

THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

MORE PAGES
EVERY QUARTER

To give more needed space in The Horn Speaker, especially after going to the smaller format, the March, June, September and December editions will be planned for 12 pages. During the period of a year the newspaper will have more space.

THE HORN SPEAKER

REPAIRING DYNAMIC CONES

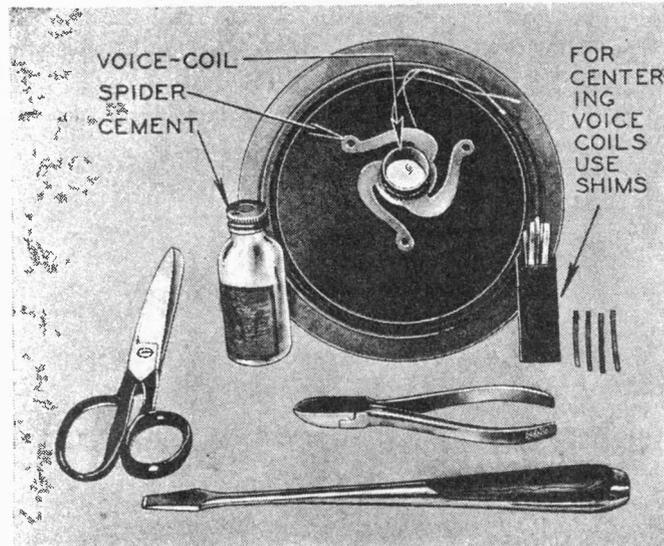
Repairing dynamic speaker cones is an art that is only acquired after a great deal of practice and patience. The author describes the procedure, with hints, for locating and repairing speaker troubles.

S. B. VALIULIS*

THE DICTOGRAPH

THE dictograph is a magnifier and transmitter of sound. Not only the tones used in conversation but also whispers, the rustling of clothing, the fall of a pin, the slightest noises, — all are conveyed by this curious apparatus.

The dictograph is the development of an instrument which was designed to help the deaf to hear. The apparatus consists of a sound collector, or transmitting disk, of hard, black rubber, a receiving disk, a battery or two, and transmission wire. The inventor has not disclosed the construction of the sound-collecting disk, but it is a sort of enormously sensitive telephone transmitter, which catches every sound within a considerable radius and transmits it to any desired distance. The dictograph has been of great service to detectives



IT IS the intention of the writer to give a few practical ideas and hints that if followed will lessen the burden of properly repairing or adjusting the dynamic reproducer, and will save the Service Man much time as well as give Mr. Radio Owner better service, and a greater quality of enjoyment from his radio set.

The construction of a dynamic speaker is familiar to every Service Man, and the principle is the same in practically all reproducers of this type. The audible signal is produced by the electrical currents that flow at audio frequency through a voice coil which is fastened to a suspended cone. However, the action will be analyzed further for the benefit of those who are not familiar with dynamic reproducers.

The "cone" is supported at the edge by the "frame" of the speaker, and in many cases is kept aligned to the proper position (exact center) by a flexible support known as the "spider" which is fastened either at the exact center of the cone or around the "voice coil." This will be more clear by reference to C in the figure. (The spider permits movement of the cone in a direction perpendicular to the face of the cone.) At the apex of the cone is the voice coil which travels in an "air-gap" surrounding the round "pole piece" of "an electromagnet." This electromagnet is referred to as the "field coil," and is excited or energized by direct current from an external source.

Around the outside of the field coil is an iron "shell" which fits closely on

the outer surface and serves not only to protect the field coil, but to complete a "magnetic field." Thus, the audio currents which flow through the voice coil make of it an electromagnet, the lines of force of which react against those of the magnetic field in which it is suspended, thus causing movement of the voice coil and consequently of the cone to which it is attached. This results in air vibration and finally the audio sound that we hear.

This type of speaker is the source of most complaints of rattling, harshness, chattering and "fuzzy" reproduction, and sometimes of very weak or no reproduction at all. Let us enumerate a few of the causes of the above symptoms.

Checking the Field Coil

First let us be sure that our field is of proper strength. This is very important and should be checked before work is attempted on the cone. The field can be crudely checked by the pull of the pole piece on an ordinary screwdriver. (Naturally, the set must be turned on so that a magnetic field is created by the current flowing through the field coil.) For accurate results the resistance of the field coil should be measured with an accurate ohmmeter and the results checked with information (usually available in Service Manuals) for the particular set and speaker in question. If the coil is found to be open or partly shorted, it should be either repaired, rewound, or replaced.

