



VOL. VIII.

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NO. 5.

# Gembox Redesigned Into 7-Tube Set At \$65

**Crosley Spring Sales We Announce New Gembox at Same Price Accelerating!**

by Powel Crosley, Jr.

*Production Schedule Maintained at Same Ratio as Height of 1928 Season*

Additions to the Crosley line are going over with a wallop. The Chinese Chippendale console models have elicited admiration and praise on all hands.

Sales are accelerating. The production schedule in our factory is the same as that maintained during November, the peak of the 1928 season. A change is coming over the radio industry. January, February and March are usually the dead months so far as radio sales are concerned, but this year no let up of sales is in sight.

Crosley sales for February 1929 were ahead of January. And January 1929 sales were equal to January and February 1928 sales, combined. We go into March with a big selling impetus.

Everything indicates that the new line has met with universal acceptance. The ensemble sets struck the popular taste at first showing. Combining A. C. electric receivers and the Dynacone Power Speaker into one set, filled a need. This fact, united with the striking and unusually effective design of the chests, has already won acclaim for the Showchest and Gemchest.

Color is playing its part in winning public favor for the new Crosley models. Answering the pronounced demand for color in the home, the Chinese Chippendale ensembles bring forward three color choices. The Showchest in Manchu Black with silvery metal trim is a striking number. Mandarin Red is that unique Chinese vermilion which is one of the few reds that is really pleasing to the eye. Mandarin Red is an elusive shade, gay in effect but restful in effect. The third color used, Nanking Green, is a subdued and subtle green which harmonizes with many styles of home decoration.

**WE** announce in this issue of the BROADCASTER a brand new set, the new Crosley Gembox. This set is redesigned in every detail. It is a 7-tube set incorporating the Mershon condenser. It replaces the old 6-tube Gembox at no advance in price. The retail price of the new Gembox remains sixty-five dollars.

**Due to unprecedented demand for the Showchest and Gemchest, our factory is crowded to its utmost capacity. We are making shipments as rapidly as possible, in the order in which stock orders were placed with us. We urge Crosley dealers to telegraph Showchest and Gemchest requirements to your Distributor at once to avoid future delivery delays.**

CROSLLEY RADIO CORPORATION

## Inaugural on WLW

### "School of the Air" Broadcasts Washington Events

As this issue of the BROADCASTER goes to press, it is planned to include the inauguration ceremonies at Washington on March 4th, 1929, as part of the program of the "School of the Air" for that date.

The inauguration of the nation's President includes the procession of the retiring President and the President-elect from the White House to the Capitol. The oath of office is taken on the steps of the Capitol building.

This year the performance, including descriptions of the processions, will be broadcast over both networks. Millions of citizens will hear President Hoover take office.

This new set has 3 stages of radio frequency amplification, detector, two stages of audio with high voltage 171 power output tube. The set is fully balanced, utilizing a new application of the Neurodyne circuit especially developed for the Gembox in the Hazeltine Laboratories.

You'll find that this set is sensitive, selective, has excellent volume and tone quality. It is not quite as sensitive as the Crosley Showbox which is completely shielded but will give a good account of itself against any set on the market.

The new Gembox eliminates the regeneration control which is, of course, a good thing in the hands of an experienced operator but which was properly regarded as an objectionable feature in the old Gembox. The switch is on the front in the conventional manner. An additional stage of radio frequency amplification makes up for the elimination of the manual regeneration control of amplification.

We are very enthusiastic about this new Gembox. It lends itself admirably to installation in console cabinets which can be sold as a combination at a low cost. It brings in distant stations and cuts out local stations. The illuminated dial is a feature every modern radio set should have. The Mershon condenser eliminates power pack trouble.

The new Crosley Gembox is by far the lowest priced radio set that can be used with a power speaker. It is designed for use with the Type-E Dynacone, and it supplies D. C. current to energize the field of this marvelous speaker.

The new set can be sold as a table model at \$65.00, with the \$25.00 table model Dynacone. It is compact and can be placed anywhere in the room in which it is used, on a bookshelf or in some out-of-the-way corner, or on the living-room table.

We urge you to familiarize yourself immediately with the new Gembox. You will be enthusiastic over the performance of this 7-tube A. C. set at the remarkable price of sixty-five dollars.



# You'll never find a radio value to equal this!



**CROSLY 6 tube AC Electric GEMBOX**  
A real power speaker radio! A real engineering triumph at the incredible price of \$65. Proof of Crosley resources—ingenuity and economical methods.

**CROSLY dynamic DYNAONE built in SPEAKER**  
The outstanding radio apparatus of 1928. Realism, power, tone, beauty! Hear it! See it! Ask yourself why ANY speaker is worth more than the price of this DYNAONE—\$25.

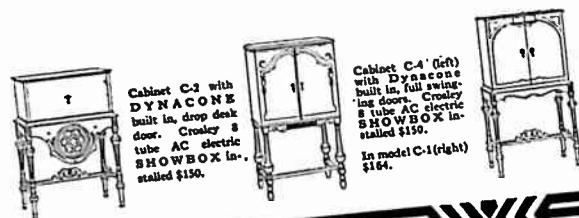
**SHOWERS WALNUT VENEER CONSOLE**

The world's greatest furniture makers produce a walnut veneer radio console right in line with the superior quality and unmatched values of Crosley radios. Exquisitely designed, beautifully finished, charmingly decorated.

**\$115**  
WITHOUT TUBES  
Ready to attach to your antenna

**5 DAY FREE TRIAL**

Prove by yourself our claim that this is radio's greatest value. If you can't come in tomorrow, send us this coupon.



Cabinet C-3 with DYNAONE built in, drop desk door. Crosley 6 tube AC electric SHOWBOX installed \$150.

Cabinet C-4 (left) with Dynaone built in, full swinging door. Crosley 8 tube AC electric SHOWBOX installed \$150.

Cabinet C-1 (right) in model C-1 (right) \$124.

**COUPON**  
DEALER'S NAME \_\_\_\_\_  
Address \_\_\_\_\_  
I am interested in the \$115 Showers Crosley radio console you offer. Please send me literature.  
Name \_\_\_\_\_  
Address \_\_\_\_\_

This ad supplied in 1-4 or full page size.

# FREE

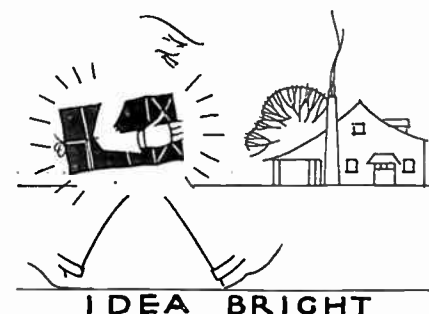
Feature this combination—the smart, unmatched Showers C-3 Console with Dynacone power speaker built in and the 6 tube AC Electric Gembox installed. This is the Value that brings them in. Write us for mats of this ad.

## SHOWERS BROTHERS CO.

Dept. 81

Bloomington, Ind.

### “What is home without a Crosley!” asked the Poet



#### At Last, the Perfect Radio Tubes

Public dancing in the streets greeted the first appearance today of the Little Beauty All Around Radio Tube and Mothers Helper. It would take too long to recount here all of the wonderful qualities possessed by this ingenious contrivance, but a few will give you a general idea.

If a radio announcer says “eyther” the Little Beauty corrects the pronunciation and feeds “eether” to the loudspeaker. After “The Road to Mandalay” has been rendered three times on any given evening, the Little Beauty refuses to pick it up thereafter. This more than human bit of glass and rubber automatically eliminates poor wisecracks. Let an announcer say: “Here’s a laugh folks. Next, though it is now 8 P. M., the Klein Cream Puff Syncopators will play ‘At Dawning.’ Ha, ha.” The sensitive Little Beauty hears this and shudders run through its grid and plate. Its delicate ions tremble and its socket reddens with exasperation. It functions and this is what you hear: “The next number will be ‘At Dawning’ played by the Klein Cream Puff Syncopators.”

But its greatest merit, its unprecedented perfection is yet to be mentioned. You have, let us assume, come home from the office prepared for a quiet evening with your favorite pipe and a good book. Your wife is complacently knitting across the table from you. All is peaceful. The cat purrs and you catch yourself napping. Mr. and Mrs. Garfield drop in “just for a moment.” The leaden minutes pass. Your hints perish in the air. They won’t go home. Your Little Beauty Radio Tube peeps out of the cabinet and sees this. Mustering all its strength, it takes a deep breath and loudly shouts through the horn:

“IT IS WELL PAST MIDNIGHT AND WE ARE SIGNING OFF UNTIL EIGHT A. M. GOOD NIGHT, EVERYBODY!”

The Garfields look horrified, mutter apologies and scamper for home. You look at your watch and a smile spreads o’er your face as you realize the shrewdness of the Little Beauty, for it is only quarter to ten. You pick up your book and light your pipe. The evening is not lost.

Get yours—at your dealer—today!  
—Arthur L. Lippmann, from “Judge”.

Mel Larson, proprietor of the Larson Radio and Music Shop at Clintonville, Wisconsin, received his Crosley franchise and his first shipment of Crosley merchandise in November, 1928. Between that time and December 31st, Mr. Larson sold 67 Crosley radio sets.

