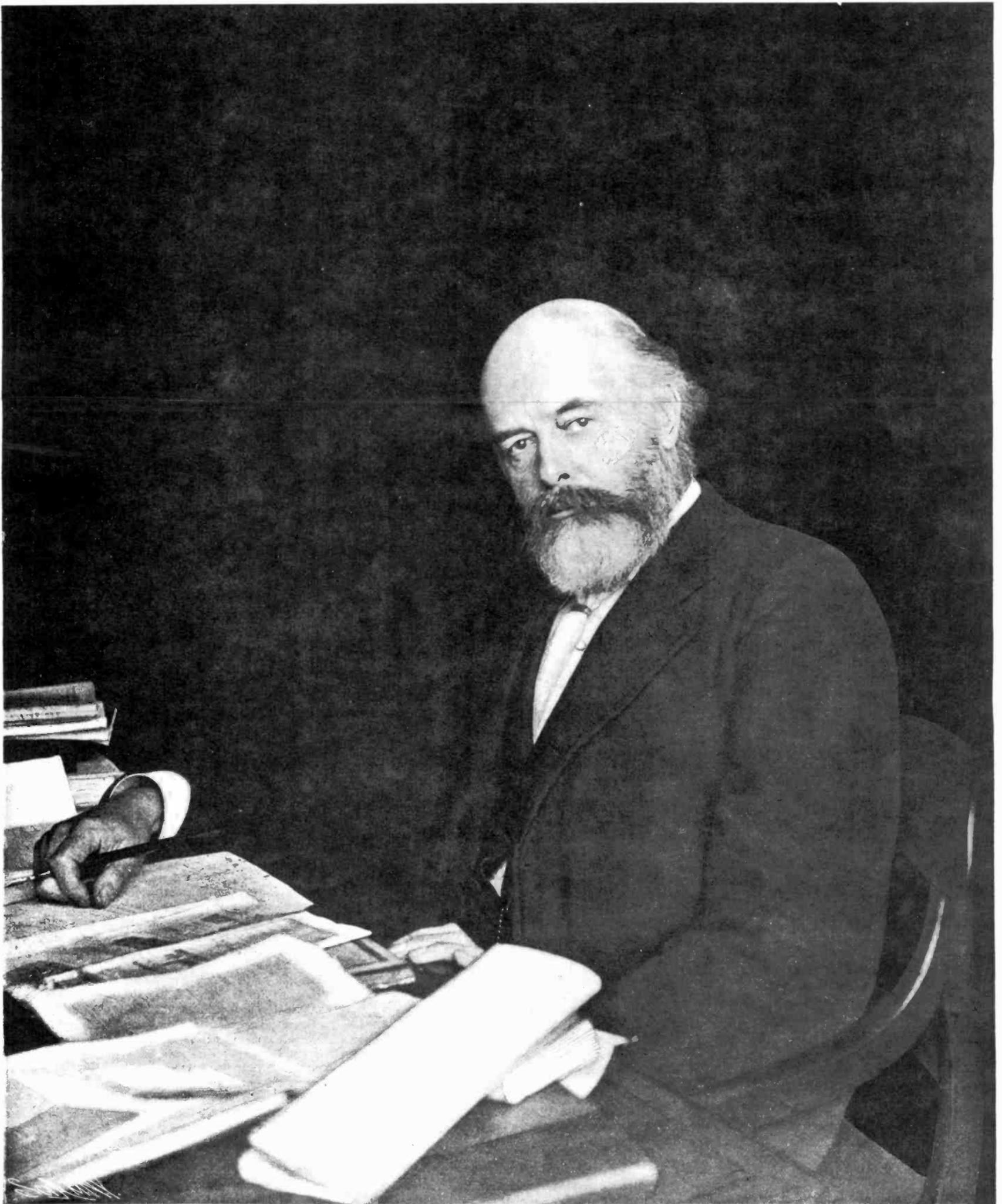


THE NEWSPAPER FOR  
THE HOBBYIST OF VINTAGE  
ELECTRONICS AND SOUND

# THE HORN SPEAKER

*Wireless Pioneer*



MARCH 1974

# THE HORN SPEAKER

Puett electronics



TUBE PRICE LIST no. 8B -- SPECIAL EDITION - All prices subject to change without notice.

MAKE ALL CHECKS OR MONEY ORDERS PAYABLE TO J.W.F. Puett 3008 Abston Drive Mesquite, Texas 75149

**PLEASE NOTE \*\*** Due to increased purchasing costs and the scarcity of certain tube types, we will be forced to increase prices. Our main Tube Price List No. 8 was published in the Jan. & Feb. Horn Speaker. The \$2.00 new & \$1.00 used prices shown in List No. 8 will continue through 31 March 1974. Beginning 1 April 1974, we will have more types to offer, but all tubes will be priced individually in List No. 9 which will appear in the April Horn Speaker. If you do not have List No. 8, send a self-addressed stamped envelope.

**ALL TUBES ARE THOROUGHLY TESTED** on a mutual conductance tube checker before shipment. **CUSTOMER SATISFACTION GUARANTEED** -- If you are not satisfied with your order for any reason, tubes may be returned within ten days for refund or replacement with exception of tubes which are shorted or have open filaments. It will be assumed that returned tubes with shorts or open filaments were damaged in shipment. Shipping damage claims will be handled promptly through the post office on insured orders. Puett Electronics assumes no liability for orders which are not insured. Tubes are mailed parcel post - no C.O.D. please. **INCLUDE 10¢ FOR POSTAGE & HANDLING.** Insurance rates are 30¢ for orders under \$50.00. **TEXAS RESIDENTS ADD 5% STATE SALES TAX.**

VERY OLD-STYLE GLASS-ENVELOPE TUBES - priced individually - all are used, thoroughly tested.