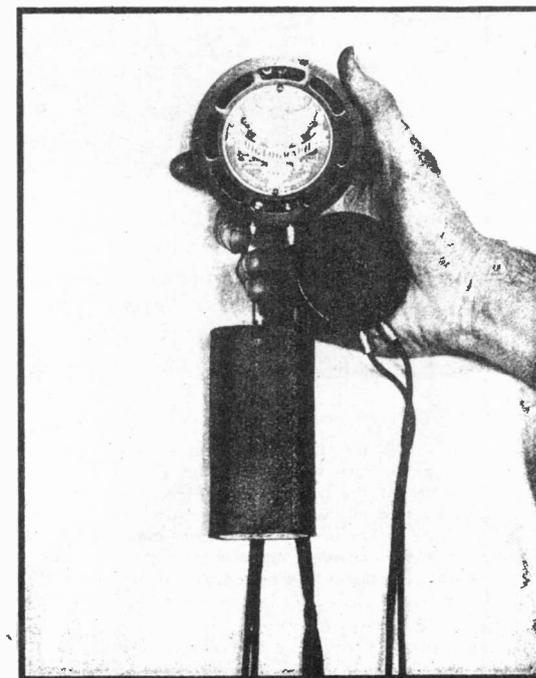
On the earlier types of A. C. dynamic reproducers the D. C. field current was supplied from a copper-oxide rectifier unit which changed A. C. to D. C. When these units become old they have a tendency to weaken and must be replaced to secure the proper and original field strength.

If the field is found in good condition your next problem is to check the voice coil and cone of the reproducer. This will be a more delicate job and will require a few ounces of patience and steady hands. Here are a few causes that are probably behind most trouble; some effects:

Sources of Trouble

- (1) The voice coil may be open internally or at the flexible leads.
- (2) The voice coil may be partially or completely shorted where the ends criss-cross each other.
- (3) The voice coil may be off-center and rubbing on the sides of the pole piece.
 - (a) This may be caused by a warped cone or a warped spider, and sometimes by the voice coil being out of "round."
- (4) Rattling may also be caused by a loose seam on the cone, the spider coming loose from the cone where it is cemented, the voice coil wires coming loose from the cone to which they are cemented, or sometimes the voice coil wires coming loose and separating from the thin paper coil support.

(Continued on page 2)



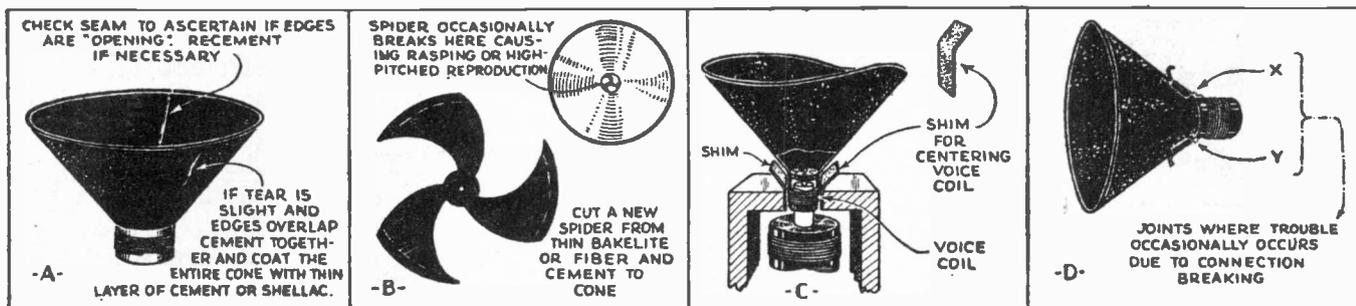
THE DICTOGRAPH

and police in enforcing the laws. It has brought about the conviction of many suspected criminals, for the instrument has transmitted their conversations and has enabled the officers of the law to learn the plans of lawbreakers, or to listen to their admissions of guilt. When used for such purposes the transmitter is placed anywhere in the room where the person whose evidence is desired will be most likely to talk. In certain Ohio bribery cases the instrument was placed under a sofa in a hotel room. In San Francisco it was put under a bed in a cell of the city jail. It can be hidden under papers upon a table, or hung on the wall behind a picture or calendar. A fine silk-covered wire runs