#### The Story of a Great Attachment

How would you like to hear a modern fable? It is all about a bride and her new home. Any story about a bride is interesting. The bride’s name was Isabelle, or what have you. Now Isabelle had a stepmother and there was no love lost between them, you may take it from us. So when Isabelle moved into her new home she found that her stepmother had presented her with an old fashioned phonograph.

“Funny old thing,” said Isabelle to herself—there being no other social equal around—when she saw the huge bulk of that phonograph. “Catty, I call it, to wish it on me.”

Isabelle, however, was a modern bride, blonde Nordic and determined. She doffed her morning dress, put on a simple afternoon frock, and lighted out for the shopping district.

She made her first call on an old flame of hers who had gone into the radio business.

“Tell me what I can do with an old phonograph to bring it up-to-date and get back at You-know-who,” she demanded.

The old flame took one look at the girlish frock, let a pair of blue eyes flicker in his direction and decided that as he was now

a married man himself, he’d do better sticking to business. So he showed Isabelle a Merola. “What’s a Merola, and why?” asked Isabelle. “Wait till I hitch it on to your phonograph,” was his rapid come-back.

“You’ve got a radio, of course.”  
“Sure, a Crosley,” was her discreet answer. “And whatever you are going to do, do it now, because my dear stepmother is coming over for dinner tonight.”

The short and the long of this fable is that the radio dealer took the Merola, that nifty electric tone-arm device, attached it to the old phonograph, joined on the power speaker of the radio set, and went back to the store.

The end of the story describes that great moment in Isabelle’s life when she put a record on the phonograph, practically in her stepmother’s face, clicked the Merola tone-arm attachment, and gloated, with a great big gloat, over the expression on that woman’s face as glorious floods of tone rolled from her revived machine.

Just shows what a Merola will do!

#### Showing Off Showbox!



Does this look as if these Showbox girls are working? They do, at least some of the time, in the offices of Harper-Meggee. Hollywood needs help like ‘em. They are Hazel Canley, Sally Turnbull and Isabelle McGillivray. Date applications filed in order received!

Crosley numbers show constant improvement without radical change.

#### Showbox Soothes Savage Staff Sergeant!

Fort Robinson, Nebraska.

Gentlemen:  
In regard to the Crosley Showbox which I recently purchased, I can not praise it too much. I have owned other Crosley radios and all of them have been entirely satisfactory.

Crosley’s slogan “You’re there with a Crosley,” should be “You’re here, there, and everywhere with a Crosley.” The Showbox must be heard to be appreciated, because it speaks for itself. The showbox is everything you say it is and more!

(Signed) HAVARD T. RAWLINSON,  
Staff Sgt., 4th F. A. B’n.

#### Week’s Best Joke

A WLW listener contributes this to the Crosley station in the form of a newspaper clipping, unidentified as to its origin:

“Hey Jim, yuh gotta new radio at your house, didnya?”

“Yeah.” (Very sullenly).

“What kind didja get?”

“A Cincinnati radio.”

“Gowan! There ain’t no such radio. You’re nuts.”

“The heck there ain’t. Come down to our house and see! If you can get anything else besides Cincinnati on it, you know your stuff!”





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**CROSLY RADIO CORPORATION**  
 Manufacturers of Radio Apparatus  
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 CINCINNATI  
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Crosley manufactures radio sets for radio amateur, experimental, and broadcast reception use, under patents of the Radio Corporation of America and Associated Companies, The Hazeltine Corporation, and the Latour Corporation.

All prices quoted in the Broadcaster are Eastern prices. Western prices are slightly higher.



This is your paper. Help make it interesting by sending in contributions. Material sent in is most welcome. Comments of every description will be appreciated. Let's all pull together.

### Marion, Ohio, Dealer Sells 111 Crosleys

A short time ago a story appeared in the BROADCASTER of a five-dollar bet won by a North Dakota Crosley fan, on his Crosley set. He bet on the accurate reception of his Showbox.

To back up his assertion, Mr. Heaton enclosed with his letter a good-looking newspaper ad in which the record of one Showbox owner in Marion is cited. That particular set owner logged 110 stations in one month's time. A list of the stations logged on that single Crosley outfit was included in the ad.

Mr. Heaton adds: "During the year of 1928, we sold one hundred and eleven Crosley radios and can say we do not have one dissatisfied customer."

The owner of a Gembox took his set to his dealer for servicing. He said he wanted the set inspected and adjusted. The service man asked what was wrong with the set. The Gembox owner replied that he wanted his set fixed because he had found that Station KMZ was inclined to fade!

One Crosley dealer got a telephone call from a customer who complained that he could not move the tuning dials on his set. The service man suggested that he might have a frozen condenser. "I don't see how that can be," answered the gentleman, "we always keep our house warm."

## Crosley's New Models Strengthen Line

By Carl F. Propson, Advertising Manager, Crosley Radio Corporation

There are two ways of putting new radio models on the market—one is to come out once a year with a brand new, strikingly different radical change from the models which have been offered during the previous season, bolstering up the dealers with pressure behind the jobbers and their salesmen, use a tremendous amount of new advertising in newspapers and magazines, get the new line going like a house afire, and let the retailer have a fire sale of last season's models which he is unfortunate enough to have in stock. The other way is to make no radical changes but gradually to merge last season's models over into the newer developments, at one time changing the chassis, at another time changing the appearance and the model, and so preserving an even and continuous flow of radio sets from the factory to the receiver. As one automobile company put it several years ago, "No yearly models but constant improvements."

The latter method is the Crosley method. New sets are essential for the life of radio, not only to appeal to the purchaser's fancy, but to take advantage of the steadily progressing developments in the art of building high grade radio sets, but it is not necessary to create a situation each year where manufacturer, distributor and dealer alike are faced with the necessity of taking very substantial losses on obsolesced models, and where the customer, the ultimate consumer, also very often finds that no sooner has he bought a model it is out of date.

The new Crosley models announced this month are a striking illustration of this policy in actual operation. Not only is it true that not a single Crosley set sold during 1928 is antique and obsolete, but the newer models presenting as they do refinements and improvements all along the line, still obviously belong to the Crosley family of radio receivers. The Showbox bridges over from the old to the new because of a different and more attractive finish.

Changes in the Gembox model are also effected without interfering with the appearance of the set. The new Jewelbox, table model, is the legitimate successor to the Jewelbox which made such an outstanding success last Spring. In the Showchest and Gemchest we have the consoles identical with those of the table model, placed in a new and most attractive setting. But even though these new models are being announced in the papers and advertised in the magazines, even though they are given the place of honor on the dealer's floor, the 1923 Crosley models still occupy an honored and useful place in the homes of countless thousands of radio enthusiasts, and their enthusiasm for the sets they have is not too seriously dampened by the advent of new models. They are confirmed in their belief that the Crosley is ably designed, honestly manufactured and merchandized with a due regard for the rights of all concerned. When they are ready for a new set it will be another Crosley. Meanwhile the set they have has not been put on the shelf by a radical jump to entirely different models.

### Appropriate Displays Sell Chinese Chippendale Sets

Showchest and Gemchest Appeal Irresistibly in Home Setting!

The Crosley ensemble has unquestionably gone over with the public. Both Showchest and Gemchest are meeting with widespread favor. These represent the leading radio value of the season!

These chests are of unusual design. Because of that they require care for proper display. Their best effect is gained by displaying them in a home setting.

In a recent issue of the BROADCASTER, we showed an illustration of a Showchest in a large picture frame. The scene represented the corner of a living-room. A Chippendale cabinet stood at one side, with the desk lid open and a few writing materials scattered informally about. Facing it was a large easy chair harmonizing with the Chippendale effect, and beside that a modernistic lamp. Between the chair and the cabinet stood a Mandarin Red Showchest. Dull green upholstery on the chair made an excellent contrast with the red lacquer on the console.

This setting was shown in the BROADCASTER as a suggestion to dealers of a suitable way to present the Chinese Chippendale models.

If you put a Gemchest in a window, cheek-by-jowl with a \$1200 model in a wood console, naturally you don't get anything like the effect obtained when the Crosley chests are individually displayed.

Successful dealers who are selling the Showchest and Gemchest are making it a point to

give these numbers careful display. If they are crowded into a window with a lot of other merchandise, of course they don't carry the selling appeal that they undoubtedly possess.

A woman seeing a thirty-dollar dress in a good shop, where she tries it on before a handsome mirror, surrounded with a decorative setting, gets a bigger kick and is more impressed than if she saw the identical dress in a jobber's loft. This has been tested.

So don't jeopardize your chances of making rapid sales on the Showchest and Gemchest by too crowded display or by inappropriate display. Given half a chance, the Chinese Chippendale consoles carry a powerful appeal and are tremendously successful selling numbers.

### White Gold Findlay Tables

Conforming to the style change in the finish of Crosley table models, the Robert Findlay Mfg. Co., are now furnishing metal tables for the Showbox, the new Jewelbox and the new Gembox in the special white gold finish which Crosley is featuring this season.

