insulated from the dial and dial shaft and both sets of plates rotate. This is made by the Remler Division of Gray & Danielson Mfg. Co., 260 First St., San Francisco, Calif. This condenser is a modified form of the SLW twin rotor condenser made by this company. The new condenser incorporates a novel adjustment, by means of which the dial shaft can be made to rotate in either a clockwise or counter-clockwise direction for an increased capacity. It is particularly intended for use when two Remler No. 110 drum dials are employed and when the condensers are driven from opposite sides of the dial. The dial rotates 360 deg. and therefore gives wide dial separation of stations at all wave lengths. The SLF dial is made in three maximum capacities, which are .0001, .0005, and .00035 mfd. The SLW style is made in two capacities, which are .0005 and .00035 mfd. The retail price for all models is \$5 each.—*Radio Retailing*, January, 1928.



## Hi-Mu A.C. Tube

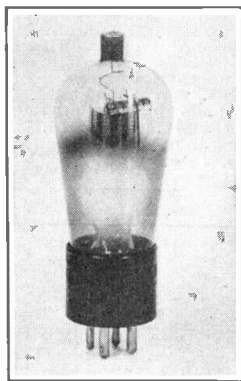
The Arcturus Radio Company, 255 Sherman Ave., Newark, N. J., has added a hi-mu tube to its line of detector, amplifier and power amplifier a.c. tubes. The Arcturus hi-mu tube, type A-C 32, follows the general mechanical and electrical practice of this line of a.c. tubes. The tube is mounted on a standard four prong base plugging into the usual UX socket. The cathode is common with one side of the heater circuit (leading to the plus post on the UX socket), eliminating the necessity of additional side or overhead connections. The tube is of a heater cathode type operating from a 15 volt source, the heater consuming .35 ampere. The amplification constant of the A-C type 32 tube is 30, the plate impedance 40,000 ohms and the mutual conductance 700 ohms. They are recommended for use with an applied amplifier voltage of 180 and higher, and a grid bias potential of minus 1.5 volts. Intended retail price is \$5.—*Radio Retailing*, January, 1928.

# What's New in Radio and Where to Buy It



## Interference Filter

The Tobe Deutschmann Co., 11 Winsor Street, Cambridge, Mass., is placing on the market a new type of interference filter known as type No. 2. This is designed to be used in conjunction with small motors and other electrical equipment which are causing radio interference and as can be seen in the illustration which shows the cover of the interference filter, a diagram is printed on the inside showing the proper connections. Type No. 1 interference filter is designed to correct troubles with motors, etc., up to  $\frac{1}{4}$  hp. and No. 2 disposes of problems on motors up to 5 hp.—*Radio Retailing*, January, 1928.



## Screen Grid Tube

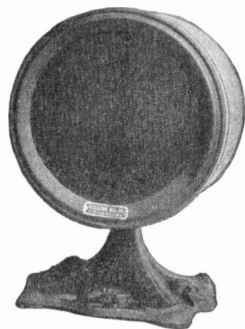
The Radio Corporation of America, 233 Broadway, New York City, has announced the UX-222 four-element radio-frequency amplifier of the screen-grid type. The outstanding characteristics of this radiotron are its high amplification factor and its internal shielding, both of which make it an excellent tube for radio-frequency amplification. This new tube may be used also in resistance coupled circuits as an audio-frequency amplifier. It has the following characteristics:—Filament, 3.3 volts; plate, 135 volts; grid bias, minus  $1\frac{1}{2}$  volts, and voltage amplification factor, 60. For radio-frequency work the outer grid takes 45 volts and for audio-frequency  $22\frac{1}{2}$  positive voltage. The intended retail price is \$6.50.—*Radio Retailing*, January, 1928.

## Cone Speaker

The United States Electric Corp., WorkRite Division, Cleveland, Ohio, is placing on the market a cone speaker of the mantel clock type. Although the diaphragm of this reproducer is only 7 in. in diameter, it is claimed that the speaker has a tone range as wide as the larger speakers. The instrument has a complete filter system and is built with a double magnet and balanced armature with closed field. The overall dimensions are 20 in. wide, 30 in. high, 8 in. deep and the weight is 14 lbs. Intended retail prices, type A, artistic cabinet, \$23; type B, plain box, \$20.—*Radio Retailing*, January, 1928.

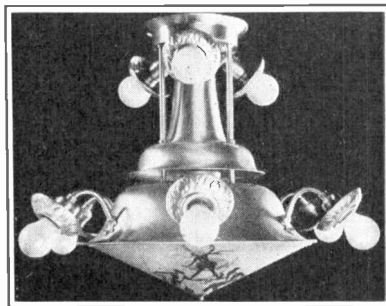
## Air Column Speaker

The Ultratone Manufacturing Company, 1044 West Van Buren Street, Chicago, Ill., is manufacturing an air column speaker finished in brass. This speaker, table type 42, is made with an air column 42 in. long, cast of special composition to eliminate vibration, and includes a genuine Nathaniel Baldwin unit. The over-all dimensions are 8 in. wide, 7 in. deep and 11 in. high. The intended retail price is \$12.50.—*Radio Retailing*, January, 1928.



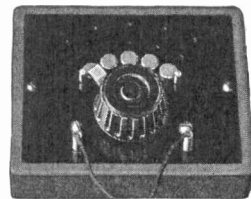
## Combination Speaker and Lighting Fixture

The Luren Radio Corporation, 8517 Third Avenue, Brooklyn, N. Y., is making a combination radio speaker and electric lighting fixture, embodying several new principles which, according to the manufacturer, successfully eliminates the vibration sometimes encountered. The combination makes use of two cones, one of which is half the size of the other, each taking a certain proportion of the high and low notes of the music. These cones are made of pigskin parchment paper. Both cone diaphragms are suspended, rather than hung, from the pin, thereby lessening distortion. Due to the position of the speaker, it is claimed that it can be heard distinctly in various adjoining rooms without increasing the power of the set. Any speaker unit may be incorporated into the fixture, which is sold either with or without unit. The intended retail price, according to elaborateness, varies from \$10 to \$60.—*Radio Retailing*, January, 1928.



## Automatic Relay Switch

An automatic relay switch which localizes the control of the B-power supply, trickle charger and A-battery in the filament switch of the radio set is being made by the Cloverleaf Manufacturing Company, 2714 South Canal St., Chicago, Ill. It is equipped with two binding posts for the storage battery, two plug socket connections and a cord and plug. When the set is turned on the charger is turned off and the A-battery and B-power supply turned on. When the set is turned off, the reverse takes place. The retail price complete is \$2.75.—*Radio Retailing*, January, 1928.



## Speaker Demonstrating Unit

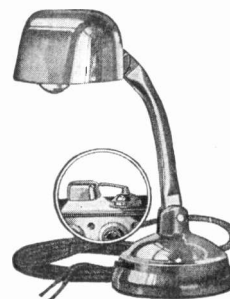
A speaker demonstrating unit for use by radio dealers is being made by the Signal Electric Mfg. Co., Menominee, Mich. The connections are made direct from the unit to the receiving set and five speakers can be connected up to the unit which is so designed that the knob can be turned from one contact to the other to demonstrate the tone of speakers and the connection is made instantly. The suggested retail price is \$3.—*Radio Retailing*, January, 1928.

## New Audio Amplifying Apparatus

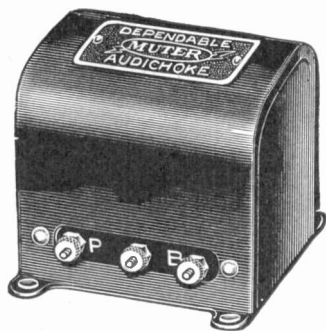
Several types of power amplifiers and equipment have recently been placed on the market by the American Transformer Company, 158 Emmet St., Newark, N. J. The first is the push-pull power amplifier, type 2 AP. This is a complete 2-stage audio amplifier with the choice of using either a '27 tube in the first stage, or two '71 and two '10 power tubes for the push-pull stage. The ABC Hi-power box type 21A supplies 500 volts a.c. plate and lower tap voltages, and plate currents up to 110 milliamperes. Also, a.c. filament current for an '81 rectifier two '10 power tubes and several '26 or '27 tubes. It has an adjustable negative bias also. Type 151 input is an inter-stage audio transformer with a high permeability core and primary impedance. Intended retail price, \$15 each. Type 152 output impedance with a ratio of 4 to 1, is designed to work from two '10 or similar power tubes into a speaker having approximately the impedance of a Western Electric 540 AW cone. Intended retail price, \$15 each. Type 271 output impedance with a ratio of 2 to 1, is similar to the 152 except that it is designed to work out of two '71 or similar power tubes. Intended retail price, \$15.—*Radio Retailing*, January, 1928.

## Portable Radio Light

The Delta Electric Company, Marlon, Indiana, announces a new item, the "Radio Dialite," No. A-614. The Dialite is a portable radio light, 5 in. high, operating from 6 volt A battery. It is finished in old gold with ample length of silk cord so that it can also be used as a trouble light. It can be adjusted to any position and the base is heavy so as to prevent tipping. The intended retail price is \$2, packed in single boxes, 36 to the shipping case.—*Radio Retailing*, January, 1928.

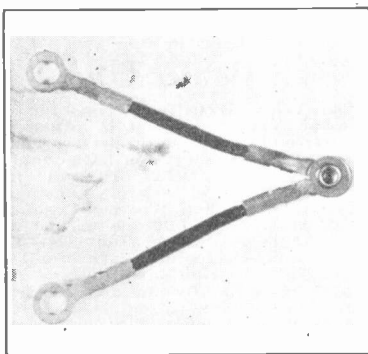


# Latest Products Gathered by the Editors



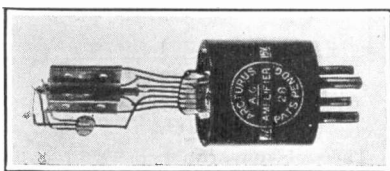
## Audio Choke

The Leslie F. Muter Company, 76th Street and Greenwood Ave., Chicago, Ill., is making the "Audiochoke." This is a complete audio-frequency choke with four terminals to be used with a B-power unit in connection with high-quality audio-frequency amplifiers. This will do away with all the difficulties caused by B-power units, etc., which cause motor-boating, howling, and numerous other things. With each unit is a complete wiring diagram showing its use.—*Radio Retailing*, January, 1928.



## Center Tap Resistance

Electrad, Inc., 173 Varick Street, N. Y., has placed the illustrated center tap resistance on the market for use with the new a.c. tubes. This is made in the V-shape so that the eyelets on each end can be fitted over the tube socket terminals and the connection made from a central point. This resistance provides a method of reaching the electrical center of transformer windings for grid return leads. The resistances are all matched before being riveted together. They are made in the following sizes 10, 20, 30, 50, 100, 150 and 200 ohms. The intended retail price is 75c. each. Special sizes may be had on order.—*Radio Retailing*, January, 1928.



## Four-Prong Base A. C. Tube

A new alternating current tube fitting the standard four prong socket has been developed by the Arcturus Radio Company, 255 Sherman Avenue, Newark, N. J. The tube is of the heater type. The retention of the standard four-prong base without additional side or overhead wiring, has been made possible by the connection within the tube of one side

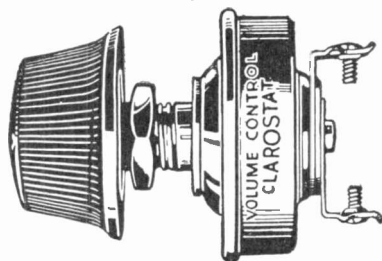
of the heater to the cathode. The heater is of the low current high potential type, contrary to the general procedure. This departure from conventional design, according to the claim of the manufacturer, results in the further reduction of hum due to the fact that it is easier to shield voltage fields than current fields, the cathode around the filament acting as the shield.

The heater filaments can be connected in parallel, just as the filaments are in the majority of D.C. operated receivers, and lighted from a readily available toy transformer selling for four or five dollars.

The tubes are made in three types, (all of which are of the heater design), amplifier, detector and power tube. The characteristics of the detector and amplifying tubes are as follows: Filament potential, 15 volts; filament current, .35 ampere; mutual conductance, 1,00; amplification constant, 10.5; plate impedance, 9,500 ohms. The characteristics of the power tube are similar to the above with the exceptions that the mutual conductance is 1665, the amplification constant 4.5 and the plate impedance 2,700 ohms.—*Radio Retailing*, January, 1928.

## New A. C. Tubes

The La Salle Radio Corporation, 149 West Austin Ave., Chicago, Ill., announces a new a.c. tube. Many distinctive features are claimed for this tube by the manufacturer, some of which are that the tubes do not produce the "hum" that is so annoying in a.c. operated sets; that the tubes are quick in operating when first turned on, which feature is obtained by specially designed cathodes, and also that variations of line voltage do not affect the operation of the tubes, and that the perfect balance of the heating wire withstands any ordinary overload, giving the tube exceptionally long life. The maker is also featuring the presence of an unusually high vacuum in these tubes. The intended retail price of the 26 type is \$3 and of the 27 type \$6.—*Radio Retailing*, January, 1928.

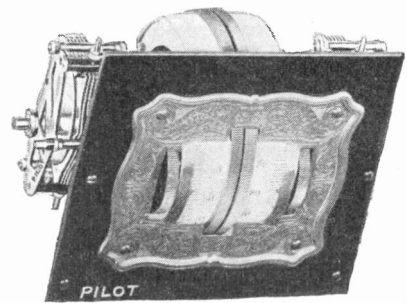


## Volume Control

A new volume control Clarostat is being made by the American Mechanical Laboratories, Inc., 285 No. 6th Street, Brooklyn, N. Y. It is approximately the same diameter as the standard type, but only one-third as deep. The current handling capacity is approximately  $\frac{1}{4}$  that of the standard type. The dial control covers a resistance range of from approximately zero to 500,000 ohms within several turns of its knob. It is mounted on a panel by means of one hole and is provided with screw terminals for ready wiring. The intended retail price is \$1.50.—*Radio Retailing*, January, 1928.

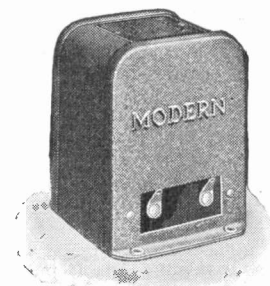
## New Tubes

The Cable Supply Company, 31 Union Square, New York City, manufacturer of a full line of "Speed" Super Emission radio tubes announces the following additions to the "Speed" line. "Speed" X 140 has a mu of 30. This is for use in resistance and impedance coupled circuits. "Speed" X 171 is for use as a power amplifier in the last audio stage.—*Radio Retailing*, January, 1928.



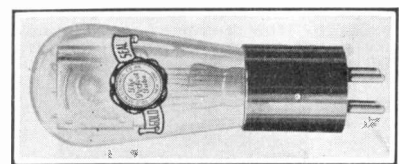
## Vernier Dial

Illustrated is a new double-drum dial with a vernier feature being made by Pilot Electric Manufacturing Co., Inc., 323 Berry St., Brooklyn, N. Y. This is also made in a single drum style, which is unique in that it takes condensers on both sides. Two supporting plates insure absolute rigidity, while the drums, themselves, revolve on heavy bearings, entirely separated from the bearings for the condensers. An etched bronze front-plate is used.—*Radio Retailing*, January, 1928.



## Audio Transformer

The illustrated type "M" audio transformer is being made by the Modern Electric Manufacturing Company, Toledo, Ohio. These transformers are made with large cores and are designed to give excellent amplification. Type M1 and M2 for the first and second audio stage have an intended retail price of \$8.50 each. Type M3, which is an output unit, has an intended retail price of \$8. Type M4 and M5, which are push-pull units, have an intended retail price of \$10 each.—*Radio Retailing*, January, 1928.



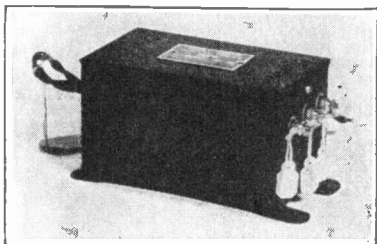
## Radio Tubes

The Gold Seal Electrical Company, 250 Park Avenue, New York, is marketing a complete line of radio tubes to meet the needs of every kind of radio set. The line includes the GSX 201A, detector and amplifier, \$1.75; GSX 200A, detector, \$4; GSX 112, power amplifier, \$4.50; GSX 171, power amplifier (greater capacity), \$4.50; GS 199, detector amplifier, \$2.25; GS 199LB, detector amplifier, large base, \$2.25; GSX 120, power amplifier, \$2.50; GSX 210, power amplifier, \$9.00; GSX 240, resistance coupled amplifier, \$2.25; GSX 280, full-wave rectifier, \$5.50; GSX 281, half-wave rectifier, \$9.50; GSX 216 B, half-wave rectifier, \$7.50; GSX 213, full-wave rectifier, \$5; GSX 226, A.C. amplifier, \$3; GSX 227, A.C. detector and amplifier, \$6.—*Radio Retailing*, January, 1928.

# What's New in Radio and Where to Buy It

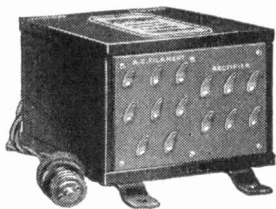
## Transformers for A. C. Tubes

All styles of transformers are being made by the Modern Electric Manufacturing Co., 2987 Franklin St., Detroit, Michigan, for use with the new a.c. tubes. No. 6513 illustrated is designed for the Acturus 15-volt tubes and will supply 6 of these tubes. This lists at \$5.25. No. 6512 is designed to be used with the 226 and 227 types in conjunction with a '71 power tube. This lists for \$5.75. No. 6510 is for use only with the '26 and '27 types and lists for \$5.25. All three of these types are equipped with a cord and plug outlet for the B-power supply and also a cap for the control switch. Models are also made for all combinations of a.c. tubes and power tubes.—*Radio Retailing*, January, 1928.



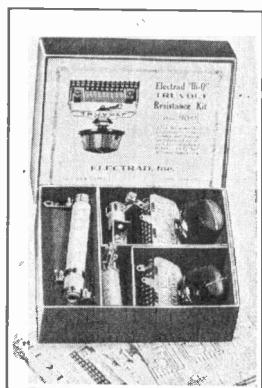
## Power Supply Transformers for A.C. Tubes

The Jefferson Electric Co., 501 South Green St., Chicago, Ill., is putting out a series of transformers to be used with the various combinations of a.c. tubes and power packs. Model 464-131 is for use on 110 volt, 60 cycle current and supplies 1.5 volts with a capacity for 6 tubes; 2.5 volts center tapped for the detector tubes, and 5 volts center tapped, with a capacity for two '12 or '71 power tubes. The transformer measures 3 1/2 in. high by 3 1/2 in. wide, and 3 1/2 in. deep, and weighs 2 1/2 lb. The intended retail price is \$7.50. For use on 25 to 40 cycle current, the intended retail price will be \$9.25. The combination filament and plate supply transformer known as 463-101 is also being made. This contains the filament supply windings as described for the above transformer, and also incorporates the proper winding for a type '80 rectifying tube. These are but a few of the extensive lines of transformers being made by this company in conjunction with audio frequency and output transformers.—*Radio Retailing*, January, 1928.



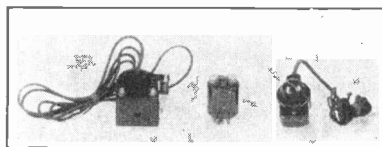
## 30-Henry Choke

This choke is designed for use in connection with a B-Power unit or as an output choke for use with a power tube in the last stage of the receiving set. It has been carefully designed for the above purposes according to the manufacturer; the core, of the best electrical steel, is ample in size, and the large wire used in the coils gives it a current capacity of 90 milliamperes. Manufactured by Ford Radio & Mica Corporation, 111 Bleeker St., New York City.—*Radio Retailing*, January, 1928.



## Resistance Kit

The Electrad, Inc., 178 Varick St., New York City, has designed a resistance kit for the Hammarlund-Roberts power supply unit. The kit is put up in a box and contains four special resistors designated respectively 1, 2, 3 and 4. It is the company's intention to carry these designations without values or tag numbers into all literature on the HI-Q power unit because the resistors, so designed, are to be used especially and only with the HI-Q. In connection with this kit, booklets are being printed which will contain full instructions on the HI-Q B-power supply unit, together with diagram showing how the resistors are to be incorporated. The kits list for \$10.85.—*Radio Retailing*, January, 1928.



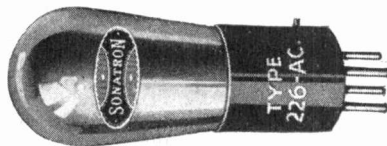
## Electrical Phonograph Pick-up for AC Tubes

In view of the large sale of radio sets incorporating the new types of a.c. tubes the Patent Radio Corporation, 156 West 16th Street, New York City, has developed an electrical pick-up equipped with an adapter for use on sets using the '27 type detector tube. This electric phonograph pick-up outfit will have the same list price as the regular Patent Phonovox, which is \$12.50. The new model will be known as Catalog No. 105-AC.—*Radio Retailing*, January, 1928.

## A.C. Receiving Tubes

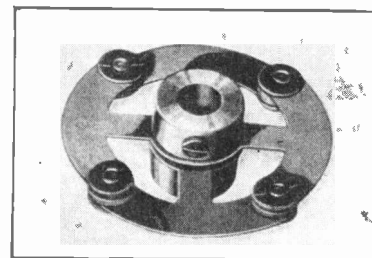
The '26 and '27 types of a.c. receiving tubes are being made by the Sonatron Tube Company, 108 West Lake St., Chicago, Ill. The '26 type draws 1.05 amp. at 1.5 volts and takes a maximum plate voltage of 180. The '27 type draws 1.75 amp. at 2.5 volts and also takes a maximum voltage of 180.

Another new tube is the 225-a which takes the place of the 225 a.c. made by this company. This 3-volt, a.c., heater-element tube can be used in all sets wired for the 225 a.c.—*Radio Retailing*, January, 1928.



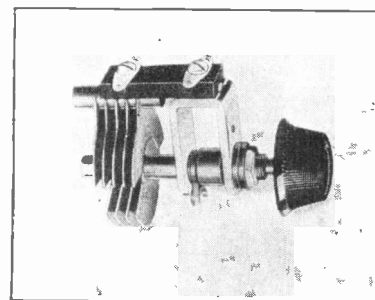
## Insulated Flexible Coupling

The illustrated insulated, flexible coupling is one of the latest products to be made by the Hammarlund Manufacturing Company, 424 West 33rd Street, New York, N. Y. The universal flexibility of this coupling permits the operation of any number of condensers in tandem without requiring exact alignment of the condenser unit. The two sides of the coupling being insulated from each other, condensers in the gang can be operated as independent electrical units. It is made of tough spring phosphor-bronze with brass bushings and two hardened steel set-screws. The insulation is of bakelite. The retail price is 60 cents each.—*Radio Retailing*, January, 1928.