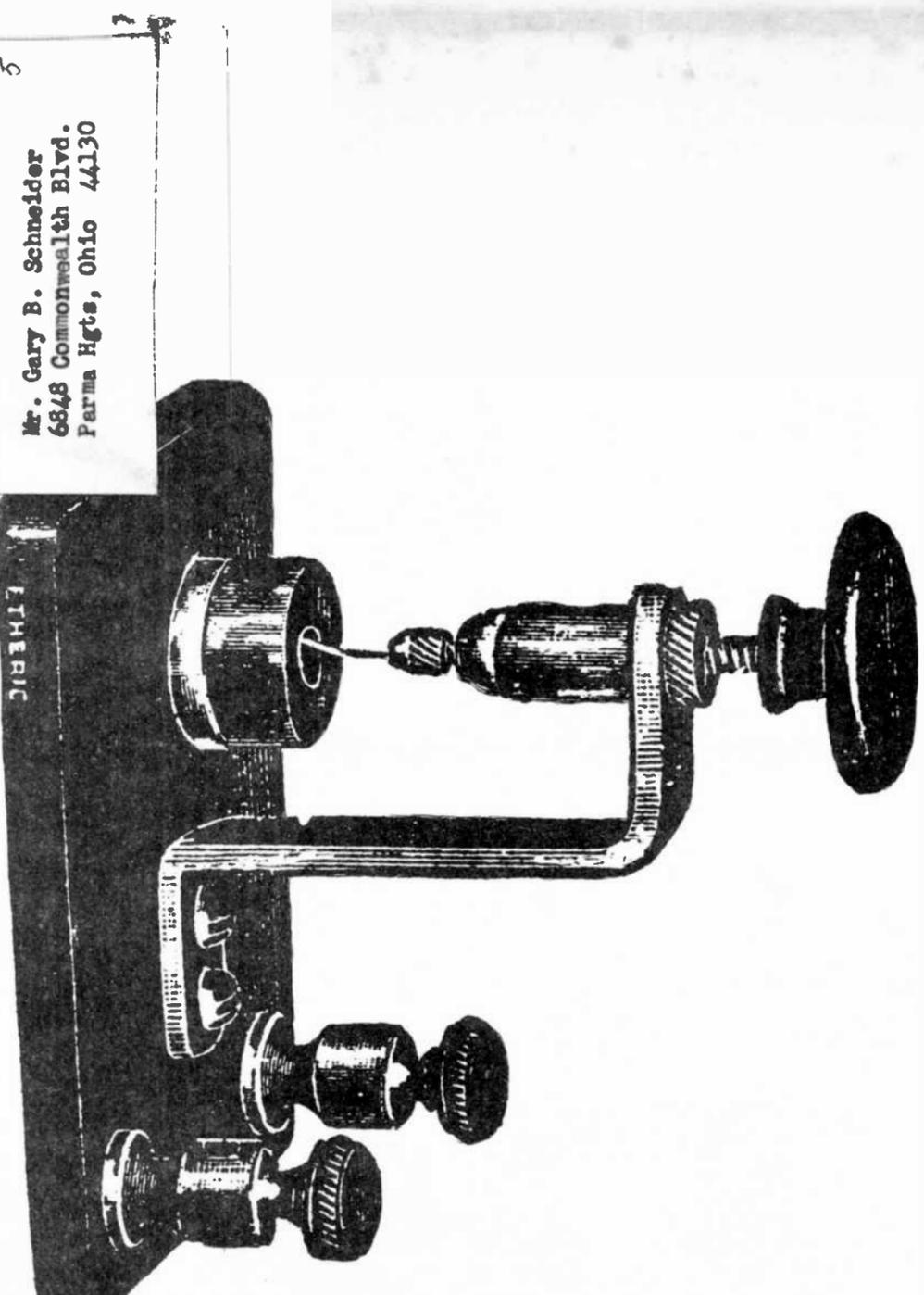
Acct:	Cunningham	Ken Rad	National	Radiotron:	Radiotron (Cont'd.)
X224	(Cont'd.)	(Cont'd.)	Union (Cont'd.)	1U	71A
Arcturus:	CX345 \$3.00	36 \$4.00	227 \$3.00	UX210 \$5.00	UX71A \$5.00
(Blue Glass)	CX350 \$5.00	UX245 \$3.00	39 \$2.00	UX112A \$5.00	UX280 \$3.00
No. 124	\$4.00	UX245 \$3.00	Perryman:	UY224 \$3.00	UX281 \$5.00
27	\$4.00	UX245 \$3.00	P.A.-224	UX226 \$3.00	UX120 \$4.00
No. 127	\$4.00	UX245 \$3.00	P.A.-227	UX227 \$4.00	Raytheon:
No. 3U	\$5.00	UX245 \$3.00	Philco:	UX226 \$4.00	UX226 \$4.00
No. 4B	\$4.00	UX245 \$3.00	44 \$2.00	UX227 \$4.00	UX226 \$3.00
37	\$4.00	UX245 \$3.00	26 \$3.00	UX227 \$4.00	UX226 \$3.00
Ce Cod	\$2.00	UX245 \$3.00	232 \$4.00	UX227 \$4.00	UX226 \$3.00
R-B-U	\$2.00	UX245 \$3.00	27 \$2.00	UX227 \$4.00	UX226 \$3.00
Cunningham:	De Forest \$3.00	UX245 \$3.00	35 \$2.00	UX227 \$4.00	UX226 \$3.00
C34	\$3.00	UX245 \$3.00	36 \$2.00	UX227 \$4.00	UX226 \$3.00
26	\$3.00	UX245 \$3.00	37 \$2.00	UX227 \$4.00	UX226 \$3.00
C346	\$4.00	UX245 \$3.00	42 \$2.00	UX227 \$4.00	UX226 \$3.00
C347	\$3.00	UX245 \$3.00	44 \$2.00	UX227 \$4.00	UX226 \$3.00
C332	\$3.00	UX245 \$3.00	71A \$4.00	UX227 \$4.00	UX226 \$3.00
C333	\$2.00	UX245 \$3.00	8U \$2.00	UX227 \$4.00	UX226 \$3.00

We also offer -- Saxon 180-\$3.00, Silverstone 112A-\$3.00, 224-\$3.00, 26-\$3.00, Tung Sol 24-\$3.00, 412A-\$3.00, 44-\$3.00, Unmarked brands 224-\$2.00, 227-\$2.00, 245-\$2.00, 227-\$2.00, we have only one new in original carton VISTRON photo cell type 71A-\$4.00 (do not confuse with tube type 71A). We offer tube collectors -- type 12-\$4.00, WE20D-\$3.00, WE21F-\$3.00, 401-\$8.00, & 852-\$25.00.

**WANTED** ----- Literature produced by and information on Mc Harro Silver, Inc. and the R.H. Scott Radio Laboratories. Will purchase literature, or trade page-for-page Xerox copies of same.

**NOTE** ----- Our tube price lists are revised frequently as we receive new tubes, especially old types. If you would like to automatically receive a revised copy of our lists, send a self-addressed stamped envelope. We will place the envelope in our files, and you will receive the revised lists as soon as they are produced.