The use of this brushed white gold finish does not obsolete the gold highlighted ripple finish. The table models and Dynacone Power Speakers are furnished in both the white gold and the yellow gold. Likewise, Findlay tables are supplied for either finish desired.

### Middletown Fights Interference

Radio Committee Active in Eliminating Static in Ohio Community

The Middletown Civic Association of Middletown, Ohio, appointed a Radio Committee some time ago to investigate static conditions and station interference. Paul D. Berry is chairman of this Radio Committee. As the committee has been very active and successful in their work, a report of their activities was secured for readers of the BROADCASTER.

C. E. Kilgour, chief engineer of the Crosley Radio Corporation, made a trip to Middletown recently, to confer with the Radio Committee and to promise the cooperation of WLW in reducing interference.

As Mr. Berry, the Radio Committee's chairman, has written at some length, we shall quote from his letter:

"From experience in other localities it was known that a determined and concentrated effort on such a problem would result in a great deal of benefit to radio listeners at large. In most localities this is handled through the organization of a radio club charging a nominal fee to defray the expenses incurred.

"This city, however, is fortunate inasmuch as it has a live-wire organization, the Middletown Civic Association, which feels that any problem pertaining to the community as a whole is equally their problem. Upon being approached on this matter of launching some campaign against interference, they immediately got behind the proposition and the results so far obtained have been excellent.

"The committee is composed of representative business men and technical men from every important industry in the city. They have all taken a great interest in the project, and it is through their cooperation and assistance that we can attribute the success obtained.

"Just to give you a brief idea of what can be done, we have cleared up, conservatively speaking, almost 200 complaints of interference due to local leaks in power lines, household appliances, etc. The biggest offender is the old-type battery charger such as the vibrator type. Next to this comes the household appliances—electric heating pads, refrigerators with thermostatic controls, and even drink mixers! Some interference has emanated from faulty transformers and other types of grounds on outside power lines. These have been very much minimized and the electric light company has been very much of a help in doing whatever they could to rectify the trouble.

"We have branched out from our original campaign, towards assisting those in the community who—due to the type of their sets—are somewhat blanketed by WLW's high-power carrier wave. We want at this time to express our appreciation for the cooperation we have received from the Crosley Radio Corporation in this connection."

Through Mr. Kilgour's efforts, the Radio Committee was able to secure a number of wave traps such as have been successfully used in and around Cincinnati, Nashville and New York City. The trap is so designed as to cut out near-by stations when distant stations are desired. The wave trap is equipped with a switch so that it can be used or not as the set owner desires.

The Radio Committee employs a "trouble shooter" to locate interference from power lines, traction companies, amateur stations and other sources. He also installs wave traps on sets which can be benefited by them.

### Gary Dealers Form Club

Crosley Radio Club Holds Monthly Get-Together to Discuss Joint Problems

A Crosley Dealer Club, composed of all the Crosley authorized dealers, has been formed in Gary, Indiana.

A get-together meeting of Crosley dealers was called by Mr. Ben Burns, a Hudson-Ross salesman in Gary and vicinity. His idea was simply to make the dealers acquainted with one another, give them an opportunity to thrash out their ideas and also to present them, as a group, with concrete ideas about Crosley merchandise and offer some advertising suggestions.

This preliminary meeting was an unexpected success. The dealers were addressed by Mr. Robert Himmel, president of Hudson-Ross, and by F. A. Bremer, Jr., Crosley representative in that territory. The suggestion was made from the floor that this venture be organized as a dealer's club, and the motion was enthusiastically approved by those present.

Mr. C. J. Kramer, of the Kramer Music Company of Gary, Indiana, was elected chairman. Mr. Burns will act as organizer for future sessions. It is planned to have meetings of the Crosley Radio Club at least once a month.

The whole radio industry took an immense forward stride in 1928. The increase in the radio industry in 1928 over 1927 approximated 52%.

It needs no further comment to remark that Crosley's increase in business in 1928 over 1927, amounted to 125%.

### "The Crosley Brings It In"

The radio fan in Michigan  
 Heeds not the sleet or snow,  
 Or day or night he feels delight,  
 How ere the winds may blow,  
 For while outside the storm kings ride  
 He heedless of their din,  
 He claps his hand to music grand,  
 "THE CROSLY BRINGS IT IN".

Once in a while he'll turn the dial  
 And hear with bated breath,  
 How heroes brave on stormy wave  
 Snatch brothers quick from death,  
 Then great hubbub in some night club  
 As racketeers cash in,  
 The news of all the World is his,  
 "THE CROSLY BRINGS IT IN".

Now 'round his knee in happy glee  
 The kids in wonder stand,  
 While Jack and Jean sing in between  
 Some bedtime stories grand,  
 And dad stays home nor cares to roam,  
 And fill himself with gin,  
 And the cause of this great joy and bliss,  
 "THE CROSLY BRINGS IT IN".

By Dr. C. F. Whiteshield, Trout Creek, Michigan.

Constant improvement in models without radical changes in the Crosley line!



I believe our success last year was due to the fact that we offered most value per dollar to radio investors. The Gembox at \$65.00 was the lowest priced all-electric set on the American market. Our dealers advertised it extensively and featured it in their advertising to bring customers to their stores. We have improved this very attractive set to a point where it is, without doubt, a leader in performance as well as the absolute leader in value.

The Crosley dealers tell me that the Gemchest is going to be a very popular model during the next few months because it combines in a compact unit an efficient set and speaker, something that makes an attractive addition to any home not only because of its appearance, but because of its unusual performance.

If you have not already recognized the great advantage of getting behind a leader, I sincerely urge you to look at the Gembox from a merchandising angle. It is the lowest priced A. C. electric set now on the market. It incorporates all modern features. Its performance is above the average and if you grasp the fundamental merchandising idea behind this Gembox and push it, through newspaper advertising and display, you will enjoy a greatly increased sale of all other items you carry as well as make a handsome profit through aggressively promoting the Gembox.

Rowell Crosley Jr.



### Quiet Mershon Performance

#### Unique Features Of Amrad Product Improve Radio Reception

In light-socket sets from the lowest priced to the highest priced you will find Mershon condensers ironing out the current ripples and supplying smooth, quiet reception.

Convinced by the proof of performance in Crosley and Amrad sets, manufacturers have universally acclaimed the Mershon condenser as superior in every way to other types of filter condensers for A. C. radio sets. Today you will find Mershons faithfully performing their functions in radios priced from \$2500 down to \$65. Many radio manufacturers with a sincere desire to give their customers the best in radio reception have adopted Mershons for their sets.

As every Crosley dealer knows, or should know, the Mershon condenser is entirely different from ordinary paper filter condensers. Instead of using paper or mica to separate the plates, a thin film is built up on the plates by electrolytic action. This thin film has two important advantages—it will repair itself immediately if a line surge punctures it, and it enables a high-capacity condenser to be built in a minimum of space. A paper condenser once punctured is ruined. Mershon condensers may be punctured a thousand times, and each time the wound will immediately and automatically heal.

These unique features of the Mershon are fully covered by patents. They were discovered and developed in one of the finest radio engineering laboratories of the country—that of the Amrad Radio Corporation. Engineering skill of unusually high caliber contributed to making Mershons what they are today, and extensive financial resources enabled experimentation to be carried on until perfection had been reached.

Although this fact may not be generally known to Crosley dealers, Mershon condensers have gone through more years of tests than almost any other part of a modern radio receiver. Mershons have been in use since the World War. Their use has not been confined alone to radio circuits, and they have proven their ability to stand up under the most exacting service requirements. Not until years of tests had proven their superiority were they widely advertised.

Until the time when Powel Crosley, Jr., acquired control of the Amrad Corporation, Mershon condensers had not been used in moderate-priced sets. He decided to incorporate them in Crosley sets because of their proven advantages, despite the fact that other condensers could be obtained for less money. The results have been worth the extra cost. Mershons have demonstrated themselves to be "the heart of the radio receiver."

### Questions ?

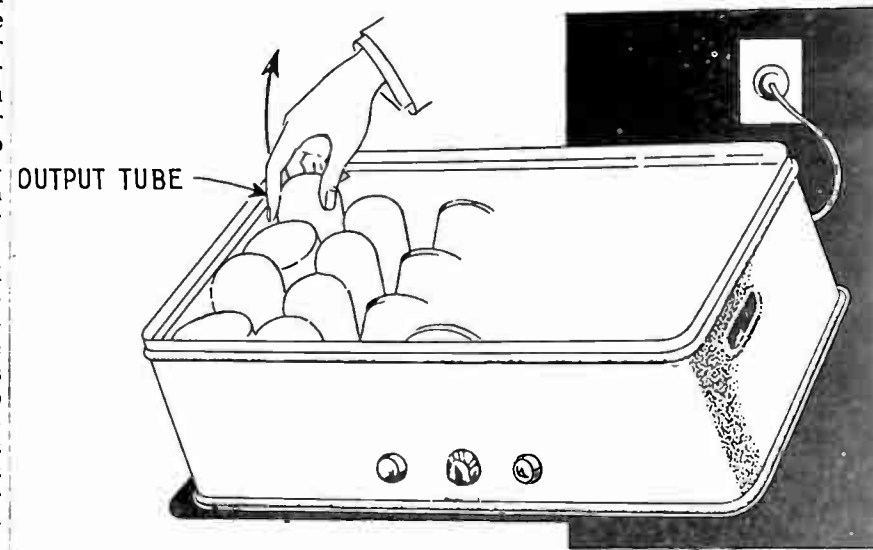
At the end of each lesson in the Crosley Dealer's Radio Course is a series of questions upon the course. Are you able to answer all of these questions? A number of technical questions have been sent in to the BROADCASTER for individual reply. A tremendous amount of interest has been shown in this radio course and it indicates that Crosley dealers are giving serious attention to the course.