## B-Power Unit

The Vesta B delivers constant and uniform current—once it is adjusted to the particular set—with perfect control over the entire voltage in both amplifier and detector circuits. Housed in a compact cabinet of rich crystal enamel, with Bakelite panel, it presents, not only an attractive unit but one with a complete range of voltages from 22 1/2 to 180 volts—sufficient to take care of all size sets. This B Unit also has a relay which automatically disconnects the B Unit when receiving set is turned off and likewise automatically connects the A unit or trickle charger, so that the set owner may merely turn the set switch on or off and the rest takes care of itself. Supplied in two capacities, 40 ma. at 180 volts and 60 ma. at 180 volts. Made by Vesta Battery Corporation, 2100 Indiana Avenue, Chicago, Illinois.—*Radio Retailing*, January, 1928.



## Improved Midget Condenser

The Hammarlund Manufacturing Company, 424 West 33rd Street, New York City, is marketing the improved Midget condenser known as the "Hammarlund Junior." It is made in five sizes, i.e., MC-5, 9, 11, 15 and 23. These are in order of capacities of 16, 22, 50, 65 and 100 mmfd. The corresponding retail prices are \$1.50, \$1.50, \$1.75, \$2 and \$2.25, which includes the Bakelite knob. Soldered brass plates are used, with cone bearings, and Bakelite Dielectric. Either one-hole or haseboard mounting may be used. A new locking device for fixing the rotor plates in any position is used.—*Radio Retailing*, January, 1928.

# What the Trade is Talking About

## N.E.M.A. Not Alarmed at D.C. Set Situation

Will work itself out if industry keeps its head, opinion of Chicago convention. Recommends standard time payment practices and warranty. Favors numbering of broadcast channels from 55 to 150.

**F**OLLOWING a prolonged and penetrating study of retail market reactions, which might occur after the first of the year, due to a possible over-abundance of battery sets in the hands of dealers and jobbers, it was agreed, by the members of the merchandising council of the National Electrical Manufacturers Association, at its second convention, held at the Edgewater Beach Hotel, Chicago, that this situation, if it exists, will clarify itself primarily from the demand of the occupants of America's 11,000,000 unwired homes for battery operated receivers. It also was pointed out that there are other factors involved that would rectify conditions which might be caused by the rapid development and demand for a.c. tube sets.

The following resolutions were adopted at this meeting:

"It is recommended that time payment terms on radio sets and accessories be limited to not less than 25 per cent of the total selling price as the initial payment and not over 12 monthly payments. It is further recommended that the carrying charge be calculated on the unpaid balance rather than on the total selling price."

### STANDARD WARRANTY FOR SET MANUFACTURERS PASSED

At this same meeting of the merchandising council, under the direction of George Scoville and D. F. Spector, the following warranty for set manufacturers was recommended and passed by unanimous vote:

*Standard Warranty for Radio Receivers approved as to form by*

RADIO DIVISION, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

Warranty No. . . . . Receiver No. . . . .

This is to certify that we,  
The Blank Radio Company,  
City, State, U. S. A.

**WARRANTY** each new radio receiver manufactured by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory any part or parts thereof which shall, within ninety (90) days after delivery of such receiver to the original purchaser, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective, this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any representative or other person to assume for us any other liability in connection with the sale of our receivers.

This warranty shall not apply to any receiver which shall have been repaired or altered outside of our factory in any way so as, in our judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor which has had the serial number altered, effaced or removed. Neither shall this warranty apply to any receiver which has been connected otherwise than in accordance with the instructions furnished by us.

We make no warranty whatever in respect to tubes, batteries, chargers or other trade accessories inasmuch as they are usually warranted by their respective manufacturers.

IN WITNESS WHEREOF we have caused this warranty to be signed by our duly authorized officers.

The Blank Radio Company,

Date . . . . . 19 . . . . .

The collection of statistical information on sales and production, was discussed at length. It was agreed that the need for reliable information of this nature was vitally important. Steps were taken to insure the collection of this data from members through the organization's present facilities.

### CHANNEL NUMBERING RECOMMENDED

At a general meeting of the entire radio division, it was recommended that American broadcast channels be known and referred to as channels and that they be consecutively numbered starting with 55 for the 550 kilocycle channel, and ending with 150, for the 1,500 kilocycle channel, and

that wave lengths and frequency designations be eliminated from station announcements, press programs and station lists.

Misleading magazine and newspaper advertisements and articles were held up to scorn by Prof. L. A. Hazeltine of the Hazeltine Corporation, in an address, "Your Money's Worth In Radio."

"The day of the revolutionary experiment and the world-beating new circuit has passed," he said. "The radio receiving set has now become a standard article. Fortunately, the Institute of Radio Engineers has nearly completed the standardization of test methods. With these methods available, we will be able to substitute definite numerical values for sensitivity, selectivity and fidelity, in place of 'coast to coast' reception, 'razor-edge selectivity,' and 'magnificent cathedral tone quality,' to quote a single advertisement."

The problems and difficulties of the Federal Radio Commission were explained to the radio audience of WEBB and the manufacturer members of N.E.M.A. at their mid-winter banquet by O. H. Caldwell of the commission.

The legislative committee of the radio division recommended that radio receivers should not be licensed by either Federal, State or municipal governments.

H. A. Bellows, manager of station WCCO, Minneapolis and St. Paul, and former radio commissioner, dwelt on the need for constant improvement in the quality of broadcast programs. He called attention also to the importance played by the local program and the local station in maintaining listeners' interest in radio and for the need of refinement in the technique of broadcasters and station announcers in putting programs on the air.

## Decision Expected Shortly in R.C.A. Tube Injunction

**A** DECISION is expected shortly, at the time of going to press, on the application of five independent vacuum-tube manufacturers for a preliminary injunction restraining the Radio Corporation of America from enforcing "clause nine" of the license agreements the Radio Corporation has signed with twenty-five leading set manufacturers.

Judge Hugh M. Morris of the United States District Court in Wilmington, Delaware, on December 22 heard argument on the motion for an injunction. John W. Davis appeared for the Radio Corporation of America, and Samuel J. Darby, Jr., and Ernest R. Reichmann appeared for the tube manufacturers.

The concerns bringing the suit are Arthur D. Lord, (receiver for the DeForest Radio Company); Northern Manufacturing Company; United Radio & Electric Corporation; Televocal Corporation; and Harry Chirelstein (Sonatron Tube Corporation).

Clause nine of the contract between the Radio Corporation and the set manufacturers licensed by them is as follows:

Nothing herein contained shall be construed as conveying any licenses expressly or by implication, estoppel or otherwise, to manufacture, use or sell vacuum tubes, except to use and sell the vacuum tubes, purchased from the Radio Corporation as provided herein. The Radio Corporation hereby agrees to sell to the Licensee and

the Licensee hereby agrees to purchase from the Radio Corporation the number, and only the number, of vacuum tubes to be used as parts of the circuits licensed hereunder and required to make initially operative the apparatus licensed under this agreement, such tubes to be sold by the Radio Corporation to the Licensee at the terms and at the prices at which they are then being sold by the Radio Corporation to other manufacturers of radio sets buying in like quantities for the same purposes. But the sale of such tubes by the Radio Corporation to the Licensee shall not be construed as granting any licenses except the right to sell such tubes for use in, and to use them in, the apparatus made and sold hereunder.

### G. E. Co. Loses Tube Suit

The suit of the General Electric Company against the DeForest Radio Company charging infringement of four basic vacuum tube patents was dismissed in the Wilmington, Del., Federal Court, January 3. The court held that three of the four patents were invalid.

THE UNITED RADIO CORPORATION, Rochester, N. Y., has appointed F. W. Piper western sales manager. Mr. Piper was formerly sales manager of the Amplion Corporation. He will cover the West in the interests of Peerless Speakers making his headquarters at 111 West Monroe Street, Chicago.

## Radio Act of 1927 Held Constitutional

The Supreme Court of the District of Columbia has ordered discontinuance of the case of the Madison Square Broadcasting Corporation versus Federal Radio Commission, and others, in which the petitioner sought to obtain an injunction restraining the Radio Commission from acting pursuant to the Act of 1927. The petitioner claimed that the Act is unconstitutional in so far as it results in the deprivation of property in physical radio facilities as well as the use of the ether, without due process of law. This decision closes the only case that has been brought in an attempt to test the constitutionality of the Radio Act of Congress of 1927. The other cases have been brought under the statute involving appeals on the merits from decisions of the Federal Radio Commission.

At the present time it is stated by the attorneys in charge that all cases but two arising under the Act have been successfully terminated by the Government. One case, an appeal from the decision of the Commission brought by the People's Pulpit Association, is still pending in the Court of Appeals of the District of Columbia. One other appeal has been taken in the case of Station WOKO, Peekskill, N. Y.

## Atwater Kent Awards Audition Finalists

The winners of the Atwater Kent national radio audition were chosen on Sunday, December 10, when the ten finalists, five girls and five boys, sang before eight judges and a radio audience, estimated at many million people. The winners, Agnes Davis, Denver, Colorado, and Wilbur W. Evans, Philadelphia, Pa., were each given \$5,000, a gold decoration, and two years' tuition in a conservatory of music. In addition, there were lesser prizes for the others. The contest was sponsored by A. Atwater Kent.

## Radio Conventions and Shows

**Jan. 31-Feb. 11: South Florida Dealers Association, South Florida Fair, Tampa, Fla.**

**February 14-15: Federated Radio Trade Association convention, Milwaukee, Wis.**

**June 11-15: R.M.A. Convention and Trade Show, Hotel Stevens, Chicago.**

**June 11-16: N.E.M.A. Annual Meeting, The Homestead, Hot Springs, Va.**

## Next Federated Convention in Milwaukee

The board of directors of the Federated Radio Trade Association, at a meeting held in Chicago, voted to hold the next national convention of this dealer-jobber organization, Feb. 14-15, at Milwaukee, Wisconsin. Every radio dealer or jobber in the country interested in the national co-ordination of merchandising effort, is invited to attend, either as a free delegate or an authorized member of a radio trade association.

The Wisconsin Radio Trade Association, will act as host on this occasion and promises the entertainment features. The headquarters will be at the Schroeder Hotel. Two entire floors have been reserved for the exclusive use of the F.R.T.A. during the two days it is in session.

This association now has an affiliation:

membership of over fifteen local radio trade associations located in some of the most active radio markets in the United States. The new full time executive-secretary, H. G. Erstrom, and local chairman, Walter Kluge, are now developing the details of the program. Permanent headquarters of the Federated Radio Trade Association are at 32 West Randolph St., Chicago, Ill.

## Prizes Awarded in Federal Window Contest

Six prizes, ranging from \$20 to \$100 were awarded recently by the judges in the window display contest held by the Federal Radio Corporation, Buffalo, N. Y.

First prize of \$100 was given to the display of the City Music Company, Detroit; second prize, \$75, to James McCreery and Company, New York City; third, \$50, C. W. Sowerwine, Huntington, Ind.; fourth, \$20, to the Radio Service Studio, Washington, D. C.; fifth, \$20, to the Whitney-Allison Company, Terre Haute, Ind.; sixth, \$20, Ralph L. Franklin, Red Oak, Ia.

Honorary mention was given to the following: Hanson & Emerson, Sauk Centre, Minn.; Kelm Radio Co., Long Beach, Cal.; Whitney Sporting Goods Co., Denver; Jarvis Tull & Co., Plainview, Tex.; Herbrick & Lawrence, Nashville, Tenn.; Geo. L. Sheppard, Winooski, Vt.; Luke Furn. Co., Oshawa, Ont.; Reusch Hdwe. Co., Madison, S. D.; Braddock Motor Sup. Co., Braddock, Pa.; and Lighthouse Elec. Co., Gary, Ind.

A group of trade-paper editors acted as judges.

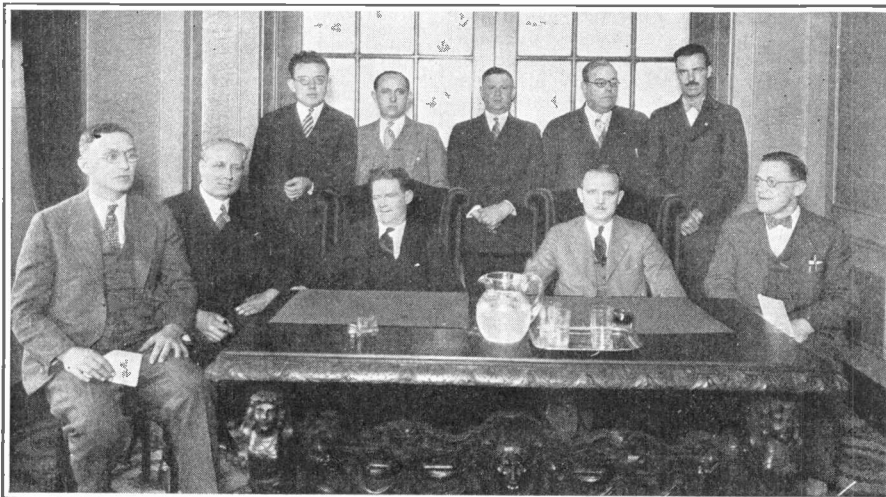
## Gold Seal Electrical Co. Issues Balance Sheet

Gold Seal Electrical Company, Inc., 250 Park Avenue, New York City, has issued the following balance sheet as of September 30:

Assets		
Plant, machinery, equipment, etc. (American Appraisal Co.)	\$159,272.28	
Less reserve for depreciation	84,819.90	\$74,452.38
Diana Radio Tube Corp. stock		50,000.00
Current Assets:		
Cash	49,916.59	
Accounts and notes receivable	254,753.14	
Inventories	59,233.33	
Merchandise with dealers	130,537.37	
Special cash deposits	6,280.00	500,720.43
Deferred charges		47,200.62
Subscribers to capital stock		
Trademarks and goodwill	1,000,000.00	
Less written off	50,000.00	950,000.00
<b>Total assets</b>		<b>\$1,622,373.43</b>
Liabilities and Capital		
Capital stock	\$1,004,062.50	
Accounts payable	57,479.83	
Reserve for bad debts	7,097.54	
Subscriptions to capital stock		
Surplus:		
Capital, earned and unrealized	553,733.56	
<b>Total liabilities and capital</b>		<b>\$1,622,373.43</b>

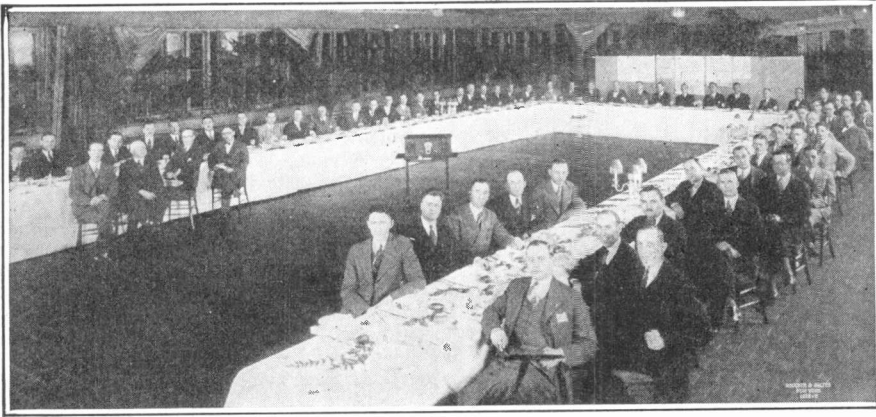
LAURENCE A. NIXON, formerly secretary of the National Radio Trade Association and affiliated with other radio trade bodies for a number of years, was elected Eastern secretary of the Radio Protective Association at a meeting of the board of directors held in New York, according to an announcement by Oswald F. Schuette, executive secretary. Mr. Nixon will take up his new duties at once, maintaining offices in New York City.

## Board of Directors of the F.R.T.A.



The hard-working board of directors of the Federated Radio Trade Association. From left to right, seated: Sidney Neu, Wisconsin Radio Trade Association, Milwaukee, Wis.; A. M. Edwards, treasurer, F.R.T.A., Michigan Radio Trade Association, Detroit, Mich.; Harold Wrape, president, F.R.T.A., St. Louis Radio Trade Association, St. Louis, Mo.; H. G. Erstrom, executive secretary, F.R.T.A., 32 W. Randolph St., Chicago, Ill.; Walter Kluge, chairman, F.R.T.A. convention committee, Milwaukee, Wis. Standing: Thomas White, Buffalo Radio Trade Association, Buffalo, N. Y.; Harry Alter, Mid-West Radio Trade Association, Chicago, Ill.; Michael Ert, Wisconsin Radio Trade Association, Milwaukee, Wis.; Jack Redell, Mid-West Radio Trade Association, Chicago, Ill.; Clarence Bates, Wisconsin Radio Trade Association, Milwaukee, Wis.

# News of Jobbers and Distributors



## 75 Kolster Dealers Guests of Federal-Brandes

Seventy-five Metropolitan New York Kolster jobbers and dealers recently gathered at the Hotel Pennsylvania, New York City, as the guests of Federal-Brandes, Inc. Plans for the ensuing months were made. H. H. Southgate, sales manager, acted as toastmaster. Among the speakers were D. S. Spector, general manager of the merchandising division; H. A. Hutchins, Jr., assistant manager, and J. A. Hanff, president of the Hanff-Metzger Advertising Agency.

## Splitdorf Lays Plans for 1928 Season

Splitdorf Radio Corporation, Newark, N. J., recently held a gathering of its mid-western distributors in Chicago in order to prepare for its spring business and plan for the first three months of the new year. The following attended from the Splitdorf factory and took active part in the meetings: E. H. Schwab, chairman of the board; Robert W. Porter, vice-president; Paul Ware, engineer; Hal P. Shearer, radio sales manager and Noel S. Dunbar, designer.

ATWATER KENT MANUFACTURING COMPANY, Philadelphia, Pa., recently deviated from its usual plan when it held a meeting of distributors' salesmen at the factory. The men were first taken through the factory and shown how the products they sell are manufactured. During the afternoon a business session was held, followed by an entertainment. This convention was the initial endeavor at calling together distributors' salesmen and the results obtained from the direct contact with the men who are in touch with the retail dealer were very satisfactory.

FEDERAL RADIO CORPORATION, Buffalo, N. Y., recently appointed W. F. Kroening as territorial representative in Michigan to replace H. H. Wilkin, who has been transferred to California. Mr. Kroening will work in conjunction with the Grier-Sutherland Company, Detroit, Mich. Mr. Wilkin's assignment to California fills the post left vacant by P. J. Rundle, who was made special representative.

JULIUS ANDRAE & SONS COMPANY, Milwaukee, Wis., has taken over the wholesale radio and electrical business of the Waterloo Electrical Supply Company, Waterloo, Iowa, and will operate this store as a branch of the Andrae Company.

## Wisconsin Kellogg Dealers Feast on Pheasant

Twenty-eight Milwaukee radio dealers gathered at the Milwaukee Athletic Club recently to feast on pheasant which John Zeman, president of the Standard Radio Company, Kellogg Distributors for Wisconsin, claimed he had shot in the wilds of South Dakota.

I. R. Witthuhn, of the Standard Company, who handled the festivities, insinuated during the course of the evening that the pheasants might have been purchased rather than bagged by the hunter, and offered five cents for every leaden pellet found in any of the birds served.

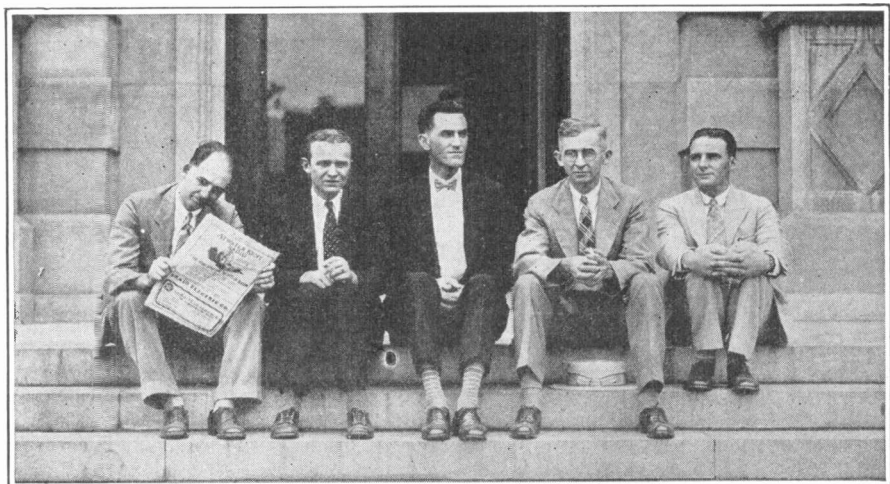
After the dinner, Mr. Zeman; William R. Shambau, Kellogg dealer of Oshkosh, Wis.; H. C. Abbott, sales-promotion manager and Mac Harlan, advertising manager of the Kellogg company, gave short talks.

SHERMAN, CLAY AND COMPANY, Seattle, Wash., has purchased a new four story building located on Fourth Avenue between Pine and Olive Streets, in order to meet the requirements of the company's increased business.

KIMBERLY RADIO, the new Wisconsin distributor for Zenith, has established offices at 2711 Wisconsin Avenue, Milwaukee, Wis. S. F. Patchin, formerly in the Chicago office, is in charge.

STEINITE RADIO LABORATORIES, INC., Chicago, Ill., has recently appointed several new distributors including the Campbell Iron Company, St. Louis, Mo., which concern will cover eastern Missouri and central southern Illinois; the Salt Lake Hardware Company, Salt Lake City, Utah; Roskin Brothers, Middletown, N. Y., and McIntyre-Burrall Company, Green Bay, Wis.

## "On to Philadelphia" Contest Winners



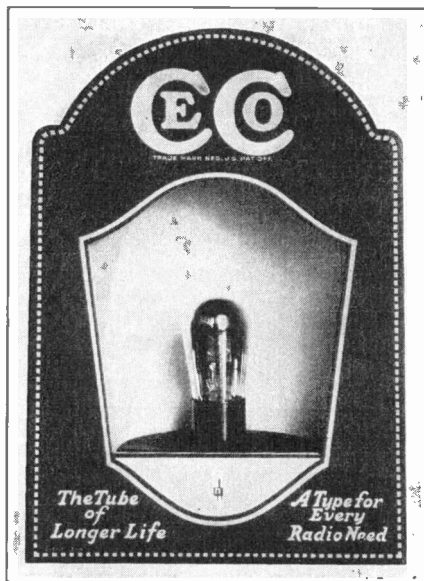
The Braid Electric Company, Nashville, Tenn., recently conducted the winners of the "On to Philadelphia" contest on a trip to the Atwater Kent factory, stopping at New York, Baltimore and Washington before returning to Nashville. The winners were: J. R. Riley, Paris Radio Company, Paris, Tenn.; D. E. Russell, Cayce-Yost Company, Hopkinsville, Ky.; and Carl Martin, T. J. Martin, Dover, Tenn.