**FLR SALE** -- APRES LE DUD BUDIC SUCES - send self-addressed stamped envelope for price list.

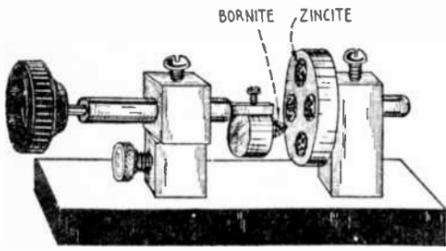


Mr. Gary B. Schneider  
66177 Ohio, Dept. 1  
Paramount Health Blvd.  
Farmersburg, Ohio 43014

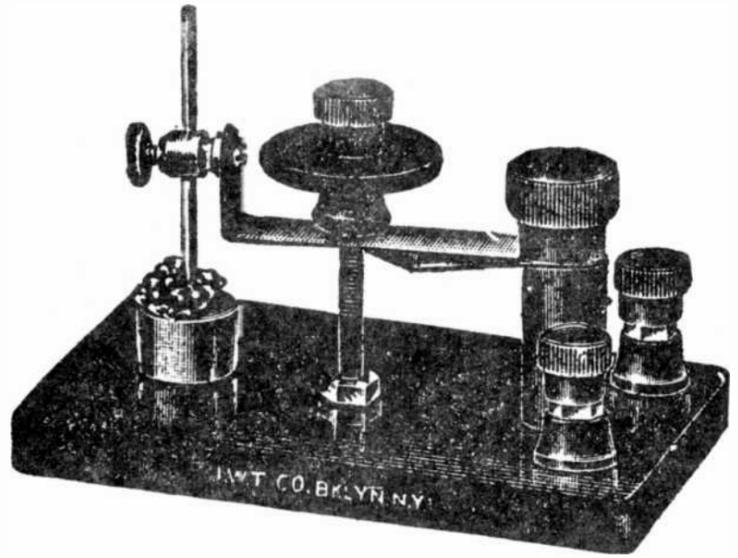
Electrolytic detector invented by Fessenden.

# Early Detectors

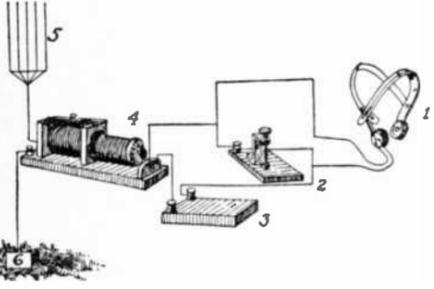
Before 1920



The Zincite Bornite Detector.

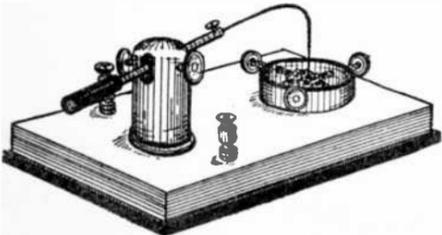
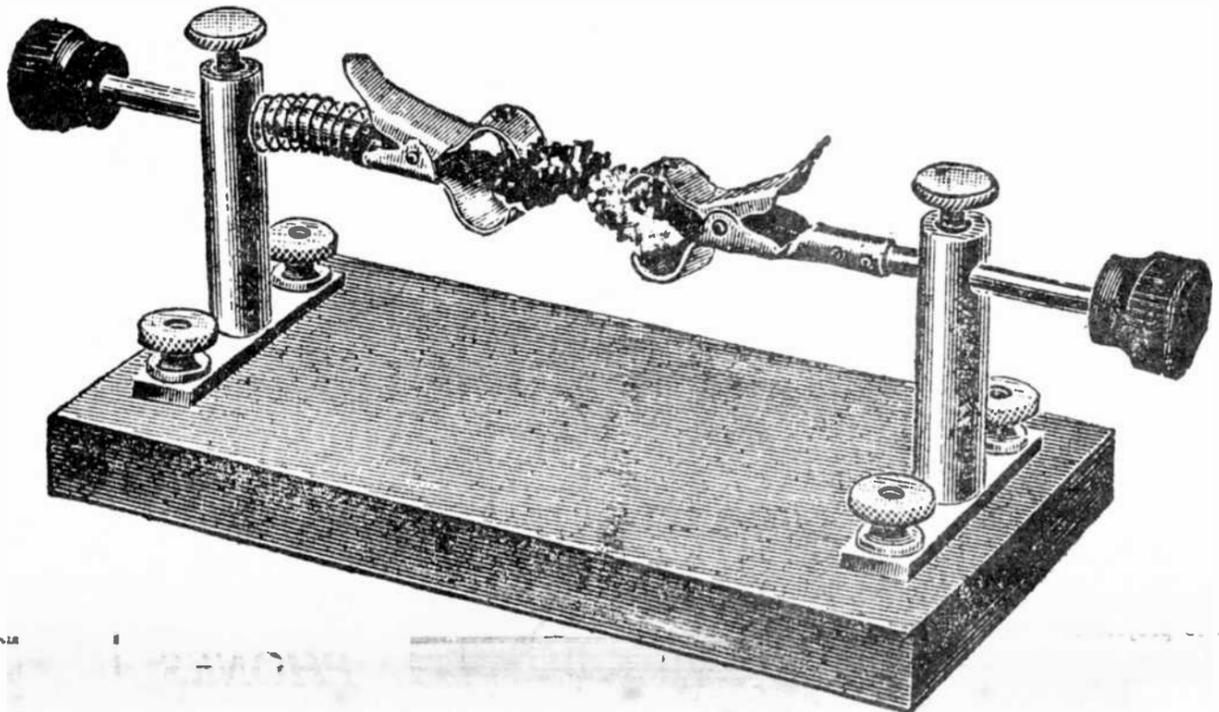


Crystal detector with double adjustment. This instrument is particularly designed to readily allow the delicate adjustment of any crystal or mineral. The very finest micrometer adjustment can be had by simply turning the hard rubber knob. It has two adjustments, one by means of the sharply pointed rod which can be lifted up or down and the other by the knob.



RECEIVING APPARATUS

1, receivers for ears; 2, detector; 3, fixed condenser; 4, loose coupler; 5, aerial; 6, copper plate in ground.



Detector Holder for Galena and Silicon Crystals.

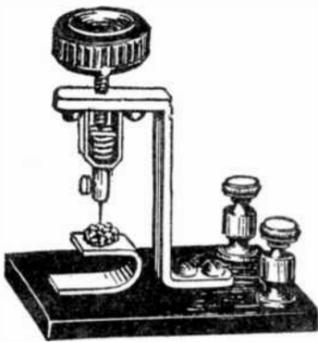
1908

MODERN ELECTRICS premium



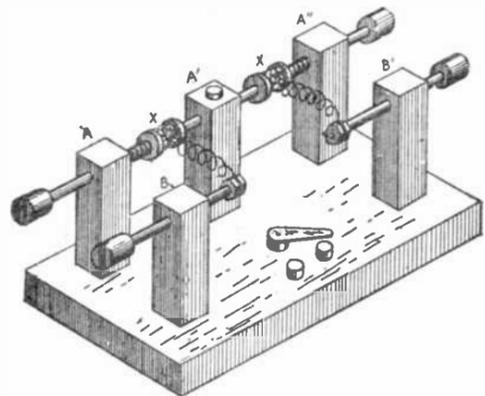
ELECTRO-LYTIC DETECTOR

Latest improved type. Homogeneous carbon cup. Micrometer thumb screw carrying fine Wollaston wire 0.0004 inch diameter. Will catch messages from 500-800 miles. Most sensitive type ever gotten up. Sells everywhere for \$2.00.



