

# RADIO

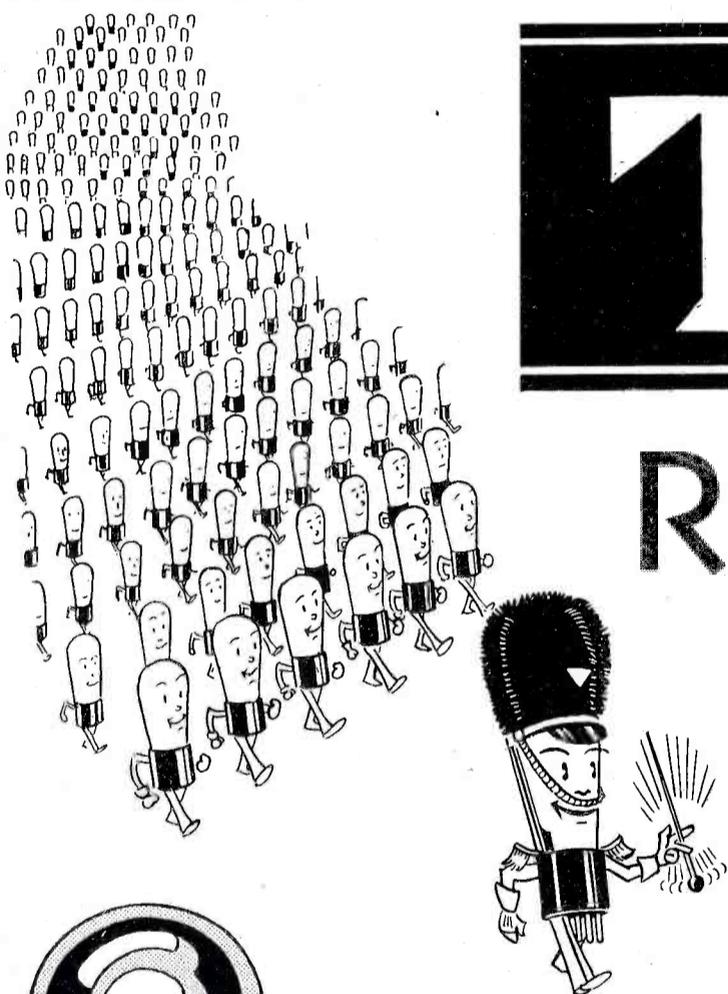
REG.  
U.S. PAT.  
OFF.

THE NATIONAL TRADE MAGAZINE

NOVEMBER, 1931

## TRIAD

### RADIO TUBES STEP AHEAD!



TYPE T247

The new **DEPENDABLE PENTODE** achieves extraordinary sensitivity by combining extremely high amplification and power output.



TYPE T235

Has characteristics of the 224 type but has new features that make it adaptable for use in automatic volume control circuits.



LICENSED  
under patents of  
Radio Corp. of  
America, Gen-  
eral Electric Co.  
and Westing-  
house Electric &  
Manufacturing  
Co.

Not content with ordinary radio reception, TRIAD has stepped ahead—in quality—in rugged construction—in tone purity. Always good, they are now better than ever before!

Don't take our word. Try a set for yourself. Hear the wonderfully improved tone. Regardless of the tubes you previously thought were good—a SET of TRIAD TUBES WILL PROVE A REVOLUTION.

*You too, will delight in TRIAD superiority!*

TRIAD MANUFACTURING CO., Inc.

PAWTUCKET, RHODE ISLAND

PACIFIC COAST SALES OFFICES—R. J. Noel Co., 800 E. Gage St., Los Angeles, 704 Larkin St., San Francisco, 1518 1st Ave. South, Seattle, Wash.



# BRUNSWICK RADIO

## stops 'em

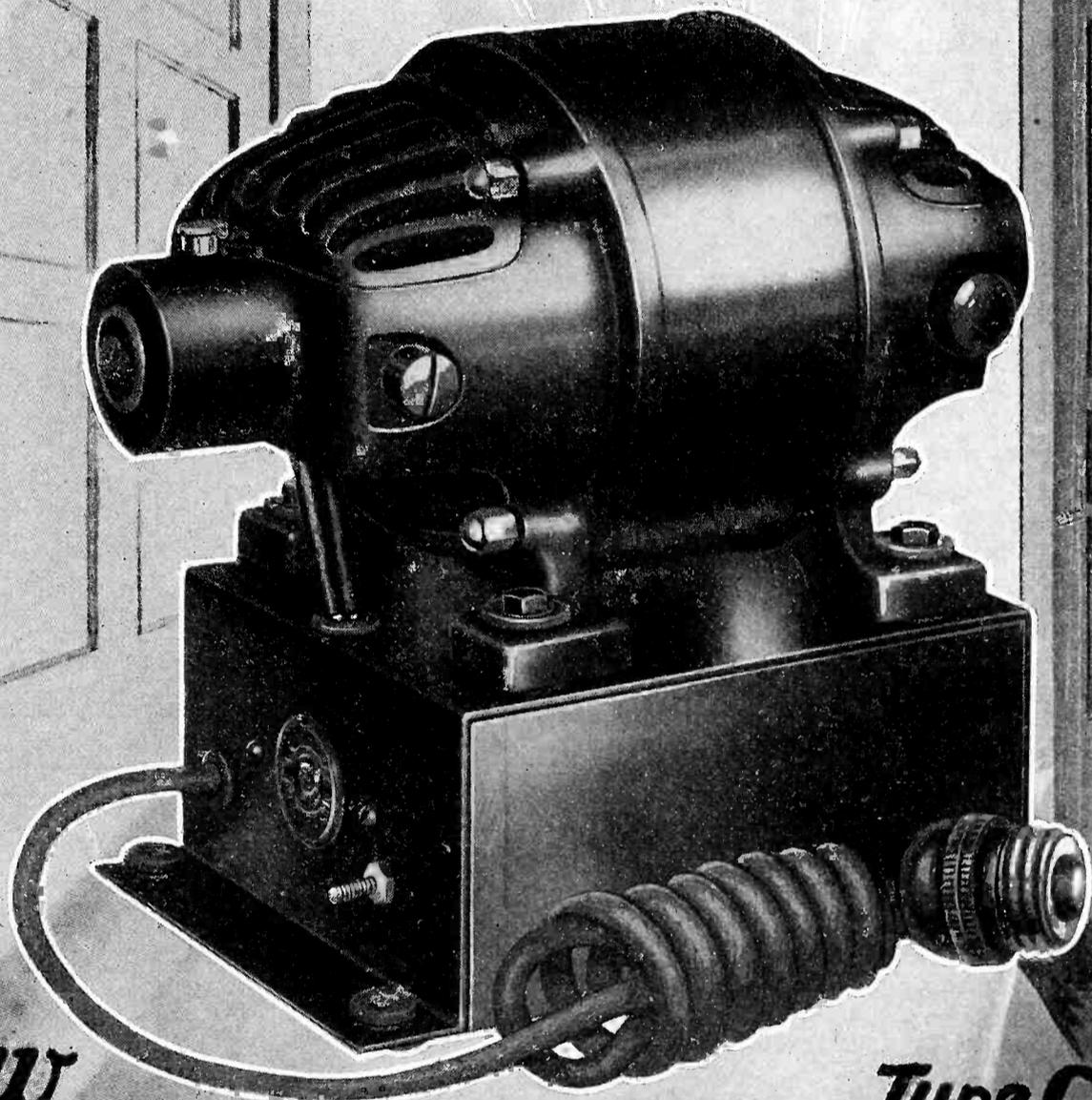
THE graceful cabinet of Brunswick stirs the buying urge  
...The true musical tone of Brunswick clinches the sale...  
The day-by-day performance of Brunswick keeps it sold.

• • •

With the complete line of eight Brunswick Radio models (List prices \$39.50 to \$225 with tubes) you can sell "up" not "down"; and increase your profits accordingly... Therein lies the basic value to you of the Brunswick franchise.

BRUNSWICK RADIO CORPORATION — *Division of Warner Bros. Pictures, Inc.* — NEW YORK, CHICAGO, TORONTO

BRUNSWICK RADIO CORPORATION



*The New*  
**JANETTE CONVERTER**

*Type CA-20-F*  
**ONLY \$49<sup>50</sup>**  
LIST  
(110 WATTS OUTPUT)

**Opens the Door to a Vast New Radio Market**

**O**VER half a million people living in rural districts are forced to use old-fashioned battery sets because of the lack of A. C. current. In addition, there are hundreds of thousands living in D. C. sections of large cities. These people are all prospects for new, modern A. C. sets if they can find a way to use them.

The sensationally low price of the Janette Rotary Converter makes these prospects "duck soup" for the radio dealer, jobber and manufacturer.

The Janette is the lowest priced converter ever offered, yet it is a high quality unit. It has perfect filtering . . . there is not a trace of ripple or interference in the receiving set. It is quiet in operation. The price includes filter, cord, plug and A. C. receptacle.

SINGER BUILDING  
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 REAL ESTATE  
 TRUST BLDG.  
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**JANETTE MFG. CO.**  
 557 W. Monroe St. « Chicago, Ill.

HARRISON SALES CO.  
 314 Ninth Ave., N.  
 Seattle, Wash.

LOMBARD SMITH CO.  
 328 N. San Pedro St.  
 Los Angeles, Calif.

JANETTE MFG. CO.  
 557 W. Monroe St., Chicago, Ill.

Please send me complete details  
 about the New Janette Converter  
 Type CA-20-F.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

25c the Copy

ESTABLISHED  
1 9 1 7

# RADIO

REGISTERED  
U. S. PAT. OFF.

\$2.00 the Year

Volume 13, Number 11

THE NATIONAL TRADE MAGAZINE  
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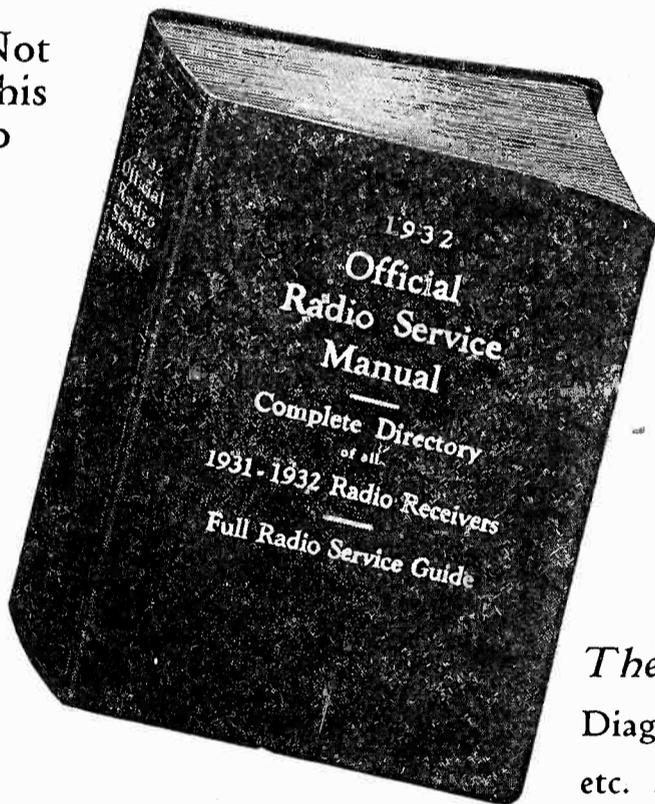
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Why Not  
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Man  
as an  
Xmas  
Gift?



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New 1932 OFFICIAL RADIO  
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*The Most Complete Service Manual Ever Published.*  
Diagrams of practically every radio set. Trouble Shooting Data,  
etc. . . . Price \$5.00, including 1 year supplementary service.

1000 PAGES

This great encyclopedia of circuit diagrams of practically all radio sets made in years is, without doubt, the most helpful book of facts for any service man. And with the book you get a supplement service for one year. Every radio dealer should have a copy of it in his shop. A thousand pages. Hundreds and hundreds of diagrams and illustrations. A massive book. It is your guide to better profits from your service department. ORDER A COPY TODAY.

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Send me one copy of Gernsback's new 1932 OFFICIAL RADIO SERVICE MANUAL and include with it the one-year free supplemental service. I enclose \$5.00 in full payment. If C.O.D. shipment is wanted please check here ( ).

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Street and Number.....  
City and State.....

# COMFORT Wherever and Whenever You Want It - - -

## The New Hexcel Air Conditioner



Front view of Hexcel Air Conditioner showing beauty of appearance and sturdy construction.

**A** DUAL purpose electric appliance  
 That applies a well known successful principle in a new and unique way  
 That has a multiple use appeal that will attract the most cautious buyer  
 That gives you a trump card to play in the game of Fall and Winter sales and still is an all-year seller  
 That is distinctly without competition in its class  
 That has a market as wide as you make it

**HEATS**—The Hexcel Air Conditioner delivers balmy “hot water” heat in heavy volume at a speed of about 360 feet per minute.

**COOLS**—In warm weather the Hexcel Air Conditioner provides more comfort than an electric fan.

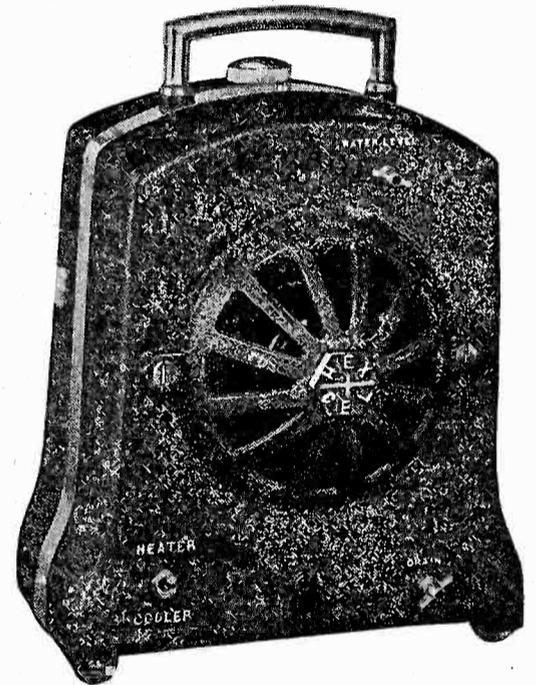
**CIRCULATES**—Whether used as a heater or cooler, this unit keeps the air circulating and moving. Run it all day if you like, the air in the room never feels stuffy and “burnt out.”

**HUMIDIFIES**—A special feature of this unit is a device within

the radiator which takes up water vapor and exposes it to the circulating action of the fan. No hot, dry blasts with this heater, but moist, comfortable waves of warmth.

**SAFE**—No exposed heating element; or fan. Nothing dangerous for adults or children to come into contact with.

**PORTABLE**—The compact construction and light weight of the Hexcel (less than 15 lbs.) enable you to carry it about wherever you want comfort,—in the living room, bath room, nursery, bed room, sick room, at the office.



Rear view of Hexcel Air Conditioner showing intake and double switch for heater or cooler service.

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VERN HILL CO.  
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CHICAGO, ILL.

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TEAR OFF HERE

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MILWAUKEE, WIS.

GENTLEMEN:

Please furnish complete information regarding the new HEXCEL AIR CONDITIONER, together with prices and discounts, to



DEALER

JOBBER

MAIL TO FACTORY AT MILWAUKEE OR TO NEAREST BRANCH OFFICE.

Tell them you saw it in RADIO

# W E L C O M E

## SERVICE SEASON TESTING



Smaller, lighter, handier case. A combined test panel and portable lab. Mounts on the wall as easily as removing the lid.

Dealers' Net Price  
f.o.b. Greenwood,  
Miss. ....

**\$147.50**

More "old" radios in every community—fewer new sets—forecast radio's greatest service season. Forcing another season of usefulness out of millions of old sets inevitably means tremendous parts replacements and service calls.

Smart radio men who know what it means in dollars and cents to stand at the top of their profession with equipment that insures economical service for themselves and their clients, are welcoming this season of opportunity with SUPREME TESTING INSTRUMENTS.

### SUPREME DIAGNOMETER AAA1

**5** Ultra-modern essential  
testing instruments in 1

Acclaimed by the radio service world as "the biggest thing in Radio since '28," the SUPREME DIAGNOMETER, AAA1, combines in the one handy case, the versatility of a SUPER-DIAGNOMETER, plus SHIELDED OSCILLATOR, plus ADVANCED TUBE TESTER, plus OHM-MEGOHMMETER, plus CAPACITOR TESTER—5 ultra-modern instruments in one at the price of 1.

The result of many months experimental development and trial, it is conceded by technicians as the most revolutionary and complete testing instrument ever produced.

### Ask Your Jobber For Demonstration

All leading jobbers can demonstrate the economy and investment value of "SUPREME" TESTING INSTRUMENTS. If yours can't, indicate on coupon what instrument interested in and name of jobber. Welcome Radio's greatest service season with up to date testing equipment—the SUPREME Way.



#### MODEL 60

A new handy oscillator designed for use with any output meter such as provided in the Model 90 Analyzer. Each instrument individually calibrated covering all ranges from 90 to 1500 kilocycles. Completely shielded in cast aluminum tray with bakelite covered aluminum panel. 100% modulation—complete attenuation without leakage even with the most sensitive receivers. The biggest value in a really precision instrument ever offered.

Dealers' Net Price  
f.o.b. Greenwood, Miss. ....

**\$30.00**

Portable type  
(illustrated) .....

**\$3.00** extra

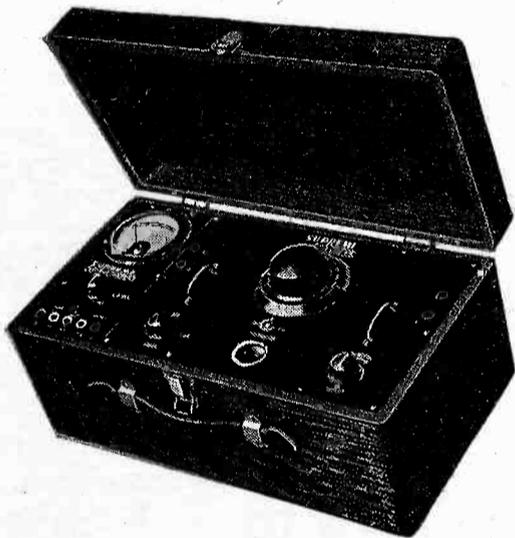
# RADIO'S GREATEST

## WITH NEW "SUPREME" EQUIPMENT

### SUPREME SET ANALYZER MODEL 90

Dealers' Net Price  
f.o.b. Greenwood, Miss. **\$78.50**

A new Model 90 Analyzer borrowing some of the tremendous features of the AAA1 DIAGNOMETER. Greater simplicity, greater range and speed. Analysis of screen grid and Variable-Mu circuits without oscillation and complete analysis of r.f. and power pentode circuits. The only analyzer providing complete rectifier circuit analysis, including helium rectifiers, and providing direct readings of resistance values up to 500,000 ohms in two ranges utilizing the same 4.5 volt battery potential provided in the analyzer. There is no analyzer on the market today remotely approaching the servicing range and elasticity of the new Model 90.



### SUPREME OSCILLATOR MODEL 70

A thoroughly shielded, completely attenuated oscillator of the highest type. Combined oscillator—output meter—high resistance ohmmeter can be obtained in a beautiful hardwood carrying case providing unequalled flexibility in service ranges. Send coupon for details.

Dealers' Net Price  
f.o.b. Greenwood, Miss.  
Supreme Oscillator Model 70  
Less Tubes and Batteries. . . . **\$49.75**

Supreme Output-  
Ohmmeter . . . . . **\$30.00**

Handsome carrying case of hardwood  
for combined Oscillator, Output-  
Ohmmeter and Accessories. . . . . **\$5.00**

### SUPREME MODEL 40

A tube tester of improved design equal to instruments selling for double its modest price. Tests all tubes without adapters, including power and r.f. pentodes and provides for filament or heater potentials of 1.5, 2.0, 3.3, 5.0, 6.3, and 7.5 volts to any of the five sockets on the panel—a very flexible arrangement. A "grid shift" test of all amplifiers is provided with a biasing arrangement automatically determined by the plate current load of the tube under test, so that the controlling grid biasing potential may be observed on the meter. Incorporates a gas test for amplifiers, a cathode-heater short test for heater types, and tests both plates of full wave rectifiers. Everything that could be desired in a high class, efficient tube tester—and at a price that fits the pocket book.

Dealers' Net Price  
f.o.b. Greenwood, Miss. . . . **\$30.00**

Portable type  
(illustrated) . . . . . **\$3.00 extra**



SUPREME INSTRUMENTS CORPORATION,  
421 Supreme Building, Greenwood, Miss.

SUPREME DIAGNOMETER AAA1  
SUPREME SET ANALYZER MODEL 90  
SUPREME MODEL 60  
SUPREME MODEL 40  
SUPREME MODEL 70

Please send me full particulars on . . . . .

Name.....  
Address.....  
City.....State.....  
Jobber's Name.....  
City.....State.....

Distributors in all Principal Cities  
Foreign Division  
130 West 42nd St., New York City  
Cable Address LOPREH, New York

Tell them you saw it in RADIO

---

# A Hundred Dollar Radio

It is being sold by the hundreds in sensational sales put on by the largest store in nearly every important city in the country.

At \$59.95 it has proven itself the best buy on the market. It is a full-size receiver in every way: 42" carved walnut console cabinet, 20 $\frac{1}{2}$ " 8-tube superheterodyne chassis, 10 $\frac{1}{2}$ " Jensen electro-dynamic speaker.

Silver-Marshall superheterodynes are sold to dealers direct from the factory. That is why values like this are possible.

Write NOW for full information on the complete S-M line.

6415 West 65th Street, Chicago  
Export: 41 Water Street, New York City

**SILVER-**

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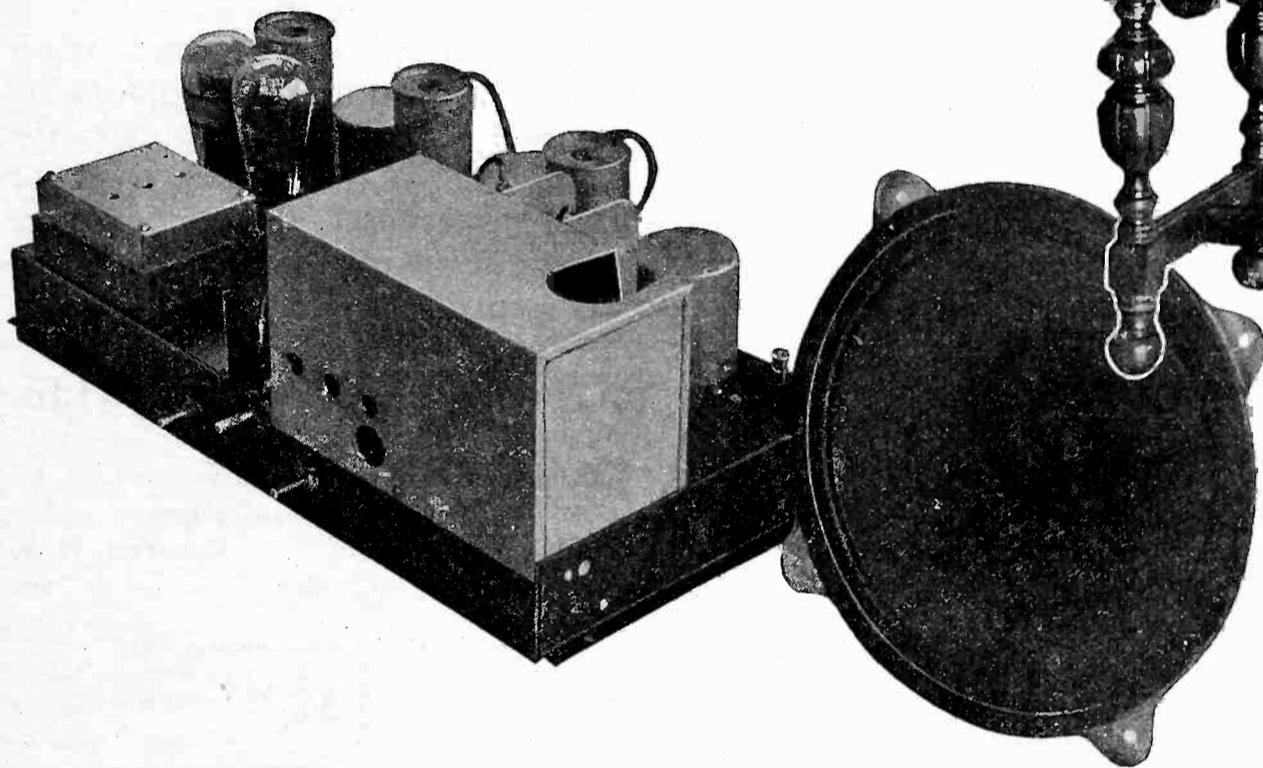
# That You Can Sell for \$59.95

\$ **59** **95**  
*LIST  
PRICE*

**COMPLETE WITH TUBES**



Model A-18



**FULL-SIZE 8-Tube chassis**; not a midget, either in size or performance. Actual dimensions:  $20\frac{1}{2} \times 10\frac{1}{2} \times 8$ .

**PENTODE TUBE**, with twice the power and four times the sensitivity of the 245 tube used in most sets.

**VARIO-MU TUBES**, giving absolute freedom from set noises, and perfect volume control.

**SUPERHETERODYNE** circuit, that gives consumers what they want in a radio.

**TONE-CONTROL**, so that the owner can

adjust the tone the way HE likes it best.