# New Dealer Help Material

*Aids to greater profits provided by radio manufacturers for their dealers*

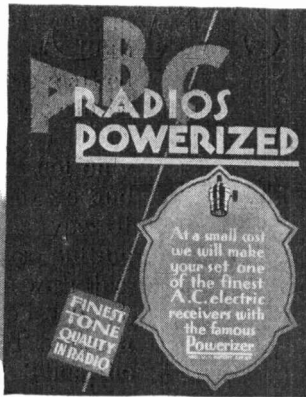
DUBILIER CONDENSER CORPORATION, 4377 Bronx Boulevard, New York City, has issued a new catalogue on its current-supply unit condensers which deals especially with "balanced" condenser blocks for every socket power need. This 8-page catalogue is generously illustrated and contains complete specifications of each type of condenser.

## Ceco Shadow-Box Display



The C. E. Mfg. Co., Inc., Providence, R. I., has just brought out an attractive shadow-box display, printed in black and red, which is free to any Ceco dealer writing to that company.

## Unusual Display Standard



Radio Receptor Co. Inc., 106 Seventh Avenue New York City, is offering the illustrated display card, size 11 in. x 14½ in. This standard is printed in four bright colors on heavy cardboard giving the effect of a hand painted sign.

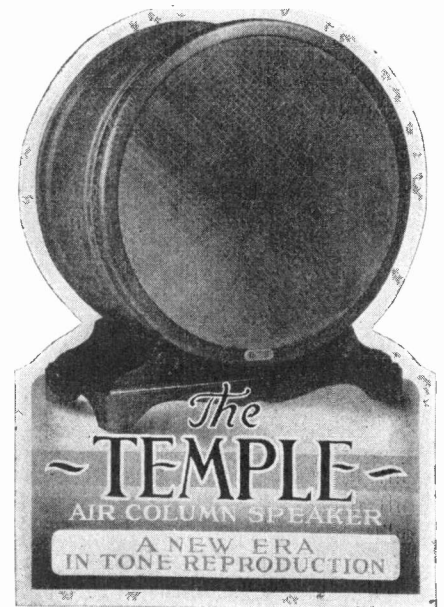
ATWATER KENT MANUFACTURING COMPANY, 4700 Wissahickon Avenue, Philadelphia, Pa., has available linen-finish, gilt-edge bridge cards for its dealers. These advertising playing cards are decorated on the back with the familiar A-K ship, and imprinted with the words "Atwater Kent Radio." They may be obtained direct from the Atwater Kent company at 55c. a pack, including case.

THE THORDARSON ELECTRIC MANUFACTURING Co., 500 W. Huron Avenue, Chicago, Ill., has prepared a 27-page booklet explaining and illustrating the use of its transformers in various circuits. The leaflet also contains detailed information on its products. Copies may be had upon application to the Thordarson company.

GOLD SEAL ELECTRICAL Co., Inc., 250 Park Avenue, New York City, has released a 32-page handbook entitled, "How to get the best results from your radio tubes," presenting in convenient form much information about the newer types of tubes and their use. This pamphlet tells how to select and install the new tubes, with illustrations and diagrams. There is also a section of technical data for the expert. Copies may be obtained free direct from the Gold Seal company.

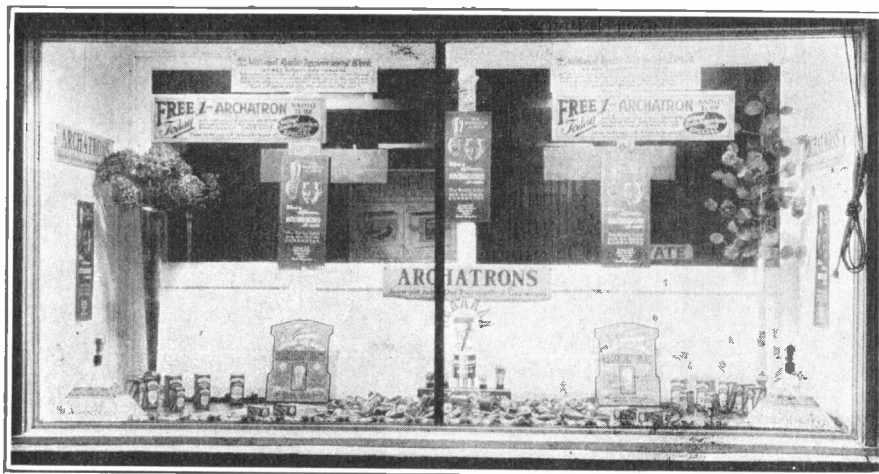
SAMSON ELECTRIC COMPANY, Canton, Mass., has available a booklet entitled, "Audio Amplification," containing many new circuits and much information relative to this subject. It may be obtained from the Samson Company at 25c. a copy.

## New Temple Show-Card



Temple, Inc., 213 S. Peoria Street, Chicago, Ill., is offering a new counter card, in four colors, illustrating its air column speaker. The card is a cut-out in the shape of the speaker at the top and measures 23 in. x 16 in. It is printed in brown, yellow, gray, and black. This display is available to Temple dealers.

## Ken-Rad's Complete Window Display Offer



Ken-Rad Corp., Owensboro, Ky., is supplying Archatron dealers with all the dealer help material shown in this window display. The above display is one recently used by the Chambers Battery Service, Owensboro, Ky.

THE MUSICAL PRODUCTS DISTRIBUTING COMPANY, 22 West Nineteenth Street, New York City, has recently issued a new edition of its illustrated catalogue covering Federal-Buffalo, Radio Art cabinets, Burgess batteries, Cunningham tubes, and Philco socket power units.

RADIO CORPORATION OF AMERICA, 233 Broadway, New York City, has prepared for its dealers a window poster in red and white calling attention to the new Radiolas and illustrating several models. To tie in with this poster several window strips are included.



# The Crosley A C Bandbox is the leading radio of today—because

of these wonderful tubes

At last! The radio tube that needs no batteries! Here it is functioning quietly, smoothly, powerfully in this new Crosley 6 tube receiver—the A C Bandbox.

Now, the Crosley A C Bandbox needs no more attention than you pay the electric lamp that lights your home.

Combined with the Crosley facilities for economical manufacture is the patent situation of which Crosley has full advantage. Licensed to manufacture under the patents controlled by the electrical and radio industries, the Crosley Bandbox is a NEW receiver incorporating latest radio developments, the most advanced ideas of radio reception as well as sound reproduction. This outstanding engineering job is best understood when you consider its features are such as are found in radios twice and more its price.

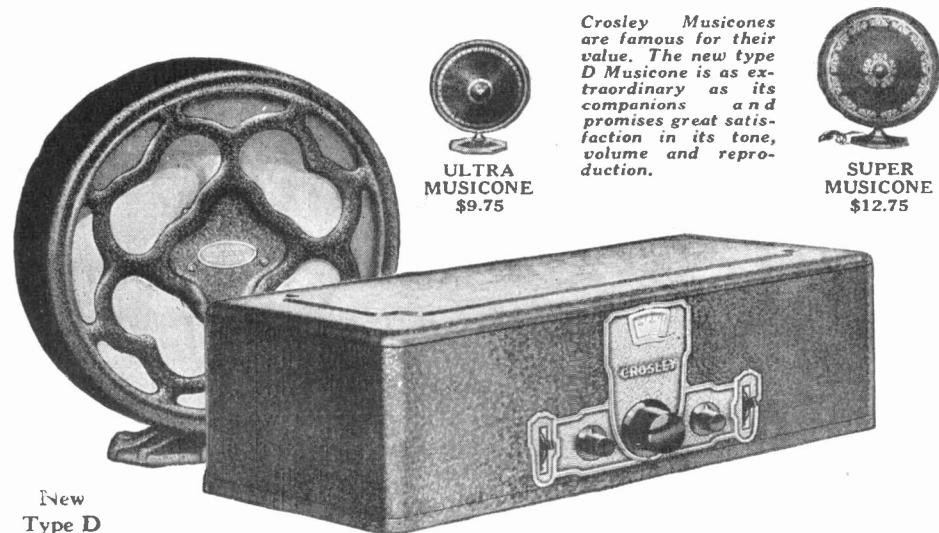
1. Complete shielding of all elements.
2. Absolute balance (genuine Neutrodyne).
3. Volume Control.
4. Acuminators for sharpest tuning.
5. Single cable connections.
6. Single station selector.
7. Illuminated dial.
8. Adaptability to ANY type installation.

The set is solidly mounted on a stout steel chassis. As all controls are assembled together in the front, cabinet panels are easily cut to allow their protrusion. The metal escutcheon is screwed on over the shafts and the installation has all the appearance of being built to order.

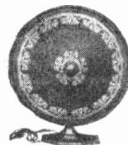
Two large furniture manufacturers have designed console cabinets in which the Bandbox can be superbly installed (Showers Bros. Co., of Bloomington, Ind., and the Wolf Mfg. Industries of Kokomo, Ind.). Powel Crosley, Jr., has approved them mechanically and acoustically and has seen to it that the famous Crosley Musicones are built in them so that the best type of loud speaker reproduction may be insured.

The Bandbox is housed in a brown frosted crystalline finished metal case which is easily removed for console installation.

See the new Crosley A C Bandbox at your distributor NOW! Hear first-hand its delightful performance! Enjoy the best in radio at the least cost! Write Dept. 130 for information.



ULTRA MUSICONE  
\$9.75



SUPER MUSICONE  
\$12.75

Crosley Musicones are famous for their value. The new type D Musicone is as extraordinary as its companions and promises great satisfaction in its tone, volume and reproduction.

New Type D Musicone  
\$15

Crosley is licensed only for Radio Amateur, Experimental and Broadcast Reception.

# CROSLEY RADIO

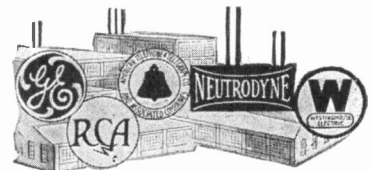
THE CROSLEY RADIO CORPORATION  
Powel Crosley, Jr., President  
Cincinnati, Ohio

Montana, Wyoming, Colorado New Mexico and West, prices slightly higher.



The amazing new RCA alternating current tubes—the UX 226 and UY 227—utilize for their filaments and their heating regular house lighting current. Current is stepped down through transformers. Rectifiers are NOT used.

the radio patents of these industries



The research and development work of these great industries—The Radio Corporation of America, The General Electric Co., The Westinghouse Co., The American Telephone & Telegraph Co., and The Hazeltine and Latour Corporations—are available to Crosley engineers in the constant advancement of Crosley radio design.

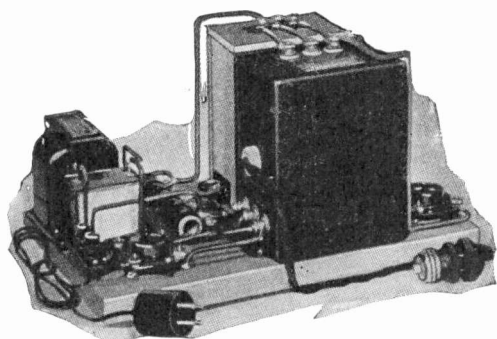
and the amazing capacity of this MERSHON Electrolytic CONDENSER



This is one of Crosley's great features. It is an exclusive Crosley device. It is self-heating—will last indefinitely—never needs attention and eliminates the danger of blown out paper condensers which are causing so much trouble in electrically operated sets.

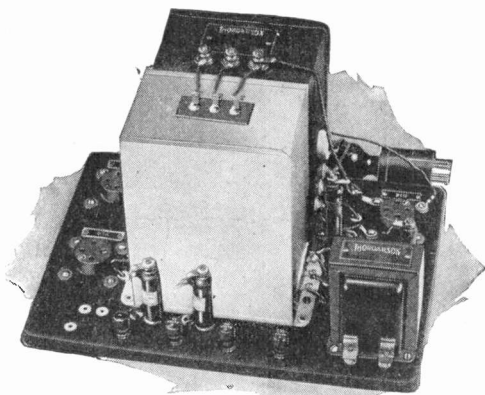
# Thordarson—

## The most popular of all Power Amplifier Transformers



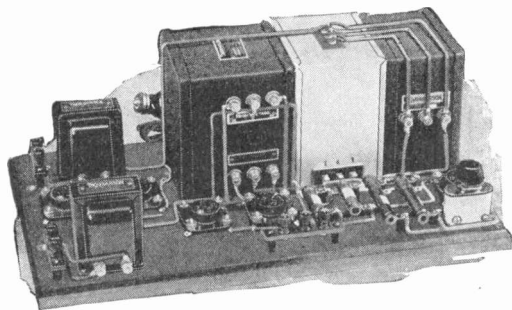
**THORDARSON 171 TYPE  
POWER AMPLIFIER**

Built around the Thordarson Power Compact R-171, this power amplifier supplies "A," "B," and "C" current for one UX-171 power tube and B-voltage for the receiver. Employs Raytheon B. H. rectifier.



**THORDARSON 210 TYPE  
POWER AMPLIFIER**

This amplifier, mounted on a special metal chassis, uses the Thordarson Power Compact R-210. Provides "A," "B," and "C" current for one UX-210 power tube and "B" voltage for the receiver. Employs one 216-B or 281 rectifier.



**THORDARSON 210 PUSH-PULL  
POWER AMPLIFIER**

This heavy duty power amplifier operates two 210 power tubes in push-pull and has an ample reserve of power for "B" supply for the heaviest drain receivers. Built with Thordarson Power Transformer T-2098, and Double Choke Unit T-2099.

### Sell Your Customers Real Musical Performance

Wherever supreme musical performance is paramount, there you will find Thordarson Transformers.

Your customers can bring their present receivers up to 1928 standards of tone quality by building their own Thordarson Power Amplifier.

Leading consumer magazines such as *Radio*, *Radio Broadcast*, *Citizens Radio Callbook*, *Radio News*, *Popular Radio*, specify Thordarson Power Supply Transformers in every issue in connection with the leading circuits for the home constructor.

Also, the fact that Thordarson transformers are used in the power units of such leading manufacturers as Victor, Brunswick, Federal, Sparton, Willard, Philco, and Neutrowound, insures your customers of unquestionable quality and performance.

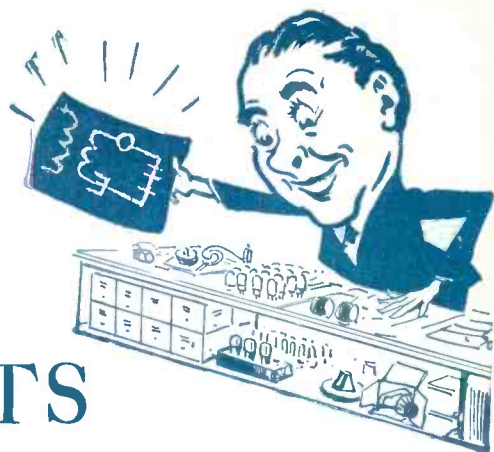
Thordarson Power Amplifier Supply Transformers are designed to meet every radio need and every pocket-book.

*Write today for complete constructional booklets.*

# THORDARSON

**THORDARSON ELECTRIC MANUFACTURING CO.**  
*Transformer Specialists Since 1895*  
**WORLD'S OLDEST AND LARGEST EXCLUSIVE TRANSFORMER MAKERS**  
*Huron and Kingsbury Streets — Chicago, Ill. U.S.A.*

# MERCHANDISING RADIO PARTS



A Section of Radio Retailing

January, 1928

## Parts Sales Vary

Reports of trade throughout the country vary from poor to excellent but optimism generally prevails

**T**RADE conditions in parts for the past few months and the predictions for the coming year are extremely variable throughout the country, ranging from reports of "business good, outlook poor" to "business poor, but outlook fine."

In the North Atlantic States where the greatest volume of parts business has been reported, conditions are generally good and the outlook is excellent. Parts merchants generally report that after a slight, unexpected slump in October and the early part of November sales picked up and continued to gather headway up to Christmas.

For New York City reports are that "total sales are not only as good as last year but market is more stable."

Philadelphia reports "business only fair but expecting it to pick up the first of the year."

Boston is "doing a good volume of business and expecting increase after first of year."

In this district and in the Chicago district where the demand is also reported as "generally good" sales are divided about equally among receiving set kits, separate units for receiving sets, and parts for power amplifiers and current-supply units.

The prediction is unanimous that the trend is toward parts for power amplifiers and current-supply outfits for existing sets and that these items will be the leaders in 1928. Merchants doing large-volume business in parts see nothing ahead but prosperity and some are looking forward to and even planning ahead for the time when television will sweep the country as broadcasting did.

In other sections of the country, particularly in California, where radio sales in general are slower than last year, "shielded-grid tubes are expected to stimulate parts sales during the coming year." Pittsburgh statements likewise are to the effect that "not much activity is evidenced in the parts business save along the lines of complete kits although a call is looked forward to for the new shielded-grid tubes and undoubtedly there will be a demand among experimenters for kits employing these new tubes."

**F**ROM Cleveland the announcement is that "set builders are active here and are keeping parts moving steadily. Demand has been mainly for superheterodynes, but field should be receptive for more kits of popular six-tube sizes for a.c. operation and easy to assemble." At Portland, Oregon, where radio trade conditions are reported as spotty, but where the outlook for 1928 is optimistic word comes that "there is a tendency for radio merchants to go into the parts business more extensively."

Statements from the Middle West vary from "poor sales with a pessimistic outlook

for 1928," in St. Louis, to "sales well over 1926 with indications that first quarter of 1928 will far exceed that of 1927" in Kansas City, with Denver striking in between these two extremes with a report of "healthy season and indications of substantial increase in 1928."

Sale of parts in the South has been generally slow due to the continued warm weather and consequent poor reception. This condition has held up sales to date but outlook for a delayed season during January and February is excellent. Atlanta states, "sales very slow and present outlook fair," while New Orleans reports, "sales below last year but immediate outlook satisfactory." San Antonio claims, "sales behind 1926 but picked up during December and outlook for beginning of 1928 is excellent."

Toronto, Ontario, Can., reports that "many dealers laid in extra stock of parts last fall looking for an increase in set building because of licensing situation. Actual results were some stimulation of parts business but this increase is not looked upon as permanent. Reception conditions have not been satisfactory this season."

### Sales Barometer for Parts

North: Fair

South: Delayed Season

East: Good

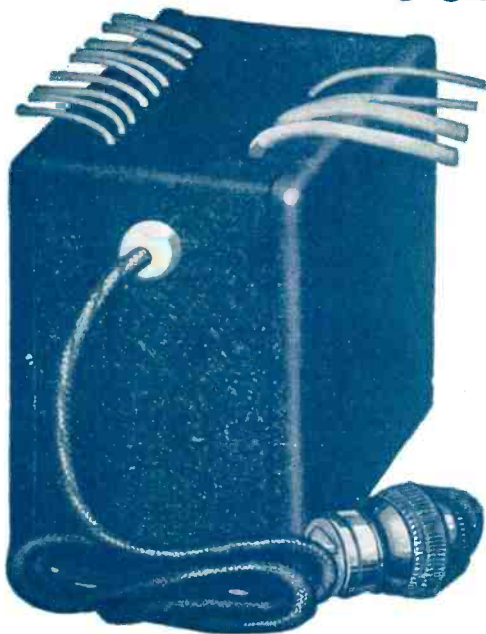
Central: Steady

Middle-West: Variable

West: Spotty



# A Complete Compact Unit of RADIO POWER SUPPLY for the A.C. Set



This power pack contains one transformer that will supply all the current for the AC tubes and the rectifier tube.

Together with the proper condensers, resistors, tube and tube socket, this pack makes an ideal unit of power supply for the AC set.

Simple in construction. Easy to assemble.

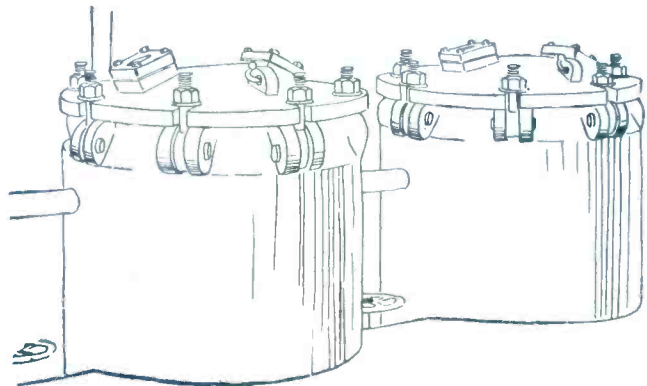
*You can always rely with complete confidence upon the excellent quality and consistent dependability of all TCA products.*

*We have served reputable radio manufacturers since 1923.*

The No. 302 POWER COMPACT illustrated here, supplies filament voltage for six or seven  $1\frac{1}{2}$  volt 226 tubes, one  $2\frac{1}{2}$  volt 227 tube, one or two 5 volt 171 tubes, and the filament and plate voltage for one No. 280 full wave rectifier tube.

We also make compacts for the SOVEREIGN, KELLOGG, MARATHON, or ARCTURUS TUBES with RAYTHEON or FILAMENT TYPE RECTIFYING TUBE.

ALL compacts may be had with leads coming out of top or bottom, front or back.



## Coils vacuum impregnated

Every coil is vacuum impregnated in a specially prepared compound which permanently protects it against the potential danger of moisture. Before being impregnated the coil is heated for several hours in an oven to drive out every particle of moisture.

## Only one transformer

Designed with exacting precision, contains all the windings for the rectifier unit and the filament of the AC tube.

## Dual Choke

Scientifically designed, a distinctive achievement in radio, this dual choke utilizes the magnetic fields of each choke. It possesses remarkable filtering qualities and is capable of easily passing 75-80 mls. without saturation.

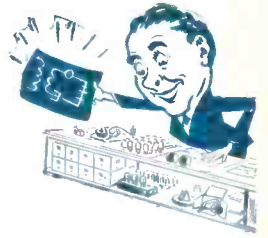
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*The Transformer Corporation of America*  
1428-1432 Orleans St. · Chicago

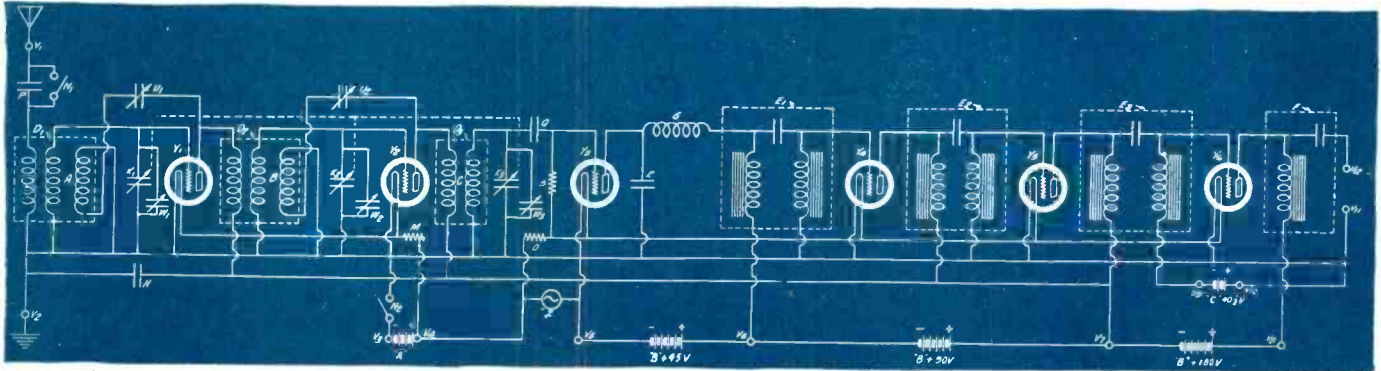
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# Pre-viewing the New Circuits

Current fan magazines are telling how to build the sets described on this page. Do you have the parts?