Crystal detector. When the hard rubber knob at the top of the detector stand is turned, the needle point, which presses into the crystal is moved up or down. This allows of a variable adjustment which may be tight or loose, as desired. The spring shown helps to push the crystal up against the needle point.

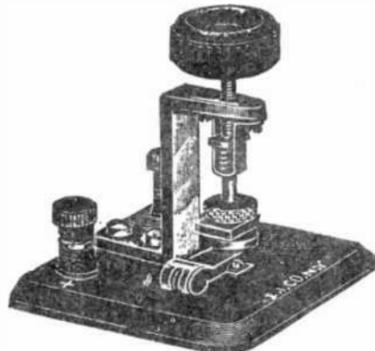
Double Crystal detector. Two crystals in contact often form a very sensitive detector, especially if one be an inactive substance and the other sensitive. This is the feature of the "perikon" detector. Carbon and carborundum may be used in this detector stand.



Combination galena detector. This detector is used in case a quick change is necessary. If one of the points of this detector happen to be knocked out of adjustment by static or other means, the other detector can be easily thrown in the circuit by making use of the two point switch. The arm of the switch is connected to one side of the circuit while the points are connected to B and B'. The base of this detector, or A, A', A'', are all connected together and led to the other side of the circuit. The detector can be adjusted to the highest degree of sensitiveness, and is easy to construct. Make uprights of one-half inch square brass rod, each one inch high. The distance between A and A' is 1 3/4 inches, and one inch between A and B. The springs between X and A will hold the mineral in tight adjustment, while the check nut in A' holds the other rod from slipping.



Electrolytic detector invented by Fessenden. It is probably the most sensitive of all detectors excepting the audion and the valve detectors. It consists of a carbon cup connected to a binding post and an adjustable standard which holds a very small hair-like platinum wire which dips into a 20% diluted solution of nitric acid. The high resistance of this acid detector is somewhat reduced by incoming wireless waves and when a telephone is shunted around it, the varying resistance is sufficient to vibrate the diaphragm but not strong enough to work a telegraph relay. When a potentiometer and battery are connected with the electrolytic detector and telephone, the sensitiveness is increased. The electrolytic detector is capable of operation with about three hundred micro-ergs; the magnetic detector is capable of operation with about four hundred micro-ergs; the silicon and most crystal detectors with about one thousand micro-ergs, and the manufactured carborundum detector with about nine thousand micro-ergs. Notwithstanding this very considerable difference in the sensitiveness of the electrolytic and carborundum detectors as measured by the C. G. S. system of units, in the actual practice of wireless telegraphy the receptive difference is hardly perceptible over similar distances. A great deal depends upon the adjustment of the detector which is a "cut and try" procedure until the most sensitive point is arrived at which will best respond to incoming signals.



E. I. CO., 1913

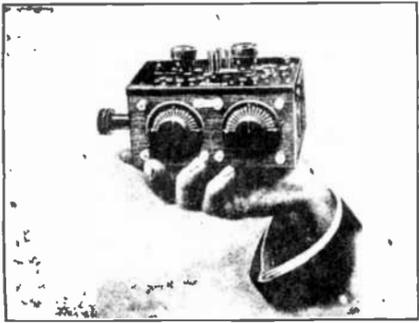
Peroxide of lead detector. A flat piece of peroxide of lead is clamped between a platinum surface and a flat piece of lead. Binding posts connect to these two electrodes and are marked + and -. The positive pole of a battery is connected to the platinum electrode at the binding post marked +.

Sources for illustrations:

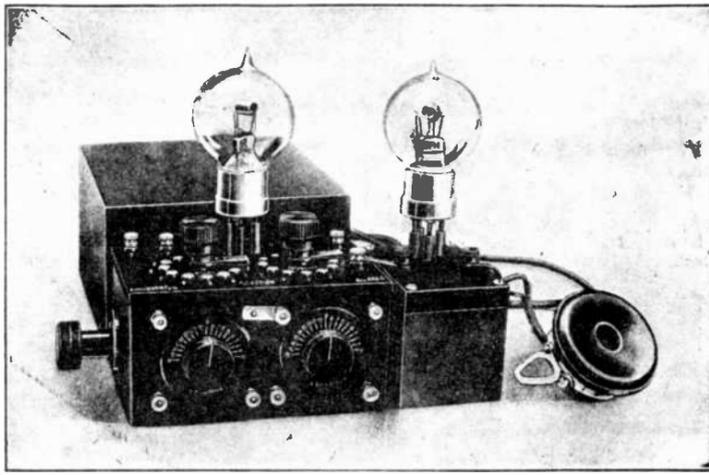
- Hawkins Electrical Guide No. 8, 1917.
- Practical Wireless Telegraphy, Elmer E. Bucher, 1921.
- Modern Electrics, August, 1908.

## Vintage Radio

1922



This Ultra Compact Regenerative Receiver of French Make May Be Carried Everywhere, as It Weighs Only Seven Pounds, Including the Batteries, Which Are of the Dry Type. The Vacuum Tubes Are Especially Designed, and Consume only 0.13 Ampere for the Filament. On the Right the Picture Shows the Set with a One-Stage Amplifier Connected to It.



## LETTERS

### EDITOR'S MAILBAG

Dear Jim,  
I would like my subscription renewed and I would also like some information from you or your readers. I have a midget cathedral radio called a "Crown". It is a 4-tube TRF with a Nat'l H. Baldwin speaker. If you know who made it or can supply a diagram it would be appreciated.

Thanks Very Much,  
Richard Hallett  
10817 Jefferson Blvd.  
Culver City, Ca. 90230  
213-836-8557

EDITOR'S NOTE: Help!!

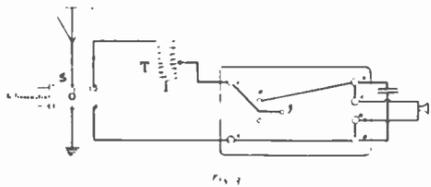
### A SILICON DETECTOR.