**SELECTIVITY** so good that each station occupies but one space on the dial.

**SENSITIVITY** so great that there is a choice of from thirty to fifty programs any evening.

**FULL-SIZE DYNAMIC SPEAKER** of special design, which is made necessary by the unusual power of this receiver.

**STURDY OVERSIZE WALNUT** console cabinet. Actually measures 42 inches high.

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# MARSHALL

Canadian Division:  
75 Sherbourne St., Toronto

# Echophone through its Quality gives

# PUNCH

to your  
Sales Effort  
and Sales Story



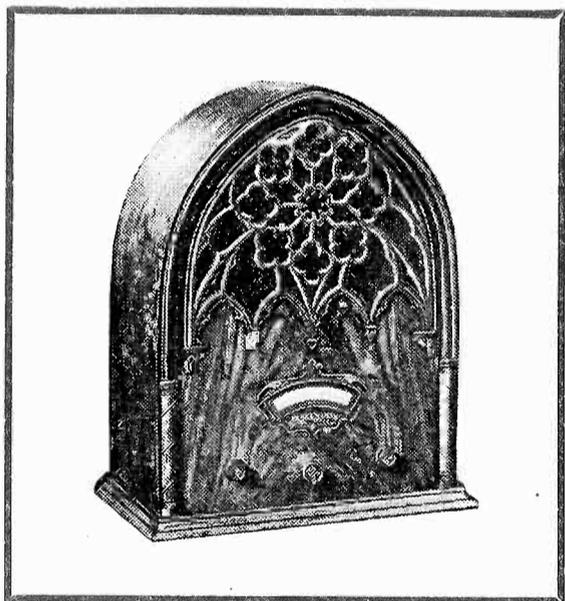
Model "90" Superheterodyne—Large Type Chassis, Eight tubes including two Pentodes Push Pull and four Variable-Mu, Pre-selector, 4-gang Condenser, 10-inch Jensen Dynamic Speaker, Full Vision Dial, Tone Control, Phonograph Jacks, Burl Walnut Panel.  
**\$89.50 Complete**

Echophone supplies you with wonderful sales arguments when you are standing face to face with a customer. The reason is simple. There's that Echophone Quality so well known since 1921. You can say a lot about that. It's the quality that has built Echophone sales year after year and made money for dealers. An Echophone demonstration and Echophone appearance puts plenty of punch into your sales efforts. A wide range of new models gives you the right receiver for any prospective purchaser. Get Echophone "punch" into your business now—let Echophone do a big profit-making job for you.

## ECHOPHONE RADIO MFG. CO., Ltd.

Executive Offices and Factory  
WAUKEGAO, ILLINOIS

Export Division—Echophone Company Export  
44 Whitehall Street New York, N. Y.



Echoette Model "40"—Four tubes including Pentode and Variable-Mu. Dynamic Speaker, Walnut Panelled. . . .  
**\$ 32.75 Complete**

Model "70" Direct Current Superheterodyne — 7 tubes including D.C. Pentodes and D.C. Variable-Mu. Jensen Dynamic Speaker . . .  
**\$59.50 Complete**



Model "60" Superheterodyne (above) — Seven tubes including Pentode and three Variable-Mu, Jensen Dynamic Speaker, Full Vision Dial, Tone Control, Phonograph Jacks, Walnut Cabinet—6 inches deep . . .  
**\$53.75 Complete**

Model "80" Superheterodyne (right)—Eight tubes including two Pentodes Push Pull and three Variable-Mu, Pre-selector, Jensen Dynamic Speaker, Full Vision Dial, Tone Control, Phonograph Jacks, 4-gang Condenser, Burl Walnut Cabinet—6 inches deep . . .  
**\$69.50 Complete**

### ACTION IS THE THING!

Get in touch with our nearest distributor or write us direct for complete details. Our new line is outstanding in quality and is the finest we have yet produced. Feature the quality that gives you the sales punch.

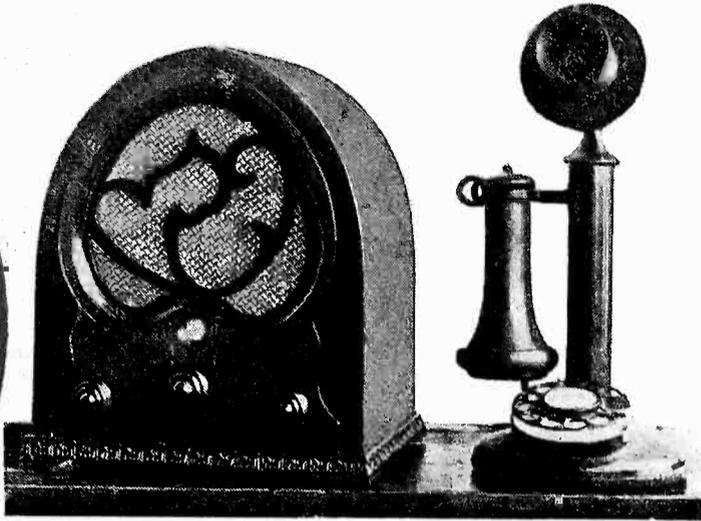
# Paramount Dealers Are Making Money

Sold  
Direct to Dealers  
at a Net Price of

**\$ 13.95**  
WITH  
TUBES

CASH WITH  
ORDER

\$12.95  
in Quantities  
of 12



PARAMOUNT  
"KEWPIE"

Retail Price  
\$29.95

NOTE: Owing to additional factory space, and increased production, we can quote this low price. We are now shipping the Kewpie radio to 'most all points of the world and dealers everywhere report exceptional volume of sales.

## *The Smallest Radio Made*

Size 9 $\frac{3}{8}$ " High, 7 $\frac{1}{2}$ " Wide (inside measurements)

### 1932 FEATURES - - - SELL ON SIGHT

#### 1 Pentode Tubes

Equal to 2-245 plus 1-227. This radio, smallest in size, incorporates the new pentode tube.

#### 2 Full Dynamic Speaker

Perfect tone quality.

#### 3 Screen Grid Circuit

Using 2 screen grid tubes to their utmost efficiency.

#### 4 Tone Control

The sales talking point of 1931. We use the new full range control.

#### 5 Selectivity Plus Distance

We have reports of distance of 1500 miles.

#### 6 Quality All Through

Steel chassis, cadmium plated, oversized power transformers (shielded), heavy service resistors, electrolytic, self-healing filter condenser. Cornell oversized bypass condenser and many features found only in high priced sets.

*Fully Guaranteed for Three Months*

## We Also Manufacture the Following

6 tube midget, full visioned dial, net \$17.95 with tubes, or \$16.95 in quantities of 12.

11 tube superheterodyne chassis to mount in your console cabinets.

10 tube superheterodyne midget, \$69.50 list.

9 tube all-wave superheterodyne midget, \$79.50 list.

7 tube superheterodyne midget, \$49.95 list.  
and an automobile radio, \$39.95 list.

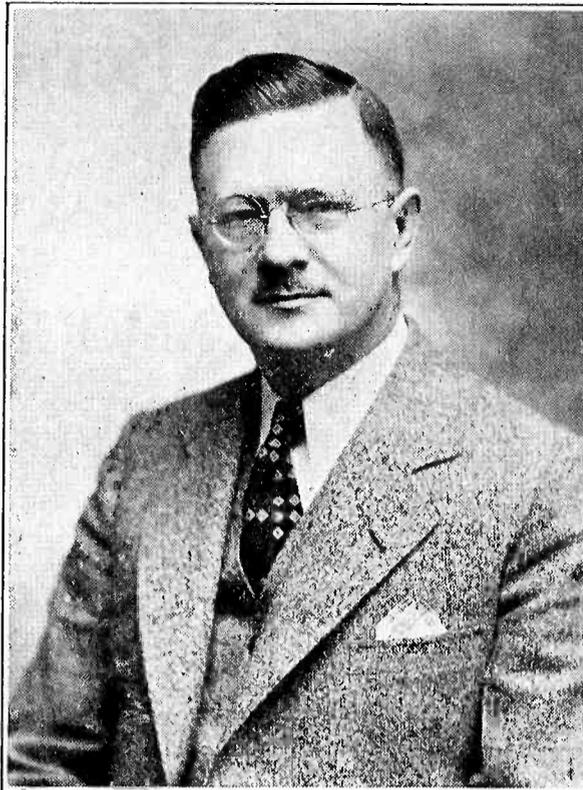
PROFITS: *Our discounts are large and allow you ample margin of profit to advertise.*

Member of  
Los Angeles  
Chamber of Commerce

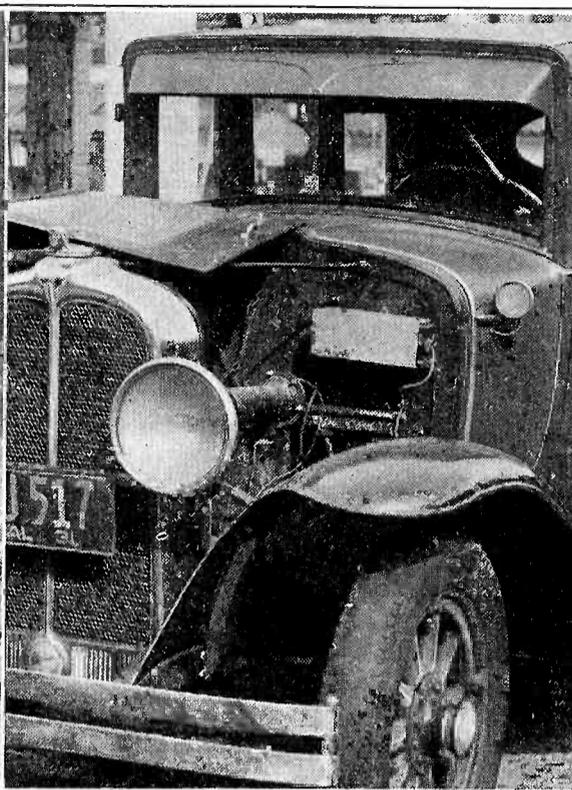
**LOS ANGELES RADIO MFG. CO.**  
3681 So. San Pedro Street  
Los Angeles, Calif.

Manufacturers of  
Quality Radios  
Since 1925

Tell them you saw it in RADIO



Henry Gardiner, Former General Motors Radio Zone Manager, and now Manufacturer of the Dynatrope.



The Dynatrope, as it looks when installed in the automobile. Note its simplicity.



F. F. Hutchinson, the inventor of the Dynatrope. Electrical engineers have pronounced the Dynatrope a success.

# THE DYNATROPE

LIST PRICE **\$39.50**

An Amazing New Invention—A Power Converter that Furnishes 110-volt 60-cycle Alternating Current (standard house lighting current) from your 6-volt Automobile Battery.

This remarkable device has startled the Radio World. It makes the automobile A. C. radio practical. It does away with the bulky, troublesome and expensive B-batteries.

Now you can use your home Midget A. C. set in your car. You don't need ignition system suppressors or filters. You'll be surprised at the remarkable improvement of reception in your automobile.

### WHAT THE DYNATROPE DOES

1. Converts 6-volt battery current into 110-volt, 60-cycle alternating current (standard house lighting current).
2. Operates A. C. Midget radios in automobiles, without the use of ignition system suppressors, or special equipment of any kind.
3. Operates hundreds of devices in automobiles (40-80 watt capacity) such as heating pads, curling irons, marcel setters, drink mixers, juice extractors, public address systems, electric vibrators, small soldering irons, cigar lighters, snap-on reading, trouble or camp lights, small lamp or gas tube advertising signs, immersion-type water heaters, milk bottle warmers small fans, small vacuum cleaners, necktie press, electric safety razors, electric hair clippers, portable adding machines, small electric grinders and key-filing machines, etc., etc.
4. Operates radio and household devices from 6-volt direct current supply on yachts—the same as in an automobile.
5. Supplies 110-volt A. C. 60-cycle current from 6-volt storage battery for operating radio sending and receiving apparatus.

The Dynatrope is a power box of a thousand uses. Not only can you plug in any Midget A. C. radio set but you can use all the household conveniences such as curling irons, immersion heaters, drink mixers, juice extractors, heating pads, small electric fans, etc., that are rated from 40 to 80 watts.

The Dynatrope is a miniature converter 4" x 4" x 10". It is unique. There is no other converter like it. It is simple—efficient—durable. Installation is quick and easy—you can do it yourself in a few minutes' time.

The Dynatrope is a necessity for the yachtsman. Not only will it supply power for the radio but it will operate other electric devices that make life more comfortable and interesting.

WRITE OR WIRE FOR COMPLETE INFORMATION

## HUTCH-GARD CORPORATION

1041 Monadnock Bldg., San Francisco, Calif.

**Your Radio is not at its Best  
unless equipped with a  
WRIGHT-DECOSTER SPEAKER**

To prove that claim, you need only make a simple test. Listen to a symphony orchestra through a Wright-DeCoster speaker. You will, we believe, experience a new thrill. To be able to hear a full orchestra with all the richness and clarity of the complete ensemble and yet with the individual personality of each instrument reproduced perfectly . . . such is the delightful surprise of Wright-DeCoster reproduction.

It is easy to have your present speaker replaced with one of the two following Wright-DeCoster models, and enjoy this finer reproduction at low cost. If you contemplate purchasing a new radio, demand that it be equipped with the "Speaker of the Year."

**The Wright-DeCoster Infant Chassis**

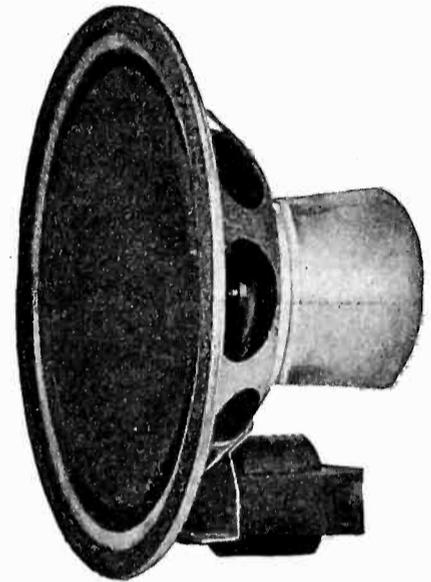
is a small sized speaker - - capable of handling 245 tubes in push-pull and our laboratory tests prove it to be a very efficient speaker indeed.

**The Wright-DeCoster Juvenile Chassis**

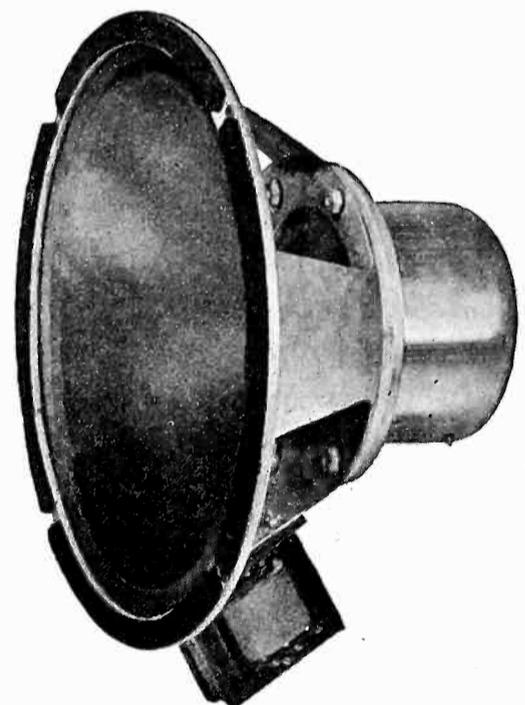
has a maximum power handling capacity of 6 watts and is suitable for installation in practically all sound reproducing instruments to be used indoors.

These reproducers are of the same high quality as is maintained in all Wright-DeCoster Speakers.

*Write for complete information and  
address of the nearest sales office.*



Wright-DeCoster  
Infant Chassis



Wright-DeCoster  
Juvenile Chassis



THE SPEAKER  
OF THE YEAR

**WRIGHT-DECOSTER, Inc.**

*Main Office and Factories*

**2217 University Ave., SAINT PAUL, MINN.**

**Export Department, The M. SIMON & SON CO.**

**25 Warren Street, New York**

**Cable Address: "SIMONTRICE"**

# Radiotorial Comment

By The Editor

**T**HE advent of simple devices that convert the six-volt direct current from a storage battery into 110 volt 60 cycle alternating current are expected to vitalize the use of radio in the automobile. One such device is a low-priced rotary converter. Another is a converter called the Dynatrop. Nor is it impossible that the thyatron be applied to this purpose as it has to inverting 100-volt d-c to 110-volt a-c.

With some such device it is possible to operate any a-c radio, midget or otherwise, from the battery in a motor boat or car. It does away with the necessity for "B" batteries to supply plate voltage. With the double conversion of d-c to a-c to d-c may be wasteful, it is convenient. And that is what the radio using automobilist or motor-boat enthusiast wants.

This makes a new accessory of great sales promise, not only for the operation of radio sets but also of any other standard electrical device whose current consumption does not exceed the capacity of a storage battery. The radio loudspeaker may yet displace the automobile horn!

• •

**A**DDED to the technical difficulties which television workers are gradually surmounting is an attempt to discredit the results that may already have been obtained and, by inference, to undermine public confidence in yet-to-be-announced results. The method is to stage a "television show" with a transmitter that has purposely been thrown out of adjustment. The operator is paid to put on as poor a show as possible and to sneeringly say "This is television."

Store managers that have allowed such disgusting exhibitors are short-sighted. Within less than a year they will be trying to undo the harm that they have done, not to television, but to themselves. Always in the past any kind of "knocking a competitor" has proved a boomerang that hurt the knocker. To say nothing, if you don't know enough to say something good, is not only good business ethics, but good business sense.

How much better would be an honest state-

ment that the store believes that purchasers will not be permanently satisfied with the television equipment that is available, but that the present radio sets will be satisfactory for years to come. It will be many years before the radio motion picture and its accompanying voice or music will be broadcast on the same channel. Two separate receivers, or two separate parts of a combination instrument, will be required for the simultaneous reception of a picture and its sound accompaniment. The present type of radio will be just as suitable for the reception of sound as will that which may be incorporated with the television receiver. It may be some time before television advances to the same relative state of perfection that radio has reached during the last ten years. Meanwhile why deprive a family of the pleasure of owning a radio set today because television will be here tomorrow.

Such a statement would be believed by the public. The fake television show and the knocking is not. Our sympathy goes to the poor operator who has to take this kind of a job in order to make a living!

• •

**T**HE radio department manager in a very prosperous store says business is mighty good. He hasn't put on a "sale" since May. On the floor are sets at all prices. But his volume on higher priced merchandise is going up. His secret is the commission check to the salesman. No high-pressure schemes are used. When a customer comes into the store he is politely shown the "newest things in radio," just as the other department clerks show the newest things in their departments. Before even asking him how much he intends to pay for a set, he is asked to listen to a few of the newest things in radio. The appeal for something new is as old as the world itself. Even Adam knew it. The customer is shown a set that sells for well over a hundred dollars and the salesman compares the features of that set with the little midget alongside of it. You know how it goes . . . just like putting a bicycle alongside of a big eight-cylinder automobile. The more the per-

son looks at the bicycle the more he wants the auto.

"How much does he want to pay for a radio?" "Well, not more than fifty dollars." So the salesman works on the monthly payment idea and shows where the few dollars per month are extended over so many months and it's not the amount the set costs but how much per month can be paid. If it is \$7.50 one month, it's almost a safe bet that the same amount can be paid next month, and the next.

But remember this . . . the sale is not lost if the higher priced set is not wanted. If it is definitely made known that a small one is wanted as a second set the small one is sold.

But any person who can afford a hundred dollar radio set and is permitted to walk out of the store with something selling for one-fourth as much, is a better salesman than the man who is trying to sell the customer. Every salesman should ask every customer about his aerial. Not so much because a good aerial should go with every set, but because there's a good margin of profit in a good aerial installation. Why not have the service man put up a good aerial when he installs the set? Tell the customer about the dangers which can arise from faulty aerial installations. Stormy weather calls for good aerial installations. Use this point in selling aeri-als. Look around your neighborhood at the maze of cob-web aeri-als and count your prospects as you walk from block to block. You won't have much trouble in finding them.

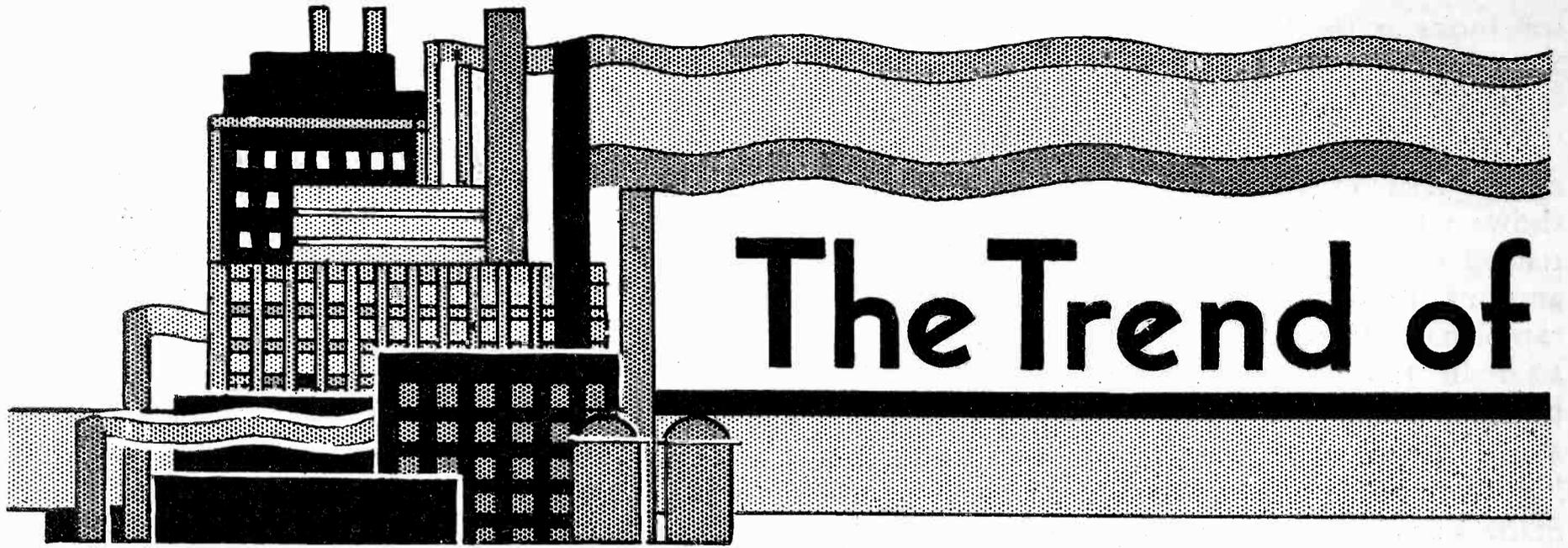
**D**ISTRESS radio sets, especially midgets, are at a premium. There doesn't seem to be any such animal prowling around. Consequently, for the first time in years, there will be little or no dumping and price demoralization. To-let signs will soon adorn "junkie" windows because of lack of stock. Careful control of production and low prices made possible by large-scale operations did the job. The legitimate retailer and the public will both profit. Why not advertise this fact?

**T**HE day that the drop in tube prices was announced one dealer advertised "Tubes at a 40% discount" . . . trying to kid the public that he was giving something away. Another store said "Now . . . Our Special Price on Tubes. Old Price So Much. New Prices So Much, Etc." Neither of these so called merchandisers had the

nerve to tell the truth. Their public still believes that tubes are 40% overpriced. It's WRONG. A legitimate reduction in prices should be announced as such simultaneously by manufacturer and dealer. Use the talking point of new low prices to get your customers to re-tube now. There won't be another price drop for some time. Make the most of a legitimate price reduction and tell the customer to put in a *whole new set of tubes* because the price is so low. You'd be surprised to know how many sets need a complete new set of tubes.

The 301-A is now sold for six bits. Not many years ago it sold for six dollars. And with the coming of these "new lows in tubes" you would think that the midget set manufacturers could afford to use standard brands as factory equipment, instead of tubes which are bought by the set maker merely because of an extra 10% tacked on the discount sale. Those manufacturers who have proclaimed that their profit on the low priced midget was thirty-five cents per set, are smiling today because at the new tube prices the profit on the set sales goes up. That is until some alley racketeer hollers that the new prices allow him to sell his sets for less. The first fellow who does that ought to be tarred and feathered. Now that tubes have come down, **LET THE PRICE OF THE SET STAY UP.**

**D**ON'T make the same mistake this year that you made last year. Christmas will be here before you know it. People buy a lot of things other than radio sets for Christmas gifts and there is no reason why you, as a radio dealer, should send your customers across the street just because you don't carry some of the things which they want to buy. It is proven and known by many wise merchandisers that among the best sellers at Christmas time are fountain pens and desk sets, electric clocks waffle irons, toasters, percolators, flat irons and other small and inexpensive household devices. Perhaps your volume may not be as great this year on washing machines or expensive electrical devices, so take heed and stock those inexpensive devices which the present-day-minded economists and dollar squeezers are looking for. Everybody, as a rule, has to buy something for somebody for Christmas. Put on a real window show of the many electrical things which people buy for friends and often won't buy for themselves. One dealer last Christmas made \$1300.00 net profit from an assortment of aforementioned items which he sold only during the last three weeks in December. First time he tried it.