## The Harkness Counterfonic Six



THE latest advances in radio-frequency amplification are combined with double-impedance, audio-frequency amplification in the newest circuit by Kenneth Harkness appearing in *Popular Radio*. Other features of his new set include single-control tuning and added simplicity in construction and wiring. This receiver comprises two stages of radio-frequency amplification, a tube detector, three stages of audio-frequency and an output filter for handling large volume. The theory and design were discussed in the December, 1927, issue of *Popular Radio* and the construc-

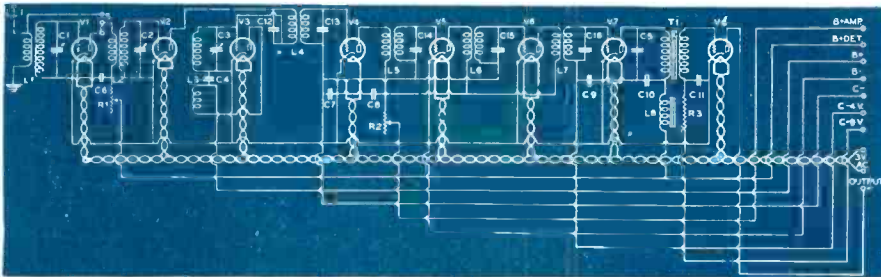
tional details will appear in the January number.

The list of parts necessary for building this receiver are as follows:

- A, B and C—High-frequency transformers;
- D1, D2 and D3—Cylindrical copper shields;
- E1, E2 and E3—Tuned double-impedance audio-couplers;
- F—Audio-output-filter unit;
- G—High-frequency choke coil;
- H—By-pass condenser, 1 mfd.;
- K1, K2 and K3—Three-gang variable condenser, .00035 mfd. capacity in each section;
- M—Midget rheostat, 10 ohms.

- N1 and N2—Battery switches;
- O—Fixed filament resistor,  $\frac{1}{2}$  ohm;
- P—Fixed condenser, .0001 mfd.;
- Q—Fixed condenser, .00025 mfd.;
- R—Fixed condenser, .001 mfd.;
- S—Grid-leak, 2 megohms;
- U1 and U2—L neutralizing condensers, .0001 mfd.;
- V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, 11 and 12—Binding posts;
- W1, W2 and W3—Equalizing condensers;
- Drilled and engraved front panel;
- Drilled sub-panel, with six sockets attached;
- Drum dial;
- Brackets;
- Grid-leak mounting;
- Wire and necessary hardware.

## The "All-Wave Electric 9"

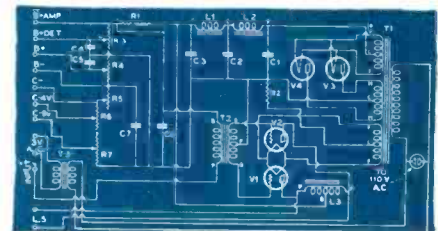


THIS set which will be described in the February *Radio News* represents the latest developments in superheterodynes by R. E. Lacault. The main features claimed by the designer of this set are: complete electrification without hum and without the use of complicated balancing arrangements; utmost in sensitiveness by using the "modulation" system of detection; plug-in coils permitting the reception of short waves as well as broadcast wavelengths; and push-pull amplification in conjunction with a power supply unit.

The power supply and push-pull amplifier are built as a separate unit and may be used with any other receiver; a feature which should be of interest to those owning more than one set.

The parts required for this set are as follows:

- C1, C2 and C3—Variable condensers, .0005 mfd.;
- L1 to L7—R.E.I. plug-in coils;
- L8—Audio-frequency choke;
- T1—Audio-frequency transformer;
- R1 and R2—Variable resistors;
- C4—Fixed condenser, .001 mfd.;
- C5—Fixed condenser, .002 mfd.;
- C6 to C9—By-pass condensers, .5 mfd., 400 volts;
- C10 and C11—By-pass condensers, 1 mfd., 400 volts;
- C12 to C16—Fixed condensers, .00025 mfd.;
- V1 to V8—Heated cathode a.c. tubes;
- R3—Fixed resistor, 100,000 ohms;
- 1 Front panel;
- 1 Sub-base panel;
- 10 Binding posts;
- 2 Stage sockets;
- 8 Coil sockets;
- 8 Tube sockets;
- 1 Drum dial;
- 1 Grid-leak mounting;
- 2 Condenser extension shafts;
- 2 Tip jack and plugs;

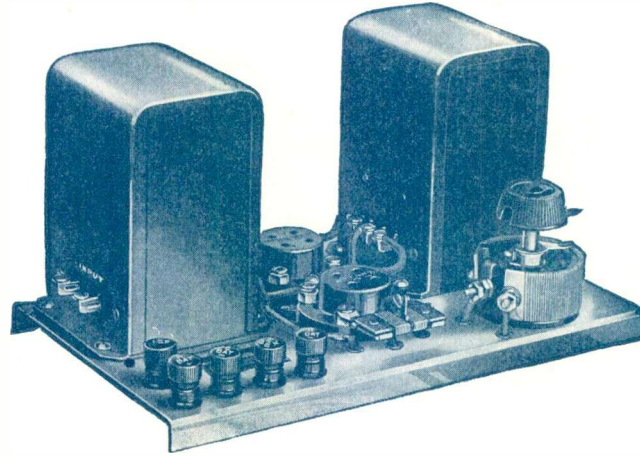


The parts required for building the amplifier-power unit are as follows:

- T1—Full-wave, power transformer;
- T2—Push-pull, audio-frequency transformer;
- T3—Filament transformer;
- L1 and L2—Audio-frequency chokes;
- L3—Center-tapped, audio-frequency choke;
- C1, C2 and C3—Filter condensers, 2 mfd., 1,000 volts;
- R1—Fixed resistor, 4,000 ohms, 50 watts;
- R2—Fixed resistor, 750 ohms, 25 watts;
- R3 and R4—Variable resistors, 10,000 ohms;
- R5—Rheostat, 60 ohms;
- R6 and R7—Variable resistors, 500 ohms;
- C4 to C7—Fixed condensers, 1 mfd., 400 volts;
- V1 and V2—Power tubes, '10 type;
- V3 and V4—Rectifier tubes, '81 type;
- 4 Tube sockets;
- 12 Binding posts;
- 1 Front panel;
- 1 Sub-base panel;
- 1 110-volt receptacle.

# GENERAL RADIO

## TYPE 441 PUSH-PULL AMPLIFIER



**I**N a search for an amplifier which would give the maximum in quality and volume, the push-pull method has proved particularly satisfactory. This type of amplifier in the last stage provides the speaker with ample power to faithfully reproduce the full frequency range that is now being broadcast without tube overloading.

A push-pull amplifier draws no alternating current from the plate supply, a fact of great importance if socket power is used, as the impedance of the power unit does not affect the amplifier. This results in improved reproduction of sustained notes, particularly of low frequency.

Other advantages of the push-pull system are, a reduction in hum when alternating current is used for filament supply and for equal power output, a reduction in the plate voltage required.

The Amplifier is supplied completely wired.

### Type 441 Amplifier

*For use with UX 226, CX 326, UX 171, CX 371, UX 210 or CX 310 tubes.*

Input Inductance .....	30 henries
Input turns ratio .....	1:2.25
Output impedance ratio .....	12:1
	(Whole primary to secondary)
Price completely wired .....	\$20.00

Licensed by the Radio Corporation of America for radio, amateur, experimental and broadcast reception only and under the terms of the R. C. A. license the unit may be sold only with tubes.

## GENERAL RADIO CO., Cambridge, Mass.

*Manufacturers of Radio and Electrical Laboratory Instruments*

If we can be of any assistance to you in supplying technical information we welcome your correspondence. Have you a copy of our latest bulletin No. 929 in your files? If not a post-card will bring one.

# MANUFACTURERS *and* MARKETS

*Devoted to the Problems  
of the Manufacturer in  
the Design and Distribu-  
tion of Radio Apparatus*

A Section of *Radio Retailing*

January, 1928

## *1928 Developments in* DESIGN *and* CONSTRUCTION

*Trends and improvements that will affect perform-  
ance and appearance of radio sets this year*

RADIO developments during the past year have not been of an individual nature. They have been the result of accomplishment of large groups working on common problems, and there is every reason to believe that the coming year will see a continuance of this activity.

In radio receiving sets, refinements both in circuit and mechanical arrangement may be expected, but no startling revamping of the set as a whole. Gang condensers are universally in use making possible one control for tuning. At present we have two other controls on the panel front, the current switch and the volume control. We may expect to find these two combined so that the future set will have but two controls on the panel, one for station selection and the other for turning the set on and off and maintaining the proper volume.

With the advent of the A.C. set, we face the problem of proper shielding, both for its electrical advantages in tuning and as a safety proposition in case of short circuit, where the house current is placed in the receiving set itself. In this direction, the coming year will see metal cabinets in greater use. These are now made with finishes to please the eyes of even the most critical, and they have the added advantage of being both economical to construct and of giving the factors of safety needed for sets working from house current.

### ONE NEW CIRCUIT

DUE to the recent introduction of the DUX-222 type of tube, which has a shielded grid, we may reasonably expect one new circuit, which will incorporate this tube, said to be excellent for radio frequency work and to have advantages over other tubes in this direction. This set

will, no doubt, be for battery operation at first. We may also expect to find various refinements and advances in battery operated sets, for it is not logical to assume that these will immediately lose their value because of the A.C. tubes.

There are many communities where it will be found unwise to use a.c. operated sets and then, too, there are 10,104,000 homes throughout the country that are not wired for electricity. While speaking of battery-operated sets, there is one market which so far has been grossly neglected and which we may expect to see opened up in 1928. This market lies among the thousands of automobile tourists who spend a good part of the year traveling over the United States. Few of these people carry radio sets with them at present, but would do so if a suitable set was developed, especially for automobile use, to be operated from the six-volt automobile battery.

There is a growing trend to market the chassis alone, and the increased production of these gives furniture manufacturers a greater chance to display their skill in design. Special furniture sold at retail is coming to the front and this is a merchandising problem which should be given considerable thought by furniture manufacturers.

As for the design of such cabinets it is not merely a problem of putting wood together with a good finish, but the manufacturer must understand acoustics, and also some of the fundamentals of the radio receiving set. If the set, reproducer and other equipment are all to be put in one cabinet, it entails problems of vibration and resonance which have to be carefully considered.

The long air column speaker will con-

tinue in its popularity as more artistic designs are worked out in console cabinets. And also, there is no doubt that radio-phonograph combinations will become more and more popular.

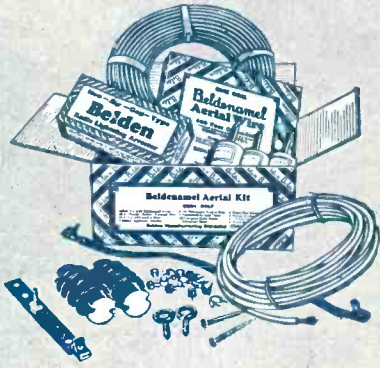
A new tuning method is being developed by means of which a half dozen or more local stations may be tuned in merely by pressing a button instead of twisting dials. This type of apparatus has already made its debut in the mid-west in connection with the wired-wireless experiment being tried out in Freeport, Ill.

When the receiving set is installed, the service man will make the proper adjustment so that some one certain station will always come in on each button. The number of stations so received is limited, of course, by the number of buttons on the panel. Should the owner of the set, however, desire to get distant stations or other local stations which would not be designated by the keys, he has but to turn a variable control which disengages the key arrangement and permits free tuning.

### INCREASING USE OF COLOR

THE use of color in both cabinet and speakers is coming rapidly to the foreground. A good example of this is shown in the automobile industry in the past year wherein the use of many colors has greatly increased the popularity of certain cars. Now the radio set and speaker are being made in various colors to match any type of house-furnishings. This trend supports the use of metal cabinets for it is much easier to get the various desirable colors on metal than it is on wood.

The filament transformer and harness for the a.c. tubes, taken up elsewhere in this issue, is another trend which has



**Beldenamel Aerial Kit**

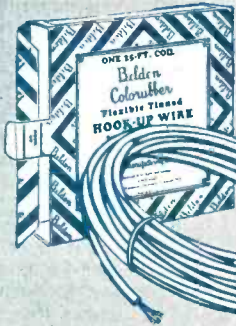
Includes Beldenamel Aerial Wire, Lightning Arrester, Colorubber Hookup Wire, Belden Ground Wire, as well as Lead-in Strip, Ground Clamp, Screws, Staples, Insulators, and everything needed for an aerial of enduring efficiency.

**Beldenamel Aerial Wire**

An aerial wire that is just as efficient after years of service as when first installed. Does not deteriorate in service because the copper is protected by the Beldenamel coating. Solves the aerial problem definitely.



**Belden Colorubber Hookup Wire**



This is the ideal wire for connecting up radio sets, internal wiring of the set, or in fact any place where a high grade wire is needed. Made with light insulation for general use and heavy insulation for A B C use.

**Belden Loud Speaker Extension Cord**

Multiplies the usefulness of the radio receiver. By using this cord, the loud speaker can be moved to any point desired without disturbing the set. Colorubber insulation on both conductors assures faithful delivery of signals with minimum waste.



**A New Extension Cord With Tremendous Sales Possibilities**

The Belden Flat Floor Cord presents unlimited sales possibilities for aggressive dealers. It is a brand new addition to the Belden Line that passes under the rug and connects a lamp, radio set, or any other electrical appliance to an outlet on the opposite side of the room.

Push the Belden Flat Floor Cord in connection with the popular Belden Radio Line. Display the Belden Flat Floor Cord in your windows. Ask your jobber's salesman or write us for the complete story.

**Belden Manufacturing Company**

2308-A So. Western Ave.  
Chicago, Illinois



**Belden Lightning Arrester**

The Belden Resistor Type Lightning Arrester has no air gap. The design is of the latest type and has been thoroughly tested and approved by underwriters. Can be installed either inside or out of doors.



**Belden Indoor Aerial and Loop Wire**

A neat indoor aerial wire that is very efficient. The neutral-colored braid is easily concealed around a window or over the picture molding. An indoor aerial of this excellent wire is very selective.



**Belden Lead-in and Ground Wire**

A high grade insulated wire for the ground connection. Assures a ground of permanent efficiency.



great advantages. By means of this equipment, which is being placed on the market by a variety of manufacturers, practically any battery-operated receiver can be converted into an electric receiver with a minimum of expense and trouble.

A new market for trade-ins will be opened up for it is now possible to change a set that is not too obsolete into a modern electric receiver. It will probably be necessary, also, to replace the audio frequency transformers but this adds only a few dollars more to the cost of adaptation. These sets can then be sold at a fair profit to clients who want an all-electric receiver but who cannot afford to buy a new set.

It is safe to say that radio will continue to advance steadily throughout 1928, with probably some new and fundamental developments in circuit design.

## Batteries Exempt from "Poison" Labeling

Storage batteries and electrolytic rectifiers are not "poison" and need not be so labeled, according to a U. S. Government decision. This ruling will relieve radio and other manufacturers who feared that a new law called the "Lye Law" passed on March 4, 1927, would require a "poison" label, possibly with skull and crossbones, on harmless radio batteries and rectifiers. In some quarters it was even feared that the "poison sign" might have to be placed on a receiving set shipped in interstate or foreign commerce.

The Caustic Poison Act is under the jurisdiction of the Food, Drug and Insecticide Administration of the Department of Agriculture. The new law requires that no interstate or foreign shipments of "any dangerous caustic or corrosive substance" shall be made in packages or containers "suitable for household use" without use of a "poison" label or sticker in large type being placed thereon.

When passed at the last session of Congress the new law attracted comparatively little attention, but the possibility of its injurious effect to the radio industry was promptly recognized and attorneys for battery and rectifier manufacturers filed protests and were accorded hearings before the U. S. Department of Agriculture's Bureau of Administration.

Regulations exempting batteries and rectifiers from the effects of the new Poison Label Law are to be issued within a few weeks and will be available to the industry.

## New Radio Patents

### DESIGNS

- 73,878. Radio cabinet. David S. Spector, New York, N. Y., Assor. to Federal Telegraph Company, San Francisco, Calif.
- 73,879. Radio cabinet. David S. Spector, New York, N. Y., Assor. to Federal Telegraph Company, San Francisco, Calif.
- 73,883. Diaphragm for a Radio Speaker. Benson F. Waddell, New York, N. Y.

### PATENTS

- 1,649,036. Electroionic Relay. Friedrich Wilhelm Meyer, Milwaukee, Wis. Assor. to The Cutler-Hammer Mfg. Co., Milwaukee, Wisconsin.
- 1,649,131. Tuning Arrangement for Radio Communication. Carl Schwarz, Charlottenburg, near Berlin, Germany. Assor. to Westinghouse Electric & Manufacturing Company.
- 1,649,132. System of Radio Communication over Wires. Carl Schwarz, Charlottenburg, near Berlin, Germany. Assor. to Westinghouse Electric & Manufacturing Company.
- 1,649,257. Suspension for Armatures of Electromagnetic Sound Reproducers. Charles R. Rowe and William H. Gerns, East Orange, New Jersey. Assors. to Brandes Laboratories, Inc., Newark, N. J.
- 1,649,341. Radio Receiving System. Walter N. Fanning, Vallejo, Calif.

- 1,649,489. Vacuum Tube. Henry Joseph Round, London, England. Assor. to Radio Corporation of America.
- 1,649,499. Receiving Arrangement for Wireless Telegraphy. Graf Georg von Arco, Berlin, Germany. Assor. to Gesellschaft fur Drahtlose Telegraphie m. B. H. Hallesches Ufer 12/13, Berlin, Germany.
- 1,649,510. Wireless Installation on Vehicles such as Automobiles. Newsome Henry Clough, London, England. Assor. to Radio Corporation of America.
- 1,649,589. Wave Signaling System. Louis Alan Hazeltine, Hoboken, N. J. Assor. to Hazeltine Corporation.
- 1,649,715. Combined Radio Receiving Set and Sound-Amplifying Horn. Walter Lytton, Chicago, Ill.
- 1,649,716. Radio and Phonograph Combination Switch. Walter Lytton and Philip E. Edelman, Chicago, Ill. Assor. by mesne assignments to said Lytton.
- 1,649,727. Aerial for Radio reception. Clarence Frederick Peitzman, Grimes, Iowa.

### DESIGNS

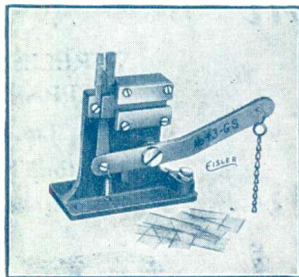
- 73,938. Speaker Casing. Hans Munsch, Berlin, Germany.
- 73,943. Radio Cabinet. Oscar Reinhold, Downers Grove, Ill. Assor. to Churchill Cabinet Company, Chicago, Ill.
- 73,944. Radio Cabinet. Oscar Reinhold, Downers Grove, Ill. Assor. to Churchill Cabinet Company, Chicago, Ill.
- 73,951. Speaker Horn. Harvey B. Troxell, Seattle, Washington. Assor. to Harris & Troxell, Seattle, Wash.

### PATENTS

- 1,649,810. Vacuum Tube. Emory Leon Chaffee, Belmont, Mass. Assor. to John Hays Hammond, Jr., Gloucester, Mass.
- 1,649,969. Audion-Bulb Socket. Alexander Morton, Glen Ridge, N. J.
- 1,650,032. Radio Apparatus. Thomas E. New, Cincinnati, Ohio. Assor. to The Teleforce Radio Laboratories Company, Cincinnati, Ohio.
- 1,650,232. Thermionic Tube. Greenleaf Whittier Pickard, Newton Center, Massachusetts. Assor. to Wireless Specialty Apparatus Company, Boston, Mass.
- 1,650,238. Coin-Controlled Radio Receiver. Richard Sause, New York, N. Y.
- 1,650,344. Combined Gramophonic and Wireless Sound-Reproducing Means. Edward Alfred Graham, Brocklety, England; Marie Graham and Alfred Graham, executors of Edward Alfred Graham, deceased.
- 1,650,353. Wave Signaling System. Louis Allan Hazeltine, Hoboken, N. J. Assor. to Hazeltine Corporation.
- 1,650,432. Radio Receiving Set. Hiran D. Currier, Chicago, Ill. Assor. to Kellogg Switchboard and Supply Company, Chicago, Ill.
- Reissue 16808. Radio Telegraph and Telephone Receiving System. Frederick

## Grid Stretching Machine

The Eisler Engineering Co., Inc., 750 South Thirteenth Street, Newark, N. J., is in production on a new grid stretching machine shown in the accompanying illustration.



The purpose of the machine is to stretch the grid giving it perfect and regular shape. In doing this, all possibility of a short is eliminated in the finished tube. The construction of this machine is very simple, it weighs approximately 5 lb. and covers but 15 sq. in. of bench space. Further information may be had by writing the above company, and it is requested by them that when ordering these machines, samples and sketches of grids be sent in.

- Grant Simpson, South Wash. Assor. Simpson Radio Corporation, Seattle, Wash.
- 1,650,701. Radio Signaling System. John F. Farrington, Flushing, N. Y. Assor. to Western Electric Company, Inc. of N. Y.
- 1,650,862. Spiral Plate Condenser. Frank A. Borzych, Minatare, Neb.
- 1,650,898. Tuned Radio Frequency Circuits. Dimmitt Ross Lovejoy, New York, N. Y. Assor. to Lovejoy Development Corp. of N. Y.
- 1,650,921. Vacuum Tube. Louis Minklemann, Hoboken, N. J.
- 1,650,934. System of Modulation. Lewis W. Chubb, Swissvale, Pa. Assor. to Westinghouse Electric & Manufacturing Co.
- 1,650,944. Apparatus for Radio Transmission. Abd-El-Rahman Z. A. Khalifah, Phila., Pa.
- 1,651,257. Vacuum Tube Socket. Harry C. Davis, Brighton, Mass.