Continued from Page 2

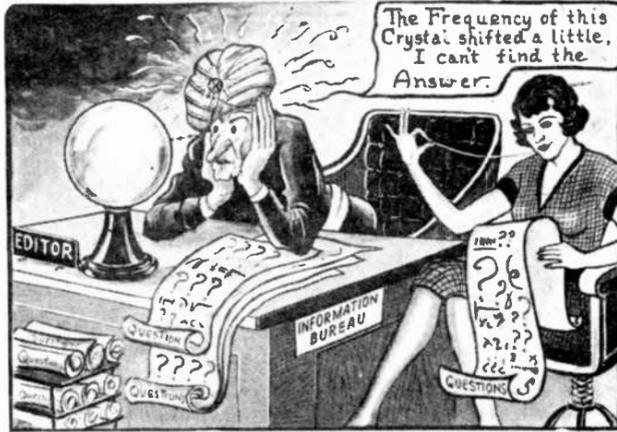
together in the order given in Fig. 9, but before clamping the binding posts, connect with No. 22 wire, "e" to "a" and "a" to "b;" "c" to "d" and "d" to "h," and "f" to "j." File off all projecting metal on the bottom of instrument, and fill in the holes with paraffine if desired, covering the bottom with leather or felt. The brass work may be finished to suit the taste.

Have made by some electrical supply or importing house a mica condenser of .01 + microfarads capacity, the condenser to be about 2 1/4" x 2 3/4" by about 1/12" thick. Now procure two pieces of rubber 1/8" thick, which should be trimmed to 4 1/4" x 3 3/8". Get four battery binding posts (such as are used on the carbons of dry batteries) 8 nuts, to fit same 1/8" thick, and two clamping heads. Bore holes in each corner of each rubber plate as close as possible to the corners allowing for the screw heads and nuts so as not to project over the edges. Now put the screws through the holes in one plate and screw on two nuts, clamping under same the two wires from condenser, which should be placed in the center of the plate. Then screw on each of the other screws one nut and then put on the other rubber plate. On the screws which connect with the condenser screw a nut and the clamping heads, and file the screws off flush with the tops of heads. Then on the other two screws put the remaining two nuts, and file these screws flush with the top of the nuts. Now bind the edges of the condenser frame with passe-partout tape, leaving on one edge a hole big enough to pour in melted wax and also another hole to allow the air to escape. Fill the frame full of hot wax, and allow to cool, when the tape may be taken off and the rubber cleaned up. Fig. 8 shows the construction of the condenser.

This completes the apparatus, and to operate a double pole double throw aerial switch S is used; connections should be made as shown in Fig. 9, there being only the one switch to take care of when receiving.



The adjustment is accomplished by slightly pressing the brass point down on the Silicon, and clamping with the set screw, and then moving the Silicon around under the point until the signals are heard loudest. More or less pressure should be given on the point, according to the sensitiveness of the particular piece of Silicon, but when the adjustment has been found it will not be necessary to bother with it again, unless the instrument should be jarred or the Silicon moved, in which case it may be necessary to readjust. The tuning coil T is described elsewhere in this issue.



RADIO-CRAFT for AUGUST, 1933

Dear Sir,  
I have a subscription to your magazine "The Hornspeaker" and I enjoy it very much, I look forward to it.

I wonder if you or one of your readers could answer the following questions?

1. When did the magazine "Popular Radio" start and end publication?

2. When did the magazine "Radio News" start publication?

Thank You,  
Sincerely Yours,  
Albert Warren  
Box 279  
Church Street  
Waverly, Pa. 18471

EDITOR'S NOTE: The beginning of these periodicals deserve a full-size article. The first periodical to achieve widespread attention for the hobbyist of electronics and the grandfather of the later magazines of the 20's was the Modern Electrics of 1908 and later. We plan to print a good answer to this letter.

Popular Radio, Vol. 1 No. 1 was May 1922, a bow to radio amateurs. Finish, not sure. Radio News, Vol. 1 No. 1 should be July 1919.

1922 Ad

## BASCO CRYSTAL DETECTOR \$12<sup>00</sup>

IMMEDIATE SHIPMENT LIST

**2000 OHM**  
**\$6.00 List**

**3000 OHM**  
**\$7.50 List**

**DISTRIBUTORS AND DEALERS!** We have a proposition that will net you big returns. Get in touch with us today.

**BRIGGS & STRATTON CO.**  
MILWAUKEE, WIS.

1922 Ad

1922 Ad

## RADIO DETECTORS

Size 3 1/2 x 2"

An improved detector of real merit. Nickel-plated posts.

Price 75 cents, post paid

Dealers get our prices on Panel Switches and Binding Posts.

**SYPHER MFG. CO.**  
Dept. R., TOLEDO, OHIO

# PARAGON

TRADE MARK REGISTERED

the  
**PIONEER**

- 1915 First regenerative receiver ever manufactured bore the name PARAGON.
- 1916 First Trans-continental Amateur Reception (California from New York; not pre-arranged) effected with a PARAGON Type RA-6 Receiver.
- 1916 First Trans-continental Amateur Transmission (New York to California; not pre-arranged) effected by PARAGON designed transmitter.
- 1917-1918 PARAGON acknowledged supreme on Western Front.
- 1921 First Trans-Atlantic Amateur reception effected with PARAGON receiving equipment, at which time 27 different amateurs scattered thruout the Eastern section of the United States registered signals at Ardrossen, Scotland—3500 miles.

THERE'S A REASON!

## The ADAMS-MORGAN CO.

Manufacturers

UPPER MONTCLAIR, N. J., U. S. A.



TRADE NAME: "Radiola Receiver."  
 MODEL: Super-Heterodyne.  
 TUBES: Six UV-199.  
 BATTERIES: Contained in cabinet.  
 AERIAL: Small loop built into set.  
 PRICE: \$220.00 without accessories, \$269.00 with tubes and loud speaker.  
 MANUFACTURER'S NAME: Radio Corp. of America.

TRADE NAME: Radyne.  
 MODEL: A.  
 TYPE: Two stages radio frequency, detector and two audio frequency amplification.  
 TUBES: Five UV-199.  
 BATTERIES: Dry cells. Space provided for batteries in cabinet.  
 CONTROLS: Three.  
 AERIAL: Inside or outside.  
 PRICE: \$130.00 without accessories, f. o. b. San Francisco.  
 MANUFACTURER'S NAME: Great Western Radio Corp.



TRADE NAME: "Ray-odyne."  
 MODEL: C-15.  
 TYPE: Two stages of radio frequency amplification, detector and two stages of audio frequency amplification.  
 BATTERIES: None furnished.  
 CONTROLS: Three.  
 AERIAL: Indoor or outdoor.  
 PRICE: \$75.00.  
 MANUFACTURER'S NAME: Brown Radio Corp.

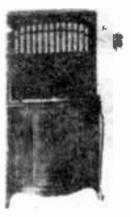
TRADE NAME: Rich.  
 MODEL: 3-T-22  
 TYPE: Reflex.  
 TUBES: Three.  
 BATTERIES: None furnished.  
 AERIAL: Outside.  
 CONTROLS: Three.  
 PRICE: \$50.00 without accessories.  
 MANUFACTURER'S NAME: George H. Rich.