## Other AC Sets Now Can Use Dynacone

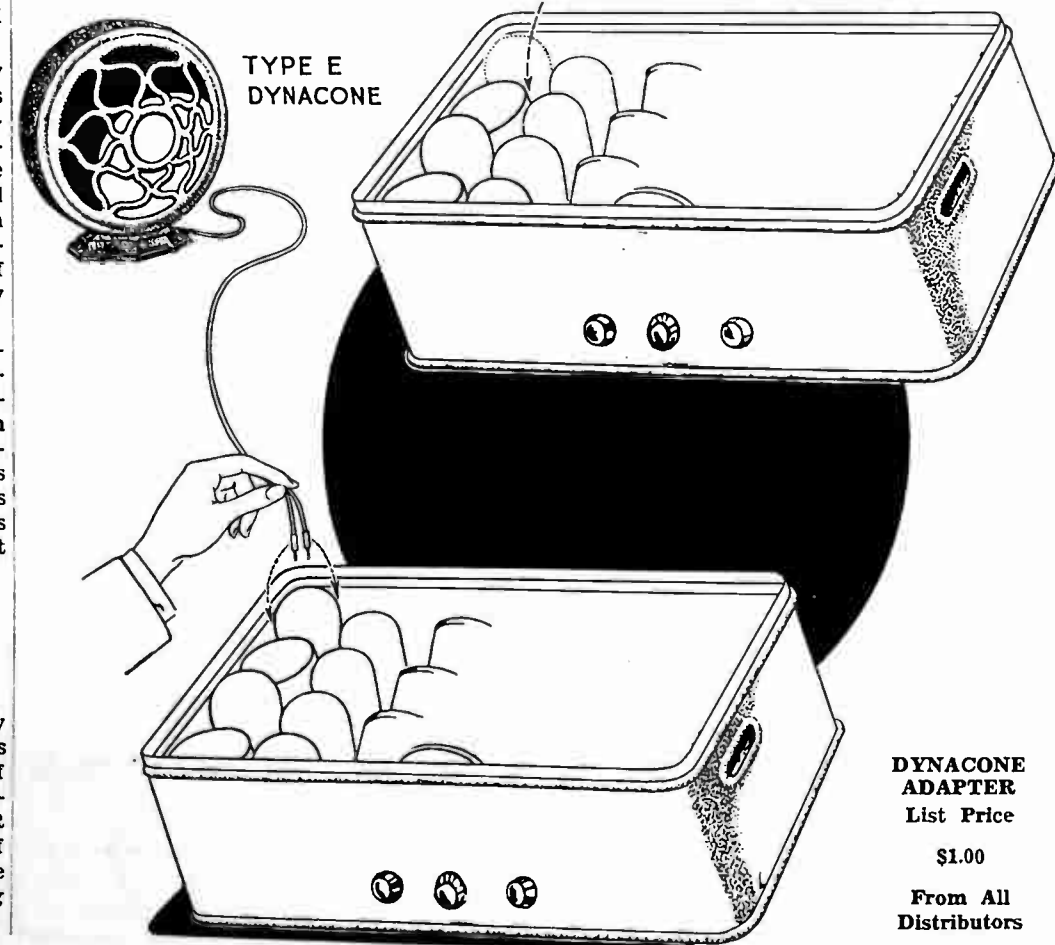
### Dynacone Power Speaker No Longer Restricted to Crosley A. C. Receivers

Any modern electric radio set can be equipped to operate with the wonderful Crosley power speaker, the Dynacone. By means of the small socket device called the Dynacone Adapter, the

Type E Dynacone can be attached with a few minutes of time and at a very small expense to other-than-Crosley A. C. Sets. The Dynacone Socket Adapter is for use with radio sets having output transformers or output choke systems.



The Type E Dynacone should be used with sets equipped with 171-A output tubes, having 135 volts or more on the plate, or with sets having an output tube with a plate current of 20ma.



**DYNACONE ADAPTER**  
List Price \$1.00  
From All Distributors

**how about the Dealer-?**

HE sold forty of these electric radio sets last month and everything looked lovely—but now it's different. Here are twenty-one of the sets back again—and twenty-one disgusted customers on his neck—all because of bum condensers.

## You can end Condenser Troubles Forever

if the sets you handle contain the

## MERSHON ELECTRIC CONDENSER!

Let us send you the names of those far-sighted Radio manufacturers who are PROTECTING THE RETAILER by making the Mershon Condenser standard equipment in their lines.

**THE AMRAD CORPORATION**  
MEDFORD HILLSIDE, MASS.

In writing, please address Dept. E-3

J. E. HAHN  
President

POWEL CROSLY, Jr.  
Chairman of the Board



# Tie Up With Dominant Crosley Ads in Major Cities!

A campaign of large, dominating newspaper advertisements is now being released in the important cities. These are 5-column ads which will secure the leading page positions. They are modern and eye-compelling. Dealers tying-up with this campaign will find an immediate reward in the form of sales!

**Fit for a king!**  
but a king would rather have a fit than own one.

The Crosley Radio Corporation, in cooperation with our Distributors, is issuing this series of large newspaper ads. The small ads shown at the bottom of the page are only a few of a new and striking series of Gemchest mats recently prepared for dealer use. Each small ad is intended to carry the dealers' imprint at the bottom. Order your mats now from your Distributor.

**Radio, like fishing, is not a matter of expensive equipment**

**"and when you send it up my man, be sure you change the price tag to \$650"**

**CROSLY RADIO**  
YOU'RE there WITH A CROSLY

**GEMCHEST \$94**

**GEMBOX \$65**

**DYNACONE \$25**

**SHOWCHEST \$109**

**JEWELBOX \$105**

**THREE TUBES \$94**

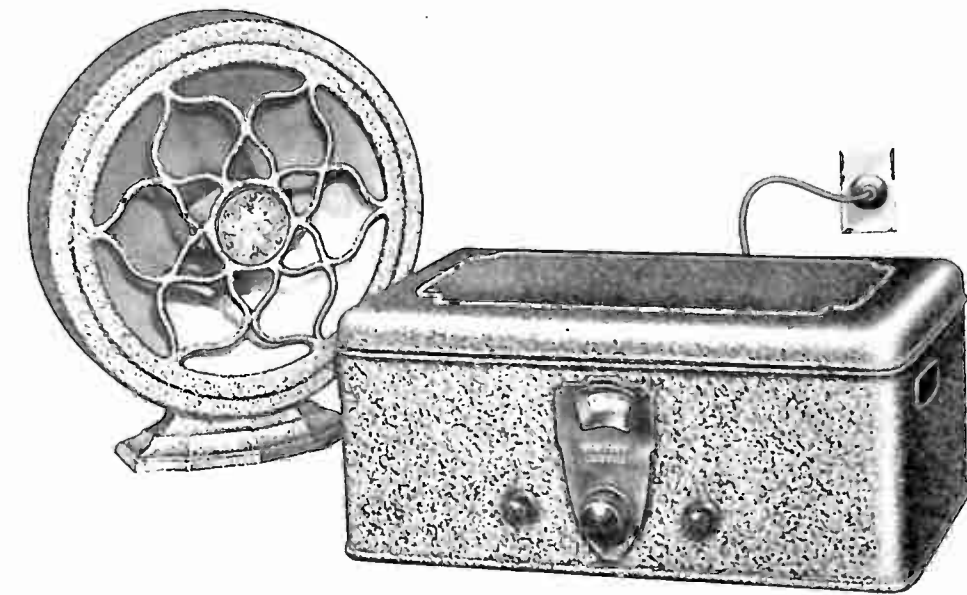
**AC Electric GEMBOX \$75**

**mic. famion \$100**

**CROSLY RADIO**

# The New Gembox Makes Its Appearance!

Furnished in new brushed White Gold finish  
Type E Dynacone in same finish



7 Tubes  
Rectifier  
3 Stages Radio Frequency  
Detector  
2 Stages Audio Frequency

The Outstanding Receiver Value, at \$65  
No. 610

THE REDESIGNED GEMBOX makes its bow to the radio world as the successor of the sensationally popular Gembox of the 1928 season. It is a complete piece of radio engineering, embodying refinements you are accustomed to find only in sets far higher in price.

The selectivity has been improved through the addition of a stage of tuned radio-frequency amplification.

The volume has been improved. The switch is now controlled from the front of the set!

All tuning is accomplished by a single control. The additional radio stage has made it unnecessary to use an intensifier, thereby reducing the number of controls.

The other features remain the same as No. 608. The chassis is mounted in a metal case finished in brushed White Gold.