### DESIGNS

- 74,018. Radio Cabinet. Frank Maggio, Phila., Pa.
- 1,651,515. Radio Frequency Transformer. Nobel Gibbs, Dowdell, Chicago, Ill. Assor. to United Electric Co. of Chicago, Ill.
- 1,651,532. Radio Telephone Receiver. Martin L. Martus, Woodbury, and Edmund H. Becker and James G. Ross, Waterbury, Conn.
- 1,651,658. Radio Receiving System. Leo C. Young, Washington, D. C.
- 1,651,953. Support for Radio Apparatus. Arthur C. Hayden, Brockton, Mass.
- 1,652,118. Radio Condenser. Monroe Guett, Hartford, Conn. Assor. Hart & Hegeman Manufacturing Co., Hartford, Conn.

### DESIGNS

- 74,045. Radio Cabinet. John M. Beach, Grand Rapids. Assor. to The Stromberg-Carlson Telephone Manufacturing Co., Rochester, N. Y.

### DESIGNS

- 74,088. Radio Cabinet. Joseph Wolff, Brooklyn, N. Y. Assor. to Sonora Phonograph Co., Inc.
- 1,652,219. Radio Receiving Apparatus. Adolph Alexander Thomas, New York, N. Y.
- 1,651,257. Composite Radio Panel and Sound Modifier. William B. Stevenson, Phila., Pa. Assor. to Victor Talking Machine Company.
- 1,652,388. Method and Arrangement for the Multiple and directed Receiving of Radio Signals. Valerian Ivanovitch Bashenoff, Moscow, Russia.
- 1,652,486. Vacuum Tube Signaling System. Siegmund Loewe, Berlin, Germany. Assor. to Westinghouse Electric & Manufacturing Co.
- 1,652,516. Radio Transmitting System. Frank Conrad, Pittsburgh, Pa. Assor. to Westinghouse Electric & Mfg. Co.
- 1,652,691. Condenser Mounting and Adjusting Mechanism. Ernest Tyrman, Chicago, Ill. Assor. to Tyrman Electric Corp.
- 1,652,880. Vacuum Tube and Tube Circuits. Albert G. Thomas, Lynchburg, Pa.
- 1,652,901. Variable Condenser. Ralph H. Langley, Schenectady, N. Y. Assor. to General Electric Co.
- 1,652,995. Electric Wave Signaling System. Francis M. Ryan, East Orange, N. J. Assor. to Western Electric Company, Incorporated, N. Y.

## Short-Wave Broadcasting Growing

With five or six American broadcasting stations already on the air on the short waves and increasing interest in foreign countries in the new field, it is likely that the demand for short-wave receiving apparatus will increase. A recent announcement, stating that the broadcasting station at Johannesburg, South Africa, is using 35 meters in addition to its regular channel, should be of interest to American listeners. With comparatively simple apparatus, English, German and Dutch short-wave broadcasters are being heard regularly by American experimenters. In the far west, listeners report KDKA's and WGY's short wave programs give clear, undisturbed speaker reception during mid-summer, even though the nearest broad-



Most of the better sets  
are Faradon equipped

When buying a set — or kit or replacement parts — it will pay you to keep in mind the fact that Faradon Capacitors are the choice of leading manufacturers.

Look for the familiar blue and white label on the condensers in the hook-up. It is your assurance that you are securing reliable electro-static condensers.

Your favorite radio store carries Faradon Capacitors and Faradon equipped sets.

WIRELESS SPECIALTY  
APPARATUS CO.  
Jamaica Plain  
Boston, Mass., U. S. A.  
Established 1907

*Faradon*

Electrostatic condensers for all p

It pays to  
stock Faradon  
Capacitors  
and Faradon  
equipped sets!

WIRELESS SPECIALTY  
APPARATUS CO.  
Jamaica Plain  
Boston, Mass., U. S. A.  
Established 1907

*Faradon*

Electrostatic condensers for all purposes

casters, using standard channels, often cannot be heard because of distance and noisy ether conditions. A technical paper, recently presented before the Institute of Radio Engineers, on short-wave transmission, states that, below 30 meters, static is practically negligible at all seasons.

On the other hand, it must be realized that fading and skip-distance effects somewhat limit the usefulness of the very short waves. Although, with comparatively low power, short wave stations can practically cover the earth with their signals, they are not audible within a few hundred miles of their source.

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## R.M.A. Forms Definite Standards for Resistor Units

The fixed resistance unit committee of the Radio Manufacturers' Association has recommended as standard practice that if spring clips of any type are used for the purpose of holding or securing resistance units, these clips be  $1\frac{1}{8}$  inches apart at the point of contact. A sub-committee has been appointed and instructed to submit at the next standards meeting its recommendations pertaining to the overall dimensions of resistance units commonly known as the grid resistor type.

One measure adopted is that fixed resistor units be marked with their resistance value from 100,000 ohms upwards, using the decimal system in megohms, and that all resistance values below 100,000 ohms be marked with their correct reading in ohms. Furthermore, it has been recommended that fixed resistor manufacturers adopt a commercial list of resistance ranges as follows:

500, 1,000, 2,000, 3,000, 4,000, 5,000, 7,500, 10,000, 25,000, 50,000, 75,000 ohms, and .1, .25, .5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 5, 6, 7, 8, 9, 10 megohms, and that this list of ranges be specified in their trade and consumer literature.

It has also been recommended that manufacturers of resistor units adopt, as an approved practice, a method of indicating, on shipping containers or by means of printed slips, the voltage at which the resistor units were tested.

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## Co-operate with the Census Bureau

With the opening of 1928 the operations of American industry are once more to be surveyed and counted by the Federal Government. Up until 1919 these industrial censuses were taken every five years, but at the close of 1921 the biennial census of manufactures was instituted. Such an advance in the collection of general production data is in line with the new economic era under the influence of which business and industry has been functioning since the war period.

Timely data on both production and distribution are absolutely essential to the fullest development of business and industrial management, elimination of waste both material and physical, standardization and research. And the more timely the data the greater its value. In the past it has been impossible for the federal census bureau to collect, tabulate and make public the complete basic data on production under a year and a half, although data on some special industries has been issued within a year after the taking of the census.

The Census Bureau is making every

effort this year to collect the current data on production in record time, and hopes to make the summary figures available to the public many months ahead of the previous censuses. The success of the government in this task will depend almost entirely upon the co-operation received from manufacturers in furnishing the basic data required.

The manufacturers of the nation can render a real service to industry by returning these government questionnaires just as soon as the basic data is available. The Census Bureau stands ready to do its part immediately the data is received from the manufacturing plants. The value of the present census of manufactures, therefore, depends upon the co-operation extended by the manufacturers of the nation in making early reports of their 1927 operations.

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## What the World Wants

Listed below are some specific inquiries for American goods received in the Department of Commerce, Bureau of Foreign and Domestic Commerce, at Washington, D. C. To obtain confidential information, it is necessary only for American exporters to apply to the nearest office of the Bureau or at Washington, giving the number or numbers of the inquiry or inquiries in which they are interested. An asterisk (\*) indicates that the inquirer would act as both purchaser and agent.

Austria—\*28320—Radio battery eliminators. \*28320—Radio loud speakers.

France—28321—Radio sets and parts.

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## Extensive Interest Shown in Short-Wave Allotments

Wide interest has been aroused in the public hearings on the radio short-wave situation as indicated by the number of applications which have been received for short-wave licenses and the Federal Radio Commission has again changed the date of the public hearings to January 17 at 10 a.m. to allow more time for the presentation of claims to the service.

Among those applying to be heard are:

Newspaper services; communication companies—domestic and trans-oceanic; airplane operating companies; navigation companies; railroads; department store chains; interurban bus systems; electric power systems; mining, oil and lumber companies; farm co-operative organizations; motion-picture producers; police and fire alarm systems; forest and watershed patrols; ranch owners; remote resorts and hotels; operators of facsimile transmission services; radio manufacturers; television inventors; radio broadcasters; packers and shippers; geologists.

In addition, representatives of the Army and Navy and of other Government services which operate or supervise short-wave communication systems, ship compasses, ship beacons, fog signals, airplane services, airplane beacons and miscellaneous short-wave systems are also expected to attend and to tell of the developments which they are making and which might be affected by assignment of nearby short-wave channels to commercial services.

Representatives of each class of service applied for will be particularly invited to discuss:

(1) The dependence of such service upon short-wave radio rather than wire or other means.

(2) The humane, social and economic importance of their proposals.

(3) The number and position of channels believed available for such service.

(4) Power required and interference likely to be caused to other services and other countries.

(5) The probable total number of applications which will be made for such service within the next five years by all applicants in their class.

All persons who feel that they can contribute information for the benefit of the commission are invited to be present and to take part in the discussion.

---

## Temple, Inc., Issued Patent

On November 22, 1927, Temple, Inc., Chicago, Ill., was issued patent No. 1650307, in the name of Fred W. Temple, vice-president of this company. The title of the patent is: "Molded Articles and Methods of and Apparatus for Producing Them." This patent covers exceptionally broad claims and places Temple, Inc., in an excellent position as an air column speaker manufacturer. This patent is one of a series applied for by Fred Temple.

---

## R.M.A. Co-operating with Manufacturing Census

The U. S. Department of Commerce has enlisted the aid of the R.M.A. in preparing the second biennial census for 1927 of American manufacturing. A field representative of the Bureau of the Census is being supplied with information at R.M.A. offices and on about January 10, the questionnaires will be sent to radio manufacturers. The Bureau anticipates that every manufacturer will have his records in shape to make necessary returns and the R.M.A. urges its members to co-operate in order that the census may be as complete as possible.

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## Takes R.C.A. License

The Day-Fan Electric Company, Dayton, Ohio, is now licensed under patents owned or controlled by the Radio Corporation of America.

---

## N.E.M.A. Adopts Standards

New standards have now been adopted by NEMA which are intended to clear the technical vocabulary of manufacturer and user. The new standards deal with the question of receiving set control, and define "multiple selector" as "that method of manual tuning adjustment in which mechanical means are provided for setting independently each of two or more tuned circuits or groups of tuned circuits to resonance at any frequency within the range of the device."

The NEMA standard adopted last July covering master selector reads:

"That method of manual tuning adjustment in which one mechanical means is used to bring all the tuned circuits, simultaneously into approximate resonance with any desired frequency within the range of the device, and additional auxiliary means are provided to bring one or more of the tuned circuits into exact resonance."

---

## Issues Commerce Bulletins

The following bulletins may be had from the Department of Commerce, Washington, or any of its branch offices, for 10 cents each: "The Electrical Equipment Market in Chile," and "The Guianas, Commercial and Economic Survey."



# "BRAIDITE"



### Hook-Up Wire

The Biggest Seller Because it is the most Specified

In all the popular circuits described in the leading radio magazines and newspapers throughout the country. Corwico Braidite is specified because of its many exclusive features. Corwico Braidite enables the set builder to build the most efficient, neatest and workmanship-like looking set in the quickest possible time and at the least possible cost. Although far superior, Braidite costs less than ordinary hook-up wires. Mention Braidite in your local ads and display it in your windows and on your counters.

25 ft. solid copper core, list per carton 30c. 25 ft. stranded copper core, list per carton, 35c.

(Order a sample carton today)

**"Corwico" Products**

- Antenna Wire (Solid, Stranded and Braided)
- Braidite Hook-Up Wire
- Complete Aerial Kits
- Magnet Wire
- Battery Cable
- Bus Bar Wire
- Hook-Up Wire
- Lead-in Wire
- Annunciator Wire
- Loop Aerial Wire
- Litz Wire
- Flexible Wire

**CORNISH WIRE COMPANY**  
30 CHURCH STREET, NEW YORK CITY



**Cater to the Demand!**

## TRUVOLT

### Wire Resistances

THE complete Truvolt line of Fixed and Variable Resistances meets all requirements of the fans for battery eliminator work and power sets.

Electrad's engineers have brought out these resistors. Their unique design affords maximum heat radiation surface. This results in exceptionally long life. No come-back with these resistances. They will fulfill your customer's highest expectations. Stock and sell these money-makers!

A Full Line of Variable, Fixed and Tapped Wire Wound Resistances for all Radio Purposes

Write for Truvolt Circulars and full information.

Dept. 15-D, 175 Varick Street, New York, N. Y.

# ELECTRAD

## CONDENSERS

for the Manufacturer

WE ARE equipped to produce in quantities, any type of paper condenser or any combination of capacities, for any working voltage up to 1,250 volts D.C.

We will be pleased to quote prices upon receipt of blue prints of your requirements.



2317 Calumet Avenue



# Check Your Condensers

Sprague Hi-volt Midgets meet every requirement in A. C. set construction. Small, compact and dependable, they are safe for continuous A. C. operation up to 550 volts, 60 cycles, and up to 850 volts D. C.

Waterproofed with asphalt covering and special process of triple impregnation. Capacities from .00007 to .1 MFD, in new direct-to-panel eyeletting model.

SPRAGUE SPECIALTIES COMPANY  
Quincy, Massachusetts



### CLIP TIME OFF WIRING JOBS

BY USING



Approved by the Underwriter Lab.  
Cartons of 100 — Standard Package 1000



An Insulating Cap with a split screw that bites twisted wire ends.

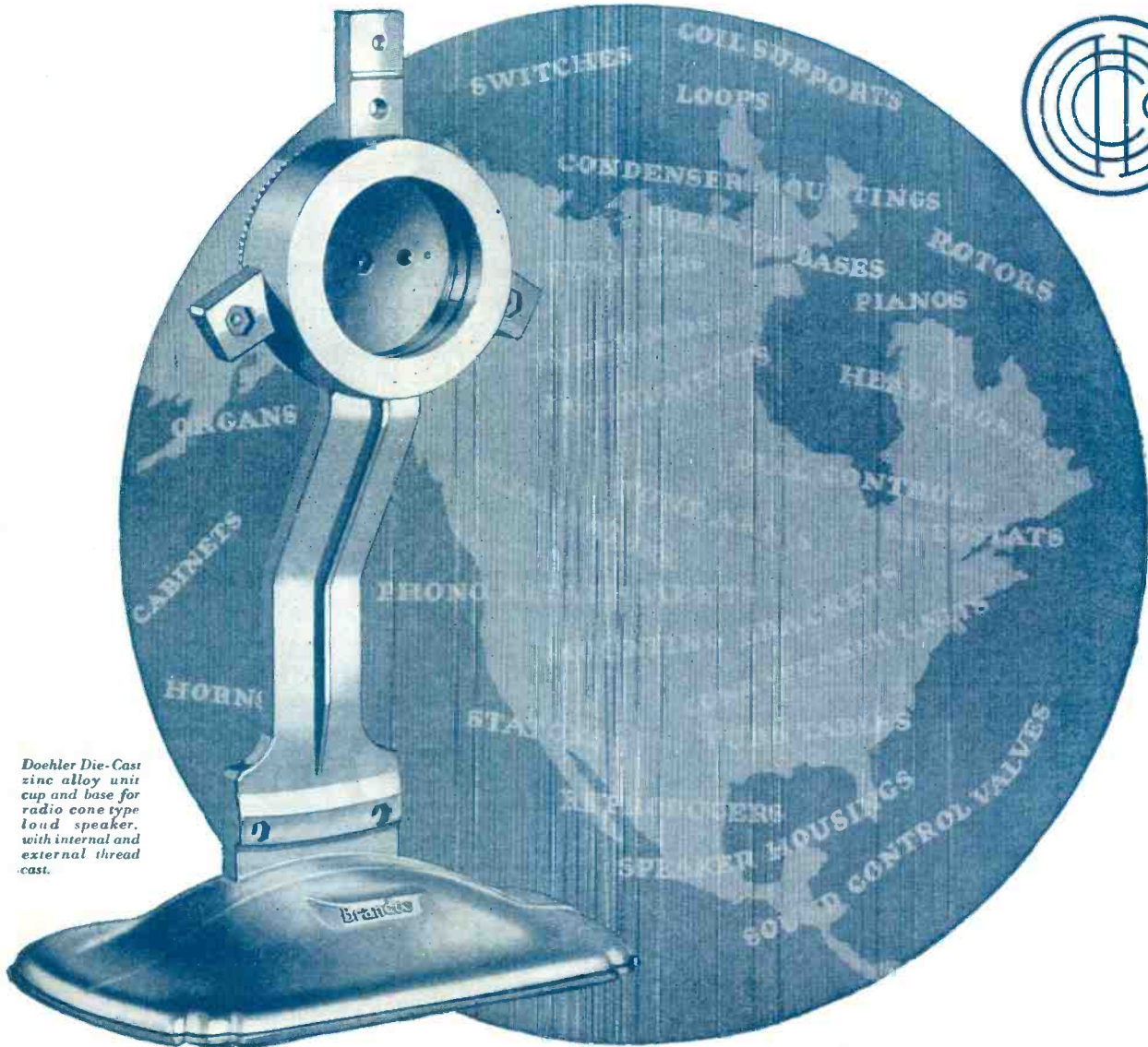
For Free Working Samples Sign Below and Mail

Name \_\_\_\_\_

Address \_\_\_\_\_

COLT'S PAT. FIRE ARMS MFG. CO., HARTFORD, CONN.

# THE WORLD'S LARGEST PRODUCERS OF DIE-CASTINGS



Doehler Die-Cast zinc alloy unit cup and base for radio cone type loud speaker, with internal and external thread cast.

*T*HERE is but one standard by which the Doehler organization gauges production . . . the best. This uncompromising attitude has attracted . . . and held . . . the patronage of America's greatest industrial enterprises. Since 1906 the leadership of Doehler Die Castings has rested on engineering and metallurgical expertness . . . plus the mechanical resources to insure vast production. And now, in 1927, three complete Die Casting plants and a separate division for assembly, makes the certainty of deliveries a fact beyond even unusual contingencies. ☐ Consider us at your service in solving YOUR Die Casting problems.

# DOEHLER DIE-CASTINGS

Also designers & manufacturers of DOEHLER Vending Machines for selling, sampling and advertising purposes.

# First choice

*First choice for uniform high quality . . . unvarying, consistently fine results . . . absolute dependability!*

*First choice of leading set manufacturers . . . professional builders . . . eminent engineers . . . and radio fans!*

*First choice during past years . . . first choice for years to come!*

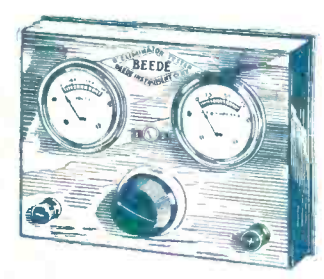


DURHAM

METALLIZED

RESISTORS & POWER OHMS

International Resistance Co., Dept. J, 2½ South 20th St., Phila.



## Absolutely Essential New Beede "Service" Type "B" Eliminator Tester

Needed by every Jobber and Dealer Service Man. Nothing like it! Compact, Accurate Volt and Milliampere readings. Switch enables you to disconnect Milliammeter so that it can be used separately for testing set load. Backed by usual Beede Guarantee. A Precision instrument at **\$12<sup>00</sup>**<sub>List</sub>

**There's a Beede Meter For Every Battery Need**

*Ask your jobber or write for our new catalog.*

**BEEDE ELECTRICAL INSTRUMENT CO.**  
136 Liberty St., New York

BEEDE METERS

MR. DEALER: YOU SHOULD HANDLE THESE POPULAR, FAST-SELLING

## FROST-RADIO ACCESSORIES



**FROST FONES**  
\$3.00 \$3.50  
\$6.00

The best-selling head fones made. Every DX hunter needs a pair. Aluminum shell or Bakelite shell type. Order today.



**FROST-JAC-BOX**

One of our most popular accessories. Use it for increasing the jack capacity of any set. Complete with cord and plug. List. \$2.50. You can sell a lot of these when you display them in your store.

**FROST-ADAPTERS**

Genuine Bakelite No. 611. List 60c., changes UV199-C299 to UV base. No. 540 changes UX199-CX299 to UV base. List. 25c.



HERBERT H. FROST, INC.  
Main Offices and Factory, ELKHART, IND.

HERBERT H. FROST, INC., ELKHART, IND.  
Tell me more about your accessories, including Frost-Fones, Frost Jac-Boxes and Frost Adapters, as advertised in *Radio Retailing*, January.

Name .....

Address .....

City ..... State .....

## One Dollar!

I am sending my dollar. Enter my subscription to *Radio Retailing* for a year. I'm interested in having the tried and tested sales and store plans, ideas and methods of the most successful radio dealers everywhere. I can use their successful ideas on organizing, selling, financing, managing, advertising, displaying, demonstrating, servicing. Start my subscription with the next issue, please.

**RADIO RETAILING,**  
Tenth Ave. at 36th St., New York City

NAME .....

STREET .....

CITY ..... STATE .....

NAME OF COMPANY .....

BESIDES RADIO WE SELL.....

*Mail this coupon today*

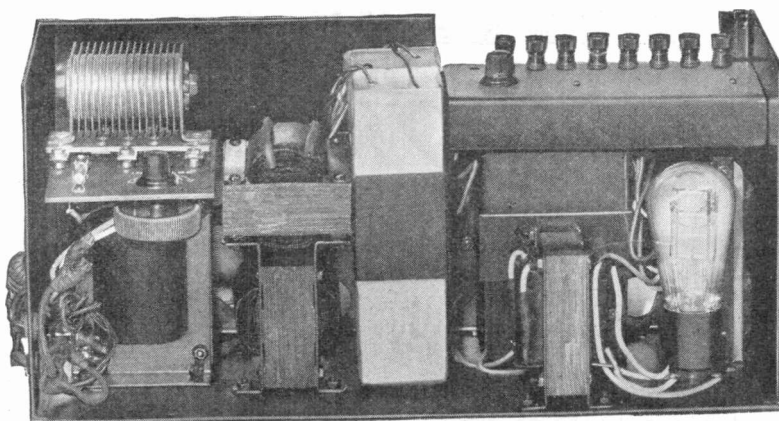
# The New Distributor's Model

## Sentinel

### "BONE-DRY"

## A·B·C

(Stripped Model)



## —completely Electrifies

No need to sacrifice or "junk" your over stock of battery operated sets. Turn them into genuine all-electric receivers by installing the Sentinel thoroughly tested and guaranteed A-B-C Power Pack. Instead of cutting prices to move merchandise, outstrip competition by offering greater value.

Sentinel A-B-C Power Pack is quickly and easily installed. No liquids of any kind are used. No acids to spill or send up objectionable fumes.

Will fit in battery compartment of any console model; when used with table model receivers installation may be made in basement or nearby closet.

Allows line voltage adjustments to get best results from any type of D. C. tubes.

Write today for complete specifications and low net prices.