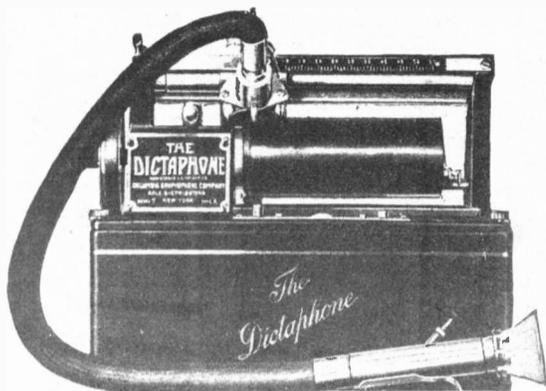
(Continued on page 2)

*Engr. General Cement Mfg. Co.

The most common forms of cone speaker troubles are illustrated below. In C is shown how shims facilitate centering voice coils.



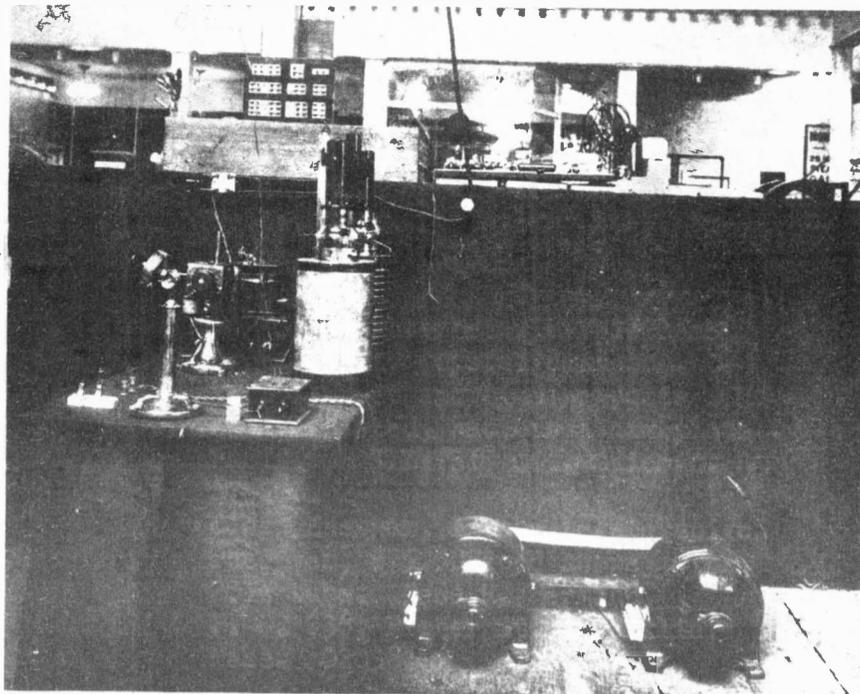
from the transmitter through a tiny hole in the wall or floor to another room, where the person who holds the receiver can hear every word spoken in the room where the transmitter has been placed, and can write it down in shorthand, if he so desires.



THE DICTAPHONE



The first radio photograph, sent across the Atlantic on November 30, 1924, was of the Prince of Wales.



Collins' Wireless Telephone Exhibited at the Madison Square Garden, October, 1908.

A MECHANICAL STENOGRAPHER

THE dictaphone is a form of phonograph that records business letters, professional reports, and similar matter, to be transcribed later on the typewriter. The apparatus consists of a stand or frame bearing the special recording phonograph, which occupies about as much space as a typewriter. The wax cylinders of the machine are driven by electricity. As the person dictating talks into the mouth-piece of a tube his remarks are recorded, and they can be reproduced and typewritten at any later time.

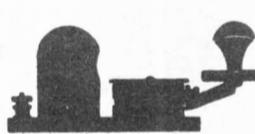
The Dictograph and Dictaphone photographs and writings were taken from the 1918 edition of *Our Wonder World*, Vol. II, pages 220 and 221.

The Dictaphone achieved the success that Jesse Lippincott wanted his machines to achieve about 25 years earlier.

1974 AD

50 YEAR OLD FLAME PROOF KEY TYPE J-7-A

Gov't Order No. 141082 Dated: 1921

 \$1295
PPD

In 1966 the U.S. Navy closed the hugh Brooklyn Navy Yard and the City of New York purchased the property. The J7A Keys were discovered in a warehouse where they had been stored for the past 50 years. Corrosion has been corrected, however, there is some slight paint peel. New boxes have been provided.