The price of the GEMBOX remains at sixty-five dollars, without tubes. At this figure, it maintains its place as the most for the money of any A. C. electric radio receiver on the market.

## Dynacone Proves Outstanding Success in Loud Speakers

The Crosley Dynacone has become the biggest selling loud speaker in the world.

The Dynacone is one of two types of dynamic speakers. One is known as the moving coil type and the other as the armature type. The armature type—as exemplified by the Dynacone—is much more economical of current consumption. It requires no external power source or external rectifier. The D. C. current which energizes the field of the electro-magnet is supplied by the radio itself!

In tone quality, the Crosley Dynacone has all the characteristics and the power of a moving coil type of loud speaker, with far less distortion. It is free from the artificial "barrel-like" effect on voices which characterizes so many of the moving coil speakers.

In the Dynacone, all notes are in proper harmonic relation to each other without resonance peaks. It gives the entire musical gamut accurately and with beautiful quality.

The new Crosley console models both incorporate the Dynacone Power Speaker as part of the ensemble. The Gemchest takes the Type E Dynacone. The Showchest uses the Type F Dynacone. The Chinese Chippendale chests are especially designed to hold both the receiver and these wonderful Dynacone Speakers.



# Quebec Gembox Winner Replies with Acrostic

**CANADIAN INTERNATIONAL PAPER COMPANY**

Mr. Powell Crosby  
Quebec  
Crosley Radio Corp.  
Cincinnati, O., U.S.A.

A. J. Coak  
P.O. Box No. 133  
Temiskaming, Quec. Canada

PLEASE ADDRESS YOUR REPLY  
TO THE ADDRESS QUOTED  
EXCEPT IN INITIALS

Dear Sir

Crosley Radio Receivers... are inspirations of  
Byron Bayne & Company... I am a loyal possessor of yours in... I enjoy the  
Air Only Special... Do not... I am...  
Super Symphony... I am... I am...  
Crosley... I am... I am...  
Loud... I am... I am...  
Easy... I am... I am...  
Yours truly...  
A. J. Coak

P.S. Your Receiver... is the best... I am... I am...

## Hudson-Ross Finance Course Sales Staff of Chicago Distributor All Sign Up for Sheldon Course in Science of Selling

Believing that no salesman is better than his salesmanship and that no man is too old to learn, our aggressive Chicago distributor, Hudson-Ross, Inc., has provided a course in the science of selling for its whole sales force.

As a preliminary they invited H. N. Tolles, president of the Sheldon School of Chicago, to lecture to all the Hudson-Ross salesmen on the general subject of salesmanship. The course was then proposed.

This salesmanship course consists of ten books on the science of selling, twelve printed lectures and twelve platform lectures delivered by competent instructors. The lectures will be given on Saturday afternoons, one each for twelve weeks.

Hudson-Ross is standing 25% of the tuition, the men paying the balance. The heads of this firm, Bob and Charlie Himmel, have also put up three cash prizes of \$50.00, \$35.00 and \$15.00, for the three men ranking highest in their work at the completion of the course.

So for the next twelve Saturday afternoons you'll find Hudson-Ross salesmen earnestly listening to lectures and busily taking notes. Incidentally, Frank Bremer, Crosley's able representative in the Chicago territory, is among those taking this course.

Modern, scientific selling requires a lot of information. It has a lot of sidelights. Hudson-Ross are not overlooking any bets.

**TUNE IN!**

We broadcast daily at  
11:00 a. m. and 1:30 p. m.

Financial News  
Market Reports  
Government Bond  
Quotations  
Call Money Rates  
Foreign Exchange  
Grain and Live Stock  
Quotations

**THE FIFTH THIRD UNION COMPANY**

14 West Fourth Street  
Cincinnati, Ohio

**TAYLOR ELECTRIC CO.**

MADISON, WIS.

Exclusively Radio  
Wholesale Only

**CROSLY DISTRIBUTOR**

**SCHUSTER ELECTRIC  
COMPANY**

WHOLESALE  
CROSLY DISTRIBUTOR

2169 Spring Grove Avenue  
412 Elm Street, Cincinnati, Ohio  
West 144—PHONES—Main 820

## New Sales Manager for Stan- dard Battery of Iowa



JOHN G. ESSER

## When a Fellow Needs a Showbox-----

Service, and How!



When a fellow needs a radio he wants it badly. Advance Electric Co. of Terre Haute, Indiana, speed the delivery of a Crosley Showbox from the Terre Haute airport. Harry Musick and Paul Pickett are shown rendering hot service to waiting radio fan!

# Northwest Served by Harper-Meggee Stores

Seattle and Spokane Branches Facilitate Crosley Distribution

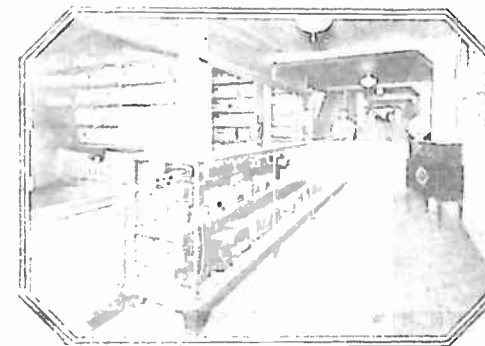
AMONG our good friends we number the Crosley Distributor in the Northwest, Harper-Meggee, Inc. Their efforts are centered in two large stores located in the key cities of that territory, Seattle and Spokane. A large organization is maintained at each establishment. Harper-Meggee are exclusive Crosley distributors in the field they are covering and we feel they are making a good job of it.

This organization has made a wonderful showing in the state of Washington in the period they have been distributors for the Crosley Radio Corporation and are continuing to bat a high average.



SEATTLE HEADQUARTERS

Harper-Meggee made a wonderful showing



STOCK ROOM

with the Crosley line during 1928. They rolled up an increase in business of something more than 300% in 1928 over the preceding year.

This organization is very aggressive, employing unique merchandising methods to keep their goods moving. It has been known to happen that a carload of Crosley sets arrived at the Seattle plant and is allocated to the dealers and out of the warehouse before sunset of the same day. We know of one instance where a carload got into the hands of the Crosley dealers shortly after noon of the same day of arrival.

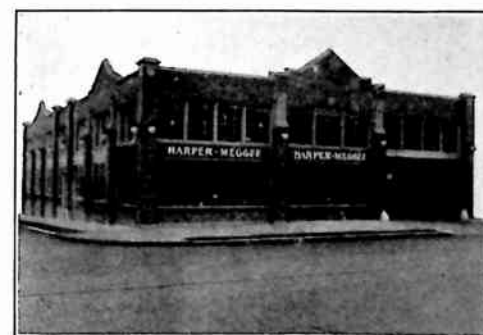
Maybe this is Western technique. In any event, it is certainly effective in advancing sales.

A great many fan letters come to the BROADCASTER from enthusiastic owners of Crosley sets who want to testify as to the qualities of their Showbox or Gembox or one of the Crosley numbers. An increasing number of these have been arriving from the Pacific Coast, especially from the Northwest. That is one way, rather a surprising one, too, of learning at first hand that the State of Washington is getting thoroughly Crosleyized.

Radio fans in Seattle, Tacoma, Spokane and other Washington cities, have the well-nigh unique pleasure of picking up the Japanese stations. It is true they have to stay up into the early morning hours to do it but the thrill warrants the effort. So many Crosley owners have

been writing in, enclosing copies of their log records, that we know that reception from Japanese stations is now fairly reliable. And we begin to hear oftener about logging fans picking up Australian programs and occasionally New Zealand. To date, the bulk of such reports have come from the Northwest. Of course California fans are getting Japan, too, on their Crosleys. Conditions along Puget Sound, however, seem to be particularly favorable to reception across the Pacific. Washington is considerably farther north. As the crow flies, it is a shorter distance from Spokane to Tokio than from California. We are inclined to feel rather envious of radio listeners in the Northwest who find it possible to bring in a program from the Orient. The intrinsic merit of the program may not be anything like that one would normally get over such an inland station, as, say, WLW, but the kick is greater. On the other hand, we find, also, that Crosley fans in Washington get a huge kick out of hearing WLW. That's an exploit in itself, for the distance from Cincinnati to Seattle is very great and there are two ranges of mountains intervening. The tremendous power behind WLW makes it possible for this station to be heard consistently on the Pacific Coast.

So many letters come in from Crosley owners living in the State of Washington expressing their interest in WLW programs and their satisfaction with the Crosley sets by which this



HARPER-MEGGEE OFFICES AT  
SPOKANE, WASHINGTON

achievement is possible, that we know that the number of Crosley owners in that territory is on the rapid increase.

Now for this rapid increase, we feel that a very large measure of credit goes to the two organizations of Harper-Meggee, at Seattle and Spokane. Such men as R. F. Meggee, president, C. W. Dawson, T. J. Tobin, to mention only a few of this up-and-coming organization, have made possible the brilliant record for 1928.

The same aggressive tactics apply in the present season, judging by the carload shipments of Crosley merchandise which they are demanding and which are being sent as rapidly as possible.