# The Trend of

**The R.M.A. Trade Show again goes to Chicago in 1932.** But next year's show will be staged somewhat earlier than usual. May 23rd is the date on which the doors will be thrown open to the trade. This will make possible an earlier start in lining-up new business by having new models ready in time for the presidential campaigns and other events of importance which will be on the air during the summer months of 1932. The new show date will also shorten the sales period preceding the trade show . . . a period in which sales have always been reduced because of the usual "hold-off" until show time. The RMA Directors also received bids to stage next year's show at Pittsburgh, Detroit, St. Louis, Atlantic City and Toronto. The decision to again hold the show in Chicago was unanimous.

**Set sales for 1931 are estimated at between 2,500,000 and 3,000,000.** Parts manufacturers are running full blast. Factory wages are being generally sustained. Public demand for sets and tubes has shown a very gratifying increase.

**Facts from the pen of a radio factory owner who has made money every year:** "Our factory produced about fifteen thousand receivers last fall. We had no surplus stock on hand after the holidays. We made money. At this time we are producing just twice as many sets as were made by us last fall. Our billings are just a little less than half what they were last year. Our profit is smaller but we are making money. We are giving employment to more people and we have not reduced our wage scale. The reduction in price of tubes gives us a little better edge on profits but we are not reducing the list price of our merchandise." A minute inspection of the plant shows that production costs have been trimmed to the core. The office force is also down to bed-rock. But

everybody works . . . hard. More than 200 sets are coming off the production line each day. So well are they made that less than 4 sets out of 100 require a bit of service here and there on the part of the dealer. And this manufacturer's dealer line-up is one to be proud of. When a set is sold it stays sold. Only standard tubes are used . . . the best loudspeaker and filter condensers. Here is a manufacturer who is in this business to stay . . . even tho he must build twice as many sets and sell them for half his last year's price in order to make half as much money as he made last year. Those who have adjusted themselves to present-day conditions are not complaining.

**Motorcar radio will come into its own** with the announcement that Hupp and Nash will equip next season's cars with auto radio. Sheep follow sheep. The 4-wheel brake and free-wheeling will be no less popular than auto radio in next year's market. Widespread adoption of motorcar radio will help move millions of tubes and the "B" battery business will boom next year.

**The R.M.A. reports a decline in complaints** to its Fair Trade Practice Committee. Also in many months no disputes to adjust or arbitrate have reached the council-room. 200 manufacturers comprise the list of R. M. A. members. There have been few resignations. These have been offset by new accessions, particularly from the ranks of the manufacturers of television equipment.

**Almost every dealer can sell electric clocks.** Prices are down to what you were formerly asked to pay for a cheap spring-wound clock. Many families are buying more than one electric clock. You can use a clock in every room at home. Get a stock of electric clocks for the holiday trade. People are buying

sensible gifts. There's nothing more acceptable as a gift than an electric clock. Put them in your window. They sell themselves. One dealer gave away an electric clock with each sale of \$20.00 or over. He moved 148 clocks in one month.

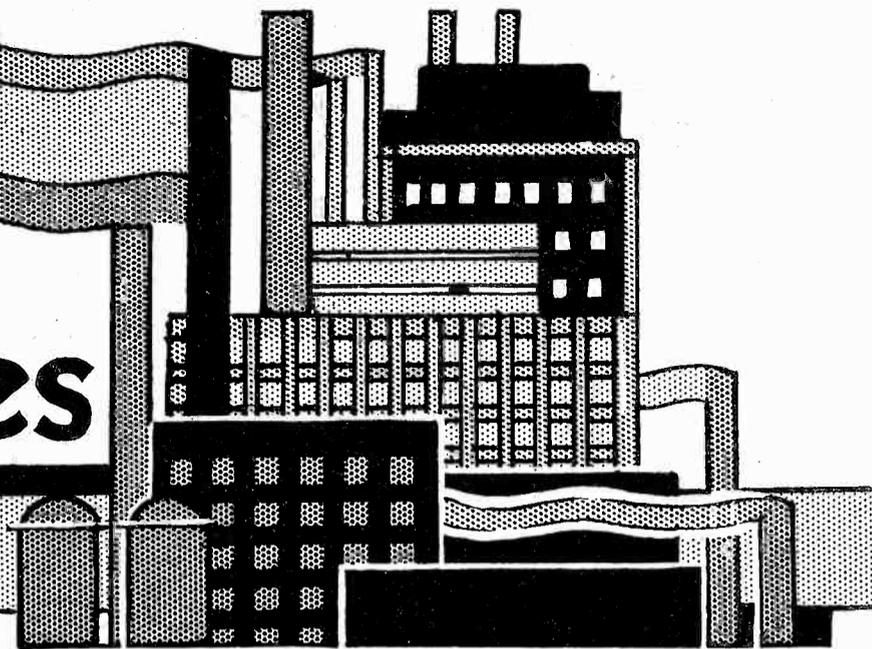
**Another of the new devices that dealers can sell** is the automatic time switch . . . a switch that turns on or off the radio or other electrical device at a predetermined hour. Useful to turn off your store lights or window flashers at a certain hour each night. It's wise to sell a few good accessories when a set is sold. Properly merchandised, you can move many of them.

**The Hexcel Air Conditioner looks good.** It delivers balmy "hot water" heat in heavy volume at a spread of about 360 cubic feet per minute. A fan draws cold air in at the back of the heater, blows it through a radiator, and expels it into the room in billows of heated, healthful moist air, the manufacturer says. Heats a chilly room in a hurry and does not "burn up" the air in the room. Sells for twenty-five dollars, list. A hot side line for cold weather selling. Good for summer-selling, too, because it acts as an electric fan when the heater element is disconnected.

**Tales of retail radio selling through the heart of the depression** that are little short of astounding are contained in the final summary compiled by Guy C. Core who was in charge of the Sparton Scholarship Contest. A number of the several dozen young men and women who won college scholarships or European tours were responsible for a volume of business that would make a reasonably profitable moderate sized retail store in itself.

The contest started in August, 1930,

# The Radio Times



and continued through April, 1931, thus taking in the most hectic days of radio when dumping and distressed selling was at its height.

It is significant that practically every one of the winners worked over a definite, concrete plan and did not deviate from it. Taking certain territories or certain groups of individuals, they went ahead in a straight line with the optimism of youth. Depression was just a word to them, and where older and more experienced campaigners "folded up" because of it, the boys and girls plugged straight ahead because they did not know its meaning.

"This entire contest has been a marvelous study in psychology," comments Mr. Core. "Never having known the easy days of radio, these young folk took the tough days of last year as normal and they accepted them cheerfully as they came. They took the only way to sales volume that exists when selling is tough, which is more contacts. In their case that meant simply leg-work, and they certainly used it in unlimited quantities.

"If every retail dealer could see the results that leg-work accomplished, there would be more of the same thing applied to good advantage by the owners of radio stores."

**Mr. David Sarnoff, President of the Radio Corporation of America,** announced the resignation of Edward E. Shumaker as President of its subsidiary, the RCA Victor Company.

The resignation was accepted by the RCA Victor Company Board to become effective as of January 1st, 1932.

Mr. Sarnoff stated that it had been Mr. Shumaker's desire to retire from active business when the Victor Talking Machine Company, of which he was president, was purchased by the Radio Corporation of America. At Mr. Sarnoff's request, however, Mr. Shumaker had agreed to accept the Presidency of

the new RCA Victor Company which was formed in 1929 as a result of the merger and to serve in that capacity until the problems incident to unification had been solved and the reorganization completed, which has now been done.

**Continuing with his plan to place 16mm Movies on a big business basis,** Rudolf Mayer, President of INTERNATIONAL 16mm PICTURES, INC. and brother of Louis B. Mayer, of Metro - Goldwyn - Mayer, announced that his organization had acquired the U. S. Laboratories at Hudson Heights, N. J. This is the second laboratory purchase made by Mr. Mayer within ten days, and it is his intention to merge both into a huge organization which will have a weekly capacity of more than 4,000,000 feet of 16mm film. The new organization will be known as the Union Film Laboratories and will be located at Hudson Heights, N. J.

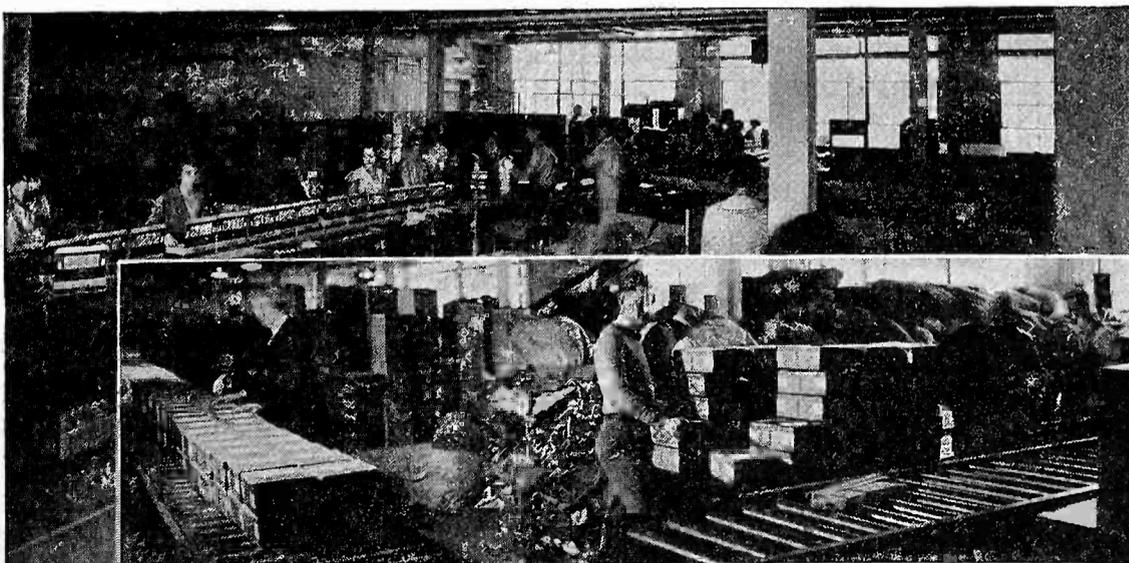
Thru acquiring the U. S. Laboratories, INTERNATIONAL 16mm PICTURES, INC. will also have facilities for handling 35mm negatives and prints.

The merging of these two laborato-

ries will provide the most up-to-date and the largest 16mm printing laboratory in the world. According to Mr. Mayer, 24 to 48 hour service will be possible. Heretofore, a lapse of as much as three weeks was often experienced between order and delivery on prints.

**The DeForest Radio Company and the Jenkins Television Corporation of Passaic, N. J.,** announce the resignation of Charles G. Munn as President of both companies, and his election as Chairman of the Executive Committee of both companies. Leslie S. Gordon, who has been identified with banking and manufacturing activities in Chicago, succeeds Mr. Munn as President of the DeForest and Jenkins companies. The personnel of both organizations remains the same.

**The latest Government figures (August)** show another increase in radio exports. The month's shipments were \$249,271 *greater* than the same month a year ago. The number of receiving sets exported in the first eight months of this year were more than double that of a year ago.



*Upper: Sylvania "Emergency" Kits go down the line to the packing crew.*

*Lower: The end of the line. The Postal Department routes the kits into mail bags for shipment.*

# Captain Sparks Says:-

1. **A**N exclusive radio dealer CAN make a profit. . . . .
2. **T**UBES, alone, if skillfully merchandised, will support a business in itself. . . . .
3. **F**IFTY per cent of the people can be sold quality merchandise.. . . .
4. **S**ERVICE must be merchandised. It is the profits from service that gives the velvet.



## A Dealer Can Exist On Radio Alone!

**I**N A RECENT issue of a prominent advertising publication the statement was made that radio could no longer be sold through exclusive radio dealers. The unit of sale, the article stated, had become too small to support a store on radio profits alone.

Capt. Wm. Sparks, president of the Sparton organization, was asked to comment on this article by one of his distributors, and replied with the following analysis of much general interest.

"If the writer of this article meant that radio must become a side-line to other lines of business, I believe he is wrong. If he meant that other lines of business could and should be handled by the radio dealer with profit, he is, within certain limits, right.

"The exclusive radio store can hardly hope to sell low-priced sets over the counter on demand only and continue indefinitely. Neither can any other type of dealer comparable to radio. We have recognized that for years. We have preached to our dealers that there are four things they must do.

"First, they must recognize the fact that tube business alone, if tubes are skillfully merchandised, will support a business in itself. The dealer who, over a period of four or five years, has sold a profitable volume of sets, has in his

old customers alone a possible tube volume that will pay much of its overhead.

"Second, he must recognize the fact that the replacement of obsolete sets goes to the dealer who goes out after the business. Owners of old sets seldom change of their own accord. On the other hand, I could supply you with the names of hundreds of dealers and salesmen who regularly, day by day, go to the owners of these sets, demonstrate new Spartons and secure a steady volume of business on high-grade sets almost exclusively.

"Next, service must be merchandised. Few automobile dealers are able to make money on the sale of new cars alone. It is the profits from service that give them the velvet.

"Last, there is the business of 'trading-up' sets. People who ask for a mid-get can, in a large percentage of cases, be sold better sets. Those who buy midgets or low-priced consoles are, within a year, logical prospects for better instruments. The process of trading-up by owners is just as prevalent as in the automobile business.

"Now getting back to the original question—"Can a dealer exist on radio alone?"

"It is obvious from the above that radio is a business, demanding concen-

tration and effort that prevents it from becoming a sideline to any other. The man who wrote that article *did not*, I believe, know the radio business. He only saw the visible side . . . the selling of sets over the counter with that as the end of the sale. Radio with its logical ramifications *can* be a profitable business and *is* a profitable business for any merchant who has it in him to make a success of any similar business.

"There is just one qualification that must be attached to this flat statement. He must handle a line that can be sold as a quality line to the 50 per cent of our population who can afford to buy quality merchandise. He must have something to sell besides price, or he will *not* make money.

"With radio as a fundamental business in itself the adding of other lines becomes a matter of the dealer's own experience and capacity. We have many who sell electric refrigeration, music and accessories and varied other lines and do it successfully. But I can make this flat statement. Vastly more dealers have built fundamentally on radio, adding other lines at a profit than have reversed the process. They are organized for complete radio sales and service, and there is money in that alone, and always will be."



Mr. McMurdo Silver at his desk.

## Mr. McMurdo Silver Takes the Editor's Chair and Discusses the Price Question

**T**HE writer, like most of the rest of those who read radio trade publications, has noted with much amusement the recently published fulminations regarding the need of higher unit sales prices if any money was to be made by anyone at all in the radio business. Unquestionably, higher prices are not only desirable, but almost vitally necessary, but the schemes actually suggested or only gently hinted at for producing them are childish in the extreme.

**E**VER since the first man in the world had something to trade to the second man, and on until this earth is too old to support life, only one factor has ever determined the price of anything—the law of supply and demand. In radio, no combination of manufacturers, distributors and dealers could benefit by even an impossibly perfectly executed price raising agreement. Why? Simply because radios are today sold at just what the public will pay for them—raise prices and the public will tighten up on its money. Only one single thing in all this world will permit raising of prices without loss of sales volume — increased demand. And in turn the only thing that will reasonably definitely increase demand is an improvement in general business — making more employment, and consequently more earning power. Nothing will bring this about except the exhaustion of stocks of all kinds of finished goods, and the necessity for employing people to fabricate new stocks against even the present severely cur-

tailed public demand. Once this starts, buying power begins to build up, demand crystallizes, and the upturn of prosperity is here. Looking at New England for example, the upturn is here, for shoe, leather and textile mills are now going full blast. This makes buying power, which stimulates industry elsewhere, and on the basis of the theory that when New England, first hit in the depression, began to recover, the rest of the country would follow suit, better times are here right now—and certainly by spring.

**C**ONSIDERED briefly, the suggested plan of price raising by agreement is merely “A tale told by an idiot, full of sound and fury, but signifying nothing.” Adam Smith summed it up — prices are determined by the law of supply and demand, and by nothing else under the sun.

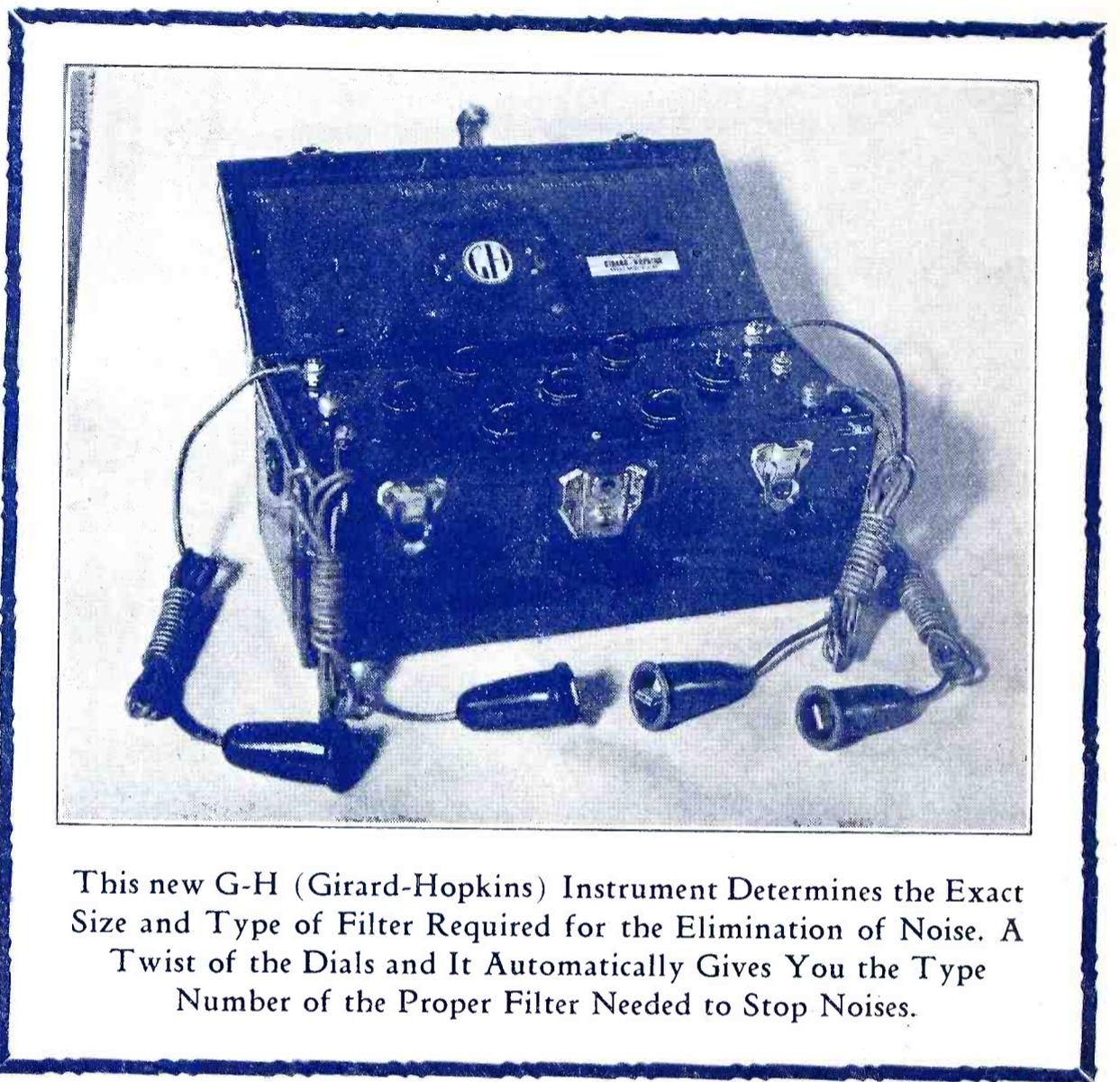
**L**IKE many others, the writer has visited the wailing wall to do a bit of weeping on the subject of low prices, but has not remained long. A more profitable trip is to the pencil sharpener to find out how to cut costs. Silver-Marshall is satisfied to make money at present prices and costs, and have their dealers to do likewise, and to leave the well worn path to the wailing wall for others to tread. At present, money can be made on radios selling from \$50.00 to \$100.00 complete—but only if intelligence is applied to the problem. Time enough to talk of price raising when it can be done—when costs go up, which is the same thing as saying when demand has improved. Until then, a bit harder work and less time spent crying is the best—only—solution.

# Any Filter Combination You Want at the Twist of the Dials

AS THE elimination of interfering noises becomes one of the most important phases of the radio industry, from the standpoint of the dealer who wants his customers satisfied, of the customer who wants to be satisfied, and of the service man who looks yearningly at the business that will go to the one who can produce results in providing this satisfaction, any new apparatus that will make it easier to determine the style and type of filter necessary to solve each particular problem will be received with open arms.

The instrument described herein will not be sold to the radio dealers, but will be manufactured only for the jobbers who handle the Girard-Hopkins line. These jobbers will equip themselves with the master filter so that they may loan the instruments to their dealers, thereby allowing the dealer to avoid the necessity of adding a rather expensive piece of apparatus to his equipment.

For many years Girard-Hopkins have been building condensers for replacement purposes and filters for interference elimination. But the sales of filters has always been handicapped by the hunt and try methods of determining the combination of inductance and capacity necessary to handle each job successfully. Therefore they went to work and developed this instrument of a thousand or more combinations which will indicate with but a few minutes work the code number of the G-H filter corre-



This new G-H (Girard-Hopkins) Instrument Determines the Exact Size and Type of Filter Required for the Elimination of Noise. A Twist of the Dials and It Automatically Gives You the Type Number of the Proper Filter Needed to Stop Noises.

sponding to the capacitive-inductive circuit which, in the master filter, gave the best results. In the master filter there are fifteen fundamental circuits available with variable inductance and capacity for each. The dealer, using the instrument, need know nothing of the actual values needed in the filter, for the numbers indicated by the seven dials is read off as a seven digit number which is the model number of the Girard-Hopkins filter necessary to eliminate the noise. When the customer complains of noise that seems to be entering the radio set through the supply lines the dealer or service man connects the G-H master filter between the supply socket and the set, in

some cases, or between the power supply and the meter in others. Then he varies the dials until the noise is eliminated or at least minimized. At this stage he jots down the readings of the dials, starting from 1 to 7, and orders the filter that corresponds to this reading.

The system is an achievement worthy of honorable mention. Experienced trouble shooters know only too well that correct circuits and valves for filters are hard to find. Too much capacity or inductance is as bad as too little, and this business of trying one filter after another until the correct one is found not only requires time and patience, but a five ton truck.

# G - H

## QUALITY CONDENSERS AND CARBON RESISTORS

CONDENSERS FOR ANY PURPOSE . . . 200 STOCK SHAPES AND CAPACITIES  
BANKS FOR ALL SETS . . . . . LINE FILTERS—ANY TYPE  
TRANSMITTING CONDENSERS . . . . . SPECIAL CONDENSERS OR BANKS  
BLOCKS FOR MANUFACTURERS . . . CARBON RESISTORS—5% TOLERANCE

*Write Us For Catalogue*



### GIRARD - HOPKINS

1437 23rd Ave.  
OAKLAND, CALIFORNIA



## DEALERS . . . . . We will loan the use of the G-H Interference Locator to dealers and service stations in our territory.

Make application immediately for your use of the new Girard-Hopkins Interference Locator. We have this instrument at your disposal. A trained specialist will assist you in its use and operation. Let us show you how we can help you make money by correcting interference troubles in your vicinity. We make no charges for this service. We can supply you with the necessary G-H Filters for the elimination of interference.

### Get Your G-H Replacement Condensers From Us!

#### WRITE FOR FREE COPY OF CONDENSER CHART

Condenser Replacement Blocks for practically all makes of standard receivers can be secured from us. We carry the G-H Line. Send your blown-out condensers to us for replacement. Any kind or size of condenser will be made to your order.

The complete line of G-H condensers and transformers is described in our latest brochure. In it you will find the list of types of condensers used in most makes of receivers and prices of replacement condensers. This is a valuable guide for every dealer and service station. Write for your copy today.

### UNITED RADIO SUPPLIES CO.

1062 Howard Street, San Francisco, California

WE ARE JOBBERS FOR THE NEW INTERNATIONAL ALL - WAVE RECEIVER

Tell them you saw it in RADIO

# Sparton Executive Explains Why Sparton Uses Its Own Make of Tubes

By V. A. SEARLES, Advertising Manager

THE SPARKS-WITHINGTON COMPANY  
Jackson, Michigan

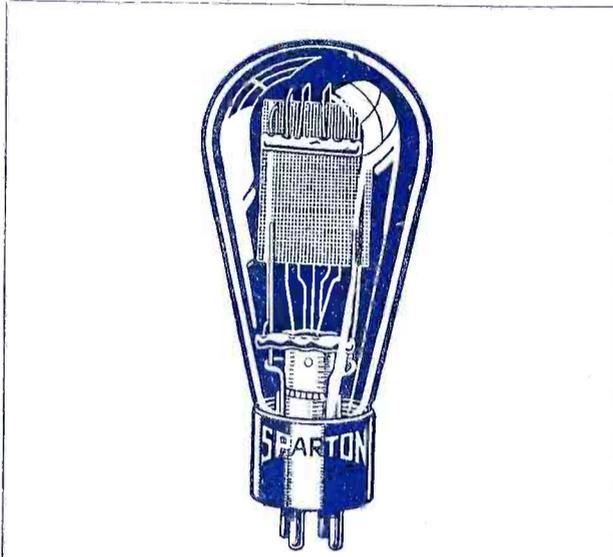
Dealers outside the Sparton organization have frequently voiced the inquiry, "Why does Sparton specialize on a unique type of tube?" Early in the history of radio, Sparton, like other manufacturers, purchased their tube equipment from independent makers. In the sincere effort to make of Sparton the richest and truest voice in radio, no expense was spared and only the finest tubes obtainable were purchased. In the endeavor to maintain Sparton ideals of quality and musical excellence, however, it was soon found that the rigid perfection demanded by Sparton inspectors was an unusual and difficult standard for even the best tube manufacturers to meet. Sparton's discriminating inspection and testing of all tubes purchased, resulted in the constant rejection of a large percentage of tube makers' shipments.