## Any Battery Operated Set Up To 6 Tubes

*At a Surprisingly  
Low Net Price*

Marvelous In  
Performance  
Easy to Install  
*Absolutely*  
*Bone-Dry*  
No Liquids or  
Acids Used

*Manufactured and Guaranteed by*

### Sentinel Manufacturing Company

9705 Cottage Grove Ave.

Chicago



# ARBORPHONE

## 1928 A. C. Radio

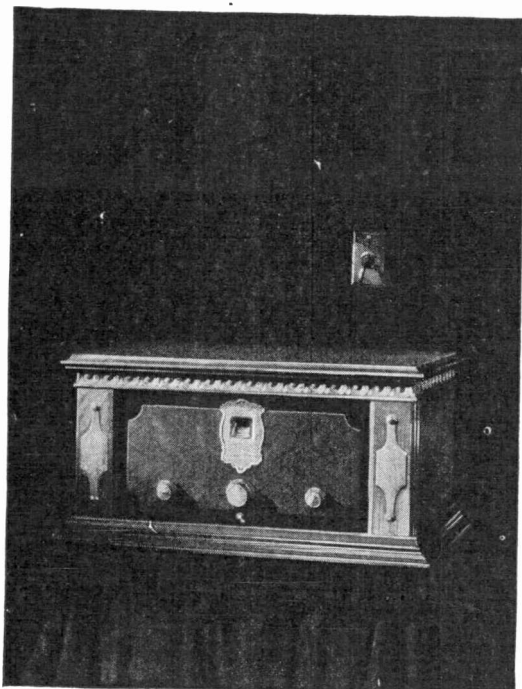


TABLE MODEL 35

*The Finest  
A. C. Radio  
in America*

*Loftin-White Circuit and other exclusive features*

Uses Radiotron or Cunningham A. C. tubes—entirely self-contained—power units built-in—objectionable A. C. hum eliminated—A. C. volume control perfected—fully adjustable to variations in house current voltage—master control switch on front panel—exceptional tone quality and volume from push-and-pull power amplifier—equally good reception at every wave-length due to Loftin-White constant coupling—non-reactive plate circuit makes it entirely independent of tube capacity.

*The perfected A. C. radio*

**No batteries—operates from the lamp-socket**

The Model 37 Series is the lowest priced Licensed A. C. radio on the market. It has all the tone quality and selectivity for which the battery operated Arborphone has always been famous, plus the convenience and salability of lamp-socket operation.

A reasonably priced A. C. radio of recognized quality is what the public will buy now. This is a real selling opportunity for good dealers.

*Write your jobber or us for detailed information about these fine radio receivers and the twenty-four page booklet explaining the famous Loftin-White Circuit as perfected in the Arborphone.*

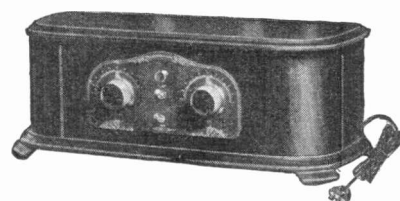


TABLE MODEL 37

A true A. C. radio of Arborphone quality for only \$78 (less tubes and "B" eliminator).

You can sell a high-quality A.C. radio at a price like this.

**ARBORPHONE DIVISION  
CONSOLIDATED RADIO CORPORATION**

Ann Arbor, Michigan

Licensed under Radio Corporation of America, General Electric Company, Westinghouse, Electric & Manufacturing Company, American Telephone and Telegraph Company, and Loftin-White patents.



# CASE

## New Model 63C Console

### All-Electric

**6-Tube  
Shielded  
Neutrodyne**

*Chassis*

One piece heavy metal, nickel-plated with beautifully enameled top. Brass and copper parts polished and lacquered.

*Control*

Single control; no compensators; illuminated drum; scale calibrated in meters and kilocycles.

*Power*

Tested filament heater transformer with high grade B and C Eliminator.



**Retail  
Price, Less  
Tubes, \$230**

*Console*

Reddish brown walnut, beautifully finished and hand rubbed. Front panels exquisitely grained. Doors swing flat with sides. Closing doors shuts off power. Hinged top, removable back. Dimensions — 44 in. high, 25 in. wide and 20 in. deep. One of the most handsome and carefully made radio cabinets ever produced.

*Speaker*

Specially designed, low pitched with 46 inch air column and output filter.

Using Either  
R. C. A. or Cunningham A. C. Tubes

Licensed Under Patents of  
Radio Corporation of America and  
Associated Companies  
Hazeltine Corporation  
Latour Corporation

**Indiana Manufacturing & Electric Co.**

Marion, Indiana

Division of

**UNITED STATES ELECTRIC CORPORATION**



*Everything In Radio — Everywhere In America*

# ANNOUNCEMENT

To confirm their belief that the radio cabinet should be chosen with a desire to complete the harmonious ensemble of the living library or drawing room of to-day and to assist in furthering this desire

**Radio-Master**

announces

The exclusive services in cabinet design

of

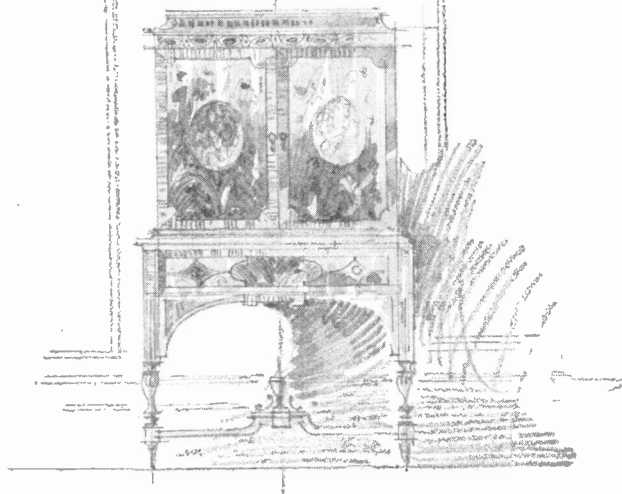
• MR OAKLEY V. WEEKS •

Those interested in cabinets designed and built to accepted furniture standards

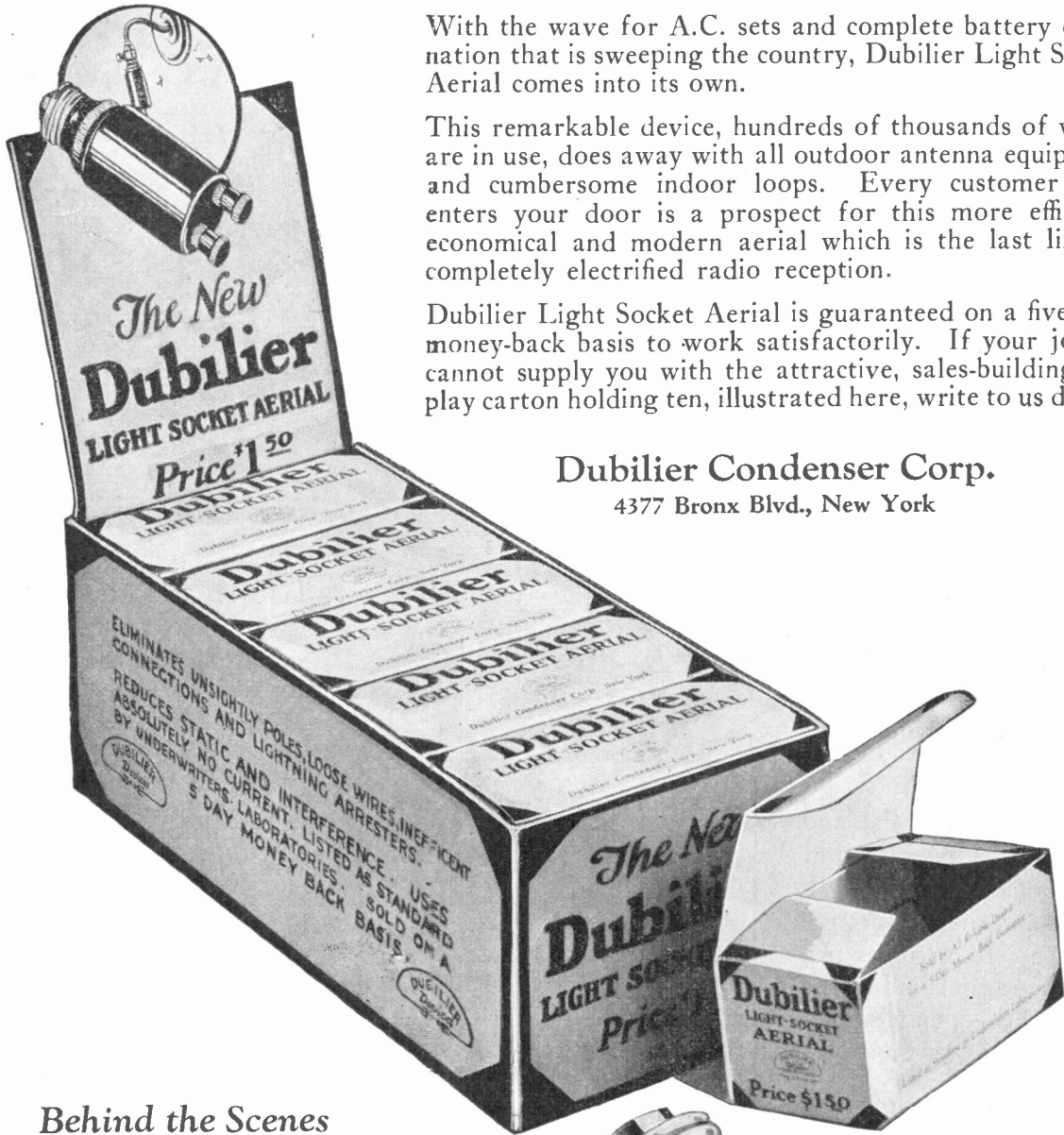
inquire of

• RADIO MASTER CORPORATION •

• BAY CITY MICHIGAN •



# Dubilier Light Socket Aerial



With the wave for A.C. sets and complete battery elimination that is sweeping the country, Dubilier Light Socket Aerial comes into its own.

This remarkable device, hundreds of thousands of which are in use, does away with all outdoor antenna equipment and cumbersome indoor loops. Every customer who enters your door is a prospect for this more efficient, economical and modern aerial which is the last link in completely electrified radio reception.

Dubilier Light Socket Aerial is guaranteed on a five-day, money-back basis to work satisfactorily. If your jobber cannot supply you with the attractive, sales-building display carton holding ten, illustrated here, write to us direct.

Dubilier Condenser Corp.  
4377 Bronx Blvd., New York

## Behind the Scenes

Dubilier maintains one of the largest and most complete research laboratories of its kind in the world.

Back here tests and experiments are carried on without regard to time or cost.

Much of the progress made by Dubilier in their eighteen years of experience in this highly specialized field can be traced directly to this extensive research work.



**\$1.50**

List Price

# Bremer-Tully

## COUNTERPHASE RADIO

Why is it superior?

“Direct From the Socket”

What does it mean?

“Single Control”

What is it?



“A. C. Operation”

Is it satisfactory?

“No Eliminator”

It is true?

“Tone Quality”

How Can I Get It?

“Better Tuning” — the 80-page B-T Radio Booklet, now in its 13th Edition—satisfactorily answers these questions and many others.

It is interesting—concise and to the point—a booklet that can be profitably read by both the dealer and the prospective buyer alike. It discusses pro and con the radio trend of the day in easily read, understandable style.

Your copy is here—*send for it.*

*The following reproduced from December issue Talking Machine Journal highly endorses “Better Tuning.”*

“One of the most interesting radio books published, is the one known as ‘Better Tuning.’ A small booklet of 84 pages issued by the Bremer-Tully Mfg. Co., Chicago, and of which, we understand, John C. Tully is the editor.

“This book is just jammed full of information on all phases of radio, and is equal in size to the average text book.

“The issue at hand contains facts regarding everything from Illusory Harmonics to Battery Connections, and is written in a clean cut, high grade manner, devoid of superlatives and giving real compact information.

“It is not only a worth-while book, but worth reading by any radio man, no matter what set he sells.”

Three months ago Bremer-Tully began shipping A.C. sets.

Since then letters have poured in from every section of the country attesting their excellence and dependable performance.

The stability of the A.C. Electric Counterphase is thus assured and B-T recommend the A.C. sets as highly as the D.C. models.

Sell the B-T Counterphase and you sell satisfaction—goodwill, prestige and repeat orders result.

The B-T franchise is a bigger asset each day—details on request.

*For convenience use coupon to send for your copy.*

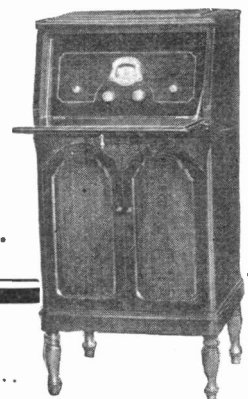
### Bremer-Tully Mfg. Company

520-532 So. Canal St.,

Chicago, Ill.



Counterphase 8-17 AC provides many distinct and exclusive features — Radio's greatest value.  
Price, less tubes... \$365.00



An excellent value—outperforms sets selling at several times its price. Compact, attractive.  
Price, less tubes... \$230.00

Please Send “Better Tuning”

Name .....

Address .....

City ..... State .....

Dealer ..... Sets ..... Parts.....



Zenith Model 16  
8 Tubes

World's largest manufacturers of High Grade Radio—3 different circuits—6, 8 and 10 tubes—battery or electric—some with antenna—some with loop—others without loop or antenna—16 Models . . . . .

**\$100 to \$2500**

**T**HE essential requirement in radio manufacture today is Flexibility—production must be geared for quick response to the public desire. The speed with which Zenith answered the overwhelming demand for All Electric Radio illustrates the value of flexibility in manufacture. From the beginning Zenith Radio has always been salable merchandise, keeping well in the forefront of popular favor. The organization behind the Zenith dealer is “on its toes.” Such bugaboos as distress stocks, forced sales and dumping are unknown in Zenith history.

*Licensed only for Radio amateur, experimental and broadcast reception.  
Western United States prices slightly higher.*

**ZENITH**  
TRADE MARK REG.  
→LONG DISTANCE←  
TRADE MARK REG. **RADIO**  
3620 IRON STREET - CHICAGO

# Prosper with Kellogg in 1928

Kellogg Radio was the outstanding success  
of the 1927 season



Kellogg's A-C operation means no batteries  
to worry the user — or to cause service  
expense to the dealer



Kellogg is true A-C radio, using Kellogg's  
own A-C tubes



Limited production restricted the territory  
that could be opened up last fall



Increased production for 1928 creates  
money-making opportunities for new dis-  
tributors and dealers

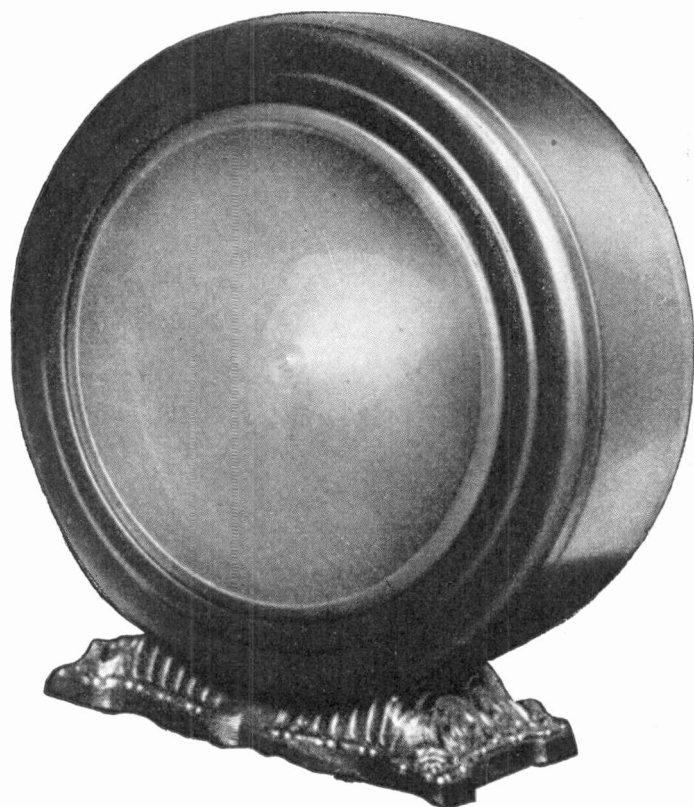


Applications are now being considered

**Kellogg Switchboard & Supply Co.**

Dept. 54-80, Chicago

# Values Like This Build Your Radio Trade



## QUAM LOUD SPEAKER

\$17.50  
Slightly  
Higher West  
of Rockies.  
In Canada,  
\$24.50.

{ Sounds like, looks like and is a \$35 value }

“Built on the Stretched Reed Principle” like the human vocal cords. Unmatched range—full, accurate tone reproduction—no blasting. Beautifully and permanently made—requires no adjustment at any time.

Make any test you wish, compare with any speaker at any price, and you will see why the Quam is so enthusiastically received by the public and welcomed by the dealer. It is truly—

“A Wonderful New Voice for Radio”

*Write for circular and discounts, or  
better still, send for a personal trial.*

## QUAM RADIO CORPORATION

9718 Cottage Grove Ave.

Chicago, Ill.

# ANNOUNCING A MIGHTY MERGER OF MEN AND RESOURCES

**S**ONORA ANNOUNCES to all Sonora dealers and representatives the merger of four great companies—the Sonora Phonograph Company, the Bidhamson Company, the Premier Laboratories, and the Liberty Electric Co.

With this merger of brains, men, money, resources and experience has been born a new and progressive force in the music industry.

The Bidhamson Company numbers among its officers and organizers those captains of industry, John Hays Hammond, Lewis Kaufman, James J. Burden, E. F. Hutton, Harris Hammond, and Anthony J. Drexel Biddle Jr. It holds valuable patents.

The Premier Laboratories, headed by well-known scientists, holds patents covering loud speakers, electrical recording apparatus and electrical phonographs. These patents have never been divulged to the public or the trade and constitute in themselves new and major advancements in the acoustic field.

The new corporation, incorporated in New York State and entirely financed by its board of directors and present stockholders, has been named the Acoustics Products Company. P. L. Deutsch of Chicago, who developed the phonograph division of the Brunswick-Balke-Collender Company, is president.

Backed by this amalgamation of interests the Sonora

Phonograph Company retains its name and identity as a separate corporate structure, with P. L. Deutsch as its new executive head.

New things are in store for Sonora and Sonora dealers, new and greater things.

Early in the New Year, Sonora will contribute to the realm of music important new and epochal achievements destined to create worldwide attention.

Watch for further announcements on a matter which may profoundly affect the policies of the music, industry and trade. During the intervening months before the appearance of the new Sonora products, distribution and sale of the present popular Sonora line of radios and phonographs will be energetically prosecuted and all Sonora distributors and dealers may remain confident in the assurance of a sustained effort and a constructive policy.

The fact that in 1927 Sonora sales were more than double those of the preceding twelve months, lends stability to the immediate situation.

With this new merger so triumphantly consummated, the year 1928 and those to follow will be known as Sonora years—years in which the high records of 1927 will sink into comparative insignificance. Many of the foresighted are now finding it wise to secure more information about Sonora, its products and its prospects.

SONORA PHONOGRAPH CO., 64 EAST JACKSON BOULEVARD, CHICAGO, ILL.

**Sonora**   
CLEAR AS A BELL  
RADIOS-PHONOGRAPHS





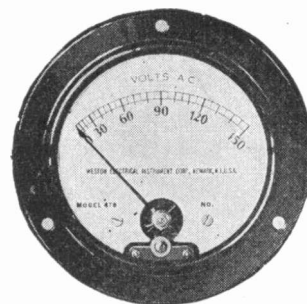
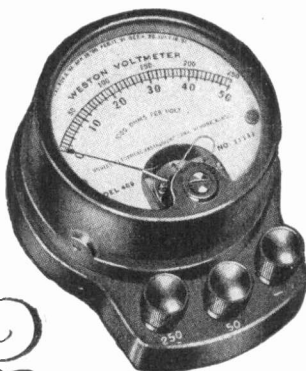
**Model 519  
Radio Set Tester**

One of the most important radio instruments, and the most useful to the dealer, ever developed. Solves all the problems of set servicing. It has a high range of 600 volts and a current range of 20 milliamperes. The universal standard for set testing and advanced set owners' use.

# A NEW YEAR'S STOCK SUGGESTION

**D. C. Model 489  
1000 Ohms per Volt**

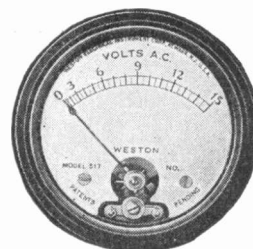
A remarkably fine instrument with high internal resistance for giving the true voltage measurement of the output of B-Eliminators, as well as for any other D. C. voltage testing. It has a double range combination of 250 50 or 200/8 volts with a self-contained resistance of 1000 ohms per volt. A multiplier for increasing the range to 500 volts can be obtained when required.



**D.C. and  
A.C.  
3 1/4-in. diam.  
Also  
Thermo-  
Couple  
Types**

**Panel Type—  
Flush Style  
Instruments**

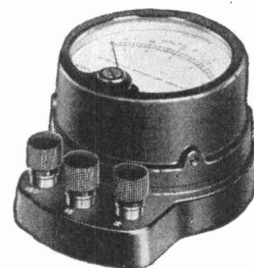
A complete line of 2" and 3 1/4" diam. D. C. and A. C. panel instruments for your own testing requirements and for sale to set builders and amateur transmitters. Made as Voltmeters, Ammeters and Milliameters. Unusual electrical characteristics. The A. C. instruments have an accuracy of 2% on any commercial frequency, and may be left in circuit continuously. High internal resistance and excellent damping. Exquisite design and workmanship, yet moderately priced.



**A.C. and D.C., 2-in. diam.  
Also  
Thermo-Couple Types**

**Portable A.C. Instruments**

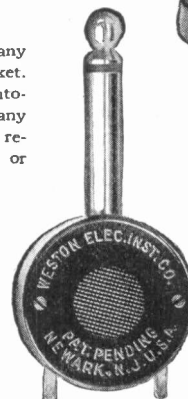
Small, compact instruments, in mottled red and black bakelite cases, made as Voltmeters and Ammeters, for testing the new A. C. receivers. These models represent a distinct achievement in portable A. C. meter design and construction. The voltmeters are made with exceptionally high internal resistance, self-contained in double ranges up to 600 volts.



**Model 528  
Portable Types  
for A.C. Testing**

**Radio Plug**

The greatest success of any radio item on the market. Millions now in use. An automatic radio plug that fits any standard jack. No tools required to instantly attach or detach telephone terminals.



**DEALERS—  
All the signs point  
to a BIG SALE of  
Radio Instruments  
in 1928**

Great changes are coming. Re-allocation of wave lengths, synchronization of stations and clearing of broadcasting channels for increased distance and better reception—all these required adjustments forecast a banner sales year for reliable radio instruments. Operators of all classes will be obliged to cooperate with this nation-wide program by regulating and controlling their equipment within closer limits than ever before.