SEATTLE DISPLAY ROOM

The radio outlook this year is so extraordinarily promising that it is our belief that Harper-Meggee, Inc., will not only exceed their 1928 accomplishment. Perhaps go far ahead of it.

With the great number of battery sets to be replaced by A. C. sets, and with the increasing popularity of the new Crosley numbers, everything points to a brilliant Crosley season in the Washington territory under the able generalship of the Harper-Meggee staff.

South Bend, Washington,  
February 13, 1929.

Crosley Radio Corp.,  
Cincinnati, Ohio.

Dear Sir:

I listened to your station WLW (Cincinnati) and KWKH (Shreveport, Louisiana) last night at 9:45 P. M. on one of your Crosley A. C. sets. I was using the bedsprings for an aerial! I'd like to see anyone beat this—I didn't even have the ground connected. Sure a great machine.

Distance from here to Shreveport, 2135 miles; to Cincinnati, 2289 miles.

Yours truly,

(Signed) **LOWELL WHEELER,**  
South Bend, Washington.

The Chinese Chippendale Gemchest Incorporates the New 7-tube Gembox Receiver!  
Bring Your Window Display Into Line with the Chinese Chippendale Showchest and Gemchest models.



# The MEROLA Phonograph Pick-up \$15



Switch from radio to phonograph and back again to radio at pleasure!

## Push Merola Vigorously!

THE MEROLA is a special electrical pick-up by means of which a phonograph record is played exactly as it was first recorded. The MEROLA is a simple attachment which picks up the sound waves from the phonograph record by the usual needle, and transmits them electrically to the amplifying tubes of an A. C. radio set. With the MEROLA placed on a phonograph instead of the old-fashioned tone-arm, the sound waves go through the radio receiver and come out into the room through the power speaker. Any talking machine may be made into an electric reproducer by plugging the MEROLA attachment into the radio like a radio tube. There is a volume control on the MEROLA tone-arm by means of which the volume can be swelled or diminished. A switch makes it possible to change over from phonograph to radio set at will!



Crosley A. C. electric receivers are equipped with MEROLA posts, thus making a MEROLA installation the work of a few minutes.

The MEROLA is handsomely finished, is very compact and easy both to handle and install. A popular item, easy to sell!

Order from your Distributor

## Fargo Dealers Meet in Sub-Zero Weather



It was 20 degrees below zero when the Fargo Motor Supply Company held its dealer meeting recently. Despite this, thirty Crosley authorized dealers attended from all parts of North Da-

kota, saw the new Crosley Showchest and Gemchest, and waxed enthusiastic about the 1929 possibilities of the Icyball Refrigerator.

## Standard Battery Hold Successful Meet

JANUARY 23, 1929, saw the more-than-successful dealers' meeting in the Iowa territory held by the Standard Battery and Electric Company, exclusive Crosley distributor in Waterloo.

The attendance exceeded 250, including Crosley authorized dealers from all over the state of Iowa, and the Standard Battery sales force. These registered real interest in the great possibilities of the Gemchest and Showchest and were tremendously enthusiastic about the Icyball.

The Standard Battery and Electric Company is one of the oldest of the Crosley distributors. Their headquarters is in Waterloo, Iowa, but they recently opened a branch in Cedar Rapids under the management of F. M. Wood. The Standard Battery have a new salesmanager, John G. Esser. The president and general manager of the concern, John Hanson, has charge of their radio business. The Cedar Rapids branch handles Crosley and Amrad solely.

1928 saw an enormous increase in their Crosley and Amrad business over preceding years. Mr. Hanson, the president, expects 1929 to be



STORE ROOM OF THE STANDARD BATTERY & ELECTRIC CO., WATERLOO

their banner year for radio sales. He is laying plans for an active campaign to promote Icyball sales in the Iowa territory.

The Iowa territory is ideally suited for extensive use of Icyball refrigerators and with the cooperation of their dealer organization, Standard Battery will no doubt find it easy to promote the use of this remarkable invention.



IOWA DEALERS MEET AT BIG PEP MEETING IN WATERLOO, IOWA



# CROSELY DEALERS



## Big Six Radio Shop's Boss St. Peters, Mo., Dealer Tours Florida in Crosley Car



GEORGE STIEFVATER

George Stiefvater, proprietor of the Big Six Radio Shop and Crosley authorized dealer at St. Peters, Missouri, recently carried the Crosley slogan in a tour of the South. His tire cover caused universal comment on Crosley sets and WLW.

## Street Fair Enlivened with Dynacone



The Main Street of Aberdeen, South Dakota, had an unusual attraction furnished by Mr. Lincoln Boyd, owner of our good dealer in that city, the Boyd Auto Co. Overhead was hung a huge star and in its center a Dynacone Power Speaker. The Dynacone was connected and the population of Aberdeen entertained with continuous entertainment. This stunt stirred the whole town to favorable comment.

## Test Sets Before Delivery

No set should be installed in a customer's home until it has been tried out with the tubes and speakers with which it is to be used.

This is a red letter rule, and should be followed in every instance.

Of complaints received at the factory about the operation of sets in the field, the overwhelming majority prove to be the result of faulty accessories. One bad tube can cause as much trouble in the operation of a set as a half dozen defects in the internal construction of the set itself.

Tubes should always be tested before the set is installed. Batteries, if they are used, should be checked carefully. The loudspeaker should be tried out under actual operating conditions.

The surest method is to give the set and its accessories a trial under actual operating conditions. Connect it to a good aerial and ground. Use the tubes and other accessories that you intend to supply to your customer. Tune to various stations and compare the reception with that of a standard set.

Our Sterling, Illinois, Distributor, the Hardware Products Company, is advising their Crosley dealers to keep from one to a dozen Crosley sets out on trial or demonstration every week.

When the Bok Memorial Tower was dedicated Friday, February 1st, '29, in the Florida Bird Sanctuary, an inspiring address was made by President Coolidge to a distinguished gathering. The Baird Hardware Company, Crosley Distributor at Gainesville, Florida, installed a Showbox and Dynacone in the city offices of Gainesville so that the city employees could listen in to the exercises. Mr. C. Addison Baird is in receipt of a letter of thanks signed by all the Gainesville city employees who enjoyed this unusual program.

Crosley does not meet, but creates competition!

The Modern Electric and Radio Company, Crosley authorized dealer in St. Louis, makes a flat charge of \$1.50 for service on Crosley sets in the home.

During the 1928 radio season, Crosley authorized dealers throughout the country used nearly three million of the small folders, Form 822, showing the complete line of Crosley radio apparatus. This form has been superseded by the new folder, Form 919.

Giving Crosley Set Demonstrations with  
WLW is a Sales Clincher!

## Enthusiastic Dealer Acceptance

### Crosley Dealers Convinced of Selling Appeal in New Numbers

Already a number of dealer meetings have been held in important cities around the country. These have been characterized by a large attendance on the part of Crosley authorized dealers. A very great deal of real enthusiasm over the Jewelbox, the Showchest, the Gemchest and the new Gembox has been displayed.

Some of the meetings held by distributors have been very ambitious affairs. The Wilkening meeting in Philadelphia was carefully planned, skilfully handled and went over with a bang. The Nebraska-Buick meeting in Omaha was an outstanding example of a successful dealer meeting. The Chicago gathering held by Hudson-Ross was another big success.

At such meetings, dealers have the chance to see the new numbers in the Crosley line displayed to advantage, and they get plenty of opportunity to ask questions.

Many points are thrashed out when all the dealers get together with their distributor. New slants on salesmanship are brought up, the line is explained in detail. And there is built up a cordial attitude between the respective dealers and a better understanding between the distributor and his dealer group.

That our dealers recognize these facts is shown by their response. They have attended in large numbers and they have welcomed the additions to the Crosley line. The Showchest and Gemchest, radical departures as they appeared, have aroused great interest and conviction in their selling appeal. The line is going over big. The dealer meetings prove it!

### STUDENT EDUCATIONAL RECORDS

Incorporated

Lakewood, N. J.

Feb. 11, 1929.

Crosley Radio Corp.,  
Cincinnati, O.

Dear Sirs:

I have just finished listening to your program of the Dynacone Diners. I have a Crosley Bandbox on which I have received 272 stations since November '28 when the new waves went into effect.

I like the Bandbox which I have very much.  
Sincerely yours,

(Signed) HUBERT N. MORTULET,  
Lakewood, N. J.

P. S. I have received 11 stations on the Pacific Coast.



# SOUVENIRS SNAP UP SALES

### New Book Matches!



Attractive new Book Matches featuring the Crosley Showchest on one side with ample space for your own advertisement on reverse. 5 beautiful colors give snap and distinction to this ever-welcome souvenir. Priced for wide distribution at \$3.75 for one thousand, or \$3.50 per thousand on orders of 2 thousand or over. Order today from your Distributor.