As a result Sparton gathered together a group of highly trained tube engineers and electrical specialists. After months of painstaking laboratory work and enormous expense, a modern tube plant, with all the very finest equipment and precision apparatus was placed in operation at Jackson, Michigan. This provided absolute control of the quality and characteristics of the tubes that went into Sparton radios from that day on, and has much to do with the reputation for beautiful tone that Sparton now enjoys.

Although at first, tubes were made for only Sparton sets, it was soon found that these high quality precision-built tubes could be used to advantage in radios of other makes. As a result there is today available a full line of Sparton radio tubes for every standard purpose.

## Here Is What Mr. Searles Says About the Current Trend in Radios:

**B**ETTER merchandise attuned to the widespread and growing value-consciousness on the part of the public—that, in the opinion of The Sparks-Withington Company, makers of Sparton Radio and Sparton Tubes, is the most practical answer any manu-



Now that SPARTON Radio Tubes are standard and may be used in all standard makes of Receiving Sets, The Sparks-Withington Company are laying plans to go after the tube business of the world in a big way. Various charts, curves and graphs show so conclusively the excellent performance of Sparton Tubes that everyone is to be told about it.

As a first step in this campaign The Sparks-Withington Company has secured the service of John L. "Jack" King, who has had vast experience with radio tubes. He will devote his time exclusively to SPARTON Tube Sales and will visit many of the largest accounts in the country.

facturer can give to the vital question—"How can we best help our dealers to make money in today's market?"

No expert knowledge of business analysis is required to recognize and interpret the present trend in practically all lines of retailing. In recent months the trend has become so general and its characteristics so clearly defined, that everyone engaged in the buying and selling of commodities must be aware of it.

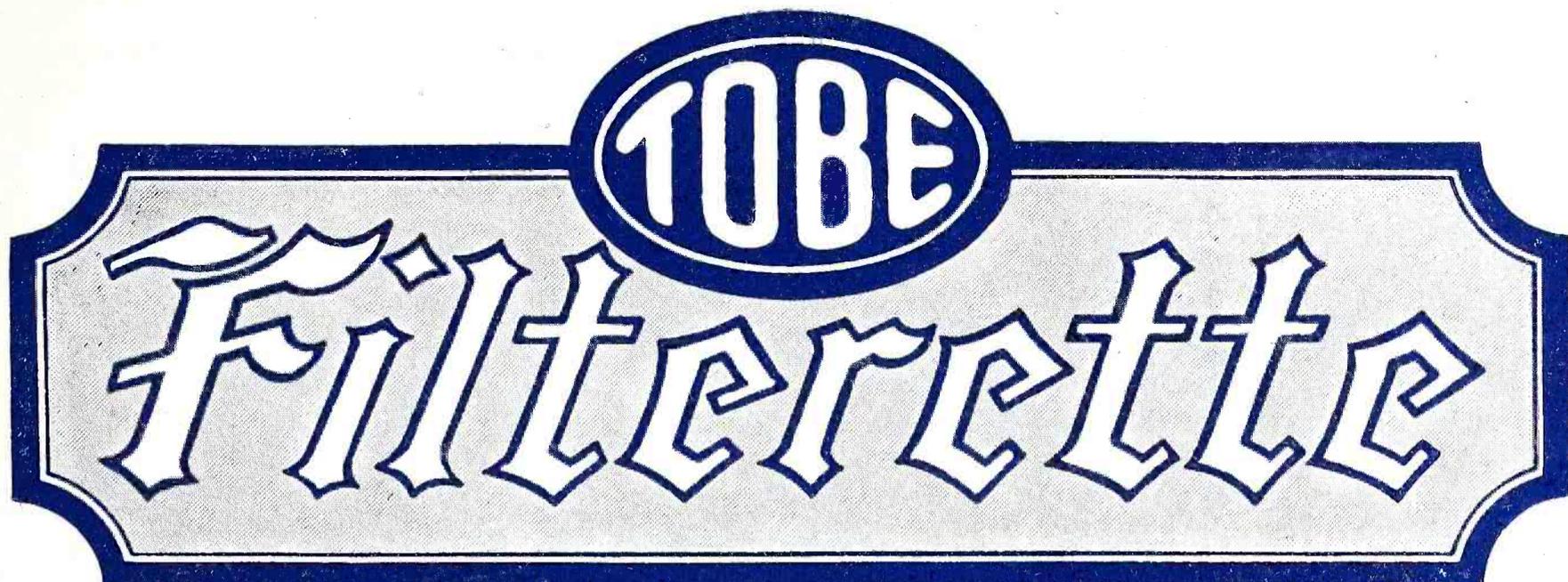
The free-spending American of the boom years is a swiftly vanishing species. We are developing a new and wholesome respect for the coin of the realm. Even the lowly nickel is respected, and the quarter is regarded as an asset to be taken seriously. On every hand it is emphatically apparent that buyers have made up their minds to get their money's worth. They have learned

to appreciate values and to look for them.

Nowhere is this state of mind on the part of the buying public more pronounced than in the radio business. To be convinced of this fact you have only to talk with any good radio merchant. He will tell you that his customers are showing increased interest in those radio features that mean dependability and lastingly satisfactory performance. They insist upon basic quality. And they are no longer impressed by merely superficial advantages.

Some manufacturers may misinterpret this more careful buying as a reluctance to buy at all. They may assume that in order to induce people to part with their radio dollars it is necessary to cheapen the product. Sparton believes this to be a mistaken idea. Even the most casual visitor to Sparton laboratories and plants could not fail to observe on every hand the manifestations of a conviction that has never ceased to dominate Sparton manufacturing operations, and that is today more vigorously in force than ever before. We have always believed that it is the undesirable buyer who is hoodwinked by inferior merchandise. The type of purchaser who can be developed into a permanently profitable customer for Sparton dealers, we believe, is the type who looks beneath the surface and demands dollar-for-dollar value. And we feel that the biggest help we can give our dealers at this time is to build the kind of product that attracts precisely this kind of patronage.

You will find this leading tenet of the Sparton creed expressed in numerous features of the present Sparton line. A notable combination of chassis improvements contributes not only to finer performance but also to *continuously* finer performance throughout the years. In the new Supersonne circuit, for example, Sparton engineers, pioneers in the application of the band-pass filter principle, have retained all the advantages of Superheterodyne selectivity and at the same time have successfully included the full measure of musical quality carried on the broadcasting band. In addition, the Supersonne development practically eliminates image frequencies or the secondary reception of the same station at different points on the dial.



The logo features the word "TOBE" in a bold, sans-serif font inside a dark oval. Below it, the word "Filterette" is written in a large, stylized, gothic-style font with decorative flourishes. The entire logo is set against a light background with a dark border.

TOBE DEUTSCHMANN CORP.

CANTON, MASS.

OCTOBER - NOVEMBER, 1931

## Interference from Electro-Medical Apparatus Requires Filterette HFO For 100% Elimination, Apparatus Must be Shielded

High frequency apparatus, such as is used in the medical profession, has long been one of the most prolific sources of radio interference. Unlike the majority of electrical devices which create interference in their immediate locality only, certain types of high frequency apparatus set up interference which destroys reception over a large area. In fact, in some cases where the supply lines to the apparatus parallel the primary supply or telephone circuits, the disturbance may be spread over a considerable distance and even carried into cities several miles away.

In order to understand the reason for the somewhat complicated procedure which must be followed in overcoming Diathermy interference, it will be well to consider the principles underlying the operation of high frequency electro-medical apparatus. A Diathermy machine is a device for the production of high frequency currents to be used in the treatment of certain diseases. The frequencies used in the earlier models were from 900 to 1400 K. C., or practically the whole of the Broadcast band. In some of the newer models an attempt is made to keep the frequencies used outside the broadcast band, but this is difficult due to the tendency of this apparatus to propagate a broadly tuned wave.

### Diathermy Similar to Spark Transmitter

The circuit used for obtaining these frequencies is essentially the same as that used in early spark transmitters whose operation is now forbidden by federal law. In the Diathermy machine a transformer, condenser, and adjustable spark gaps are used to produce high frequency currents. These currents are carried along flexible leads to metal electrodes applied to the body of

the patient. The similarity to a spark transmitter is obvious. The high frequency generator is the Diathermy machine. The antenna consists of the electrode leads and the body of the patient. In the case of some types of treatment the body of the operator is also a part of the antenna system. The counterpoise is the power line.

The maximum high frequency current used in Diathermy treatments is usually 4000 milliamperes or four amperes. When it is understood that a radio transmitter with an antenna current of 4 amperes may have a working range of several thousand miles, it is obvious that a Diathermy machine can do considerable damage to broadcast reception. Fortunately, the "antenna system" of the Diathermy apparatus is not designed for maximum radiation at the frequencies used, consequently, the area affected by the direct radiation from the electrode leads and the body of the patient is relatively small. This directly radiated interference seldom affects receivers more than 200 feet from the Diathermy apparatus.

### Interference Carried Along wiring Circuits

The greater part of the Diathermy interference which affects receivers located at a greater distance from the

apparatus is carried along wiring circuits in a manner similar to the transmission of "wired wireless" or more correctly speaking, carrier telephony. This disturbance is impressed upon the various wiring circuits in two ways. The first of these is by feed-back from the Diathermy machine to the power line to which it is connected. The high frequency currents flowing in the electrode circuit of the Diathermy machine cause voltages of the same frequency to be induced in the primary of the transformer used and thus to be superimposed on the power supply line. The high frequency currents flowing as a result of this induced voltage may travel back along the secondary distribution network for many miles, unless a suitable Filterette is installed in the power supply line to the Diathermy machine. This Filterette must be of the special type designed by the Tobe Filterette Laboratories after a thorough study of the Diathermy interference problem.

### Choice of Line Filterette

In the choice of a line Filterette for application to a Diathermy machine, three factors must be considered. They are:

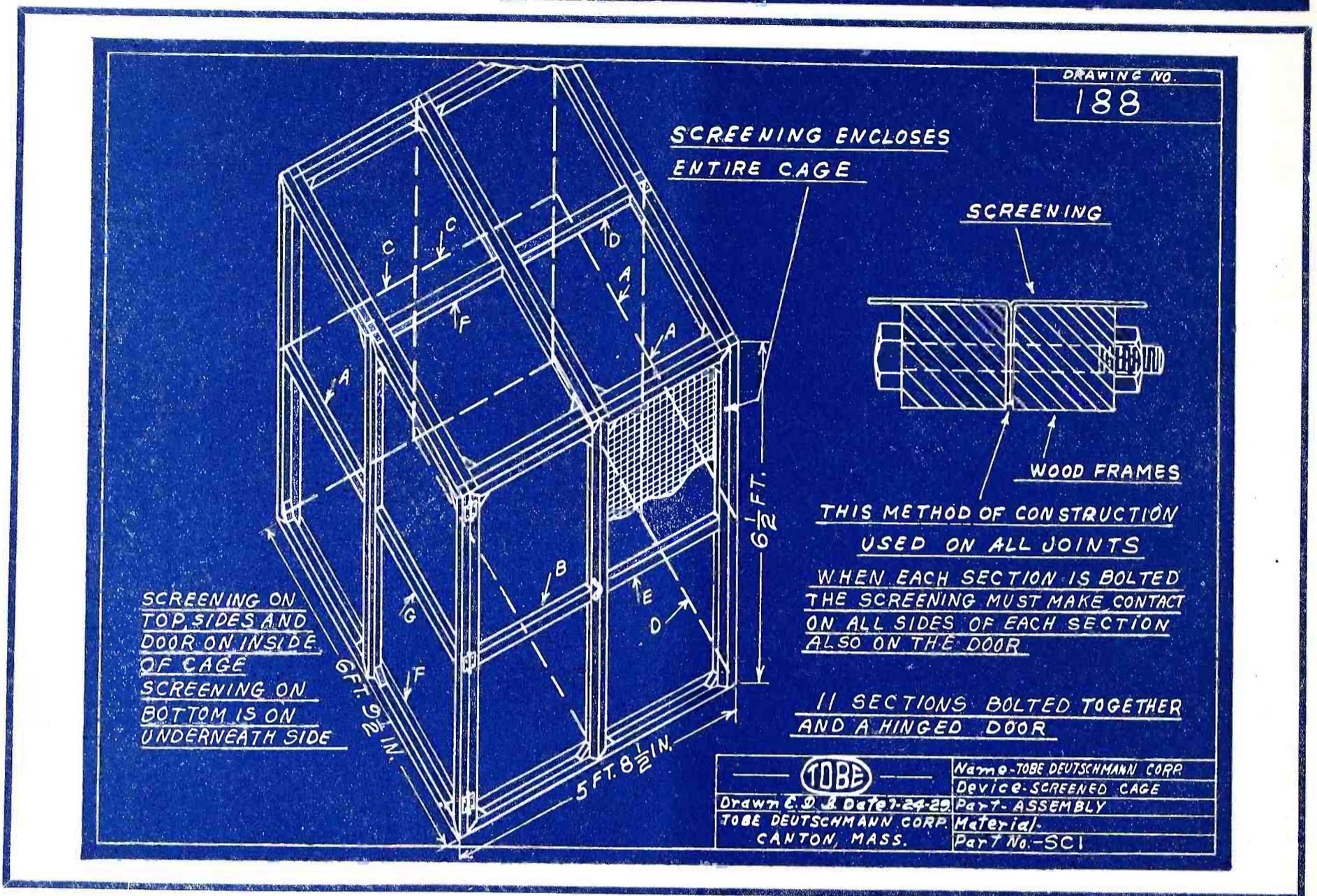
1. The voltage of the line to which the Diathermy machine is connected.
2. The number of amperes flowing in the primary circuit of the Diathermy machine.
3. The frequency of the power supply. Note: 60 cycles is the frequency most widely used in this country, but 50 cycles, 40 cycles, 30 cycles and 25 cycles may also be encountered.

In the development of line Filterettes for application to Diathermy machines it was found that the single section inductive capacity type Filterette, widely used for other applications, was not satisfactory for suppressing Diathermy

### Interference Questions Answered

Tobe Deutschmann Corp. maintains a complete Question and Answer Service on Interference Problems. Write us! Also send for current literature.

# Interference Problems



interference. In order to prevent the feed back of Diathermy interference into the power line it was necessary to construct a three-section inductive capacitive type Filterette. This was, of course, not commercially practicable because of the high voltage drop in the Filterette, the large size of the Filterette, and its excessive cost. If this construction were to be used, the first difficulty, that of excessive voltage drop, might be eliminated only by a procedure which would further increase the cost of the Filterette. It was, therefore, necessary to develop a Filterette which would combine, with high efficiency, the desired characteristics of compactness and low cost. This was successfully accomplished in the Tobe Diathermy Filterette.

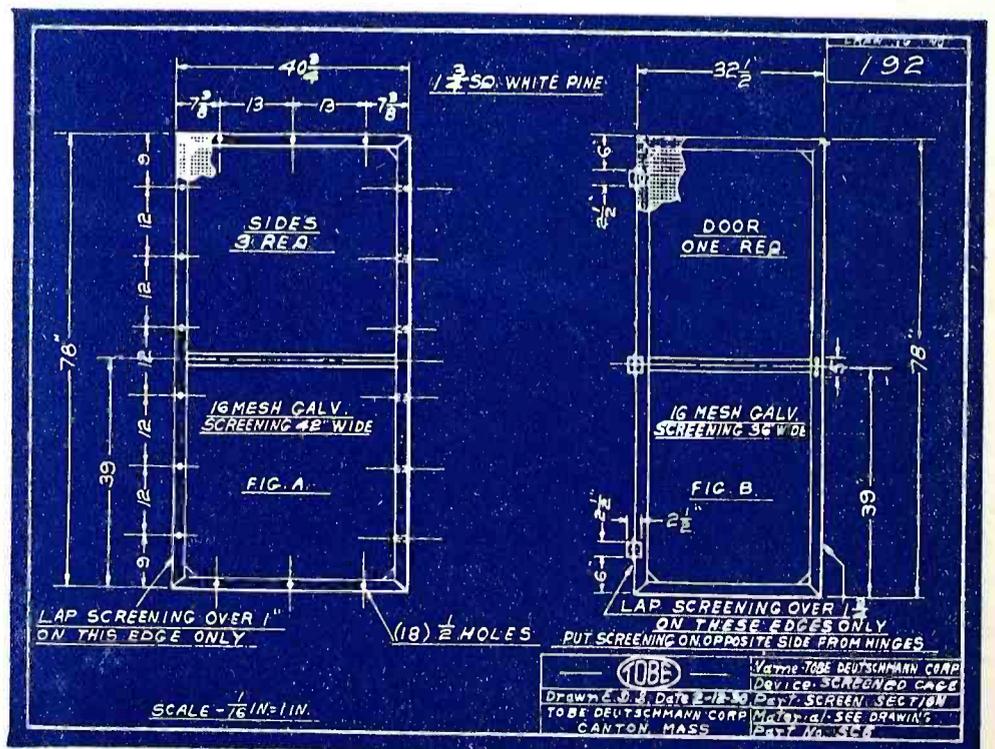
There are three standard models of Diathermy Filterette. The Type 1—HFO Filterette for application to practically all of the portable Diathermy outfits is only 7 $\frac{5}{8}$ " long, 6 $\frac{3}{4}$ " high and 5 $\frac{1}{2}$ " wide. This Filterette will handle any six ampere Diathermy machine operating at 110 volts, 50 or 60 cycles. Filterette 1—HF—2 contained in a metal housing 11 $\frac{1}{8}$ " long, 7" wide and 9" high is suitable for application to Diathermy machines drawing up to 15 amperes at 110 volts, 50 or 60 cycles. For application to the large size Dia-

thermy machines requiring up to 25 amperes at 110 volts, 50 or 60 cycles. Filterette 1—HF—3 has been constructed. This Filterette also is contained in a metal housing 16" long, 13" high and 8" wide. If Diathermy apparatus is used at lower power frequencies than those listed, special Filterettes for operation at these frequencies may be constructed. These Filterettes will be slightly larger than those for operation at 50 or 60 cycles.

## Diathermy Apparatus Must Be Shielded

Although the use of the Filterette alone will prevent the feed back of interference from the Diathermy machine to the power supply line, it will not of itself entirely prevent the distribution of interference. Unless steps are taken to prevent the radiation of interfer-

ence from the electrode leads and the body of the patient being treated, this interference will be picked up by the various wiring circuits in the building, such as the lighting or telephone circuit, and may thus be carried out into the neighborhood even though the correct Filterette is installed at the power input to the apparatus. It is, therefore, obvious that if the interference from a Diathermy machine is to be successfully eliminated, steps must be taken to pre-



# How to Treat Them

vent the radiation of interference from the secondary side of the apparatus.

It is not advisable to install Filterettes in the output circuit of the Diathermy machine since, if these Filterettes were effective in suppressing the interference, they would also prevent the passage of high frequency currents to the body of the patient, and would thus render the apparatus ineffectual in the treatment of disease. It is, therefore, evident that the only remaining possibility is shielding, and that this shielding must enclose the Diathermy machine, the patient being treated and the operator of the machine.

The following quotation from the laboratory report covering the experimental work undertaken in the development of this screen describes the necessary screening:

"A screen cage sufficiently large to contain both the apparatus and the patient was constructed. This cage was constructed of copper screening bolted to an angle iron framework, and to all appearances should have been entirely satisfactory. However, upon further experimentation, it was found necessary to solder screening across all the joints in the angle iron framework in order to prevent radiation. As this construction was quite complicated, a third shield was constructed.

"In the construction of the third shield, copper screening was again used. A wood frame, however, was substituted for the iron, and the screening was so arranged that firm metallic contact was maintained between screen sections. This shield proved entirely satisfactory.

"A fourth screen was then constructed on the same principle as that previously employed, with the exception that galvanized iron screening was used in place of copper screening. This screen was, if anything, more satisfactory than the copper screen."

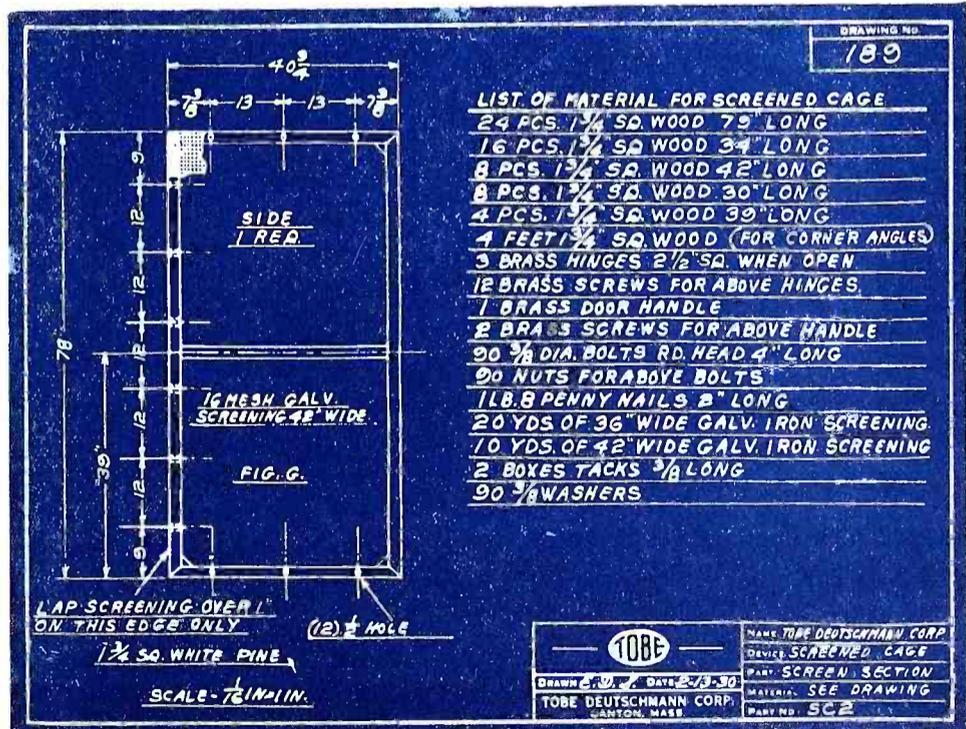
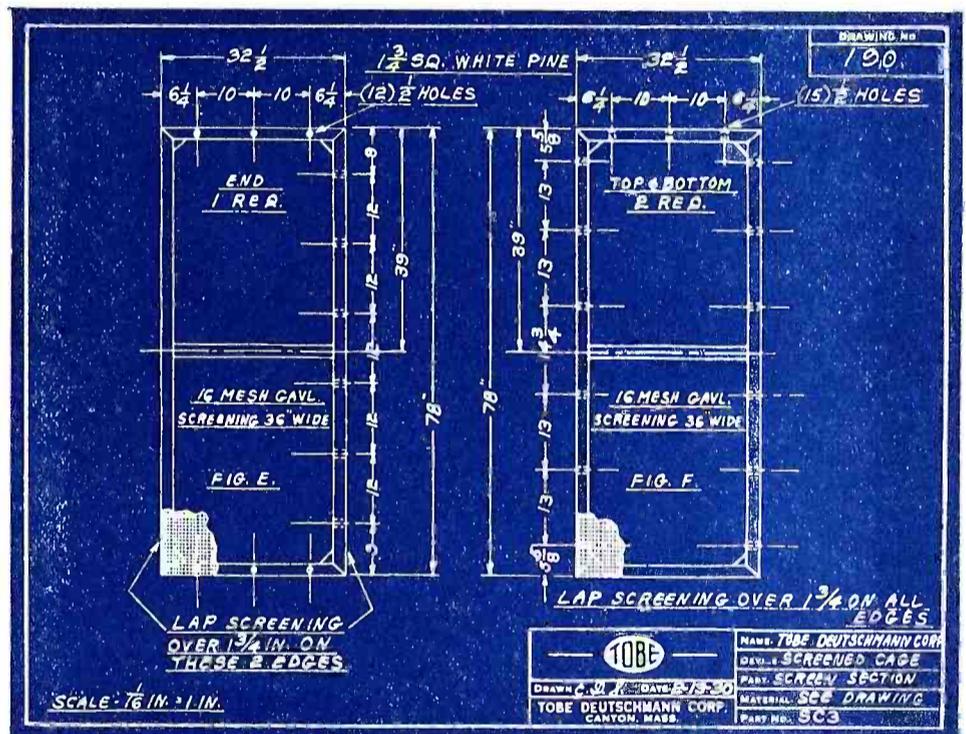
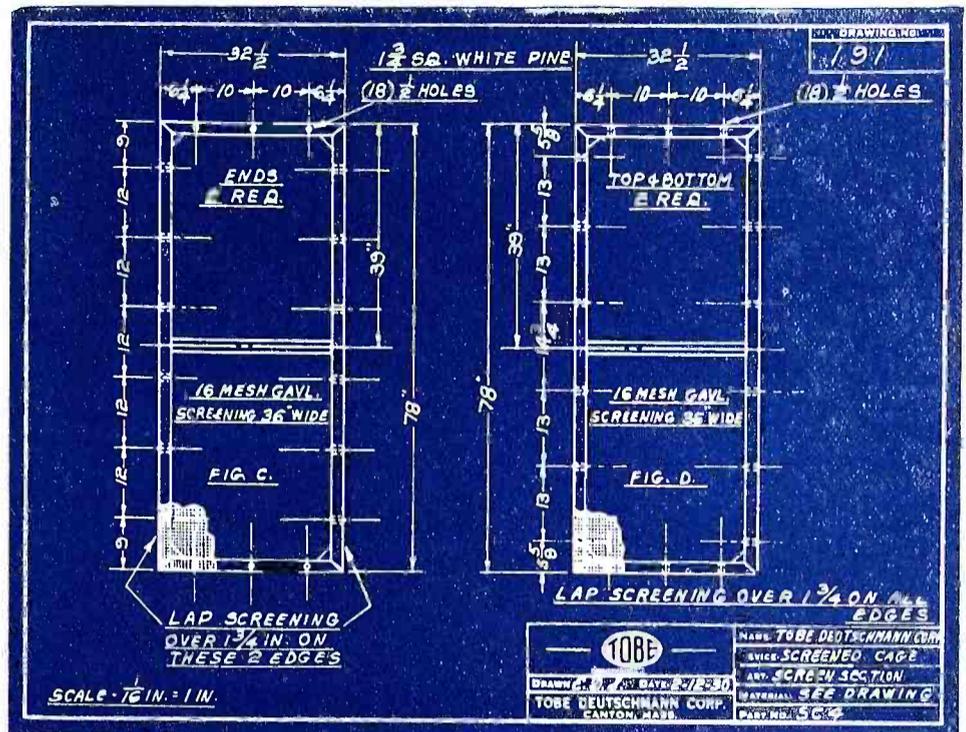
The blue prints show the constructional details of the screen finally adopted as standard for preventing the radiation of interference from a Diathermy machine. The important feature in the construction of this shield is the continuity of the screening. The exact size of the screen cage is not important. Slight variations from the suggested construction are not likely to affect the results obtained from the use of the screen. It must be remembered, however, that the screen alone will not provide satisfactory suppression of Diathermy interference, since the interference which is fed back into the power line is sufficient to minimize the benefit obtained from the use of shielding.