The rapidly increasing sale of Weston instruments over all other makes indicates a wider extension of radio knowledge and the recognized need for instruments of the highest quality and most dependable performance. Professional and home set builders, service experts, manufacturing and laboratory engineers, and amateur station operators know by experience that "Westons" give the best service. Inferior substitutes, at whatever price, are generally unreliable and useless.

Tie in with Weston Service and enjoy the profit-making, quick turn-over advantages of handling the Weston line—for forty years the world's precision standards. We suggest your consideration of the models shown here. Dealers everywhere find they meet an exact need. Your jobber will supply you and help you select the most popular ranges.

**WESTON ELECTRICAL INSTRUMENT  
CORPORATION**  
25 Frelinghuysen Ave., Newark, N. J.

**WESTON  
RADIO  
INSTRUMENTS**



## PUT IT DOWN ON YOUR PAD

—that the year 1928 will be the biggest year Guthrie has ever known. The biggest because Guthrie's new seven tube, single dial, AC Tube set has more value packed into it than any radio you've ever heard of.

The biggest year—because these sets are selling fast *now*—and will sell faster as the months roll up added popularity and demand—because *value* in radio is being demanded today as never before, and Guthrie's got it! This new Guthrie set has illuminated dial, push-pull amplification, designed for AC power tubes but also may be operated with



batteries or battery eliminators. Furnished in Table cabinet, or Console chassis only.

\*A true AC tube set—no trickle chargers or batteries of any kind—just plug into the light socket and you're all set! Price quoted less tubes.

Write or wire your jobber today.

**The GUTHRIE Co.**  
ELYRIA, OHIO



## SANDAR will make it so!

HERE'S another year and here's SANDAR still riding successfully along on a wave of popularity, making new sales and new friends every day, making 1928 even happier for the dealers who handle SANDAR and for the fans who purchase it.

Lower priced than any other licensed speaker of its size—\$27.50—attractive in appearance, perfect in performance, the Sandar Senior now has a popular, healthy running-mate in the Junior model, retailing at \$16.50. Both of them, from all reports, are destined to build up even better records during the current year.

Sandar franchises are valuable assets these days—they mean prestige and profits. Why not seize a real opportunity by signing up Sandar! Write TODAY for terms and full information.

SENIOR Model \$27<sup>50</sup>  
(No. 25)  
West of the Rockies \$30<sup>00</sup>

JUNIOR Model \$16<sup>50</sup>  
(No. 21)  
West of the Rockies \$17<sup>75</sup>

*Licensed under Lektophone Patents*

# SANDAR S P E A K E R

SANDAR CORPORATION, Crescent Plaza Building, Long Island City, New York

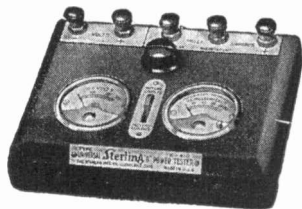
*"Something wrong with the set? Sure, I'll send our service man over right away"*



## Your Service Man's Time is Money

*... money made or lost!*

**Y**OUR service man can also sell. But, the best service man is only as efficient as the instruments he uses. Equip your service men and your store with complete portable special-purpose testing equipment that is designed for rapid servicing on all models of radio sets and power units, including the new electrically operated sets.



**Sterling Universal "B" Tester**

A complete portable testing laboratory for Power Units and all D-C circuits up to 300 v. Voltmeter (0-300 scale) and milliammeter (0-100 scale) are used independently or in combination. Light, compact, complete with plugs and adapters. R-410, \$30.00.



**Sterling "Universal Service" Tube and Set Tester**

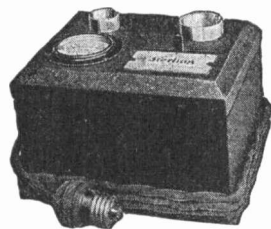
Used with batteries or Power Units. Tests large and small tubes including 171 type. Milliammeter shows amplifying strength of tube. Combination voltmeter tests both the "A" and "B" voltages, also locates defective circuit wiring, open transformers, poor contacts in sockets, etc. Voltmeter 0-10, 0-200 scale, Milliammeter 0-15 scale. R-412—List price • \$25.00.



**Sterling "B" Power Tester**

A high resistance, low priced meter for checking the output of any Power Unit or B batteries and other D.C. circuits up to 300 volts. A necessary unit in the radio service man's equipment.

R-415 D. C. Model, List price \$8.50  
R-417 A. C. Model, for testing line voltages and all A. C. circuits up to 150 volts, List price • • \$7.50



**Sterling "Metered" Tube Reactivator**

For large and small tubes, including 300-A, 171 and all tubes having thoriated filaments. Emission meter shows tube needs reactivation, also improvement after reactivation. Handle on back. Complete with adapters. R-403—List prices, 50-60 cycle • • \$12.50; 25-40 cycle • • \$14.00.

THE STERLING MANUFACTURING CO.  
2831 Prospect Avenue • • Cleveland, Ohio

# Sterling

**SERVICING EQUIPMENT**

# "Electrified"

That's the magic word that moves radio sets to-day. You can electrify every radio set in your town with

# Majestic



"A" & "B" electric power units.

**NO** acids. liquids. concealed batteries.

**Majestic Units**

## Improve Radio Reception

Write us for name of your nearest jobber

Grigsby-Grunow-Hinds Co.  
4540 Armitage Ave., Chicago

## Quality at a Sane Price

# PREMIER

"6-in-Line"

## Radio Chassis

AC  AC

## 100% Electric—No Batteries

We offer you chassis only or complete receivers so that you can meet every public demand. Price range from \$100.00 to \$300.00. Big discount to those entitled to receive them. Write today for complete information.

## PREMIER ELECTRIC COMPANY

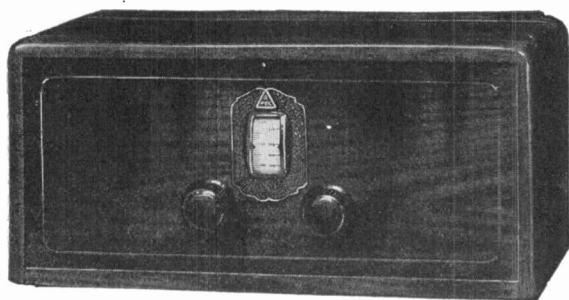
Dept. 524, 3800 Ravenswood Ave., Chicago, Ill.  
Established in 1905—Radio Since 1920



Presents Most Extraordinary Quality at

Startling Low Prices!

Apex, consistently first in radio progress, is again first with the two new neutrodyne models illustrated on this page. Both of these splendid receivers are outstanding values in the world of radio. There is nothing to equal either the Milan A. C. or the Music Chest at their prices.



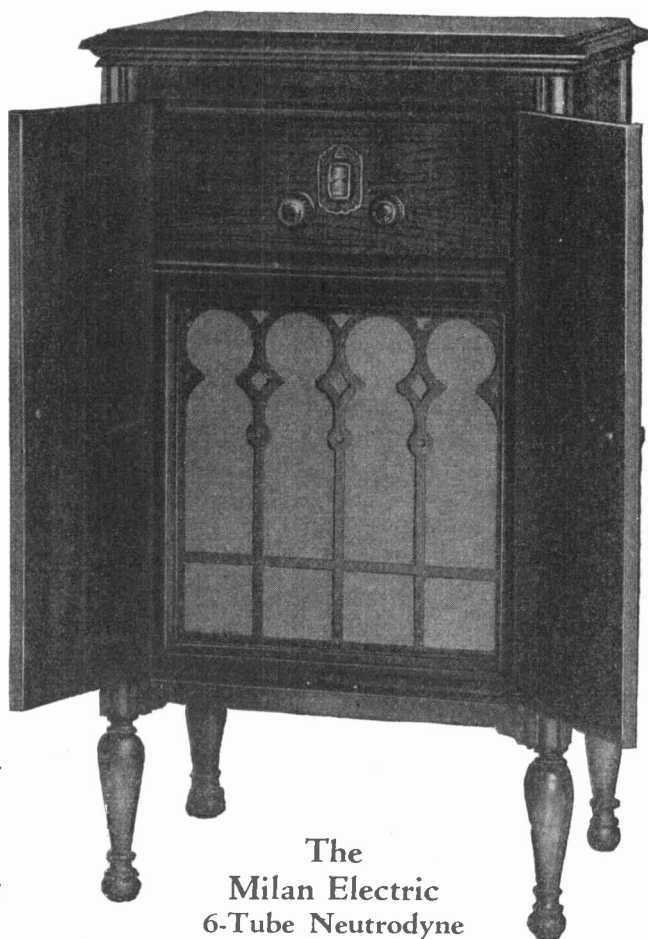
The New 6-Tube Shielded Neutrodyne "MUSIC CHEST"

Less Accessories, \$65



Licensed Under Patents of

Radio Corporation of America and Associate Companies  
Hazeltine Corporation  
Latour Corporation



The Milan Electric 6-Tube Neutrodyne Complete \$220  
(Without Tubes, \$192.50)



Apex Electric Mfg. Company  
1410 West 59th Street, Chicago

Division of

UNITED STATES ELECTRIC CORPORATION

Everything In Radio — Everywhere In America

## For Radiola 17—Watson town

*RCA  
Radiola  
100A  
Speaker  
Built in  
at our  
Factory*



No. 933  
Equipped with RCA 100A  
Speaker expressly for  
Radiola 17

### Steps Ahead

—  
This beautiful  
Solid Mahogany Table  
with the 100A installed  
in a correctly designed  
compartment makes the  
Radiola 17  
More beautiful  
than ever

—  
Boost your business  
with this Table

Radiola Distributors and Dealers, write for literature and prices—they will surprise you.  
**WATSONTOWN TABLE & FURNITURE COMPANY, Watson town, Pa.**  
*Successful Furniture Manufacturers for Thirty-five Years*

# Charles M. Schwab

says:

“We have only begun to explore the field of economic distribution and selling. This, as a necessary phase of developing our production, is industry’s immediate problem.”

Even in an infant industry like Radio, it is not the securing of capital or the mechanics of production that are its major problems, but the distribution of merchandise—Sales.

In its three short years of existence, *Radio Retailing* has been privileged to make some fundamental researches into the problems of radio distribution and selling. These studies have included:

- (a) Surveys of the cost of doing business in the radio industry
- (b) Discussions on the place of the jobber in the radio field
- (c) Statistical studies of radio apparatus sales
- (d) Studies of retail selling methods
- (e) Surveys of methods of financing retail radio operations

At the beginning of the year 1928 *Radio Retailing* pledges itself to continue its studies of the most pressing problem facing American radio business today, that of merchandise distribution.

## Radio Retailing

—A McGraw-Hill publication  
Tenth Avenue at 36th Street  
New York City

Member of ABC and ABP

# Electrify with Exide Super-Power Units

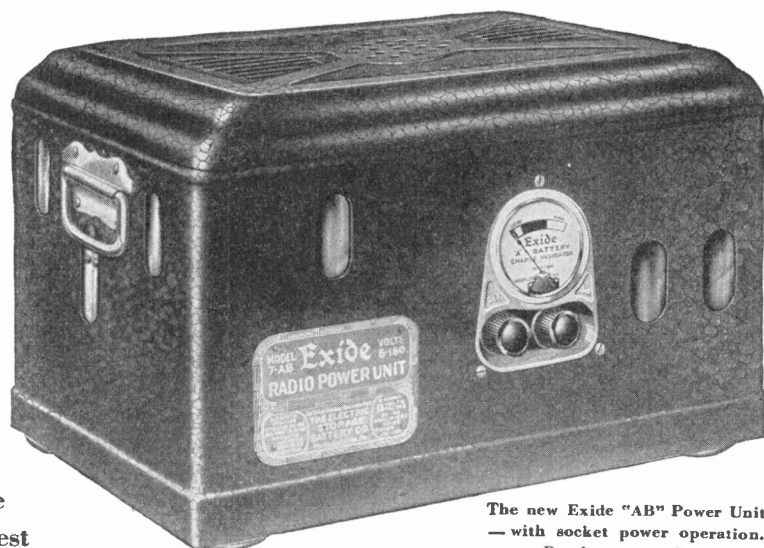
*for the highest-quality  
reception with socket  
power operation*

**T**HERE are always plenty of people who want to buy the best. They are willing to pay for it. They judge a socket power unit by its performance.

Be ready with the Exide Super "AB" Power Unit. Real radio fans will instantly appreciate this unit. For any size set—three tubes or ten tubes—it's the best buy on the market. It is made for the man who wants to get really fine reception; the man who can appreciate the best in radio power engineering.

This unit insures steady, ample power, automatically—power as dependable as the Exide Battery. Its design is simple and efficient with long life in every part. And it is built along pleasing lines—an accessory beautiful in appearance.

The Exide "AB" Power Unit is the finest thing in its field. It is the most advanced development in radio power engineering—constructed on the latest scientific



The new Exide "AB" Power Unit—  
with socket power operation.  
B voltage up to 180.

storage battery principles. It is the production of years of Exide experience in supplying radio power.

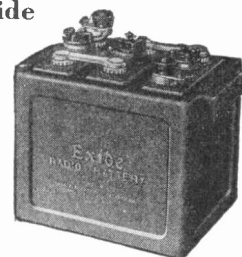
People are learning of these advantages through extensive advertising. This advertising is also telling them about the rest of the advanced Exide line—the Exide "A" Power Unit, the Exide "A" Battery, the Exide "B" Power Unit, the Exide "B" Battery, the Exide Master Control Switch.

Be ready to catch the after-Christmas sales.

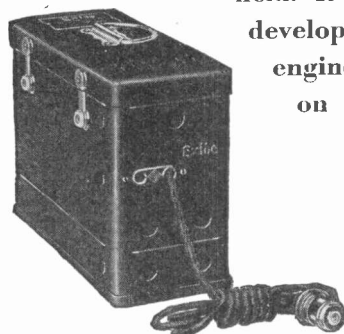
If your stock is not complete, get in touch with us at once.



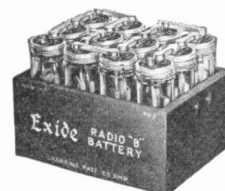
The new Exide "B" Power Unit—ready to supply sustained "B" power to any size set.



Standard Exide 6-volt "A" Battery—also made in 4-volt size. Rugged—built in one piece.



Exide "A" Power Unit in 6-volt and 4-volt sizes.



Exide 24-volt "B" Battery with glass cells. 6000 milli-ampere capacity. Also made in 48-volt size.

## Exide RADIO BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, PHILADELPHIA  
Exide Batteries of Canada, Limited, Toronto

## Can you sell a .36" Power Cone Kit for \$12.50 (List) ?

You don't have to!



Stand \$3.00 extra

**T**HIS kit sells itself with very little boosting.

You offer the prospect a quality unit, with all materials complete. He spends a profitable evening assembling them and has a lively, true-tone cone capable of taking all the power he wants to feed it. He saves from 30 to 50 dollars!

Get the dope and samples.

ACCUSTI-CONE LABORATORIES  
11 N. 7th St. Philadelphia, Pa.

## For 4 YEARS

Tower has led in Sales Volume



\$11.95  
IN THE WEST \$12.95

Adventurer RADIO CONE SPEAKER

Push a line that will guarantee you ~ prestige profit and satisfaction in 1928

TOWER MFG. CORP.  
122 Brookline Ave., Boston, Mass.

## PATENT INFRINGEMENT NOTICE

To Manufacturers, Jobbers and Dealers

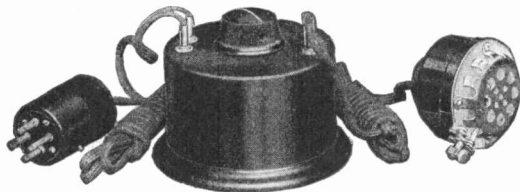
The Elec-tru-tone Corporation desires to call the attention of the radio trade to the fact that it is the owner of

U. S. Patent No. 1,645,491  
Granted Oct. 11, 1927

This patent basically covers phonograph electric pick-up devices that utilize a detector socket plug, with or without volume control and/or blocking condenser.

Licenses are being offered to manufacturers who are now making such devices or who had dies for this purpose completed on or before Dec. 31, 1927.

The Elec-tru-tone Corporation hereby gives notice of its intention to vigorously prosecute manufacturers, jobbers and retailers who sell unlicensed devices of this nature.



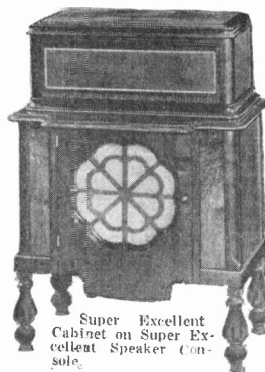
**Dealers & Jobbers** Investigate the Elec-tru-tone; the original electric pick-up for the phonograph and radio set. Truer reproduction—fuller bass—lighter weight—more volume.

THE ELEC-TRU-TONE CORP.  
Hibernian Bldg., Los Angeles

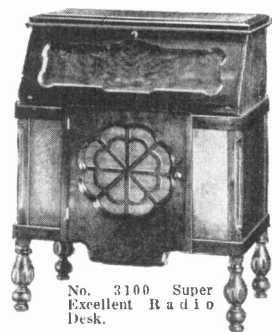
## Popular Radio Furniture

Ehlert Radio Furniture is manufactured by a firm with 40 years' experience in making furniture with regard for artistic beauty. Ehlert quality furniture will sell your table-type receivers.

All we ask you to do is to put our cabinets on your floor and watch your sales increase.



Super Excellent Cabinet on Super Excellent Speaker Console.



No. 3100 Super Excellent Radio Desk.

Supplied with or without 60-inch non-vibrating air column orthophonic tone chamber.

Suitable for use with Radiola Models 16 and 17, Atwater Kent (any model), Crosley, Freshman, Kolster, Planstiehl, and many other popular radio receivers. Also now used with latest circuits designed by Tryman, Canfield, Silver-Marshall, Nine-in-Line and others.

**Ehlert**

Send for catalog of complete line with full descriptions.

RADIO FURNITURE CO.  
2468 Lincoln Ave.  
CHICAGO ILLINOIS



# The TRUTH About "B" Batteries!

WHAT tea, coffee and flour mean to the grocer... What the sale of records represents as related to talking machines...



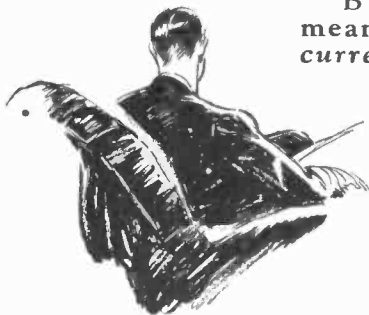
That is exactly what Ray-O-Vac "B" Batteries mean to dealers in radio.

"B" Batteries have been aptly termed "the bread and butter line" in the radio field. They bring a steady, dependable flow of valuable "repeat" profits.

\*\*\*\*

Far-sighted dealers are losing no opportunity to give their customers the TRUTH about "B" battery power.

They are thereby serving the best interests of their customers as well as themselves.



"B" battery power means *true direct current* — smooth, quiet, dependable — unaffected by outside factors — never subject to sudden cut-off.

Only with

battery power can the radio owner be certain of getting the fullest measure of pure tone value and radio enjoyment.

\*\*\*\*

Ray-O-Vac "B" Batteries supply "B" battery power at its best.

The widely-discussed Ray-O-Vac "Cell-Pocket Construction" is Ray-O-Vac's own patented feature — an unprecedented forward step in "B" battery design — each cell encased in its own insulated pocket.



The difference can be *felt* in Ray-O-Vac's lighter weight.

The difference can be *seen* in Ray-O-Vac's pitchless top.

The difference can be *recorded* in Ray-O-Vac's longer life.

Ray-O-Vac "B" Batteries are being dominantly advertised, in color, in *The Saturday Evening Post* and *Country Gentleman*, and in leading newspapers.

*You can build a bigger battery business with Ray-O-Vac!*

# RAY-O-VAC

FRENCH BATTERY COMPANY, Madison, Wisconsin

Makers also of Ray-O-Vac "A" and "C" radio batteries, Ray-O-Vac flashlights and batteries and Ray-O-Vac ignition batteries.

RADIO IS BETTER WITH BATTERY POWER

# Radio Dealers, Distributors and Manufacturers

## THE "POWER"

### A, B and C

#### Socket Power Unit

(Licensed by R.C.A. and Associated Companies)

#### Converts Battery Sets to A.C. Operation

It's no longer necessary to consider the battery operated sets you have in stock a loss.

You can bring them quickly and easily up to date and put into the class of ready selling merchandise by converting them for AC Tube operation.

The Power A B and C Socket Power Unit plus the Power AC Tube Harness will do the work satisfactorily and economically. Delivers 50 mils at 180 volts "B" Current.

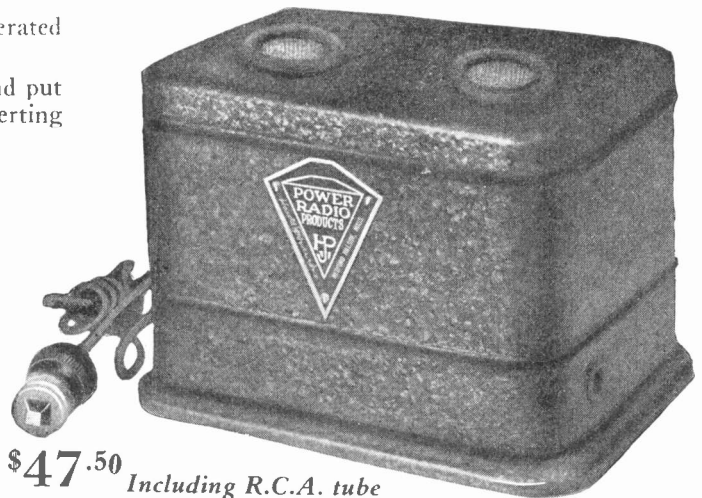
Send for Details of Our Proposition.

*Harold Power, Inc.*

Makers of Socket Power Devices  
Medford, Mass.

#### The "Power" AC Tube Harness

Easier to connect than batteries—  
NEAT—converts sets as by magic  
to AC tube receivers. \$15.00 List.

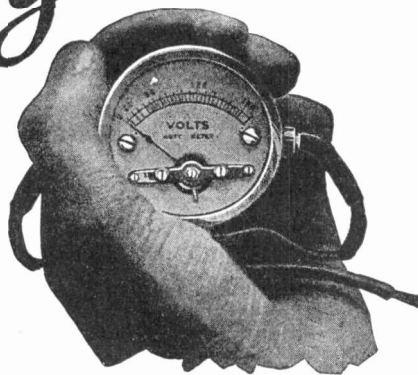


\$47.50 Including R.C.A. tube

*Hoyt*

**A. C.  
POCKET  
METER**

for  
Testing  
Line  
Voltage  
in  
Servicing  
A. C.  
Sets



Accurate information on line voltage at the input of A.C. Sets and Eliminators is essential in Service Work. This is the first test to make, as variation in voltage at this point is responsible for a large proportion of reported trouble with equipment.