\$3.75 for One Thousand

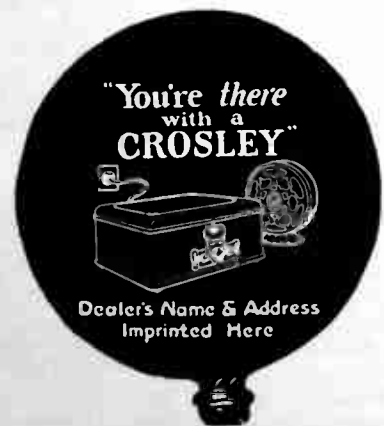
## Pocket LETTER HOLDER



\$1.19 each  
f. o. b. Cincinnati

A handsome and lasting souvenir. No. 28-12 is a Pocket Letter Holder in genuine russet pigskin, carrying the name CROSELY over your imprint. A charge of \$1.50 covers imprinting in genuine gold leaf. Minimum order, 1 dozen. Order now from your Distributor, enclosing cash with order.

## COLORED BALLOONS



Brilliantly colored balloons go big with children and carry your ad direct to the home! Assorted colors, several styles, some with squawkers. 250 for \$5.00; 500 for \$9.50; 1000 at \$18.00; 2500 at \$16.50 per thousand. Cash with order direct to Mansfield, O.

PERFECTION RUBBER CO.  
Mansfield, Ohio

## Trouble-Shooting with Showbox

### Green of Kalamazoo Gleans Prospects Searching for Hum

Crosley sales in Kalamazoo, Michigan, show a decided upward trend due to the activities of A. O. Green, authorized Crosley dealer in that city, who has been starring as a trouble-shooter. He uses a showbox. Surprised Here's how.

Having a Showbox in a home for free trial, Mr. Green called around to close the sale. He found, however, that the prospects were unable to get any satisfaction from the set because of a loud hum all over the dial.

Picture Mr Green scratching his head. An idea rushes in and takes possession.

"That's from the 110 lighting circuit, I'll bet. Let's find it."

So he fastened a 10-foot piece of aerial wire on the Showbox set and started calling on the neighbors. He was cordially received because all the set owners in the neighborhood were having similar trouble. Mr. Green pulled fuses and 110-volt switches and located the trouble at last in the meter room of an apartment building.

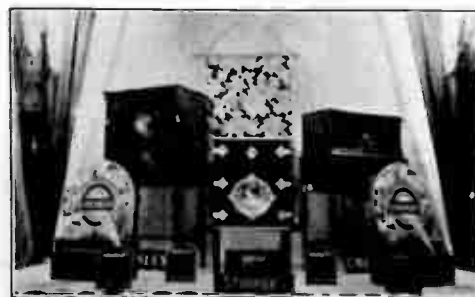
An electric light bulb had broken and had to arc to make a light. It was this that caused the grief.

Having discovered and remedied the trouble, Green returned to his original prospect and made the sale of his Showbox. Incidentally, his trouble tour netted him several live Crosley prospects.



Nebraska dealers gather at Hotel Fontenelle, Omaha, on Feb. 1st, for Nebraska-Buick meeting.

When Senator Curtis takes the oath of office as Vice-President of the United States, in the Senate Chamber on March 4th, 1929, the network will afford the first opportunity in our national history for the public to participate. Heretofore this has been a private ceremony.



Charles A. Sturmer used this display to good effect in his Port Huron, Michigan, store.

# ATTENTION Means Business!

## SWINGING NON-ELECTRIC SIGN

Weatherproof metal sign in three  
Crosley colors, lasting and ef-

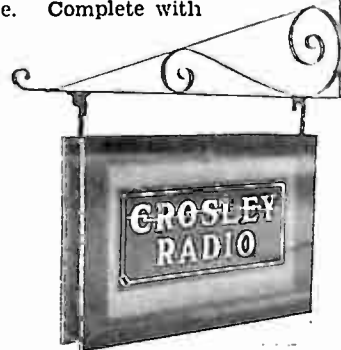


Hanging Sign  
No. 28-6

\$2.50 each From your  
f. o. b. Cincinnati Distributor

## Electric Bracket Sign

Illuminated sign with unbreakable, transparent panels, wired for 4 bulbs, size 23 x 34 inches. Withstands weather and effectively displays your name. Complete with brackets.



Hanging Sign,  
Illuminated, No. 28-5

\$12.00 each, from your Distributor

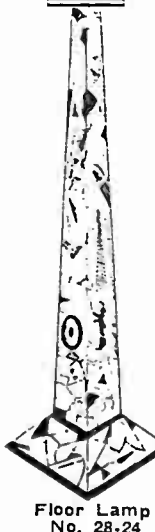
## Revolving Floor Lamp



This modernistic floor lamp brings your Crosley display up-to-the-minute. The illuminated shade revolves slowly, affording ample time for display.

\$3.50  
each  
f. o. b. Cincinnati

Order from your  
Distributor



Floor Lamp  
No. 28-24

# CROSELY DEALER'S RADIO COURSE

### 10 Simplified Lessons Especially Prepared for Crosley Dealers

#### LESSON VIII.

##### Construction of Radio Tubes.

The tubes used in modern receiving sets and in broadcasting stations contain three separate internal elements—hence they are called "triodes", or "three-electrode tubes".

One of the elements is a filament of wire, somewhat similar to the filaments in ordinary electric lamp bulbs. When in operation this filament is heated to incandescence by a current from a battery or power supply unit, known as the "A" current.

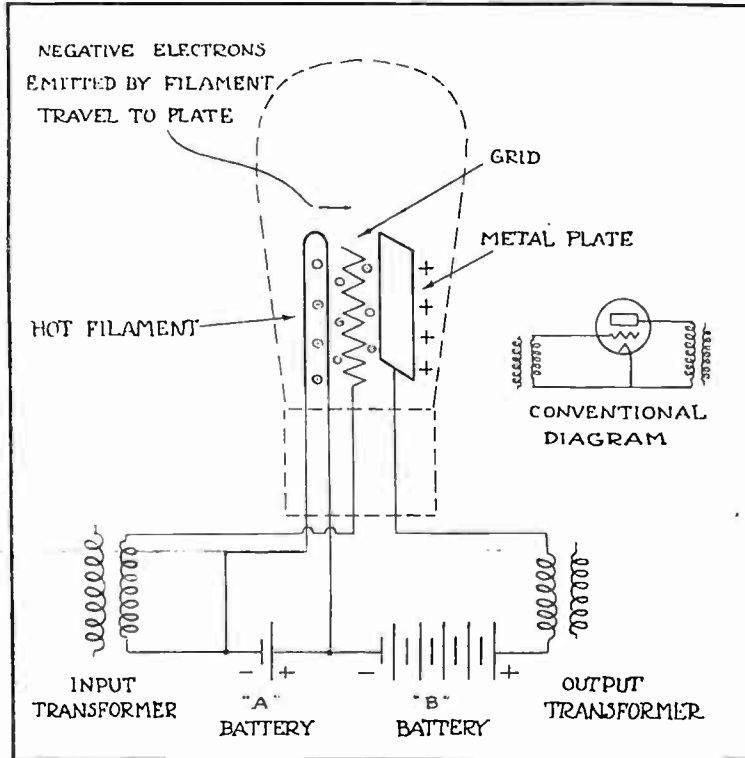


Figure 1

At a short distance from the filament are mounted one or two metal strips, known as the "plate" or "plates". Frequently the plate takes the form of a cylinder surrounding the filament. The plate is maintained at a positive potential with regard to the filament, by means of a battery known as the "B" battery. In receiving sets this plate to filament potential difference amounts to from 40 to 180 volts.

Between the filament and the plate is an open wire structure called the "grid". If a cylindrical plate is used, this may take the form of a wire spiral around the filament. The grid represents the input element of the tube and the plate the output element.

The space within the tube is evacuated, just as the space inside an ordinary lamp bulb is evacuated.

##### Function of the Filament.

You will remember, from a previous lesson, that every body has within it countless small negative electrical charges called "electrons". It is the flow of these electrons, as you will recall, which constitutes an electrical current.

Now these more or less free electrons are in constant motion inside a conductor. If the conductor is heated, their motion becomes more violent. If it is heated to a sufficiently high temperature, a portion of the electrons will jump through the surface, in a manner analogous to the evaporation which takes place when water is heated.

The function of the hot filament is to supply these free electrons. If the hot filament were isolated, with no other bodies near it, the electrons which evaporated from its surface would fall back into it.

##### Function of the Plate.

Positive charges of electricity attract negative charges. The positive-charged plate attracts electrons emitted from the filament. Thus there is a continuous flow of electrons from the filament, through the vacuum inside the tube, to the POSITIVE plate.

Where do these electrons come from and where do they go? The

electrons collected by the plate of the tube are returned through the plate circuit and "B" battery or "B" supply unit to the filament of the tubes. Thus, electrons are not "used-up"—they are simply forced around through the plate circuit as a current of electricity.

##### Function of the Grid.

The grid is the trigger which controls the current flowing through the tube.

As explained above, the "B" battery or "B" eliminator is constantly forcing a current of electricity, known as the "plate current" around through the plate circuit. Inside the tube this current is carried in the form of a stream of electrons, emitted by the hot filament and traveling thence, through the tube, to the positive plate. This stream of electrons must pass through the meshes of the grid (the grid being mounted between the filament and plate.) Now if the grid is charged negatively it will repel the electrons and hinder their passage to the plate, thus partially or totally blocking the plate current. If it is charged positively, it will assist the plate in attracting the electron stream, thus increasing the plate current.