## Installing Filterette

Figure 1 shows the correct method of installing Filterette No. 1—HFO in the screen booth. As this picture shows, the Filterette is contained in a metal housing and a short piece of BX, bonded to the Filterette housing, is provided to facilitate connection to the 110 volt line.

A receptacle is provided in the Filterette so that the Diathermy machine may be connected to the supply line by means of its attachment cord and plug. The Filterette may be located at any point within the Diathermy screen, although for best results it should not be located further from the screen than the distance allowed by the length of ZX lead supplied with the Filterette.

In making the Filterette installation, standard wiring practice, as recommended in the National Electric Code, should be followed. A satisfactory method of making this installation is shown in Figure 2. As this drawing shows a shallow flush switch box (such as G. E. catalog No. SP6976) is mounted in any one of the sections of the screen, being held in place by a wood frame of 1 3/4" material extending over the top and one side of the box are supported by the vertical member and the cross member of the wood frame of the screen section in which the box is to be mounted. When the box is mounted in this manner, its back will be flush with the screening of the section. A small hole



should be made in the screening at the point where the BX is to enter the switch box and a BX connector, fastened to the end of the short piece of BX supplied with the Filterette should be used to hold BX in place.

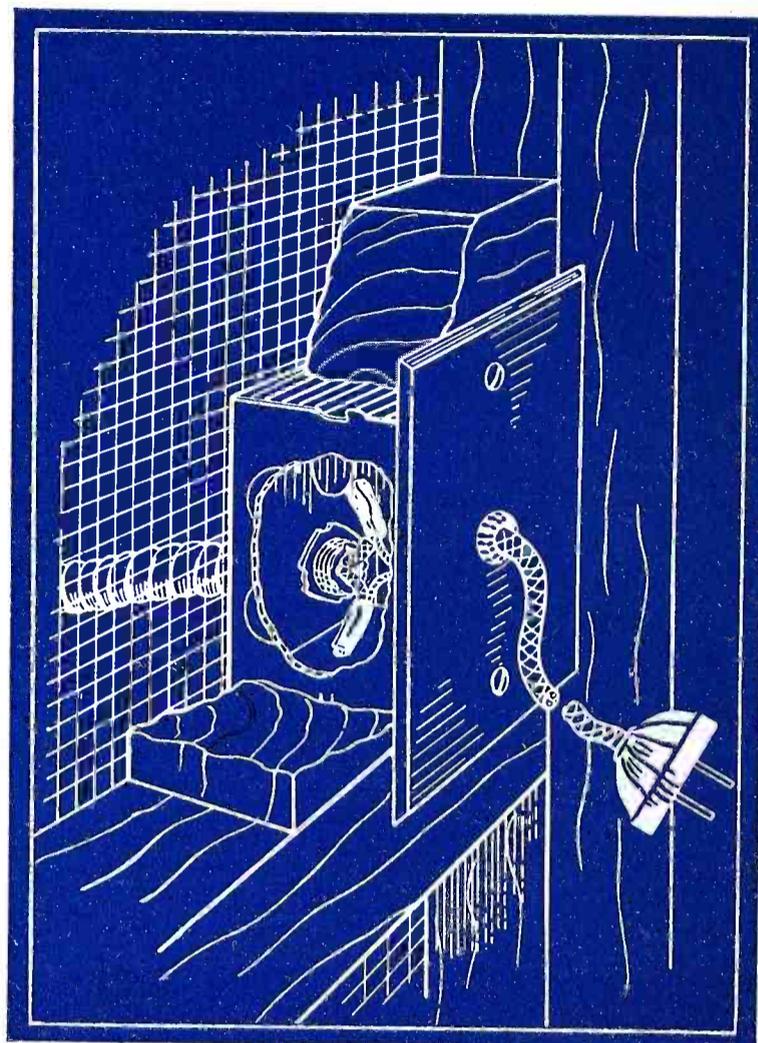
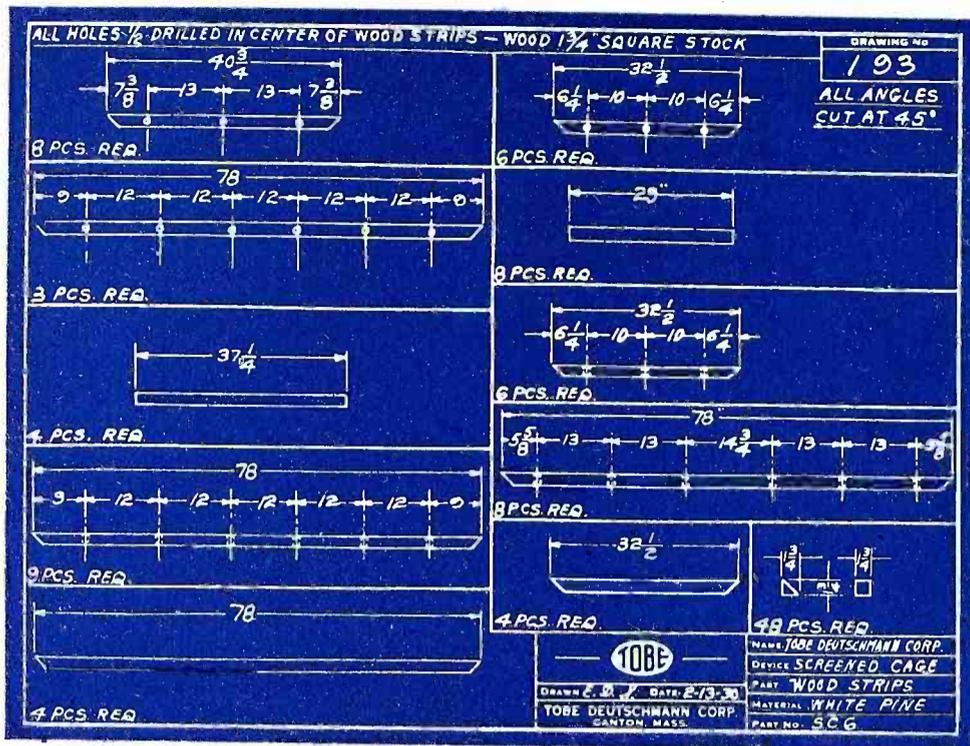


FIGURE 2.

It is suggested that a washer be placed over the BX connector in such a manner that the metal screening will be held in firm contact with the switch box when the BX connector has been fastened into the switch box. It is important that the BX sheath, the switch box and the metal screening be bonded together for more satisfactory results. To complete the Filterette installation, a short wire must be connected from the Filterette binding post to the metal screening. An excellent method of making this connection is to wrap the return wire around the BX connector so that it will be held between the screening and the washer which has been recommended.

#### Connecting Filterette to the Building Wiring

There are several possible methods of connecting the Filterette installation to the power supply line. The following method is recommended. Mount on the front of the switch box a flush plate having an outlet for a telephone cord. A composition plate (such as G. E. catalog No. GE2349) is recommended. Carry through this plate an attachment cord of sufficient length to reach the nearest baseboard outlet or wall receptacle. Note: Do not connect the apparatus to a lighting fixture, as the wiring of fixtures is not designed to handle the current required by Diathermy apparatus. The cord used should consist of two No. 14 conductors and should be type PO or its equivalent. A standard attachment cap should be connected to one end of this cord and the other end should be spliced to the conductors of the BX within the switch box. Whenever the Diathermy apparatus is not in use, the attachment plug of the entire installation should be re-

moved from the baseboard or wall receptacle.

#### Filterette 1—HF—3 requires separate Wiring Circuit

In installing Filterette No. 1—HF—3, a separate branch circuit of No. 10 wire should be run from the service entrance of the building to the Diathermy screen and an indicating switch opening the ungrounded conductor should be mounted on the outside of the screen booth. The Filterette should be mounted just inside the booth opposite this switch, and a short piece of flexible metal conduit should be connected from the switch box to the input side of the Filterette.

Terminals, protected by a metal housing, are provided at the output side of the Filterette to facilitate connection of the Diathermy machine to the Filterette. Be sure to protect the connecting cord by means of a porcelain bushing where it enters this housing. A switch is also provided in this Filterette to compensate for the line drop when the Diathermy apparatus is used at its full capacity.

It is important to note that any wiring which enters the screen booth must pass through the Filterette, otherwise interference will be picked up on this

wiring and carried out of the booth, thus reducing the value of the shielding. In other words, any lighting fixtures used for illuminating the interior of the booth must be mounted above the top of the booth so that the light shows through the screen, or if they are installed within the booth must be connected to the load side of the Filterette. Doorbell, annunciator, or telephone wiring must also be kept outside the screen, otherwise the interference will be picked up on this wiring and carried out into the building, thus nullifying the value of the Filterette and screening.

If satisfactory suppression of Diathermy interference is to be obtained, all of the instructions in this bulletin must be carefully followed.

The Tobe Deutschmann Corporation will gladly assist you in the solution of your Diathermy interference problems or in the solution of any other interference problems which you may encounter.

#### DIATHERMY FILTERETTES

Model No.	Volts	Amps.	Frequency	Dimensions	Price
1 HFO	110	6	50-60 cycles	7 $\frac{5}{8}$ " x 6 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ "	\$35.00
1 HF-2	110	15	50-60 cycles	7" x 11 $\frac{1}{8}$ " x 9"	75.00
1 HF-3	110	25	50-60 cycles	8" x 16" x 13"	125.00

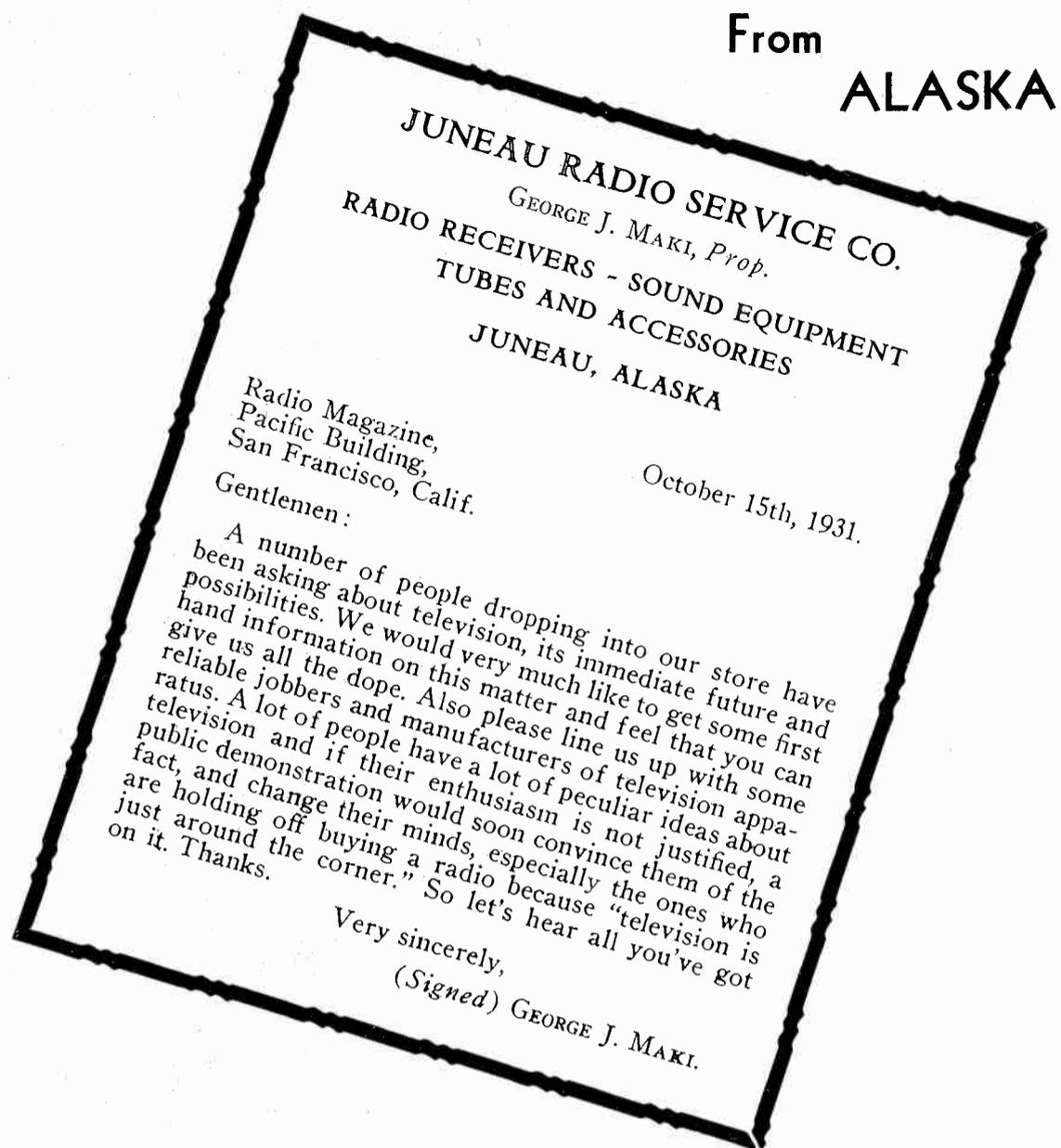
# TOBE DEUTSCHMANN CORPORATION

Filterette Division • CANTON, MASSACHUSETTS

The Acknowledged Authority on Radio Interference—Makers of FILTERETTES, the Accepted Remedy

# The Question

From  
ALASKA



# and our Answer:-

**T**HE disk-scanning television sets which are now on sale are very interesting scientific toys for experimental use. They produce a picture whose grain is not fine enough for long-continued entertainment in the home. The not-too-critical observer will be satisfied with the finer-grained pictures made by cathode-ray scanning sets. These are now under development and will be in the market next year. The first pictures will not show as much detail nor be as large and clear as those produced by a home-movie projector.

Pictures and accompanying voice will be broadcast on widely separated channels for some time to come. Two receivers or two separate parts of one combined receiver will be needed to receive both simultaneously. Consequently there is no good reason for postponing the purchase of a present-day receiver of voice and music. Television has been "just around the corner" for nearly fifty years. But there has always been another corner just ahead.

◆ Paste This In Your Window Where Your Customers Can See It ◆

# Short Wave Adaptor Pulls In Customers and Foreign Stations

By H. C. SCHULTZ  
General Sales Manager, Colin B. Kennedy Corporation

**W**HAT TO DO NOW?" asks Mr. Average Dealer at the end of an intensive selling year that has turned all of his prospects into customers. This Mr. Average Dealer is just like you and you and thousands of others. He hasn't "laid down" a minute in spite of conditions. True, most of his sales were not as easy as in the past but his prospects were followed up repeatedly until their cards could be removed from the "prospect" file and put into the "customer" mailing list. But he is not satisfied with seeing these monthly payments come in and taking whatever service and tube replacements he can for additional business. As he fingers the customer card file of perhaps two thousand names he is scratching his head and wondering where his real, plus business is coming from. What should it be? Wash-

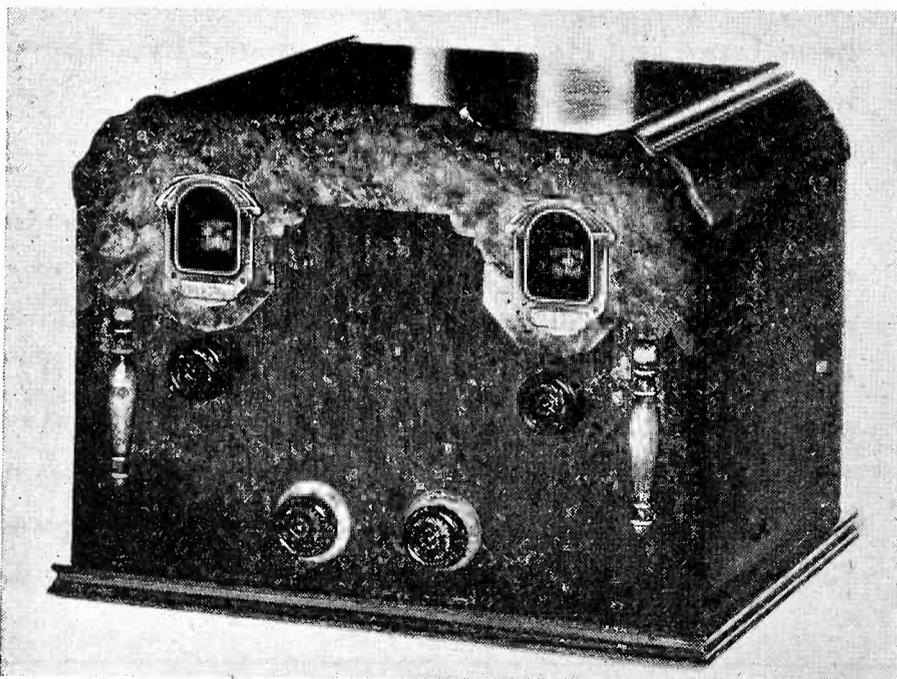


H. C. SCHULTZ

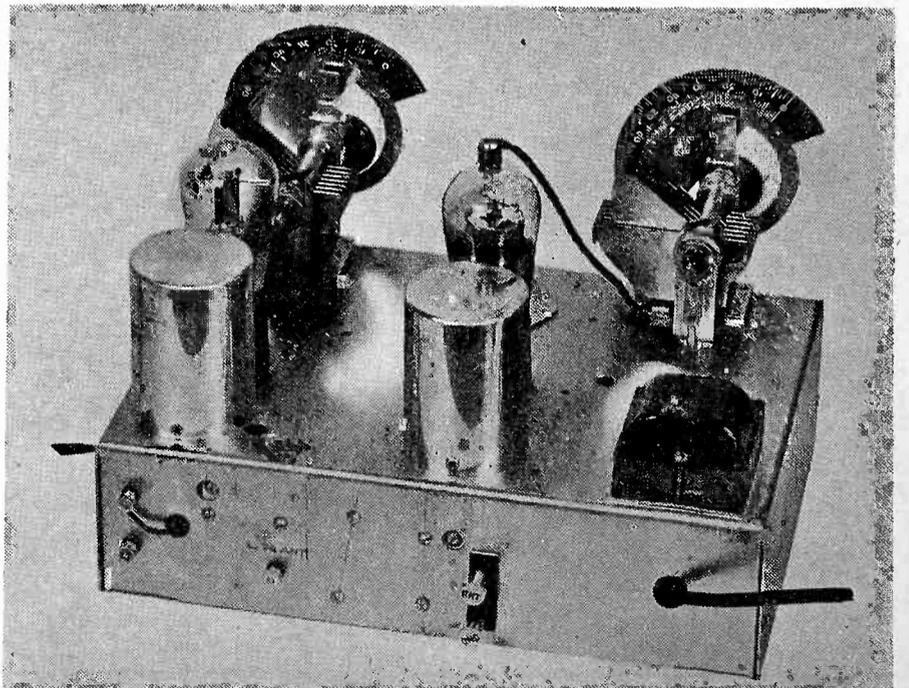
ing machines? Electric Sweepers? A complete electrical line? Sheet Music and Records?

**T**HE radio factory has done as much head-scratching as the dealer. We have answered this question for hundreds of radio dealers with a new short wave adaptor, or converter, known as the Kennedy Globe-Trotter. With this unit, the dealer can cover his entire customer list with splendid results, for the Globe Trotter may be used with any speaker type broadcast receiver, is easily attached and remains permanently so, simple to operate and sells for under fifty dollars.

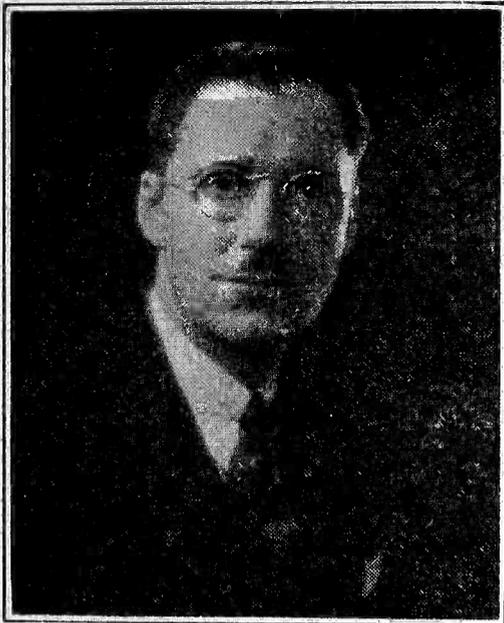
"World Reception" is the dealers new selling point. "Foreign Stations on your own Radio" are the magic words that compel attention and the one time customer is now a prospect, deeply engrossed in the fine points of short wave reception. He is somewhat amazed to learn that short wave reception is not mysterious, costly



The Kennedy Globe Trotter Has Eye and Sales Appeal



The Chassis Is Simple and Rugged in Construction



Advertising Manager Howser of the Colin B. Kennedy Corporation.

and dependent upon vast technical knowledge. Our advertising on the Globe Trotter stresses these points. A lot of copy is necessary in these advertisements to bring out all the selling points.

THERE ARE MANY interesting merchandising developments to which this type of unit is especially adapted. A cartooned letter, written by "the Globe Trotter" in person, was successful in interesting hundreds of radio dealers in this new short wave unit. After the dealer had received his sample he put a four colored jumbo card in the window with the caption: "Foreign Stations on your own Radio" to attract passersby. He next sent out a card to his entire customer list which asked the question: "Can you hear England on your Radio?", with the advice that: "You are missing something . . . and it's at our store." This was an invitation to the dealer's store to come and meet the Globe Trotter. A follow-up letter from the Globe Trotter was used with good results. Globe-girdling parties were arranged at some prospect's home and the dealer's sample "went visiting" on the appointed night, the store salesman and the Globe Trotter acting as co-host in the prospect's home. Many orders were thus obtained and the dealer could then order in quantities, assured that his "plus unit" had more than us-

*The Dawn of a NEW THRILL in Radio.*

**Now - FOREIGN STATIONS ON YOUR OWN RADIO!**

ITALY!  
FRANCE!  
GERMANY!  
ENGLAND!  
HOLLAND!  
SPAIN!  
HONDURAS

With the

*Pioneers in Radio*

**KENNEDY**

*Police calls! Amateurs!  
Oceanic Telephony!  
Airplane & Television Signals!*

*Since 1911*

**Globe Trotter**

**WORLD-WIDE RECEPTION FOR ALL**

Tired of ORDINARY RECEPTION  
Want Real Distance?

**1** This announcement is directed to those radio owners whose appetite has become jaded with ordinary reception. The Kennedy Globe Trotter enables you to girdle the globe! You use this unit with your own radio. Here, at last, is really something different!

**The GLOBE TROTTER makes a Short Wave Superheterodyne of any Receiver**

**2** The Kennedy Globe Trotter operates on the superheterodyne principle, and by its use any broadcast receiver of the speaker type may be made to operate as a short wave superheterodyne. If used with a receiver employing the "superheterodyne circuit it then becomes a "double converter" for short wave operation and performs with full efficiency.

**EASY TO CONNECT and OPERATE**

**3** Anyone can connect the Kennedy Globe Trotter to their own radio. You merely plug into the light socket and connect three wires. Thus connected it remains so permanently, to operate as both a long and short wave receiver. Tuning is the same as that to which you are accustomed.

**Short Wave Log**

Showing Partial list of Stations actually received in South Bend, Indiana, with the "GLOBE TROTTER."