Supplied in 2 1/4-in. diameter nicked case; with hand-calibrated scale, rubber-covered leads, and standard plug; packed in a well-made pocket case.

**EASY TO CARRY—RELIABLE READINGS**  
Price 0-150 Volts ..... \$11.00

Send for Catalog "Hoyt Meters for Radio"

**HOYT ELECTRICAL INSTRUMENT WORKS**

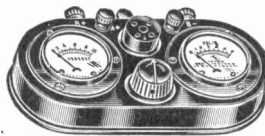
BURTON ROGERS CO.  
Sole Selling Agents  
857 BOYLSTON ST., BOSTON, MASS.

A Laboratory at Your Finger Tips

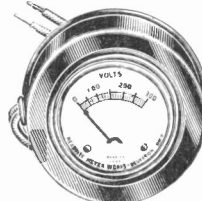
*Readrite*

PORTABLE  
AND PANEL

**METERS**



No. 210 Tube Checker.



No. 346 Voltmeter

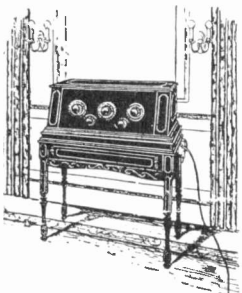
These instruments are not only of value to you; every set owner should have them. It means less worry and more profit for you.

**No. 210 Tube Checker**  
Indispensable for dealers and service men. Quantities of tubes may be checked in a short time, and poor ones weeded out. An invaluable aid in keeping tubes constantly up to maximum efficiency. List \$7.50

**No. 346 Voltmeter**  
A high resistance voltmeter for checking the voltage of B eliminators and radio B battery circuits—something that hitherto required laboratory instruments. Enables the service man or dealer to determine at once the condition of the plate circuit of all tubes. List \$5.00

**Readrite Meter Works**  
6 College Ave. ESTABLISHED 1904 Bluffton, Ohio

## Sell This To Your Trade!



Model 687,  
Cuno Radio Reel

Handsomely finished in nickel and mahogany brown enamel. Complete with automatic ratchet controlled rewinding reel. 25 feet high grade cord and terminals.  
Each .....\$3.75



**RADIO  
CUNO  
REEL**

Sell the idea with your next set. The Cuno Radio Reel gives 25 feet more radius to the Speaker.



Your jobber has these in stock,—order your stock now. Unit package 5 reels, each in attractive individual box. Display card in each carton.

Millions are just waiting to be shown.

**THE CUNO-ENGINEERING CORP.**  
Meriden, Conn.

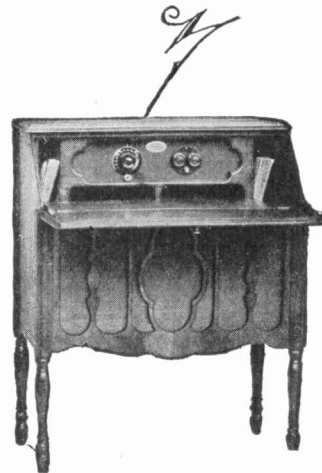
Manufacturers of the famous "Electric-Match" Cigar Lighter for autos and for household use.

Write for illustrated literature.

# Red Lion Cabinet

for  
**THE NEW  
ATWATER KENT**

Model 37 A. C.



Atwater Kent Distributors are now in a position to supply dealers with Red Lion cabinets to fit the new Atwater Kent Model 37 A. C. Radio. This includes the entire line, desk type, console, and chest type cabinets. This will in no way interfere with the regular line of cabinets for Atwater Kent Model 35, 30, 33 Radio.

The big business in radio for 1928 will be in the popular priced field. The new Red Lion-Atwater Kent Combination, which supplies cabinet, A. C. Set and built-in speaker to retail at \$133, is an ideal outfit to meet the demand.

**RED LION CABINET CO.**  
Red Lion, Pa.

## The NEWEST in AC TUBES

*Sonatron 225 A  
to replace the 225 AC*



SONATRON presents the inevitable step forward in A C tubes—the 225 A! This 3-volt heater type tube replaces the old 225 A C and acts as a radio frequency amplifier, detector and audio frequency amplifier and oscillator. This new tube takes its place with two other A C SONATRONS which are already favorites—

**X 226 - Y 227 A C**

SONATRON'S growing prestige and the profit possibilities of its 33 types, make it your best bet for 1928. Write!



Note that the 225 A has the cathode connections right on the base, replacing the prongs on top of the tube in the old style.

**THE WORLD'S LARGEST RADIO TUBE LINE**

**SONATRON TUBE COMPANY**  
Chicago · New York · Newark, N. J. · Detroit

# SONATRON

Nationally Advertisised  Standard Quality

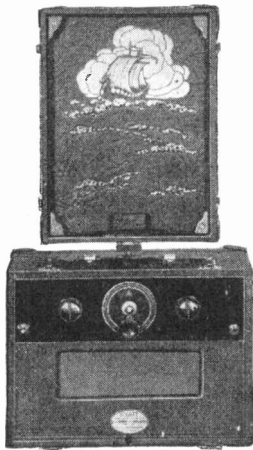
# Dealers!

## Understand this--

The Hyatt Utility receiver is not competing with your line of larger receivers.

Your best prospects for Hyatts are those to whom you have sold larger sets.

A Hyatt six will provide—bed-time stories for children in the nursery—a lecture for father in his study—genuine entertainment for those confined by illness in their bedrooms.



Model A

*Sell Hyatt on this basis to old customers and when price or home conditions are a factor, sell Hyatts to new customers.*

**HYATT**  
Electric Corporation

836 N. Wells St.

Chicago, Illinois

# ELKAY

TRADE MARK REG.

OFFERS FIVE GREAT  
ELECTRIC RADIO SETS

with Arcturus Tubes

Senior A. C. Electric.  
Senior A. C. Power Electric, 210 Output.  
Junior "7" A. C. Electric.  
Junior "7" Power Electric, 210 Output.  
Junior "7" Universal Battery or Electric.  
Also available in Pearson Consoles.

Write for franchise and complete trade sheet to  
**THE LANGBEIN-KAUFMAN RADIO CO.,**  
Dept. M, New Haven, Conn.

## Radio Cabinets by UDELL



A beautiful new 32-page Catalog illustrating and describing the greatest line of Radio Cabinets in the country is ready.

*Write for your copy today.*

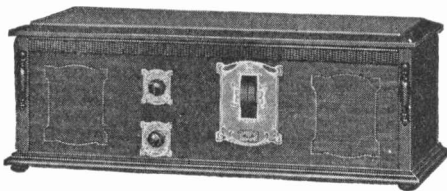
**THE UDELL WORKS**  
28th St. at Barnes Ave.  
Indianapolis

## AMERICAN BEAUTY

\$57.<sup>00</sup>

Net to Dealers

**6 A. C. Tube All Electric Set**  
*New Era in Electric Models*



THE WORLD'S LOWEST PRICED 6 A.C. tube set in a handsome 7 in. x 24 in. walnut cabinet representing a marked advance in radio craftsmanship. No more apparatus needed, except loud speaker.

This set is equipped with six genuine Arcturus A.C. tubes, the latest step in extreme selectivity. **REAL SET FOR DX FAN.** Special made split drum, dials calibrated with wave lengths and kilocycles.

Send check with order, this wonderful price demands that we sell for cash.

Money refunded and no questions asked if returned within ten days.

You can sell this set for \$95.00 and burn up competitors.

**Diamond T Radio Manufacturers**  
South Bend, Indiana

## JEWELL

### Testing Power Tubes

The widespread use of power tubes has created an urgent demand for a new tube checker capable of testing power tubes as well as the less powerful types.

Jewell has provided a tube tester of the above type in their No. 115, now available. This checker operates on the grid shift principle, as do all Jewell checkers, and is equally as simple and reliable to operate.

*Write for descriptive circular No. 1115.*

**Jewell Electrical Instrument Co.**  
1650 Walnut St., Chicago  
*"27 Years Making Good Instruments"*

*Pattern No. 115*

Only reliable products can  
be continuously  
advertised

# SEARCHLIGHT SECTION

## SURPLUS STOCKS—BUSINESS OPPORTUNITIES

**UNDISPLAYED—RATE PER WORD:**  
 Positions Wanted, 6 cents a word, minimum \$1.25 an insertion, payable in advance.  
 Positions Vacant and all other classifications, 10 cents a word, minimum charge \$2.00.  
 Proposals, 40 cents a line an insertion.

**INFORMATION:**  
 Box Numbers in care of any of our offices count 10 words additional in undisplayed ads.  
 Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

**DISPLAYED—RATE PER INCH:**  
 1 to 3 inches.....\$6.65 an inch  
 4 to 7 inches..... 6.40 an inch  
 8 to 14 inches..... 6.20 an inch  
 Rates for larger spaces, or yearly rates, on request.  
 An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page.

Radio Retailing

### POSITION VACANT

A REPRESENTATIVE to do missionary work among radio manufacturers in New York City territory. Must have some idea of radio designing and engineering. Send full particulars such as experience and references to Bastian Bros. Co., 1600 Clinton Ave. N., Rochester, N. Y.

### POSITION WANTED

RADIO manager and buyer; 37 years of age; 5 years' experience in buying and selling; at present manager of radio department for large St. Louis house; prefer to locate in St. Louis or the Middle West. PW-52, Radio Retailing, Bell Telephone Bldg., St. Louis, Mo.

### POSITION WANTED

THIS advertiser wants to hear from a manufacturer who is looking for a salesman. I am forty years old, college education, fifteen years on the road, four years calling on radio jobbers and dealers, Southwest, clean record, references include present employer. PW-53, Radio Retailing, Bell Telephone Bldg., St. Louis, Mo.

### REPRESENTATIVE AVAILABLE

ARE you looking for a representative in Michigan or vicinity? I want a line that requires work and lots of it and that has plenty of reward for that work; age 35; large clientele and many friends now; 10 years' experience. C. A. Parkham, 149 Ford Ave., Detroit, Mich.

### AGENTS WANTED

NATIONALLY known manufacturer of radio aerial equipment has some unassigned territory on a commission basis. AW-54, Radio Retailing, Tenth Ave. at 36th St., New York.

### TECHNICAL SERVICE

(Agency)  
 217 Broadway, New York  
**RADIO PERSONNEL**  
 Radio Engineer P.h.D. degree, salary open.

### WE PAY CASH for your

### SURPLUS RADIO STOCKS

What have you for sale?  
**AMERICAN SALES CO.**  
 21 Warren Street, New York City.  
 Established 1919

### We have cash for Surplus Radio Goods

Write us what you have and lowest cash price.  
**Dewey Radio Company**  
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### FREE RADIO EMPLOYMENT SERVICE

Employers in any line of the Radio industry (or in allied industries) should call on our Free Radio Employment Service when additional employees are needed. Thoroughly trained, experienced men supplied anywhere in the U. S. or Canada on 48 hours' notice. No charge for service. Send post card today for our free monthly bulletin. Address National Radio Institute, Dept. R.R., Washington, D. C.

### R.C.A. DEALERS

Send for our list of special bargains on standard replacement parts for Radiola Sets and Speakers.

**AMERICAN SALES CO.**  
 21 Warren St., New York City

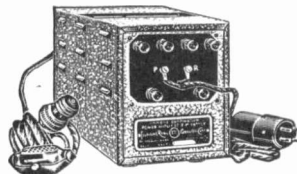
### Superior Radio Crystals

World Famous Concert Tested Radio Crystals  
 Trade Mark for Reflex or Crystal Sets  
**Unconditionally Guaranteed**  
 Discounts furnished upon Request  
**A-1 CALIFORNIA RADIO MINERALS**  
 Reg. U.S. Pat. Off. Harry Grant, Jr.  
 Successors to K. O. PRODUCTS CO.  
 904 Oak Grove Ave., Burlingame, California.

## DEALERS—here's an opportunity to make a real profit on Power Units!

—LOOK AT THESE BARGAIN PRICES!

### TIMMONS Combination Power Amplifier and "B" Supply

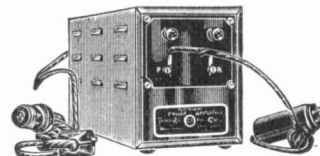


List \$70.00  
 (without tubes)  
**SPECIAL AT \$18.50 ea.**



### TIMMONS Power Amplifier

List \$45.00  
 (without tubes)  
**SPECIAL AT \$11.50 ea.**



Both of these high quality compact units use a U.X. 216B or 281 tube for rectifying and a U.X. 210 super power audio tube as an amplifier which gives distortionless and true natural reception with wonderful tone quality and volume.

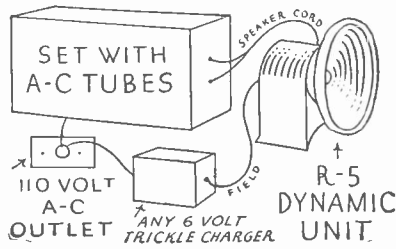
Both instruments are identical in their performance as super power amplifiers. The Combination however is also a complete "B" Eliminator furnishing all the "B" current

required by the regular tubes of the set. No adjustments required and no output transformer or similar auxiliary equipment needed with either unit.

For use with alternating current 105-120 volts, 50-60 cycles. Every unit is brand new, packed in original factory sealed carton and fully guaranteed. They have been approved by Popular Radio and Popular Science Laboratories.

Terms:—20% cash with order, balance C.O.D. f.o.b. N. Y.

**AMERICAN SALES CO., 21 WARREN ST., NEW YORK CITY**



# MAGNAVOX

## Dynamic Speaker

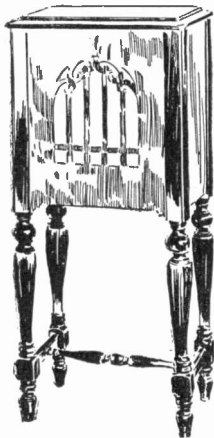
# UNIT

(Type R-4, 6 volts, D.C.)

Hook it up like this sketch because the 6 volt rectified output of any standard trickle charger or "A" rectifier will energize the field of the the MAGNAVOX 6 volt Dynamic power speaker unit.

R-4 unit only \$50.

Easily fitted into any cabinet



**Aristocrat  
Model  
Dynamic  
Speaker  
Complete  
6 volt \$85  
110 volt \$90**

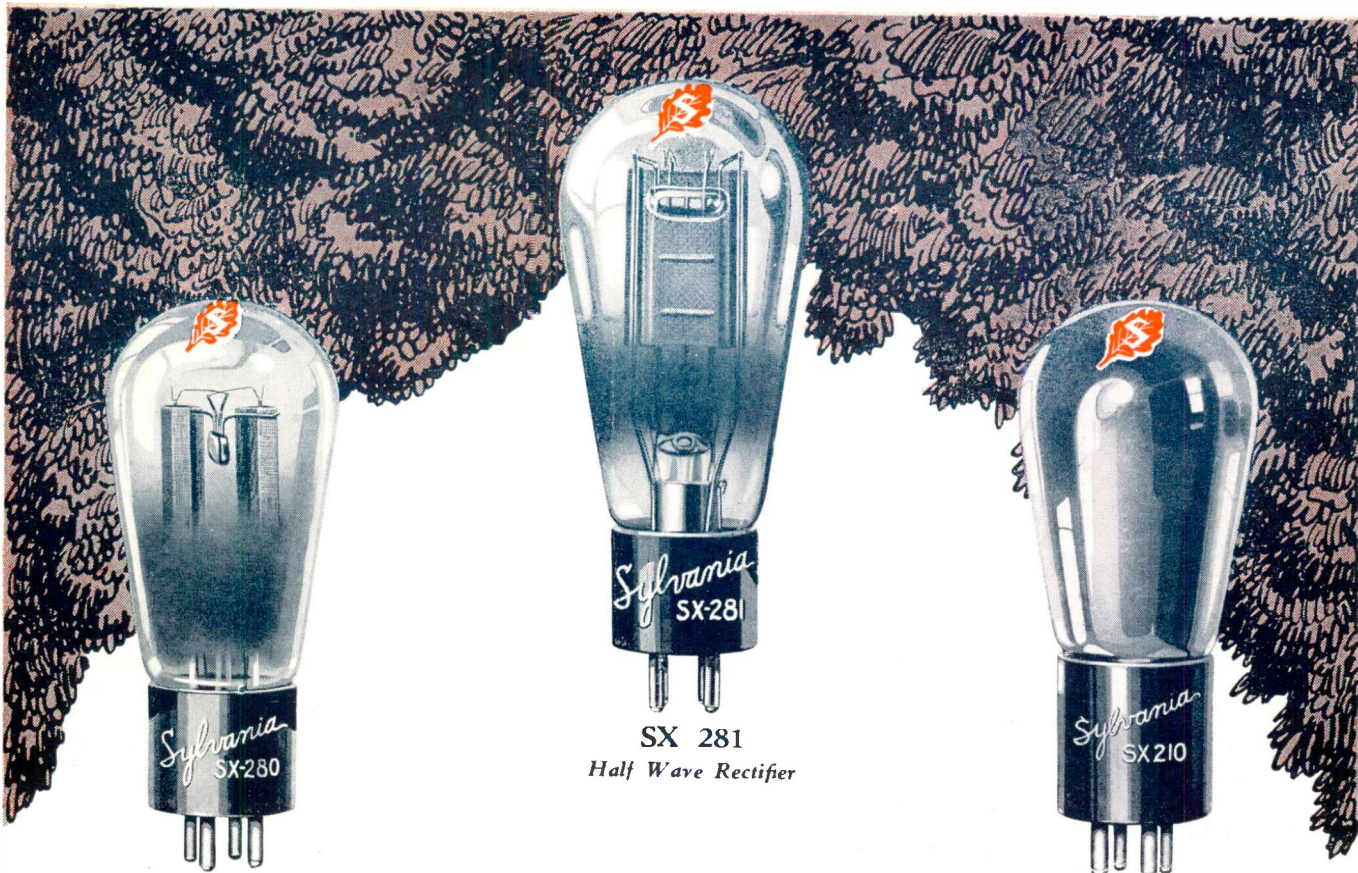
Only the Dynamic type speaker can bring out the full qualities of reproduction demanded today.

*Write for speaker bulletins.*

**THE MAGNAVOX CO.**  
Oakland, California

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**SX 280**  
Full Wave Rectifier

**SX 281**  
Half Wave Rectifier

**SX 210**  
Amplifier and Oscillator

## Your Idea of a Good Tube to SELL

It doesn't take radio retailers long to learn the features that make Sylvania Radio Tubes *successful merchandise*. Dependable Performance—Good Reputation—Complete Line—Money-back Guarantee—Fair Profit—No Price Cutting—Full Protection against Price Decline—Advertised to the Consumer.

Tune in on the Sylvania Foresters through Stations WJZ, WBZ, WBZA, KDKA and KYW every Wednesday evening at 8:30.

Have you tried the SX-226 AC amplifier and the SY-227 detector? If your jobber doesn't have them, let us know your requirements.



SYLVANIA PRODUCTS COMPANY

Emporium, Pa.

- A Radiotron  
for every purpose**
- RADIOTRON UX-201-A**  
Detector Amplifier
  - RADIOTRON UV-199**  
Detector Amplifier
  - RADIOTRON UX-199**  
Detector Amplifier
  - RADIOTRON WD-11**  
Detector Amplifier
  - RADIOTRON WX-12**  
Detector Amplifier
  - RADIOTRON UX-200-A**  
Detector Only
  - RADIOTRON UX-120**  
Power Amplifier Last  
Audio Stage Only
  - RADIOTRON UX-222**  
Screen Grid Radio  
Frequency Amplifier
  - RADIOTRON UX-112-A**  
Power Amplifier
  - RADIOTRON UX-171**  
Power Amplifier Last  
Audio Stage Only
  - RADIOTRON UX-210**  
Power Amplifier Oscillator
  - RADIOTRON UX-240**  
Detector Amplifier for  
Resistor-coupled  
Amplification
  - RADIOTRON UX-213**  
Full-Wave Rectifier
  - RADIOTRON UX-225**  
A.C. Filament
  - RADIOTRON UV-227**  
A.C. Heater
  - RADIOTRON UX-280**  
Full-Wave Rectifier
  - RADIOTRON UX-281**  
Half-Wave Rectifier
  - RADIOTRON UX-874**  
Voltage Regulator Tube
  - RADIOTRON UX-876**  
Ballast Tube
  - RADIOTRON UV-886**  
Ballast Tube
- The standard by  
which other vacuum  
tubes are rated



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for every purpose**

- RADIOTRON UX-201-A**  
Detector Amplifier
- RADIOTRON UV-199**  
Detector Amplifier
- RADIOTRON UX-199**  
Detector Amplifier
- RADIOTRON WD-11**  
Detector Amplifier
- RADIOTRON WX-12**  
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- RADIOTRON UX-874**  
Voltage Regulator Tube
- RADIOTRON UX-876**  
Ballast Tube
- RADIOTRON UV-886**  
Ballast Tube

The standard by  
which other vacuum  
tubes are rated

**RCA HOUR**  
Every Saturday Night

Through the radio we can  
hear the best of the  
country's finest talent.

**Key to the Radio Tube**

6X4	6X4
6X5	6X5
6X6	6X6
6X7	6X7
6X8	6X8
6X9	6X9
6X10	6X10
6X11	6X11
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6X00	6X00

**Key to the Radio Tube**

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6X91	6X91
6X92	6X92
6X93	6X93
6X94	6X94
6X95	6X95
6X96	6X96
6X97	6X97
6X98	6X98
6X99	6X99
6X00	6X00

Make sure that your new radio set is equipped with RCA Radiotrons throughout. Manufacturers of quality receiving sets specify RCA Radiotrons for testing, for initial equipment and for replacement. They are recognized by experts as the standard of performance.

RCA Radiotrons are the joint product of RCA, Westinghouse and General Electric, developed and perfected by the radio engineers who designed and built the leading broadcasting stations. Never use new tubes with old ones that have been in use a year or more. See that your set is completely reequipped with RCA Radiotrons once a year at least.

## RCA Radiotron

MADE BY THE MAKERS OF THE RADIOLA

RADIO CORPORATION OF AMERICA - NEW YORK - CHICAGO - SAN FRANCISCO

Public approval has put the stamp of preference on RCA Radiotrons. Their quality is evidenced by the fact that they lead all other tubes in volume of sales. That is because they are the perfected products of the expert engineers of RCA—the same skilled scientists who designed and built the country's leading broadcasting stations. There is a Radiotron for every purpose. It will pay you to carry the complete line.

You make every one of these advertisements a crackerjack salesman for you when you display RCA Radiotrons and recommend them to your customers. RCA offers you powerful selling helps, counter and window displays in addition to newspaper and magazine and broadcast publicity that is heavier than that behind any other vacuum tube.

# RCA Radiotron

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