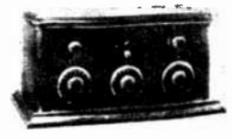
TRADE NAME: Radyne.  
 MODEL: F.  
 TYPE: Two radio frequency, detector and two audio frequency.  
 TUBES: Five.  
 BATTERIES: Not furnished. Room for "B" and "C" batteries in cabinet.  
 AERIAL: Inside or outside.  
 CONTROLS: Three.  
 PRICE: \$140.00 without accessories, f. o. b. San Francisco.  
 MANUFACTURER'S NAME: Great Western Radio Corp.



TRADE NAME: Sears.  
 MODEL: Standard  
 TYPE: Reflex.  
 TUBES: Four.  
 BATTERIES: None furnished.  
 CONTROLS: One.  
 AERIAL: Outside.  
 PRICE: \$160.00.  
 MANUFACTURER'S NAME: Sears Mfg. Co.



TRADE NAME: "Radiola Receiver."  
 MODEL: Super VIII.  
 TYPE: Super-Heterodyne. Console.  
 TUBES: Six UV-199.  
 BATTERIES: Contained in cabinet.  
 CONTROLS: Three.  
 AERIAL: Concealed large loop built into set.  
 PRICE: \$425.00 with tubes and built-in loud speaker.  
 MANUFACTURER'S NAME: Radio Corp. of America.



TRADE NAME: "RMP."  
 MODEL: 50.  
 TYPE: Tuned radio frequency.  
 TUBES: Six.  
 BATTERIES: "A," storage or dry; "B," 90 volts.  
 CONTROLS: Three.  
 PRICE: \$100.00.  
 NOTE: Model 51 contains two mounted jacks and switch at same price. Model 52 hand-rubbed walnut cabinet, plate glass front, two mounted jacks and switch. Price \$135.00.  
 MANUFACTURER'S NAME: Radio Products Mfg. Company.



TRADE NAME: Radyne.  
 MODEL: Console table.  
 TYPE: Two stages of radio frequency, detector and two audio frequency.  
 TUBES: Five.  
 BATTERIES: Not furnished, but room provided for all batteries in cabinet.  
 CONTROLS: Three.  
 AERIAL: Inside or outside.  
 PRICE: \$275.00 without accessories, but including built-in loud speaker.  
 MANUFACTURER'S NAME: Great Western Radio Corp.



TRADE NAME: Sears.  
 MODEL: Standard.  
 TYPE: Acme reflex.  
 TUBES: Five.  
 BATTERIES: None furnished.  
 CONTROLS: Two.  
 AERIAL: Outside or inside.  
 PRICE: \$200.00.  
 MANUFACTURER'S NAME: Sears Mfg. Co.

TRADE NAME: Radyne.  
 MODEL: H.  
 TYPE: One-stage radio frequency, detector and two stages of audio frequency amplification, one-stage being reflexed.  
 TUBES: Three.  
 BATTERIES: Not furnished.  
 CONTROLS: Two.  
 AERIAL: Outside or inside.  
 PRICE: \$70.00 without accessories, f. o. b. San Francisco.  
 MANUFACTURER'S NAME: Great Western Radio Corp.



TRADE NAME: Rich.  
 MODEL: 2-T-12.  
 TYPE: Reflex.  
 TUBES: Two.  
 BATTERIES: Not furnished.  
 CONTROLS: Two.  
 AERIAL: Indoor or outdoor.  
 PRICE: \$29.50 without accessories.  
 MANUFACTURER'S NAME: George H. Rich.



Radio News for March, 1925

# THE FABULOUS PHONOGRAPH

## From Edison to Stereo

Ever since 1877 when Thomas Edison invented a curious tin-foil apparatus to reproduce sound, the phonograph has provided entertainment and the delights of music for millions of listeners.

Roland Gelatt's history of this truly fabulous invention is a classic work in its field, and this revised edition covers new developments in stereo, recordings, and tapes.

\$6.95

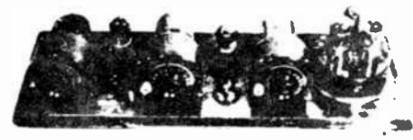
Announcing: New limited reprint of S. Gernsback's 1927 RADIO ENCYCLOPEDIA, a priceless record of old-time wireless and radio. Choice of hard-cover or handbook. 175 pages, 1,000 subjects. Radio Encyclopedia, handbook 9.95  
 Radio Encyclopedia, hard cover 12.95



EDISON PHONOGRAPHS 1912-13 (Cylinder Models), illustrated 5 x 8" catalog reprint. \$3.00 ppd. Satisfaction guaranteed.

# NEW 1923 VINTAGE RADIO

Enthusiastic readers bought out our first edition. Now you can send for the fascinating new edition of this pictorial history of wireless and radio, 1887-1929. It's the collector's bible, with 263 pages and over 1,000 illustrations. Available in handbook or deluxe hard cover.



# McMAHON'S 1921-1932 GUIDE

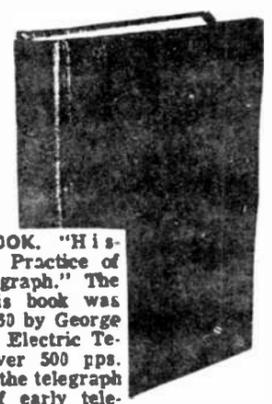
Be an instant expert. Lists 9,000 radio models by maker and year introduced, with original price, description and circuit type. A must for every radio buff or antique collector.

Vintage Radio, handbook \$4.95  
 Vintage Radio, hard cover 6.95  
 McMahon's 1921-32 Radio Guide 3.95

# The Horn Speaker Book Sales

Box 12 Kleberg, Texas 75145

TELEGRAPH BOOK. "History, Theory & Practice of the Electric Telegraph." The orig. copy of this book was first printed in 1880 by George Prescott, Supt. of Electric Telegraph lines. Over 500 pgs. of information on the telegraph & many illus. of early telegraph equipment. Reprints of this book \$7.50 ea., ppd.

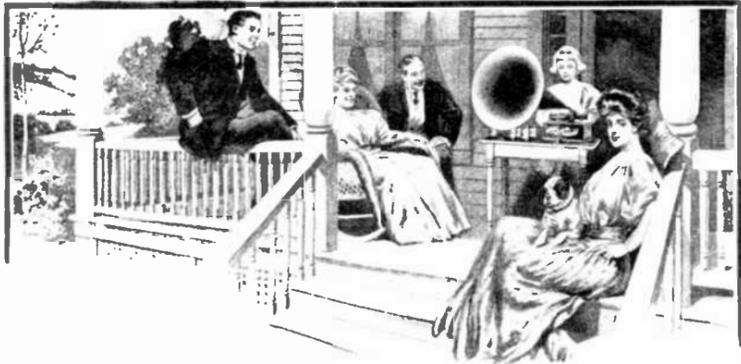


**This Room Is Equipped With  
Edison Electric Light.**

Do not attempt to light with  
match. Simply turn key  
on wall by the door.