Dial Reading	Call Letter (12-25 Meters)	Location
40	8XK	Pittsburgh, Pa.
40	AGC	Nauen, Germany
60	WOO	Atlantic phone
74	GBS	Engby, England
75	....	Amateur Phone
	(25-47 Meters)	

A Convincing Appeal to the Prospective Customer Is Made By This Type of Newspaper Advertising.

ual acceptance. The result of each party was more visitors to the store, who asked questions, secured informative folders and sometimes organized Globe-girdling parties in their own home, the dealer paying a commission on

every set sold as a result of the party. Newspaper advertisements over the dealer's signature tied up with his various mail-pieces and attracted many new customers to his store.

(Continued on Next Page)

**T**HE ADDITIONAL store traffic thus secured enabled the dealer to sell many new sets in addition to securing a good plus business from his old customer list. Such activity stamped his store as one of the "live spots" in town.

Thus, the dealer's question: "What do I do now?" is answered by: "Pull in your customers with Short Wave Reception," which, after all, is the newest thing in Radio.

### GLOBE TROTTER

#### No. 54 Chassis Specifications

#### Chassis

Base pierced, drawn and formed from heavy gauge sheet metal. Elec-

tro-plated. Width 11 $\frac{3}{4}$ ". Depth 3". Height 8 $\frac{1}{2}$ " and room to replace tubes etc.

#### Circuit

Superheterodyne circuit of "converter" or "adapter" type. Operates in conjunction with any good long-wave broadcast receiver. Comprised of tuner-detector tube (type 224) and oscillator tube (type 227).

#### Coils

No plug-in coils needed. Short wave bands covered by four switch operated coils.

#### Shielding

Fully shielded where essential and desirable. Aluminum shields. All steel parts electroplated.

#### Condensers

Individual tuning condensers. Two dials. Heavy, non-vibrating widely spaced condenser plates. Semi-

variable condensers are isolantite mounted.

#### Tubes

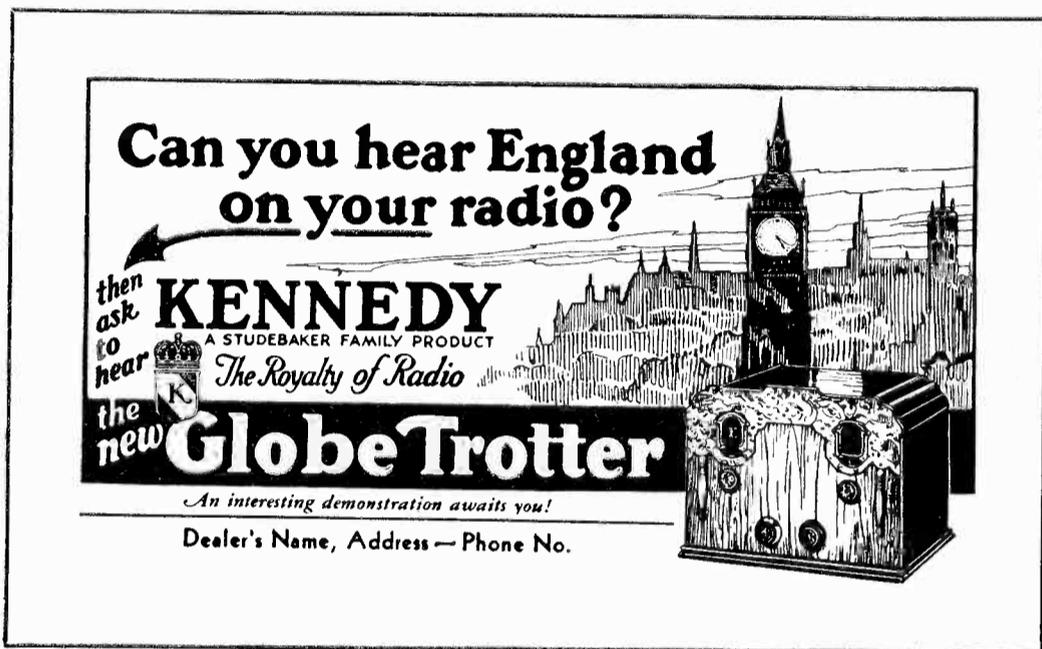
Two tubes, one 224 and one 227. Is not critical as to tubes.

#### Power

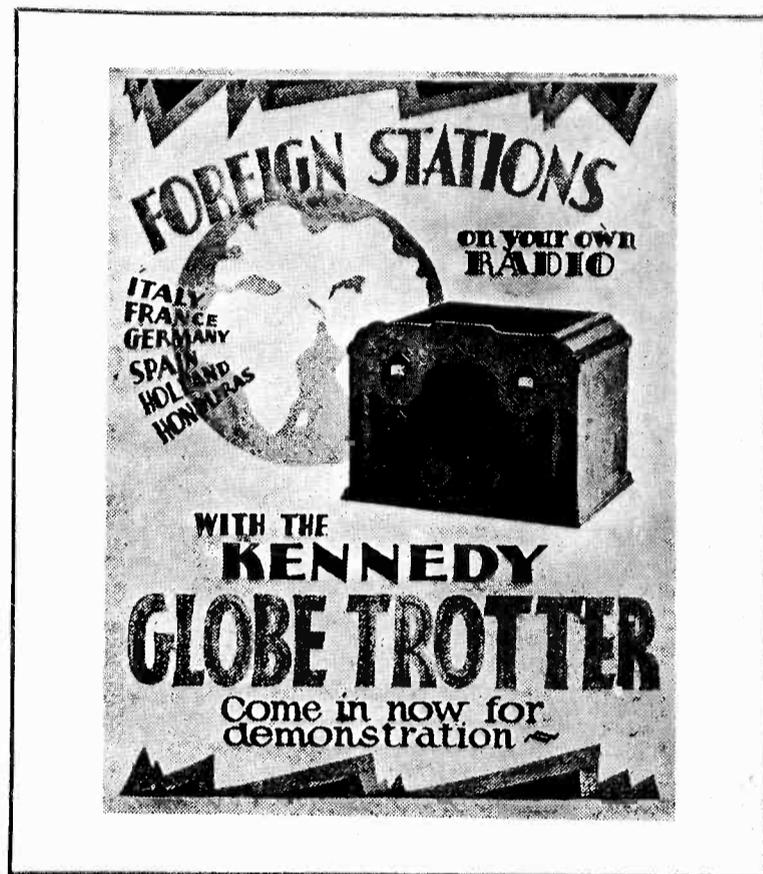
Filament power supply built in. Requires 110-120 volt alternating current. Negligible amount of "B" power supplied by the long wave broadcast receiver. No batteries.

#### Controls

Wave-band switch—no plug-in coils. Power switch. Long wave - short wave switch incorporated. May be left permanently connected to long wave receiver. Two tuning dials for maximum efficiency and simplicity. Can be operated by anyone who can tune a conventional broadcast receiver.



Above—Envelope Stuffers and Blotters Carry the Kennedy Globe Trotter Message Into the Home of the Prospect.



Right—Jumbo Window Poster and Counter Display Card for Dealers.

## Tubes Reduced in Price Four Times Since 1930

E. T. Cunningham, President of the RCA Radiotron Company, Inc., announced, on October 17th, substantial list price reductions on RCA Radiotrons and Cunningham radio tubes, ranging up to 40%, and affecting the popular type tubes which make up 82% of the tube demand. This is the fourth price reduction on tubes since 1930, making today's prices about 50% under those existing before July of last year. All other large tube makers announced similar reductions.

At the same time, Mr. Cunningham announced the offer to the trade, for a limited period, of free tubes with quantity purchases.

In announcing the reduction, Mr. Cunningham said:

"These reductions reflect the increasing economies of our consolidated ac-

tivities and the adjustment of present day costs. It has been the experience of our engineers that new tubes will improve the performance of four out of five radio sets. Hundreds of thousands of people are renewing the worn-out tubes in their radio sets. It is our belief that with lower prices, many millions will replace worn-out tubes with new ones. The increased demand will call for increasing tube production, thus offering increased employment to the thousands of people engaged in the radio tube manufacturing industry.

"The success of our activities in getting people to renew their worn-out tubes has been due largely to the splendid cooperation given to us by our distributors and dealers. So that they may put increased merchandising pressure behind our campaign against worn-out

tubes, free tubes are to be given with quantity purchases. These free tubes are being given in the belief that the profit derived from their sale will enable our dealers and distributors to profitably increase their efforts to get people to replace worn-out tubes."

The types affected and the reduction on each type follows:

Type	Old Price	New Price	Saving
UY-171-A	\$1.40	\$ .90	\$ .50
UX-201-A	1.10	.75	.35
UY-224	1.50	1.00	.50
UY-224-A	2.00	1.60	.40
UX-226	1.25	.80	.45
UY-227	1.25	1.00	.25
RCA-235	2.20	1.60	.60
UX-245	1.40	1.10	.30
RCA-247	1.90	1.55	.35
UX-280	1.40	1.00	.40

# Radio Jobber Opposes Tube Replacement Policy

## New Low Prices Will Force Discontinuance of Former Liberal Policy

A Letter from F. E. Stern,

President of Stern & Co., New England Jobbers

EDITOR'S NOTE Here, in part, is what Mr. Stern advocates. The excerpts are taken from a copy of his letter to a tube manufacturer.

I have before me your night letter announcing a substantial reduction in prices on tubes.

In my estimation, the sale of Radio Tubes by the dealer and distributor alike at these prices can only be profitable if a sale is made on a basis of finality. By that I mean to continue to handle tubes on the existing replacement basis will not alone absorb what profit there is for the distributor, but will occasion the distributor an actual cash loss.

I have been of the same opinion for well over two years, which opinion has been strengthened greatly in the past year—that the existent racketeering on replacements will ultimately divorce distributors from the sale of radio tubes.

Similarly, I do not believe that any manufacturer can make a profit on tubes by continuing to give the same liberal replacement policy which you have had in force for so many years. When radio tubes sold for \$5 and \$6 each, with a questionable life because of inexperience in manufacture and engineering development, it was your duty and obligation to the public to guarantee your tubes for a reasonable period of time, and from that guarantee developed the now existing perpetual replacement program.

The present price of merchandise does not warrant a continuation of any such guarantee. It is my earnest recommendation that your company and the leaders in the field of tube sales by virtue of advertising and public acceptance, take the initial step which is incumbent upon you because of your responsibility and leadership.

This step should be the definite testing of the tube by the dealer to the consumer at the time of sale. Such tube, if then operating properly, becomes a final sale, without recourse. Similarly, the jobber should test his tubes before shipment to the dealer, and all claims by the dealer must be made within five days, tubes to be identified by the jobber before shipment to the dealer, in order to eliminate the abuse which the dealer is making of the return privilege.

An analysis shows me that in our tube business, we handle a tube on an average of seven times for each sale. We purchase a tube from you, and it is handled once upon its initial receipt. It is handled again upon shipment to a dealer. Our replacement shows that for each tube sold, the dealer returns it to us, necessitating a third handling. We, in turn, handle the tube in our shop a fourth time to determine whether the dealer's claim is justifiable or no. It is then handled a fifth time by our Shipping Department in making a replacement to the dealer. It is then handled a sixth time by shipping the defective tube to the manufacturer. And it is finally handled a seventh time upon its receipt from you.

As regards the transportation costs, we stand the initial transportation costs on our purchases. We stand the replacement transportation cost to the dealer, as the dealer definitely and finally will not pay more than one transportation on an item which he buys. We handle a third trans-

portation cost in shipping the tube from our stock to your laboratory. We absorb a final fourth transportation cost upon your shipment of the replacement tube from your laboratory to our stock.

Obviously, at the present price of tubes, any such handling charges not alone absorb our initial profit, but leave us in the red, without taking into consideration our internal overhead charges of shipping room, shop, packing, and accounting.

The handling of your proposed 20% bonus effects a further handicap on us for not alone will we sell 20% less tubes because of this bonus, but we will have a 20% additional replacement factor on which we will absorb the various overheads outlined above.

It should be apparent to you that other than the transportation items, you incur all of the expenses which we incur in your own shipping and replacement departments, to say nothing of the cost which you incur by the replacement of defective merchandise with new.

Our experience shows us that a hundred tubes which we take out of stock for use in our own stock for testing purposes, give us a life of three months minimum, with not more than 5% of actual defective tubes. Between this 5% and the number of tubes which are rehandled by us for our dealers' accounts is a percentage running in various territories, from my observation and inquiry from 20% to 50%. Those additional claimed defects should be branded for what they are—namely, dishonest racketeering.

I believe that a dealer is essentially honest, but there is some strange quirk in his makeup which permits him to sell a customer a replacement set of tubes, take in from that customer a used set, which has given normal service, without allowance to his customer for any sum against the new purchase price, return those used sets to his distributor, and expect a 100% replacement, and then deliberately sell them over his counter for full price.

Both the distributor and manufacturer is being victimized. No individual distributor can stop this abuse. But the manufacturers, because of their position of leadership in the industry, can and should accept their moral responsibility for the correction of this abuse.

I believe that this letter is of general interest. I believe that the responsibility is squarely on your shoulders. I believe that it is time that those abuses were stopped. And I believe that it is time that the manufacturer protect his distributing organizations by taking a stand which will insure his distributors a reasonable profit for the efforts they expend.

I am, therefore, forwarding a copy of this letter to the various trade journals in the hope that they may editorially be of value and service to you in moulding public opinion towards the acceptance of this policy. I realize that it is a towards the acceptance of this policy. The buyer should not be entitled to any further guarantee on a radio tube than on a Mazda lamp.

STERN & COMPANY, INC.  
(Signed) F. E. STERN, President.

FES:S

# Receiver In Bankruptcy Tells How He Built Up Defunct Business and Later Sold It at a Profit

By MORRIS H. WHITCOMB

SOME time ago the court conferred upon me the rather doubtful honor of appointing me receiver for a retail radio store which had become so involved in financial difficulties that its creditors had instituted bankruptcy proceedings.

The store was located in a prosperous neighborhood shopping center, and while there was, I admit, no lack of radio dealers in the vicinity, it would seem that the store should have succeeded instead of failed. The erstwhile proprietor, however, calmly admitted to me that he had considered himself lucky on that month in which the store did more than meet its expenses.

In view of these facts the creditors and I were, at first, in favor of liquidation, but examination of the stock showed us that in the event of a forced sale, under the then existing conditions, the creditors would do well to receive 10 cents on the dollar. A further obstacle to liquidation was the fact that there was an ironclad lease on the premises which had three more years to run and, while the bankruptcy would break the lease, the landlord held over a thousand dollars as security, which sum would have been lost to the creditors.

This being the case, the creditors decided in favor of continuing the business under the direction of a capable manager, in the hope of building it up and then selling it as a going concern. The task of finding the aforementioned capable manager they left to me. In desperation I hid myself to my brother-in-law, also engaged in the radio business, and laid my problem before him.

"You're in the right shop," were his cheering words. "My assistant manager, Watson, broke the news to me this morning that he wants to go in for himself. If you can come to terms with him, he's the man for you—a live wire with ideas."

I lost no time in seeing Watson and presenting the proposition to him. Terms were finally agreed upon and young Watson entered upon his new duties. We paid him a salary, plus a commission as incentive, and gave him carte blanche. In addition, the astute young man asked for, and received, an option to purchase the store from the

creditors at a set price at any time within a year.

That was a year ago. Long since Watson exercised his option and bought the "bankrupt" store. What's more, he's still there; he's stopped using red ink in the store's bookkeeping, and he's so busy doing business that he has no time to stop and complain of chain store competition, small margins of profit, ruinous rentals, and all the retailer's other usual bugaboos.

## I

Ideas did it. Watson's first window display was the orthodox thing, its counterpart to be found in any one of a thousand other radio stores. His second display though, was far from orthodox. Against an effective background of scarlet crepe paper he placed a wire waste-basket filled to overflowing with radio tubes. On the window was a sign, connected to the basket by streamers, which read as follows:

### "How Many Tubes in This Basket?"

*The person or persons guessing nearest the exact number of tubes in this basket will each receive FREE any two-dollar article they may select!*

*You need not buy anything in order to enter this contest. Simply fill out the blank and leave it with the clerk.*

*Contest closes in two weeks."*

Allowing the winner to select his own prize, within a certain price limit, was a clever move designed to arouse the interest of the greatest possible number of people, and it did just that. No matter what the hour, I never saw less than three people in front of that window, speculating as to the number of tubes in the basket. A boy stationed in front of the store saw to it that every person who showed the slightest interest in the display received one of the entry blanks.

The number of people who accepted the implied challenge and stopped to fill out the blanks was a practical lesson in applied psychology—and the number of people who stepped in to deposit

their guesses, and incidentally made purchases while they were doing so, were not inconsiderable.

## II

Toward the close of this guessing contest I happened to step into the store one evening to find Watson alone, busily engaged in sorting out the entry blanks received in the guessing contest.

"Well, George" (we had reached that stage), said I, "that scheme must have netted you quite a little business."

"Yes, among other things," he grinned.

"What other things?" I asked curiously.

"Well, a bunch of acquaintances for one thing," replied George. "I'm new to this neighborhood, you know, but after these people handed me these cards with their names and addresses on them, I'll bet I'd be able to call half of them by name now. And that helps, you know."

"Another thing these cards will make," he continued, "is a good mailing list for circularizing. They already have the person's name and address, and the make of set he owns. Whenever I happen to get it, I add on additional information, such as the age and condition of the set, whether the owner might be interested in trading it in, and so forth; and when I run any specials in anything in which that person might be interested, I'll see to it that he hears of it."

Is there any wonder that this fellow soon eliminated the use of red ink in this store's bookkeeping?

## III

Shown by the guessing contest that the possibility of getting something for nothing had a universal appeal and succeeded in bringing quite a few people into the store, Watson determined to continue the idea in still another phase.

Accordingly, he placed in the window a complete radio receiving set and announced that it would be given away free on a certain day about a month later to the person who held the lucky number. He then proceeded to give duplicate numbered coupons with each purchase made in the store. One coupon was deposited in a sealed box in the

store and the other was retained by the customer.

On the day on which the set was to be given away the box was opened, a coupon picked from it, and the number called. In order to win it, the customer must be present with his coupon, otherwise the drawing continues until someone present holds the corresponding number.

This stunt brought a large crowd of people into the store, and George saw to it that he had an effective display of good values and plenty of extra sales help present ready to take care of the natural increase in business.

Also, neglecting not even the slightest opportunity, the coupons bore the store's advertisement on their reverse side, as they were sure to be held in the customer's homes for some time and were scattered about the streets when the contest was over.

The cost of the set which he gave away, Watson charged up to advertising, and never did he make a more profitable investment. People came from far and wide to make purchases in the hope that their coupon would be the lucky one, and among these people George found not a few prospects to whom he sold new radios, etc.

#### IV

Any merchant in any line will agree that when a new customer enters your store the first impression that you and your establishment make upon him will go far to determine whether or not he becomes a steady customer. George goes further. When a new family of potential customers moves into his neighborhood George reaches out and endeavors to give them a good impression of his establishment even *before* they cross his threshold.

As soon as he learns of the arrival of a new family in his neighborhood (and George has ways of abstracting such information from apartment house superintendents, renting agents, furniture movers, etc.), George sends them an attractive souvenir which is also an advertisement for his establishment. Accompanying the souvenir is an illustrated circular setting forth in particular such items as aerial and lead-in wires, tubes, and the dozen other little items which are so likely to be needed in the installation of a radio. In addition, George offers his services in installing the radio.

The newcomer in the neighborhood, knowing none of the radio dealers in the vicinity, is rather apt to remember the one who welcomed him into the neighborhood with a useful souvenir such as a radio log. This fact George has discovered to his profit.

## Bond Geddes, RMA Executive Vice-President, Tells Broadcasters What It Is All About

**T**HE National Convention of the National Association of Broadcasters were told things of interest by the R.M.A.'s executive vice-president, Bond Geddes. Here are the highlights:

(1) Radio manufacturers have a total investment of about three billion dollars which is dependent upon broadcasting.

(2) A favored few radio manufacturers are now in peak production, strangely surpassing, under present conditions, even the production of the so-called radio boom period of two years ago.

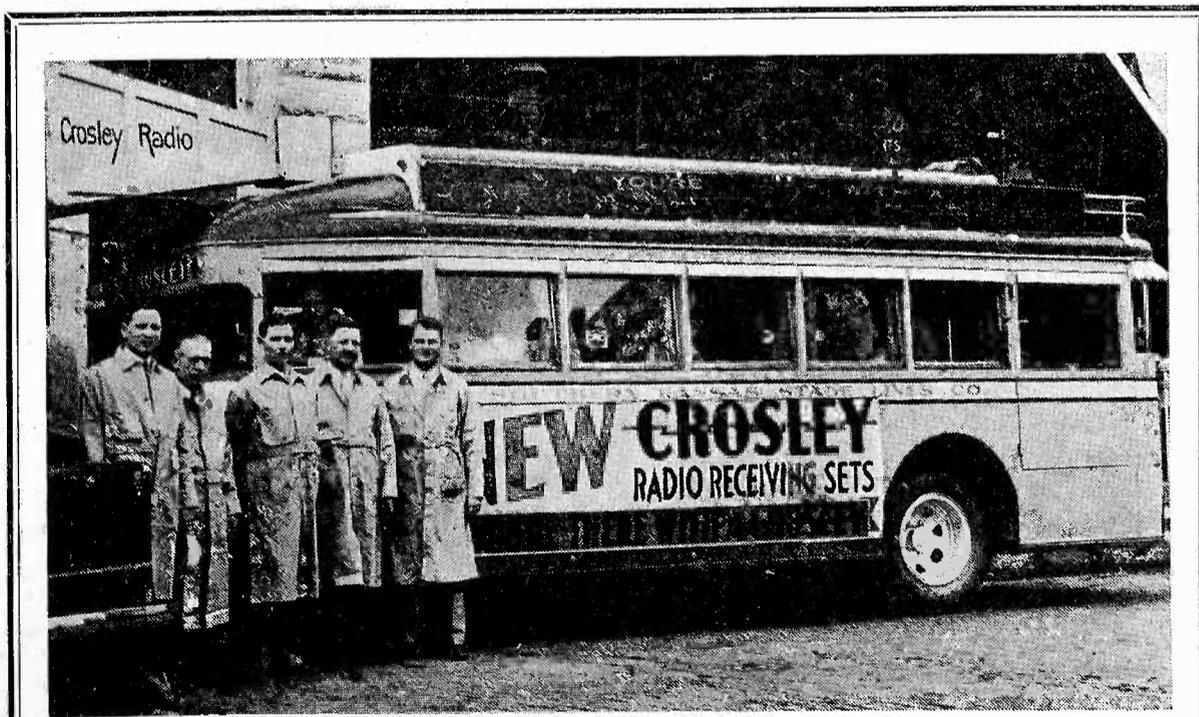
(3) Beginning last August and continuing until the present the proportion of midget sales to those of console sets has been declining. Less than half of the 2,500,000 to 3,000,000 radio sets which we expect to sell this year will be of the midget class.

(4) The midget has a definite and established place in the market, especially under present conditions.

(5) The motor car radio will tremendously increase the listening audience next year. It is a definitely determined fact that motor car radio slows down driving speed and, therefore, actually makes motoring safer.

Concluding his remarks Geddes

asked for co-operation between broadcasters and manufacturers and then related the story of the minister's parrot who asked the sailor's parrot what to do to be saved. From the seafaring parrot came the reply "Pump like hell or we'll all go down."



The Radio Corporation of Kansas Uses This Elaborate Means to Advertise Its Business. Wright-DeCoster Sound Equipment Is Employed.

# Sylvania Dealer Helps

## A Complete Merchandising Service

**B**ELIEVING that the future profits of the radio dealer will be found, to a large extent, in the tube replacement market, R. R. Ruxton, Advertising Manager of Sylvania Division, Hygrade Sylvania Corporation, has prepared a series of window displays, dealer advertising material and dealer helps, designed to attract the attention of radio owners for replacing old and weak tubes with new Set-Tested tubes if they are to get full enjoyment from their radio sets.

The new Sylvania window display "Don't Buy Tubes Blind" lithographed in color, features the many makes and models of radio receivers in which Sylvania Tubes are Set-Tested. Four Supplementary window or counter cards with adjustable dials permit the dealer to feature his own selection among these radio receivers.

placing weak or burned out tubes. The customer thus has on hand a complete emergency outfit of tubes, for instant use when tube trouble develops in his receiver. Dummy display cartons, window streamers, counter cards and envelope stuffers are supplied to dealers stocking the Emergency Kit.

new tubes at the time of purchase. The date of purchase gives the customer and the service man a clue for later tests and renewals.



Envelope stuffers and counter circulars are supplied to dealers either free of charge or at a fraction of manufacturer's cost.

A series of envelope stuffers or counter circulars describes briefly and pointedly the advantages of frequent tube testing and immediate replacement of weak tubes.

The Sylvania Emergency Kit is designed to give the dealer an opportunity to increase his unit sales of radio tubes from one to four. One tube of each type used in the customer's receiver is packed in a special carton, with complete instructions for locating and re-



Counter tube merchandiser, in enameled metal, with space for generous stock of tubes.

A counter tube merchandiser, of metal enameled in color, provides space for a generous stock of tubes, out on the counter where the customer can see them and be reminded of the tubes in his own set that should be tested and possibly replaced.



Sylvania Emergency Kits are packed in special cartons.