The grid thus acts as an electric gate in the path of the electrons, controlling the flow of the plate current. Since the grid is close to the filament, and since the attraction or repulsion effect between electrical charges increases rapidly as the distance between them is decreased, it requires but a small charge on the grid to cause a large change in plate current.

##### Relay Action of Tubes.

The simplest action of a radio tube is its so-called "amplifying action." Suppose a radio signal is impressed upon the grid circuit. The signal will charge the grid alternately positive and negative. With each change of grid charge there will be a corresponding large change in the plate current. Thus a weak signal acting on the grid may cause large current fluctuations in the plate current. The plate current fluctuations are an amplified replica of the signal in the grid circuit.

Notice that although we speak of the signal as being "amplified" in this case, what is really happening is that the signal is simply controlling the flow of current from the "B" battery, or "B" eliminator, through the plate circuit. Thus, the tube is really acting as a relay, its sensitive trigger action controlling the plate current. The large energy delivered by the tube as compared with the small energy input does not come from the signal. This extra energy is drawn from the "B" battery or power unit, the signal simply "throwing the switch to turn the current on", as it were.

##### Nature of the R. F. Plate Current.

What kind of current flows in the plate circuit of the radio frequency tubes?

When no signal is being received, a continuous direct current flows through the "B" circuit. If a signal is received, this current is made to fluctuate in accordance with the incoming signal. It thus becomes a fluctuating direct current.

Since electrons cannot flow from the plate to the filament (the filament being the emitter of the electrons and the plate being positive), the plate current can only flow in one direction. The only forms that it can take, therefore, are those of a continuous or a fluctuating unidirectional current.

##### Action of Tubes as Detectors.

For certain reasons that will be explained more fully in lessons that follow, it is necessary to blot out the radio-frequency component of the current in the radio-frequency stages. Briefly, the reason is that loudspeakers will not respond to these high frequencies. It is the audio-frequency swells, modulating the radio-frequency, which correspond to the sounds at the studio and which it is desired to reproduce by means of the speaker.

The function of the detector is to blot out the radio-frequency component of the tube currents, at the same time retaining the audio-frequency component.

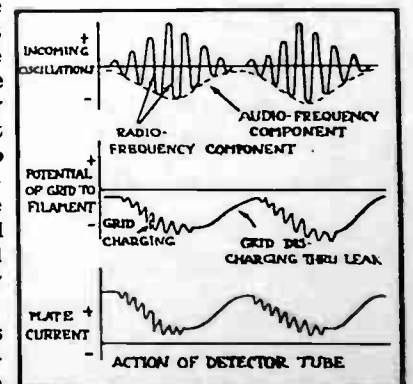


Figure 2



To do this, a condenser is introduced in the grid circuit of the detector tube. This is known as the "grid condenser". It causes a negative charge to pile up on the grid each time there is a swell or rise in the audio-frequency component, that is each time the radio-frequency oscillation rise to a maximum.

When the radio-frequency oscillations again reduce to a minimum, the charge leaks off the grid condenser through a high-resistance shunt known as a "grid leak". Thus, each audio-frequency pulse or swell is accompanied by a corresponding swell in the grid charge, which in turn cause a pulse or swell in the plate current. Practically only audio-frequency fluctuations, corresponding to the audio-frequency component of the input current, are reproduced in the plate circuit. This action will be explained more fully in the following lessons.

**Regenerative Amplification.**

When a signal is impressed on the grid circuit of a tube, its fluctuations are reproduced in the plate circuit greatly amplified. Suppose these plate current fluctuations are made to further vary the charge of the grid by being coupled back from the plate circuit to the grid circuit through a transformer. The effect of this mutual coupling of plate and grid circuits will be to cause greater fluctuations in the grid circuit and more greatly amplified output from the tube. This is known as "regenerative amplification".

In regenerative sets, the detector tube only is ordinarily regenerative. Some means of control is provided in order to regulate the amount of coupling between the plate and grid circuits. This must be so adjusted that reproduction is smooth and clear. Regenerative sets are remarkably sensitive and selective, but must be carefully tuned for best results.

**Radio Tubes as Generators.**

If the coupling between the plate and grid circuits of a regenerative tube is carried too far, the tube will go into a state of self-oscillation, in which it generates a high-frequency alternating current.

As discussed in a previous lesson, when an electrical charge is released in a circuit containing inductance and capacity it tends to set up a current which oscillates back and forth at a definite frequency. In a simple circuit, consisting of a condenser and inductance in series, these oscillations rapidly die out because the energy is dissipated in heating the resistance of the circuit. In a regenerative radio tube circuit, however, (which of course has the properties of an oscillatory circuit, containing as it does, both inductance and capacity) energy is continually fed back from the plate circuit to maintain alternations in the grid circuit,

these grid alternations in turn maintaining alternations in the plate circuit current. If enough energy is fed back from the plate circuit to the grid circuit to make up for resistance losses, the alternations will be maintained indefinitely.

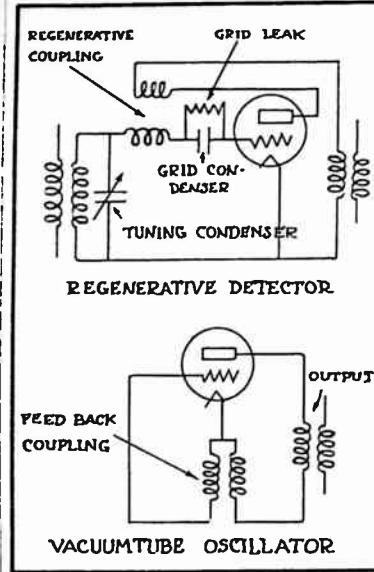


Figure 3

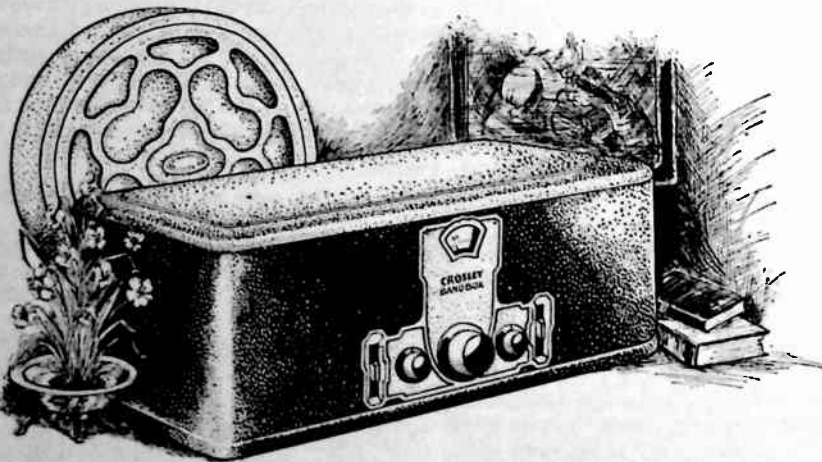
Do not get the impression that such an oscillating radio tube is a perpetual motion device. It does not make energy. It simply takes the direct current energy of the "B" supply and converts it into alternating current. The tube acts more or less like a pendulum which is kept swinging by giving it a thrust each time it reaches the bottom of its swing. The "B" battery or "B" supply unit furnishes the necessary thrust.

It is this action of tubes that is made use of in broadcasting stations to generate the powerful, high-frequency currents necessary for broadcasting purposes. In reality these tubes are not generators but convertors for changing direct currents to high-frequency alternating currents.

**QUESTIONS**

Answer the following questions carefully. If you have any questions about them or about portions of the lesson text, write to the Editor, "Crosley Radio Broadcaster".

1. If the grid is made positive with respect to the filament will current flow through the grid circuit?
2. From the answer to the above question can you deduce why "C" batteries are used?
3. What would be the effect of omitting the grid leak?
4. What is the over-all amplification of a set having three stages of radio-frequency amplification each amplifying 20 times, a detector amplifying 5 times, and two audio stages each amplifying 10 times?
5. Is the plate of a tube at the same voltage with respect to both ends of the filament?



6 tubes :: Storage Battery :: Genuine Neutrodyne

THE letter from the California lumber camp is a vivid demonstration of performance by a Crosley BANDBOX receiver. With his letter, H. E. Roberts enclosed a log giving the number of stations he had dialed, and he was certainly successful in bringing them in. The Crosley BANDBOX is a storage battery type set, 6 tubes, completely shielded, with acuminators, illuminated dial and other modern radio features. Chassis mounted in metal case with gold highlighted ripple finish. Display a BANDBOX and keep a supply on hand.

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Feb. 4th, 1929.

Crosley Radio Corp.,  
Cincinnati, O.

Dear Sirs:

I have one of your Crosley Bandboxes, and enclosed is a log I logged since November. I believe it is the best log in this locality. Your station WLW, comes in every evening at 4 P. M., (Pacific Standard Time). The Japs, also the Australian stations, come in regularly.

This is not an ideal radio location on account of so much interference. This is a big lumber camp; the largest sawmill in California is located here. I am now listening to the Kentucky-Indiana Oil Company over your station.

I am respectfully yours,

(signed)

H. E. ROBERTS,  
Box 1166, Westwood, Cal.