The use of Electricity for lighting is in no way harmful to health, nor does it affect the soundness of sleep.

Now you can have an exact 1890 EDISON ELECTRIC LIGHT PLAQUE REPLICA as used when electric lights were first installed anywhere. . . You can MOUNT and DISPLAY this PLAQUE on any SURFACE because of its ADHESIVE BACK. . . just remove paper from back and mount as desired. . . All design and lettering are ENGRAVED and seated in black. . . A special process added to the GOLD-IN-COLOR Aluminum plate makes it impossible to CORRODE or OXIDIZE. . . Unlimited uses and ideas in the Antique field, makes an EYE-CATCHING DISPLAY, HUMOROUS, but serious. . . A fine gift for any occasion. . . ORDER NOW, ONLY \$4.95 Postpaid. . . MIDCO HS20 BOX 15370, LONG BEACH, CA 90815.



## A PORCH CONCERT WITH THE EDISON PHONOGRAPH

WHAT can be more delightful than fine music outdoors on summer evenings? One of the many good points of the Edison Phonograph is its portability. Unlike any other automatic musical entertainer, it can be moved to the porch, or taken with you on your summer vacation.

Its music sounds even better outdoors than in the house. You can have your own band concert or summer comic opera, grand opera, or vaudeville in the coolness of the summer night, without leaving your home.

When it is too warm to play the piano or other indoor instruments, the Phonograph is always available, and a child can operate it.

To appreciate the superiority of the Edison Phonograph of to-day over the old phonographs, and over other talking machines, hear it at the dealer's, free of charge.

Write for booklet, "Home Entertainments With the Edison Phonograph," and name of nearest dealer.

National Phonograph Co., 11 Lakeside Ave., Orange, N. J.  
New York: 31 Union Square Chicago: 304 Wabash Avenue



TRADE MARK  
Thomas A. Edison

# The EDISON PHONOGRAPH



Imagine an entertainment where every performer is a star and every number a selection of your own

THAT describes the entertainment of an Edison Phonograph. You need not dress for it, go out after it, arrange your time for it or pay for admission to it. It takes place in your home, at your convenience, as often as you like.

You listen—that is the extent of your effort. You hear Manuel Romain sing just as you would if he stood before you. You hear Maurice Levi's Band play under his spirited direction and forget the medium by which his artistic efforts are brought to you.

Or you enjoy the talents of such clever entertainers as Ada Jones, Cal Stewart, Byron G. Harlan, Billy Murray and Steve Porter.

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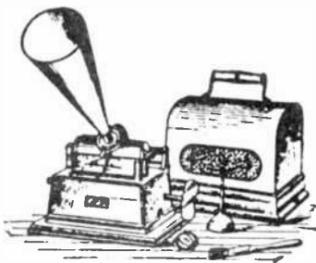


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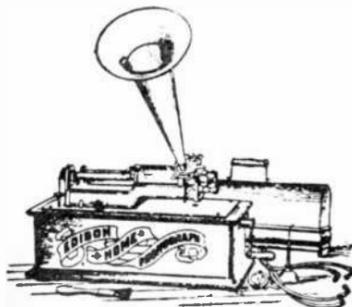
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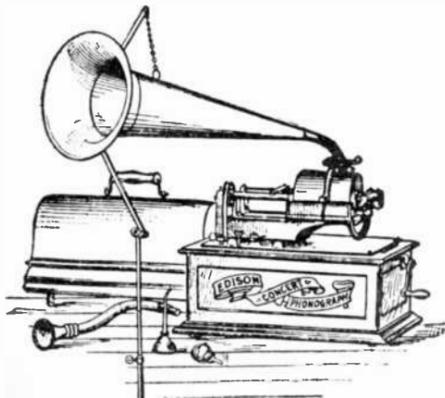
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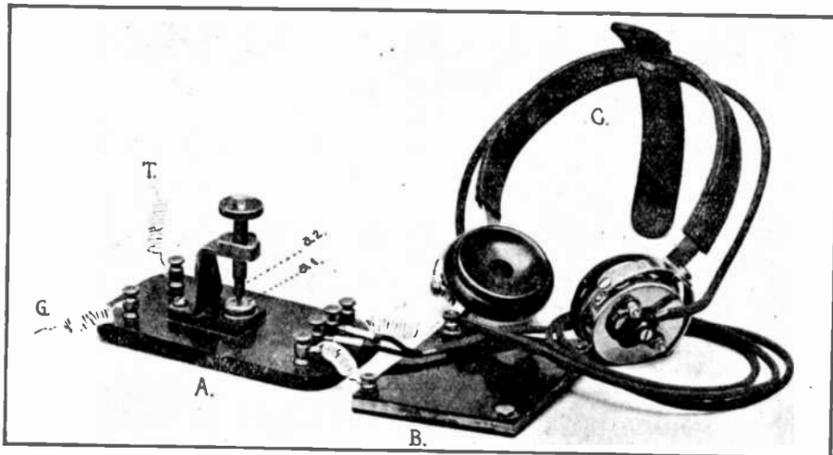
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# A Silicon Detector

By A. C. AUSTIN, JR.



## 1908 VINTAGE

About a year ago the writer had the opportunity of examining a Pickhardt Silicon Detector, and after listening to it in operation, decided to build one himself. The operator, a friend, explained the action of the detector in detail, saying in part there were no batteries to run down, and when once adjusted it could be depended upon not to get out of order, and that the connections were very simple.

From his explanation the instrument (hereinafter described) was built, at a cost of about \$3.00, and was afterward tested on one of the Fall River Line steamers, where it proved to be so sensitive that wireless telephony could be heard with it.

A silicon detector, when used with telephone receivers wound to 1,000 or 2,000 ohms resistance, is as sensitive, if not more so, than the electrolytic detector, and it does not get out of adjustment easily. However, telephones wound to a high resistance must be used, for without such telephones the advantages are not so appreciable.

The writer has experimented with a number of detectors, among them the Carborundum, of which a description will be given in a later issue, the carbon-mercury, microphonic, etc., but finds them all faulty at times, while the silicon detector seems to be the most constant, sensitive and satisfactory.

The illustration herewith shows all the receiving apparatus, except the tuning coil, "A" being the detector proper, "a 1" is the silicon and "a 2" the brass point resting thereon, "B" is the condenser and "C" the telephone receivers. "T" are leads to the tuning coil, thence to the aerial switch and aerial, and "G" through the same switch to the ground.