Two different types of tube stickers, with space for date and dealer's name, have proved helpful as customer reminders. One is for use on tubes that have been tested and found weak, but which the customer is not yet ready to replace. The other is to be applied to



Sylvania window display tells the customer "Don't Buy Tubes Blind."

The Sylvania Certified Tubes-For-Your-Set Chart serves as a sales guide for the dealer and a guarantee of satisfactory performance for the customer. This chart lists the various makes and models of receivers in which Sylvania Tubes are Set-Tested, with the correct tubes for use in each model.

A series of technical bulletins, issued by the engineering department, giving service data and average characteristics for all types of Sylvania Tubes, is supplied in a handy binder.

Newspaper mats, electros, window transparencies, streamers for special occasions such as football and baseball season, price cards and folders, electric flashers signs, portable tube checkers, tube carrying cases for salesmen and servicemen, book matches, and various other dealer helps are supplied to dealers either free of charge or at a fraction of the manufacturing cost.

Tell them you saw it in RADIO

# The Advertising Announcement Is Your "Admission Charge" to a Radio Program

By H. E. SANDERS

Director of Advertising and Sales Promotion

SHELL OIL CO.

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## A dealer should not condemn the radio programs

*Too many radio dealers, after being aware of radio entertainment in the margin of their consciousness all day long for years, are inclined to agree with the man on the street who allows advertising to spoil his radio enjoyment. It is very easy and very tempting for all of us to condemn a nation for the misdemeanors of one of its citizens. And when a quack doctor raves about his pills for ten minutes of an agonizing fifteen minute saxophone recital, or when a large national advertiser who ought to know better, and eventually will, dominates a fine musical program with blah about his product, we are inclined to damn the whole art of radio entertainment. But as radio dealers we must be the apostles of this art; we must listen carefully to the good programs and rave about them to our customers. Our enthusiasm will have far reaching effects.*

---

**T**HOUSANDS of radio fans are continually voicing bitter criticism of program sponsors. For the most part this criticism has to do with the commercial announcements punctuating the entertainment, very little of it being directed at the quality of that entertainment. Radio programs today are admittedly on a high standard. The theater of the air has attracted the best talent the country has to offer. Censorship is more strict than in most other forms of entertainment. Then what is it that inspires the fans' barrage of complaints?

A majority of those who are well informed as regards programs in general will admit that some few programs deserve to be attacked as being top-heavy with commercial "plugs." But most tirades launched by the indignant listeners are in the form of blanket indictments. These I believe to be unjustified.

Advertising is the life blood of radio today. Private capital makes possible

the superb shows heard nightly by millions seeking their entertainment at the dials. Without the competition born of progressive advertising policies, attainment of present radio entertainment standards would have required many more years. Without this keen rivalry, an evening at the dials would provide all the thrills of a month-old news reel. Interrogation of the indignant fans regarding other methods of supporting programs usually brings forth a rather vague suggestion that taxation of receiving set owners would do the trick.

Support of radio entertainment by taxation would create another government bureaucracy. Politics would come to play some part in the administration of the controlling agency. Further, the radio is a source of public information, and its freedom from government control, aside from necessary censorship and technical regulation, is almost as important as freedom of the press.

Private sponsors must justify their programs through the recognition and appreciation of a satisfied audience. A government program would not be so dependent upon the approval of the public. Selection of entertainment material would be made by a far smaller group.

Several foreign countries now using this system are years behind the United States. Programs are mediocre. To broadcast on the same scale and with comparable talent would involve a prohibitive tax levy. Some listeners will maintain that America is paying too much for radio talent. They will hold that if a readjustment was brought about the same standard of excellence could be maintained for less money. I don't believe this.

Americans have always been willing to pay top prices for talent and genius. If radio will not pay it, then motion pictures or the theater will hold the exclusive services of the artists by maintaining a higher standard of remuneration.

The advertiser is footing the bill. His advertising announcements might be

considered the fans' admission to the "show." And most of the sponsors have established a fair admission price. At the beginning the commercial announcements were much more direct and uninteresting. They usually opened and closed the program. Today a large percentage of the sponsors have split these announcements and scattered them through the program. The fan is getting his advertising in small doses.

While many sponsors have not reduced the percentage of advertising per program, they have been obliged to improve their "shows" so that, on a comparative basis, the listener gets more entertainment for his "admission."

**T**HE technique of the commercial announcement has undergone considerable change. Many of them represent real value to the listener. Sponsors encourage frequent physical inventories in the interest of good health, offer sound advice on investments in the interest of home building, and a variety of other subjects. It is true that these contributions are a part of the advertising, but they have a value separate and distinct from that of the sponsor's product.

Radio advertisers employ very direct methods in the majority of instances. The commercial announcements are usually separate and distinct from the entertainment features. The supervision and censorship exercised by the national chains is such that only reputable enterprises and products may be advertised. There is much adroitness in radio advertising, but very little deception.

A recent stop-watch survey of four fifteen-minute programs and a one-hour network broadcast revealed some interesting figures on the proportion of advertising. Each of the four shorter programs had a considerably higher percentage of advertising than was tabulated for the longer broadcast. The artists themselves supplemented the announcer's commercial script in the short programs, while the sponsors of

the longer period confined the advertising to the announcer's script. The tabulation showed:

Subject	15-Minute Period	Hour Broadcast
Entertainment .....	74.5%	86.9%
Advertising by Announced.....	13.7%	7.8%
Advertising by Artists.....	6.1%	0.0%
Theme Music.....	3.8%	1.6%

**A** TOTAL of between six and seven minutes of advertising was heard on the longer broadcast, and this was split up into five short installments, the longest of which was 75 seconds. Advertising on the shorter broadcasts totalled as much as 30.5 per cent for one program, and one announcement required as much as 90 seconds.

Certainly the six minutes of scattered advertising was not an exorbitant "admission charge." Yet the audience probably included radicals who begrudged the sponsor each short announcement. They would have been obliged to pay from 50 cents to several dollars for comparable movie, theater or concert entertainment. Those who complained would probably refuse to pay 50 cents or \$1 for a *Saturday Evening Post* devoid of advertising. And the radio fan is not obliged to listen; he can flip the dial as easily as he can turn the magazine page.

"But my investment in my radio obli-

gates the sponsor to give me what I want." This is a justification cited frequently by complaining fans. It is fallacious in several respects. The sponsor purchases time on the air from the station or chain system. He is entitled to use it as he chooses, except that the returns on his investment are in direct proportion to the degree to which his progress meets with public approval. The set manufacturer, through sales, creates the station's market—and gives his media circulation. Therefore the manufacturer and broadcasting system have some obligation to the set owner. But the sponsor is in the same position as the transportation company.

The railroad, steamship line or aviation system is under no obligation to the passenger after the ticket is sold as regards comparison with any other form of transportation. The passenger is under no obligation to travel over any one system. If he dislikes one form, he may travel differently next time. If the listener dislikes the program, he need not tune it in again. The commercial "plug" is the listener's "fare." It is for him to determine if it is justified, and he need not "pay" it again if he feels the value isn't there.

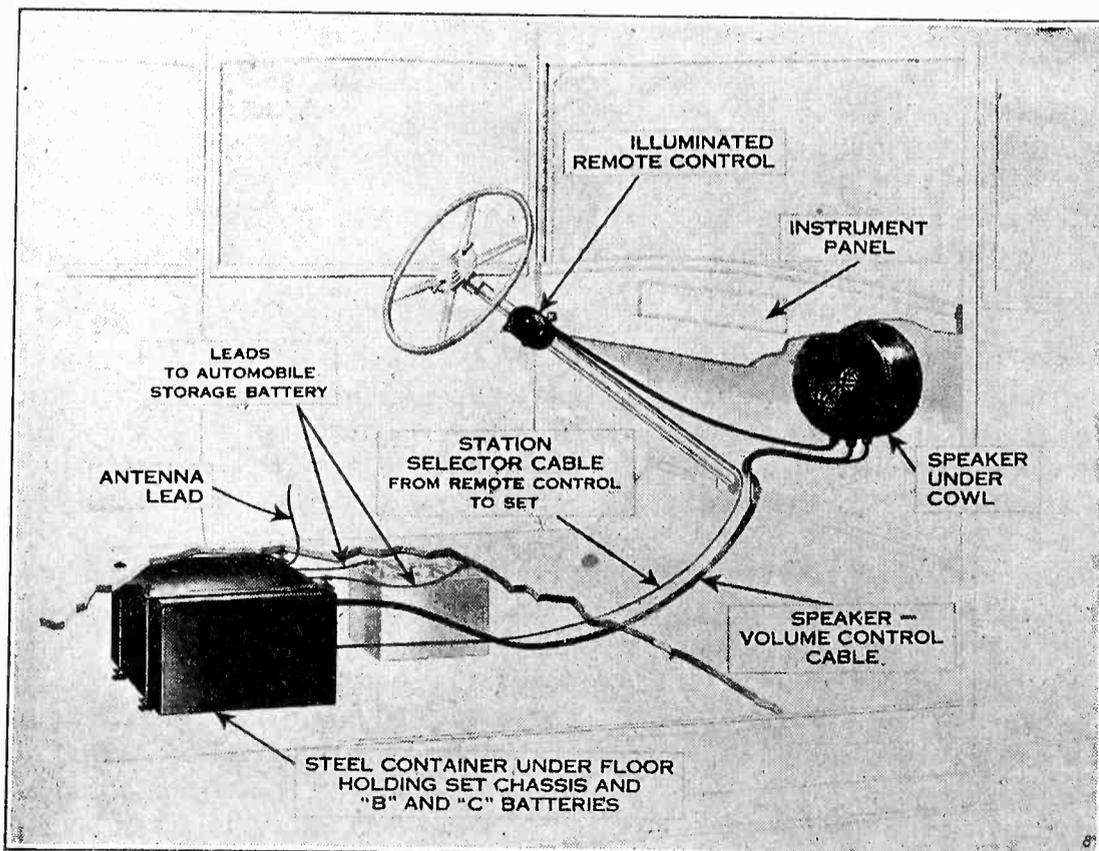
Radio sponsors are not philanthropists, but their programs are gratuitous. They have no claim on the listener except for the appreciation and recog-

nition of product value inspired by the advertisement and commercial announcements. These are entirely voluntary. After all, most "something-for-nothing" enterprises have their commercial aspects, and the radio sponsor's offering is as justifiable as the rest and more direct than most. The city building a children's playground is ostensibly charitable and humanitarian, but the taxpayer pays the bill and the city does the job to keep the citizen from moving elsewhere. Our richest men are philanthropic; they return to the public a portion of the wealth which they made through the patronage of the people. And the gift is usually made after the donor has little or no further use for it.

Program overloaded with advertising matter will not survive. Each program attracts its own audience. If it fails to hold that audience, then it becomes inefficient and will be eliminated sooner or later. Most sponsors have made the necessary adjustment to insure public approval.

This adjustment is yet to be made on some programs. But the unthinking fan who raves and rants at sponsors in general because his admittedly top-notch entertainment program is punctuated with short commercial announcements is in the same class as the fellow who demands steak in a breadline. Unreasonable!

## Atwater-Kent Auto Radio



**T**HE Atwater-Kent Automotive set, model 81, uses a special developed tuned radio frequency circuit, employing 3-236 tubes, 2-237 tubes, and 2-238 tubes, with push-pull amplification . . . one bank of three condensers . . . automatic volume control . . . illuminated remote control . . . large size improved electro-dynamic speaker.

One of the outstanding features of the Model 81 is the easy manner in which it can be installed. The entire assembly consists of but three units; the combined set and battery container, which is designed to be supported from the underside of the floor board by four long carriage bolts; the dynamic speaker, which is usually mounted under the cowl; and the remote control, which clamps to the steering column.

It is only necessary to drill four small holes to install, making it possible to remove from one car to another without affecting the resale value of the car.

The price of the set is \$89.50 complete with tubes and "B" batteries—installation and antenna extra.

# Your Letter May Win One of These Prizes!

**\$175. In Cash Awards to Owners of the**



## RESISTOR REPLACEMENT GUIDE

—for suggestions on—

**HOW THE INTERNATIONAL RESISTANCE COMPANY  
CAN BE OF MORE SERVICE TO THE SERVICEMAN**

### RULES OF THE CONTEST

*Please read thoroughly*

(1) The contest is open to all owners of the I. R. C. Service Man's Resistor Replacement Guide.

(2) Each year we mould a letter in the end cap of each I. R. C. Resistor to designate that particular year's manufacture. Last year our resistors had the letter X moulded in the cap. This year every I. R. C. Metallized Resistor wrapped in the new I. R. C. label has a letter moulded in the cap designating 1931 manufacture (type "K" Metallized Filament). *All letters must mention this designation mark, which you will find clearly indicated on one of the metal ends of each unit.*

(3) All letters must be clearly written and contain not over two hundred words—addressed to Contest Department.

(4) No employee or executive of the International Resistance Company is eligible to this contest.

(5) In case of ties for any of the prizes offered, the full amount of the prize tied for will be given to each tying contestant.

### HOW TO ENTER

Nothing to do but be an owner of an I. R. C. Service Man's Resistor Guide, and you are eligible for the competition.

Don't forget, all letters must be in our hands not later than midnight of December 1, 1931, in order to receive recognition.

Rhetoric and phraseology will count but little in the contest. What we want is your *ideas*, and how we can be of more assistance to you in the service work you are doing.

**First Prize . \$100    Second Prize . \$50    Third Prize . \$10  
Fourth Prize . . \$5    Fifth Prize . . . \$5    Sixth Prize . . . \$5**

**I**N ADDITION TO these cash prizes for the best letters received, the International Resistance Company will give free service helps on Motor Radio Suppressors to *every one entering the competition.*

It is the desire of this company to be of the utmost help to radio repairmen. The I. R. C. Resistor Guide and our other service helps are in daily use by thousands of men in the field. We wish to go further in this matter of service to those who use I. R. C. Metallized and Precision Wire Wound Resistors. Hence, we are willing to pay for the best practical information that will guide us.

Read carefully the rules of this prize contest in the adjoining column. The contest will close at midnight, Tuesday, December 1.

All letters must be in by that date.

Announcement of the names of the prize winners will be made in this magazine as quickly as possible after the close of the competition.

If you are an owner of the I. R. C. Resistor Replacement Guide, you are eligible to the contest. You are also familiar with what we are already doing to help your business. Write out your suggestions as to how to improve this service, and mail with the coupon below to

**INTERNATIONAL RESISTANCE COMPANY**

Philadelphia

Toronto

INTERNATIONAL RESISTANCE CO., 2006 Chestnut St., Phila., Pa.

GENTLEMEN:

I am an owner and user of your I. R. C. Resistor Replacement Guide. I wish to enter your contest and am sending herewith letter containing my suggestions for further helps to Servicemen.

Name.....

Address.....

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

Does Your Business Associate Subscribe to  
"RADIO"?

Pass this issue along to him when  
you have finished reading it.

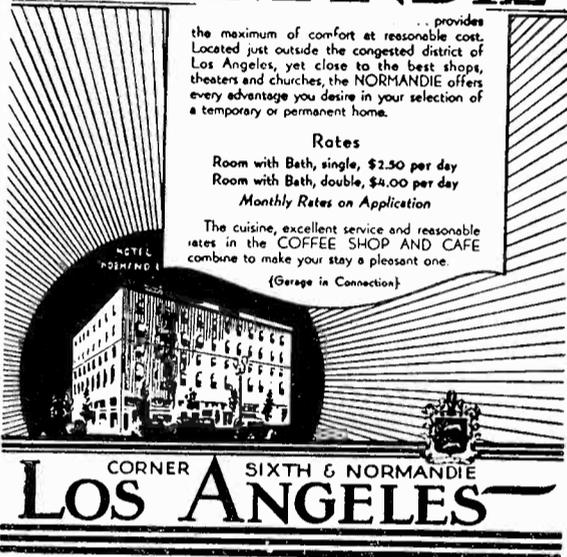
The subscription price is \$2.00 per year.  
Send subscription orders to "RADIO,"  
Pacific Bldg., San Francisco, Calif.

HOTEL  
NORMANDIE

... provides  
the maximum of comfort at reasonable cost.  
Located just outside the congested district of  
Los Angeles, yet close to the best shops,  
theaters and churches, the NORMANDIE offers  
every advantage you desire in your selection of  
a temporary or permanent home.

Rates  
Room with Bath, single, \$2.50 per day  
Room with Bath, double, \$4.00 per day  
Monthly Rates on Application

The cuisine, excellent service and reasonable  
rates in the COFFEE SHOP AND CAFE  
combine to make your stay a pleasant one.  
(Garage in Connection)



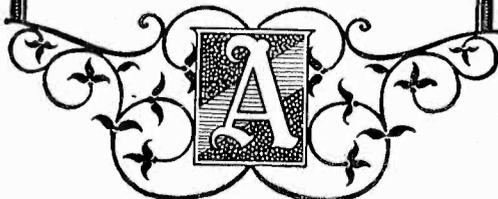
CORNER SIXTH & NORMANDIE  
LOS ANGELES



The  
ARCADY

Rising twelve stories above the  
exclusive Wilshire district,  
overlooking the beauties of  
Westlake and Lafayette Parks,  
the Arcady offers every com-  
fort and convenience for the  
traveler

LOS ANGELES  
WILSHIRE at RAMPART



Engineers Favor Two Characteristics For Dealer's  
Testing of Vacuum Tubes

THE IDEA of permitting the customer to view the testing of the tubes that he is either purchasing or using in his set through the use of a large tube tester has been immensely successful.

From the standpoint of the customer, this plan has not only created confidence and clarified his understanding of tubes, but is enhancing, to a marked degree, the quality of reception for radio listeners.

From the dealer's viewpoint, the idea has boosted sales and has done away with a great deal of unfair competition. Hence it has helped to create and build the dealer's tube business.

That this new method of selling tubes is sound and successful is evidenced by the many types of tube testers that are being offered and the dealers' alacrity in adopting them. It has been a difficult problem, however, for the average dealer to decide just what tests to give tubes to determine their efficiency and which tester will give the most accurate results and hence the greatest customer satisfaction.

In an interview on the subject, W. L. Krahl, chief engineer of the Arcturus Radio Tube Company, stated that there are only two tests that need to be emphasized—namely a test of mutual conductance and plate current.

Exclusive Tube Store Popularity Increases

ANOTHER radio tube hospital has been opened—this time in the Northwest.

The Style "Radio Doctors" has been adopted by Mr. P. R. Dunlop, since that so well describes the new enterprise, situated at 186 Sixth Street, in the heart of the shopping district of Portland, Oregon.

Incidentally, Mr. Dunlop is the manufacturer of the "Viso-Meter," which has been enlarged in size and set in the side partition. This radio test panel is by far the largest and most complete in the West, and probably among the largest in existence. The dial or meter is 32 inches across and visably marked

"Dead"—"Weak" and "Average," so that the customer readily and understandingly reads the test on his own tubes.

Every detail in the store, including test equipment, shelving, counters and showcases is finished in white enamel, thus depicting the real hospital in clean and practical tube operations.

Like the exclusive tube store in San Diego, Radio Doctors in Portland specialize in Arcturus Blue Radio Tubes. Other lines carried are Radiotron, Cunningham, National Union, Sperton, Majestic and Philco. Mr. Dunlop states that two-thirds of his entire stock is Arcturus.

YOUR VISIT TO CHICAGO



will be doubly enjoyable if you are happy in your selection of a hotel home.

The New Bismarck has much to offer that appeals to the sight-seeing away-from-home.

FOOD that has a nation-wide reputation for its appetizing goodness.

SUPERIOR SERVICE, rendered with hospitable good-will, which at once makes you feel right at home.

COMFORT and quiet in a light, cheery room. Good beds, soft water always, and a light signal that announces your incoming mail.

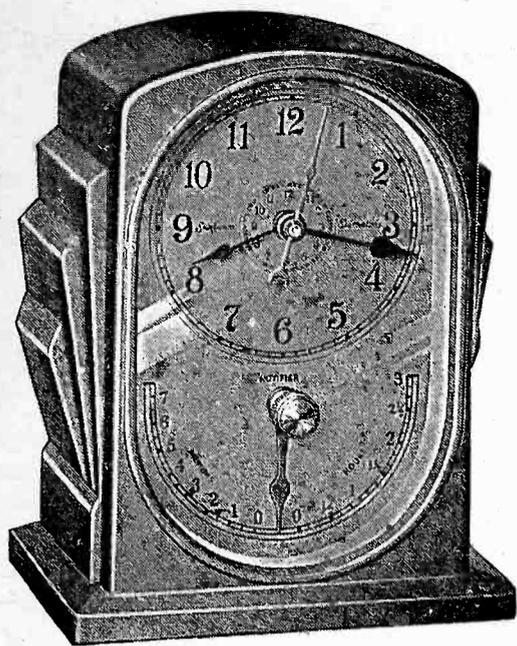
LOCATION right in the heart of Chicago's Loop . . . handy to the Civic Opera, Theatres, Shopping District and principal points of interest.

Send for booklet with downtown map.

Rooms with bath, \$3.50, \$4.00, \$4.50, \$5.00 and \$6.00  
Rooms without bath, \$2.50

NEW

**BISMARCK**  
HOTEL CHICAGO  
RANDOLPH at LA SALLE



### New Three-Purpose Clock

The new electric NOTIFIER, just put out by the Chicago Flexible Shaft Company, 5600 Roosevelt Road, Chicago, is really 3 clocks in one, and performs all 3 functions faithfully.

First, it is a good-looking electric clock, that shows accurate time every second, without winding or regulating.

Second, it is a 24-hour alarm clock, that never needs re-setting, once it has been set for the required rising hour. Shut it off each morning, and it will

ring again the next morning without being re-set or re-wound.

Third, it is a "Notifier," that can be set to notify you at the expiration of any period for one minute to three hours. Reminds you of appointments, tells you when to move the lawn sprinkler, when boiled eggs are done, when to start dinner, when to turn off the sun lamp, when to feed the baby, when to give a patient medicine, when the roast should come out of the oven, when waffles are cooked, when your favorite radio program is due on the air.

Has 100 every day uses, and its price to the user is \$12.50. Catalog No. E-39.

### Amos 'n' Andy Lead

KDKA of Westinghouse reports these listener's facts which should be of vital interest to the radio dealer who selects the proper programs in making demonstrations:

Most popular program on the air — Amos 'n' Andy.

Second choice—Lowell Thomas.

Third choice—Lucky Strike program.

Fourth choice—Phil Cook the Quaker Man.

## 853 PAGES, 1,800 DIAGRAMS IN RIDER'S NEW 6-LB. MANUAL

THE most complete service man's manual is "The Perpetual Trouble Shooter's Manual," by John F. Rider, published April, 1931, and full of real information. Wiring diagrams of ALL popular commercial receivers and kit sets from 1922 to 1931, inclusive. Also contains a course in trouble shooting. Loose leaf pages, 8½ x 11", bound. 853 pages; index and advertisements on additional rates. \$5.00 per copy. (Shipping weight, 6 lbs.)

For sale by  
"RADIO"

Pacific Building

San Francisco, Calif

## FOR QUICK SALE . . . .

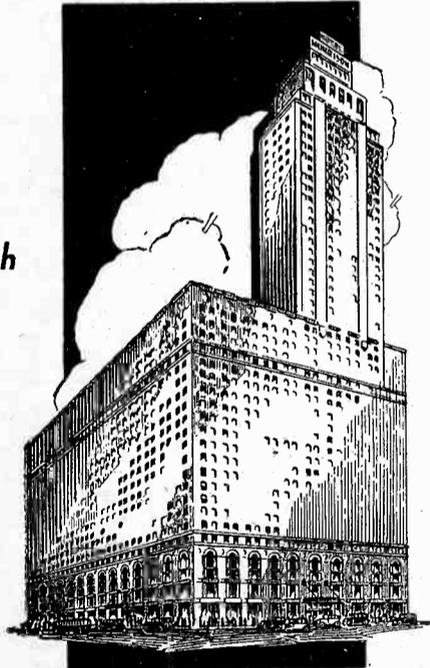
A quantity of latest model pentode automobile radio sets with remote control to steering post. Manufacturer is discontinuing this branch of his business. Will be sold for 33c on the dollar. For full information write

Box 100, "RADIO"

Pacific Building, San Francisco, Cal.

## IN CHICAGO

World's  
Tallest Hotel  
46 Stories High



LEONARD HICKS  
Managing Director

The extra attention given to the needs of guests will favorably impress you. Nearest to stores, offices, theatres and railroad stations. Each guest room is outside with bath, circulating ice water, bed-head reading lamp and Servidor. Housekeeper on each floor. Garage facilities.

2500 ROOMS \$3.00 UP

## MORRISON HOTEL

Madison and Clark Streets

CHICAGO



### UNIVERSAL MICROPHONES

America's most popular two-button microphones, true natural tone, tremendous volume; extremely low hiss level, extra heavy 24 karat pure gold spot centers and buttons. Scientifically constructed, time tested, laboratory adjusted. Fully guaranteed and now at a decided saving in cost to you.

Double Button  
Handi Mike  
List \$15.00

New Heavy  
Duty BB  
\$25.00 List Price

Other models as low as \$5.00  
1932 Catalogue just out

UNIVERSAL MICROPHONE  
CO., LTD.  
Box 305

Inglewood, Cal.

U.S.A.



## CLEAN THOSE CONTACTS

A twist of the wrist—and instantly the "PRONGETTE" cleans dirty tube prongs. Reverse the steel reamer and instantly you clean those hard to get at places in tube sockets . . . cleaning exactly where cleaning is needed. Every dealer . . . every service man . . . every engineer needs this new tube and socket cleaning tool. Insulated handle. Case-hardened steel reamers. Fits in your vest pocket. Carry it with you always. Sent postpaid anywhere upon receipt of \$1.50. Agents wanted.

\$1.50

BRADLEY RADIO CO.

1062 Howard Street

San Francisco, Calif.

## BUYER'S GUIDE

### SERVICE MEN:

A most complete line of replacement parts right in stock. If you are in a hurry just send us \$1.00, tell us what parts you require and we will send the order immediately C. O. D. with our latest catalogue showing the price on the parts you ordered.

**AIREX CO., INC.**

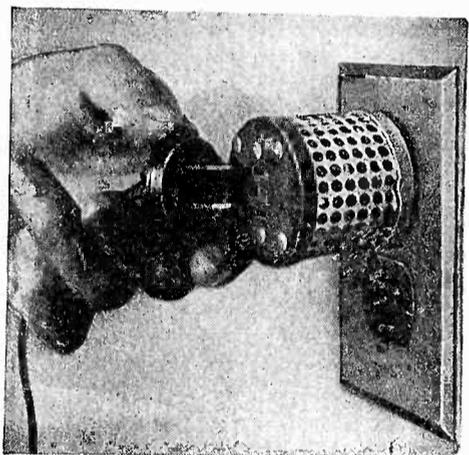
87 Cortland St., New York City

### Service Men Are Making \$90.00 per Month

installing a real regulating line voltage control—AMPERITE. Improving the set in this way builds confidence. We suggest you mail the manufacturer \$1.62 for a sample complete with socket and sales helps. No postage charge.



**AMPERITE CORPORATION**  
561 Broadway, New York, N.Y.



### PROTECT THE MIDGET SET

Midgets are designed to operate on 110 volt lines and will not stand up on higher voltages. Save the set—save your reputation!

Install a 50-watt

**CLAROSTAT AUTOMATIC LINE  
VOLTAGE REGULATOR**

Retail Price..... **\$1.75**

Other Sizes for Other Receivers

**CLAROSTAT MFG. CO. INC.**  
285 N. 6th St.

Brooklyn New York

## Chief Engineer Krahl of Arcturus Cautions Against Erroneous Tube Tests

"The plate current reading is a most important gauge of efficiency as it is a monitor of the major tube characteristics which determine the efficiency of the tube. Plate current readings of tubes of similar design should be approximately uniform and come within the limits specified by the manufacturer. The trade should be cautioned against selecting tubes with an abnormal reading since this is an erroneous, though prevalent practice.

"The filament emission reading is a check on mutual conductance. Mutual conductance, most of all checks, determines the merit of the tube insofar as its ability to provide the required amplification or gain. Filament emission itself indicates the extent of useful life the tube may possess.

"It is my personal opinion," says W. L. Krahl, "that outside of the above tests, there is no commercial test that will give the information desired.

"Some attempts have at various times been made to check tubes in an oscillating circuit but unfortunately no correlation between the ability of the tube to perform in a fixed oscillating circuit and its ability to function in a radio

receiver has ever been established. The fallacy lies in the fact that an oscillating circuit used in a test board may be properly designed for one particular type of tube in one particular circuit but still be valueless in testing tubes of other types in other circuits. Even the oscillating circuit in a superheterodyne will vary too greatly from a test board circuit to determine whether performance in one will indicate performance in the other."

The test meter which Arcturus is supplying to dealers through special arrangements gives the plate current and filament emission readings by a change in grid bias. Of all the electrical characteristics, these are the most important in tube operation and are the most indicative of a tube's ability to function.

The simplicity and impressiveness with which these tests can be made on the Arcturus Tube Tester, which in itself has considerable eye value, is decidedly convincing to consumers. Serving, as it does, as an efficiency check on tubes, such testers should be a mighty lever in the increased sale of replacement tubes this year.

### STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

"RADIO," published monthly at San Francisco, Calif., for October 1st, 1931.

State of California, County of San Francisco, ss. Before me, a Notary Public in and for the State and county aforesaid, personally appeared H. W. Dickow, who, having been duly sworn according to law, deposes and says that he is the Business Manager of "RADIO," and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Pacific Radio Publishing Co., Pacific Bldg., San Francisco; Editor, P. S. Lucas, Berkeley, Calif.; Managing Editor, None; Business Manager, H. W. Dickow, Pacific Building, San Francisco.

2. That the owner is:  
Pacific Radio Publishing Co., Pacific Bldg., San Francisco; H. W. Dickow, Pacific Bldg., San Francisco.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

H. W. DICKOW,  
Business Manager.

Sworn to and subscribed before me this 2nd day of October, 1931.

(SEAL) JOHN L. MURPHY,  
Notary Public in and for the City and County of San Francisco, State of California. My commission expires May 20, 1933.

### WE OFFER FOR QUICK SALE . . .

20 . . JEWELL A. C. Pattern, 30 volt-meters, element reading 0-50 v. List price \$24. Will sell for \$11 each. These meters have 7 3/8" base.

HORN BOOSTERS. For auto or motor boat. Make horn sound twice as loud. Will sell for \$1.50 each. Small stock only.

TURN TABLE window display device. Rotates at nine r.p.m. Induction motor. Write for details. Price only \$14.00 each.

Dealer's Headquarters for Pyrex Insulators, Leach Relays, Speedplex Bugs.

**ELLERT RADIO CO.** - 1062 Howard St., San Francisco, Calif



“Since I lent him my pen  
it has never been the same!”

Often said, but NOT of Parker Duofold

Don't lose people's good will by borrowing their pens. Unless the pen is a Parker Duofold, your hand is apt to foul the point, or change its action. Don't expose yourself. That may often cost you many times the price of a pen.

But there'll be numerous occasions when you'll *have* to borrow if you don't own this sure-fire Parker Duofold. For ordinary pens never seem to work when you need them most; while all Parker Duofold Pens — even the Duofold Jr. and Lady Duofold at \$5, as well as the Seniors at \$7 and \$10 — are built to stand up to our *Guarantee for Life!*

Take a few minutes to stop at the nearest pen counter and pick the Duofold that fits your hand to a “T.” You'll be prepared then for any emergency — even for lending — gracefully. For no style of writing can foul, distort, or alter Parker's miracle Duofold point. Still it writes as easily as you breathe — with amazing Pressureless Touch!

Parker's large-scale production makes a big difference in your favor when it comes to value. Even the Duofolds at \$5 have 22% to 69% more ink capacity than some pens of other makes priced 50% higher.

Yet none has Parker's stylish, balanced, streamlined design — “America's Shapeliest” — or Parker's Invisible Filler and Patented Clip that lets the pen set low and unexposed in the pocket.

The only guarantee you'll need for life is the name on the barrel — “Geo. S. Parker — DUOFOLD.” Accept none without it, if you want the real thing. Avoid the borrowing habit.



**BORN!** An Ink that keeps a pen *Clean!*  
And dries 31% quicker than average

Parker's new Quink is the result of 3 years of research and 1022 formulas. Entirely new principle — dries in 3½ seconds by penetration of paper. Yet Quink resists evaporation, hence keeps pen point moist and ready. Also contains a solvent that removes from pens the residue of other inks. It is 99.99/100% fluid — hence free from sediment.

**Parker's QUINK**

Two types — Permanent or Washable. Get bottle from any dealer, or write us for 30,000-word supply, free.

**Parker Duofold**

PEN GUARANTEED FOR LIFE • \$5 • \$7 • \$10

Other Parker Pens, \$2.75 to \$3.50; Pencils to match them all, \$2 to \$5

The Parker Pen Company, Janesville, Wisconsin. Offices and Subsidiaries: New York, Chicago, Atlanta, Buffalo, Dallas, San Francisco; Toronto, Can.; London, Eng.; Berlin, Germany

Tell the myou saw it in RADIO

# Instant LEADERSHIP!

**S**WEEPING far beyond every previous standard of comparison in tone and automatic operation, Capehart Series "400," combining automatic phonograph with a specially engineered 13-tube Super-Heterodyne Radio, has achieved indisputable leadership among musical instruments for the home.

*"Pride of Possession"*



Because of the substantial profit which is realized on the sale of every Capehart "400" and because these new instruments make a compelling appeal to people who are able and ready to buy... outstanding dealers are giving Capehart the lead in fall selling plans.

The Capehart "400" has an exclusive rotator which reverses and changes double-faced records — of either size or both intermixed — plays entire albums of recorded music in proper sequence.

A fitting companion to the "400" is the Capehart Model "21," priced for a broader market but still yielding substantial profit to the merchant. Model "21" combines an 8-tube Super-Heterodyne Radio with automatic phonograph, including the famous Capehart 10-12 record changer.

Beyond question Capehart is the line of leadership and of profit. Prospects in your community will buy Capeharts this fall. *Will you get the profit?* Write now for complete information, without the slightest obligation to you.

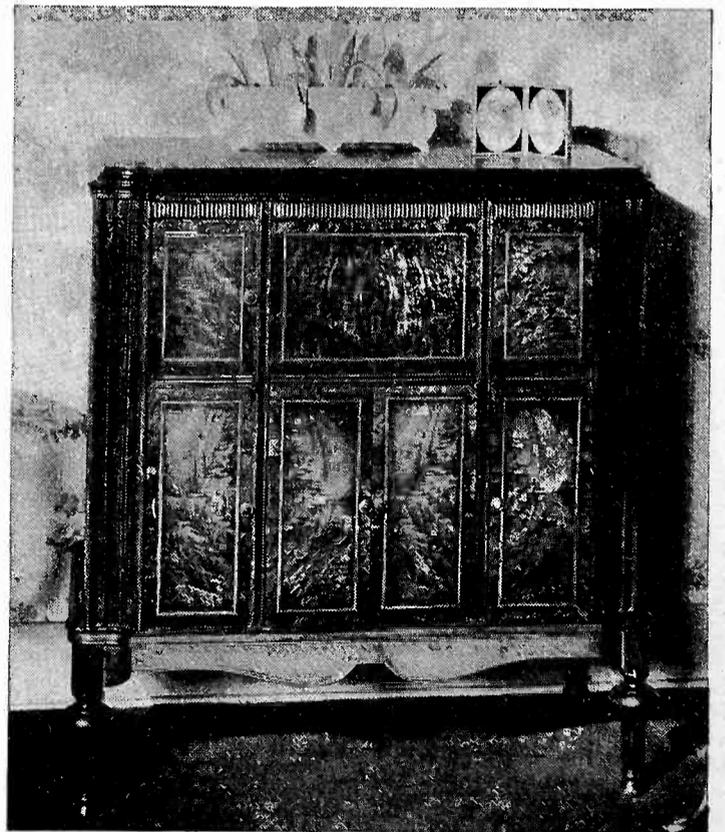
**THE CAPEHART CORPORATION**  
Fort Wayne, Indiana



THE CAPEHART MODEL NO. "400"  
*Plays all makes of Records*

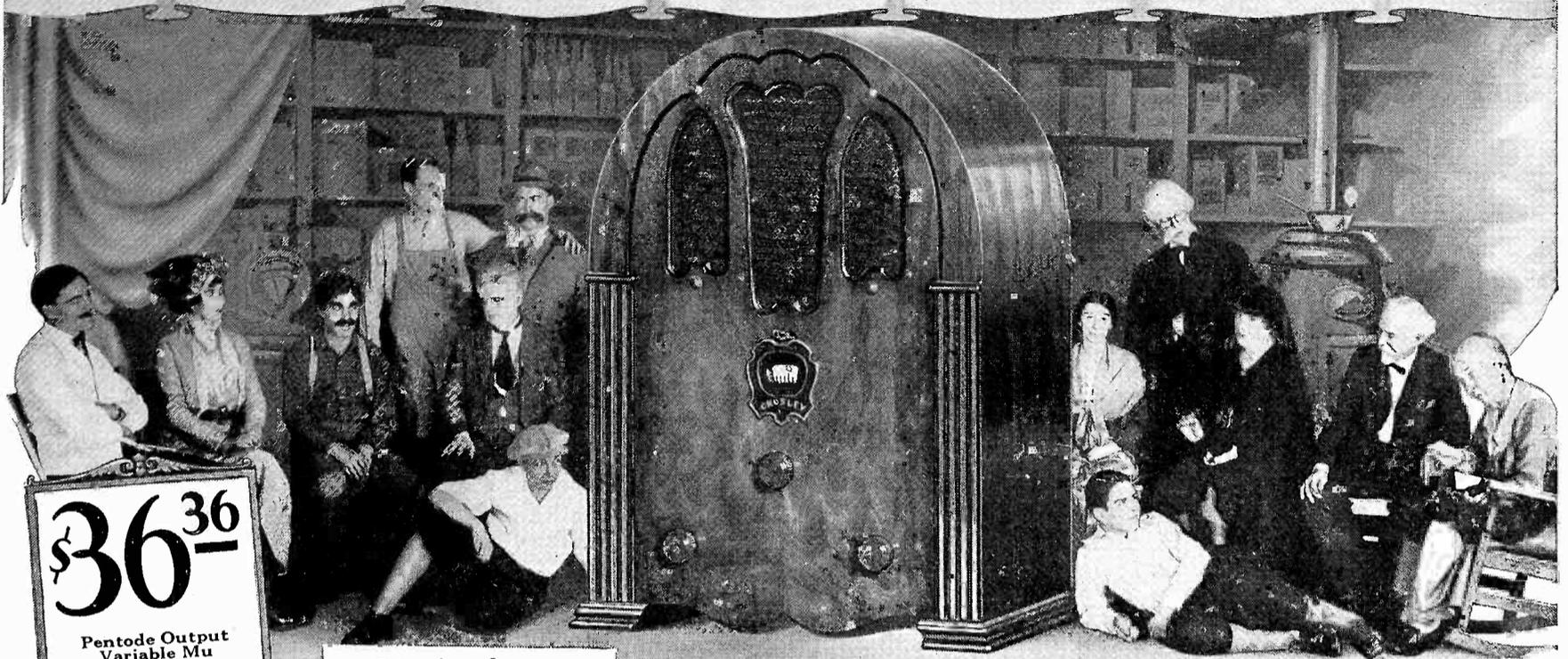
# CAPEHART

A GREAT NAME IN MUSIC



THE CAPEHART MODEL "21"  
*Plays all makes of Records*

# YOU'RE THERE WITH A CROSLLEY



**\$36<sup>36</sup>**  
 Pentode Output  
 Variable Mu  
 Superheterodyne  
 Complete  
 with Tubes

## The Crosley LITLFELLA

The new Crosley LITLFELLA—a 5-tube table model SUPERHETERODYNE radio receiver incorporating big set features—Pentode Output—Variable Mu—full floating moving coil dynamic speaker—and other Crosley features.

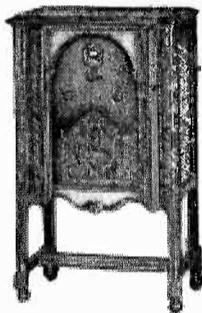
When that happy, everyday, tremendously human group of "REAL FOLKS" broadcasts every Monday night over a nationwide N. B. C. network—You're THERE with a Crosley.

## The Crosley LITLBOY

An exquisite lowboy console housing the same type 5-tube Pentode, Variable Mu Superheterodyne radio receiving set and Crosley full size full floating dynamic speaker as The LITLFELLA. Front panel is of American black walnut. The posts and stretchers are finished in walnut. The sides and top are of 5-ply walnut veneer. An unusual radio value.

**\$48<sup>50</sup>**

Complete With Tubes



CROSLLEY sweeps aside all precedent in offering the sensational Crosley LITLFELLA, a compact table model Pentode Output, Variable Mu SUPERHETERODYNE, at a price that is almost unbelievably low. Some of radio's greatest engineers, artists and technicians have been taxed to the utmost of their ability to produce this sensational, super-performing, extremely low-priced SUPERHETERODYNE which is already causing a furore among radio dealers. Not content to ride along with the easy success of the amazing Crosley LITLFELLA, and determined to uphold the enviable reputation gained through producing sensation after sensation in the radio industry, Crosley has designed and developed the 8-tube, 124 Series, Push-Pull Pentode Output, Variable Mu SUPERHETERODYNE. This marvelous line incorporates all of the most recent radio refinements and is priced sensationally low. The Crosley TENSTRIKE and the Crosley HAPPY HOUR, 10-tube Push-Pull, Pentode Output SUPERHETERODYNE with METER TUNING and Automatic Volume Control round out this sensational line. Compare Crosley, feature by feature with other radio receivers, then you'll know you're getting the greatest value per dollar with a Crosley. See your Crosley distributor. Or write the factory direct.

## 8-Tube Push-Pull Pentode Output SUPERHETERODYNE

### The Crosley PLAYBOY

An exquisitely designed all wood table or mantel model, 17" high, 17 1/2" wide, 10 1/4" deep. Front panels of imported Oriental wood finished in two-tone effect. The solid side panels and arch top are of high-lighted walnut finish. Incorporates the new Crosley 8-tube push-pull Pentode output, Variable Mu Superheterodyne chassis and latest Crosley full floating moving coil dynamic speaker. Embodies all the new Crosley features. Never before such superlative radio performance at so low a price.

**\$49<sup>75</sup>**

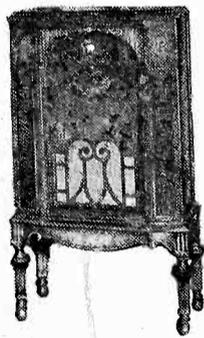
Complete with 8 Tubes



### The Crosley CHEERIO

A magnificent cabinet of rare beauty, full forty inches high, housing the new Crosley 8-tube push-pull Pentode, Variable Mu Superheterodyne chassis and newest Crosley full floating moving coil dynamic speaker. All new Crosley features are incorporated.

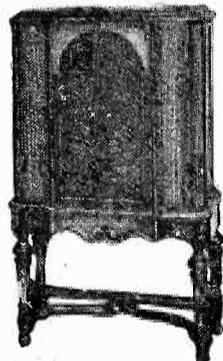
**\$65** Complete With 8 Tubes



### The Crosley MERRY MAKER

Another forty inch console of unusually attractive design and sound construction housing the new Crosley 8-tube push-pull Pentode, Variable Mu Superheterodyne chassis plus the new type Crosley Auditorium size full floating moving coil dynamic speaker.

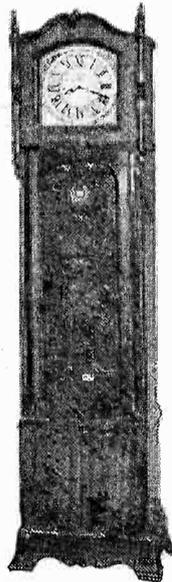
**\$75** Complete With 8 Tubes



### The Crosley ANNOUNCER

One of the most beautiful door console models. Stands forty-two inches high. Incorporates the new Crosley 8-tube push-pull Pentode, Variable Mu Superheterodyne chassis plus the new type Crosley Auditorium size full floating moving coil dynamic speaker.

**\$85** Complete With 8 Tubes



### The Crosley PLAYTIME

Here it is! A dream come true! A grandfather type A. C. electric hall clock incorporating the new Crosley 8-tube push-pull Pentode, Variable Mu Superheterodyne radio receiver and Crosley Auditorium size, full floating moving coil dynamic speaker. The same A. C. house current connection operates both clock and radio.

**\$95** Complete With 8 Tubes

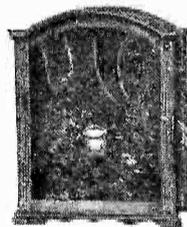
## 10-Tube Push-Pull Pentode Output SUPERHETERODYNE with Meter Tuning and Automatic Volume Control

### The Crosley TENSTRIKE

An unusually attractive and compact table model receiver incorporating the new Crosley 10-tube push-pull Pentode output, variable Mu Superheterodyne chassis with METER TUNING and Auditorium size Crosley full floating moving coil dynamic speaker. Stump walnut veneer front panel with burl maple overlay. Walnut finish sides, top and pilasters. Grill openings coved and backed with changeable cloth. Dimensions: 20 1/2 inches high, 16 inches wide, 10 inches deep.

**\$69<sup>50</sup>**

Complete With 10 Tubes



### The Crosley HAPPY HOUR

Front panel of this magnificent six-legged console is of beautiful figured stump walnut veneer arched with burl maple in two tone effect and high-lighted. Carved pilasters of especially selected stump walnut veneer. American black walnut veneer top and sides. Six turned and fluted legs, capped with oval medallions in contrasting shades. The spindle units of the stretcher extend in a fan-like manner from the base rail to each leg. Incorporates the new Crosley 10-tube push-pull Pentode output, variable Mu Superheterodyne chassis with METER TUNING and Auditorium size full floating moving coil dynamic speaker.

**\$99<sup>50</sup>**

Complete With 10 Tubes



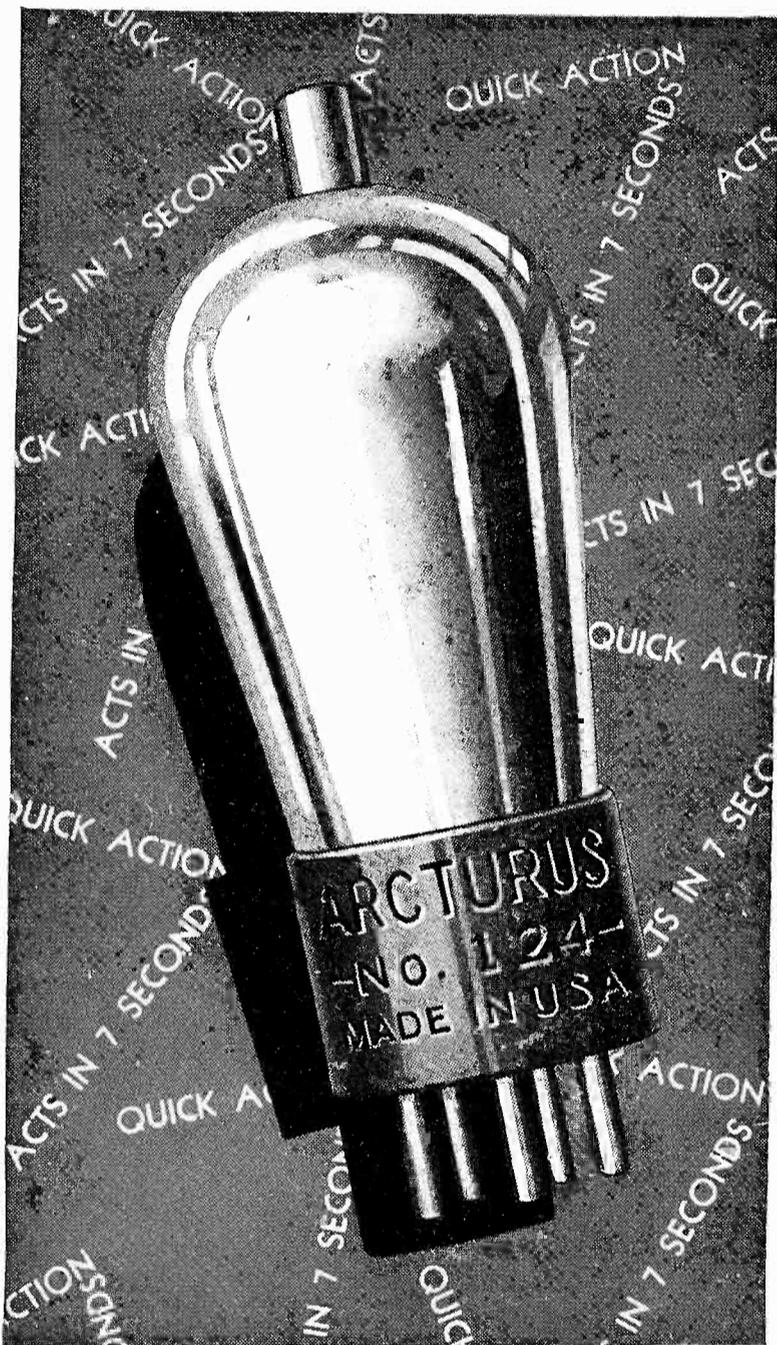
THE CROSLLEY RADIO CORPORATION  
 POWEL CROSLLEY, Jr., President  
 Home of "the Nation's Station"—WLW  
 CINCINNATI

(Montana, Wyoming, Colorado, New Mexico and West, prices slightly higher.)

# CROSLLEY RADIO

# Quick Heater

## RECOGNITION



The quick-acting principle in a.c. tubes is now, more than ever, accorded full appreciation by set and tube manufacturers, jobbers, dealers – and, most important, consumers.

Arcturus pioneered *that* principle over three years ago, in May 1928 – with the famous 7-second action tube.

This Arcturus contribution met with immediate success as users no longer were willing to tolerate the delay in getting reception caused by the old slow-heater. The demand for quick-heaters has become so insistent that the old slow-heater type has now been relegated to an inferior classification and must of necessity be priced appreciably lower. This difference in list price is evidence that the superior merits of the quick-heater are fully appreciated.

A lower price for slow-heaters is unimportant to set users. They will not sacrifice efficiency for price. So they demand quick-acting tubes.

Arcturus *Blue* Tubes are all quick-acting – the same as the original “7-second tube”. Arcturus quick-acting tubes are positively not affected by “hum”. Arcturus quick-acting tubes have become the standard of the industry.

ARCTURUS RADIO TUBE CO., Newark, N.J.

# ARCTURUS

WESTERN DIVISION:  
Arcturus Radio Tube Co., 1855 Industrial Street, Los Angeles, Calif.