The materials for this detector may be obtained from any good supply or importing house, and directions for construction are as follows:

Procure a wooden base such as is used for pony relays, same to be of the dimensions as shown in Fig. 1; bore 9 holes, as per Fig. 1, large enough to accommodate 8/32" screws, countersinking them 3/16" so as to accommodate washers and screw heads, and then cut the grooves for the connections, making them of sufficient depth to allow the instrument to set flat when completed. There must also be six small binding posts to set in holes "a," "b," "c," "d," "e" and "f."

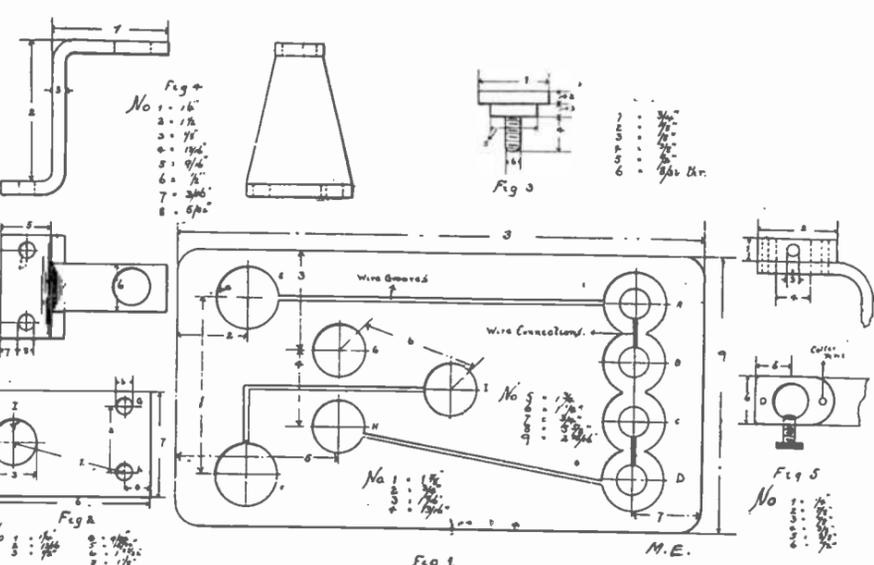
Procure a piece of hard rubber 1/8" thick and trim to size 1 1/8" x 1 27/32" and bore holes as per Fig. 2, "g" and "h" to be large enough to accommodate 8/32" screws. Also two round-head brass screws 8/32" thread, about 3/4" long.

Make a piece of brass of the dimensions shown in Fig. 3. Get three nuts 8/32" thread and three washers to fit the three last-mentioned parts.

Procure a piece of brass 3 1/2" long (this allows for wastage), 1/8" thick, 1 1/8" wide at one end and 1/2" wide at the other, and make up as per Fig. 4.

Also another piece of brass 1/4" x 1/2" x 7/8" and by pinning and soldering or brazing, fasten to the upper side of the 1 1/4" arm of the support just mentioned, rounding the corners to make a nice ap-

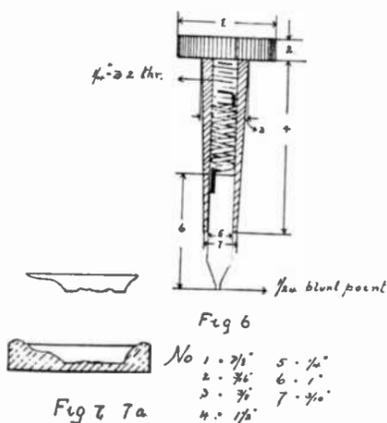
pearance, as shown by Fig. 5. Bore a hole 3/8" in diameter, as shown in Fig. 5, through the boss, and then through the side of same, as shown, put a small hole, threaded with any convenient small thread, and put a set screw in same so as to clamp the adjustable brass point which rests on the silicon.



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Bore a hole 3/8" in diameter, as shown in Fig. 5, through the boss, and then through the side of same, as shown, put a small hole, threaded with any convenient small thread, and put a set screw in same so as to clamp the adjustable brass point which rests on the silicon.

The point should be built as shown in Fig. 6. A small hole should be bored in the top of the point itself and the bottom of the milled head to receive the ends of a fairly stiff coiled brass spring,



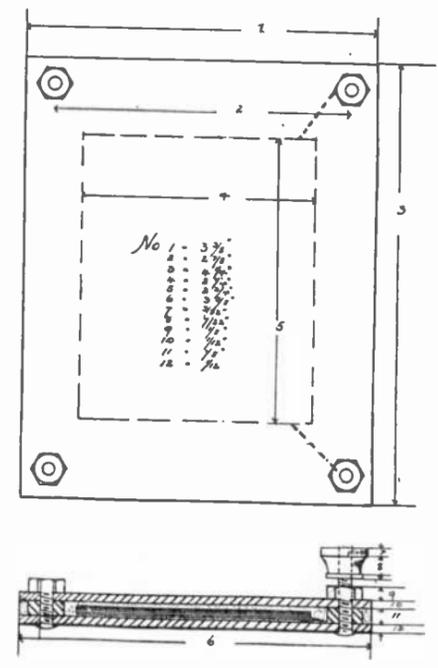
as shown. The point must slide freely in the tube so that when the set screw clamps the tube there will be a constant pressure from the spring, thus holding the point on the Silicon at the same pressure all the time.

Now we come to the most important part of the detector, namely the Silicon itself, and its holder. Great care must be taken in the making of this part, and twice out of every three times it will be necessary to make it over again, for the reason that Silicon differs, one piece not being as sensitive as another in the detection of the waves.

Get the mainspring case from a watch, take out the coiled spring, leaving the brass cup with cogs on the bottom; file off the projecting cogs and make the cup smooth all around. Now take a lump of FUSED Silicon, and chip off a piece not over 3/16" thick at any point, and about 1/2" across the face (care must be taken when chipping, as Silicon is very brittle

and very hard). Select the flattest side of the Silicon chip and grind on a fine emery wheel until it assumes somewhat the shape as shown in Fig. 7. There may be a few pits on the face of the Silicon after grinding, but if there are not too many it will be found to work

all right. Now take the brass cup and place the Silicon in it, flat face up, and heat with a blow torch, laying the cup on a surface which will prevent the solder from escaping through the hole in the bottom. When quite hot apply the solder using soldering paste as a flux. When the cup is full of solder press the Silicon down in same, being careful to keep the face of the Silicon as level as possible, and allow to cool for about a minute, then immerse in water to entirely cool it, and finally file off the superfluous solder on the bottom of the cup, and sand-paper perfectly flat. The finished part should appear somewhat as shown in Fig. 7a. This cup sets on the part shown in Fig. 3, and is made separate for the reason that it is advisable to have two or more such cups in order to



replace in case of accident or damage to one, the substitution being easily effected by simply raising the brass point and slipping another cup under it. Now assemble the various parts placing them

# MART

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