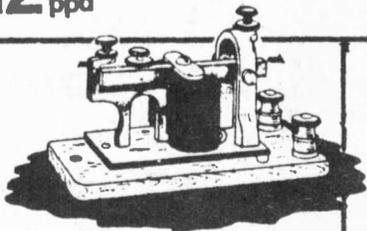
Both keys are of heavy duty construction with a large Navy type knob. The keying arm and dome are brass . . . the contacts are ¼ inch coin silver. The J7A is 2½ x 5½ inches and the J5A is 2½ x 3¼ inches in size. The BULB, or Lamp is NOT supplied with the J7A.

A RARE FIND!
ORDER TODAY! \$1295
ppd

The J5A was made for the Signal Corps in 1941, and is the same type of Key except for the Dome housing the neon bulb. A real memento of WWII. Supply is somewhat limited . . . buy today!



\$1195
ppd



Sounders
\$2500
ppd

WALTS EMPORIUM

P. O. BOX 19406

DALLAS, TEXAS 75219
EVENINGS 214-262-7855

SAVE FOR
COMPLETE
LIST

REPAIR DYNAMIC CONES

(Continued from page 1)

(5) Trouble is encountered many times from voice coils that do not hold their shape and are too flexible. Chattering may sometimes be attributed to spiders that are not stiff enough, or broken, or by cones that come loose on the outer edge where the ring is supposed to rigidly clamp it.

The above five points of trouble will cover practically all the elements that may go wrong with a speaker (except damage to the frame of the speaker or the cone itself).

The Use of "Shims"

Now if after checking the speaker the Service Man finds that his trouble is in the voice coil being off-center, the simplest thing to do is loosen the supporting screws of the spider and very carefully insert around the pole piece small steel shims (particularly adapted for this purpose) of the proper size, tighten the spider supporting screws again and then remove the shims. The cone should be perfectly centered, providing the spider has not warped, the cone is not out of shape, and the voice coil is true and round. About 75% of speaker troubles may be repaired by this simple adjustment.

If adjustment in this way cannot be properly made then you have a bigger job on your hands. It will probably be necessary to remove the cone and check in detail. To remove this cone you must be careful not to damage it, because it will have to be replaced again. In many of the newer type of speakers you will find the cone cemented on the rim, and to remove this the rim of the cone should be saturated with a specially made solvent until the old cement dissolves, and then the cone may be lifted off (it usually takes from 5 to 10 minutes for the solvent to sufficiently loosen the old cement). Do not use water as it will ruin the cone and it will not loosen the cement, since the cement used on speakers is waterproof.

Examination of Cone

After the cone is removed it must be closely examined. All loose parts should be re-cemented and if the voice coil seems to be out of round, true it up by inserting a round tapered cork of the proper size on the inside of the coil, and then coat the coil with a very thin solution of the cement. The cement will tend to stiffen the voice coil and keep it in shape. A finger is the best "tool" for applying this cement on the voice coil as it is necessary to not have any lumps or uneven spots on the coil. If too much cement is applied it can be smoothed out or washed off with solvent without any damage to the coil or the paper as the solvent evaporates readily.

It is a good practice to re-cement all the former cemented parts on the spider and seams of the cone, even though they seem to be in good condition, as sometimes the break in the cement that causes the rattling is not visible. If the spider is found to be too flexible it may be stiffened by coating it with cement.

After the cone is repaired it should be set aside to dry for at least an hour and then replaced. The cement will dry in 15 minutes but an hour gives it plenty of time to set properly. In replacing the cone the shims should again be inserted to properly align the cone, and the spider set-screws then tightened. The edge of the cone should then be re-cemented and the shims removed after the job is dry and completed.

In some cases if it is found that the voice coil is open or shorted and repairs cannot be made in a practical manner it is wise to replace the cone with a new one rather than attempt repairs.

LETTERS

EDITOR'S MAILBAG

Dear Mr. Cranshaw:

I like your newspaper, it has helped me a lot and as owner of some telegraph sounders what's the recommended voltage?

John Green
5540 Hickory St.
Omaha, Nebr. 68106

Editor: 4½ to 6 volts.

Dear Jim:

Enclosed, please find my check in the amount of \$4.50 for subscription renewal.

I find your paper very interesting, however I would like to see more articles about radios in the 1930 - 39 era.

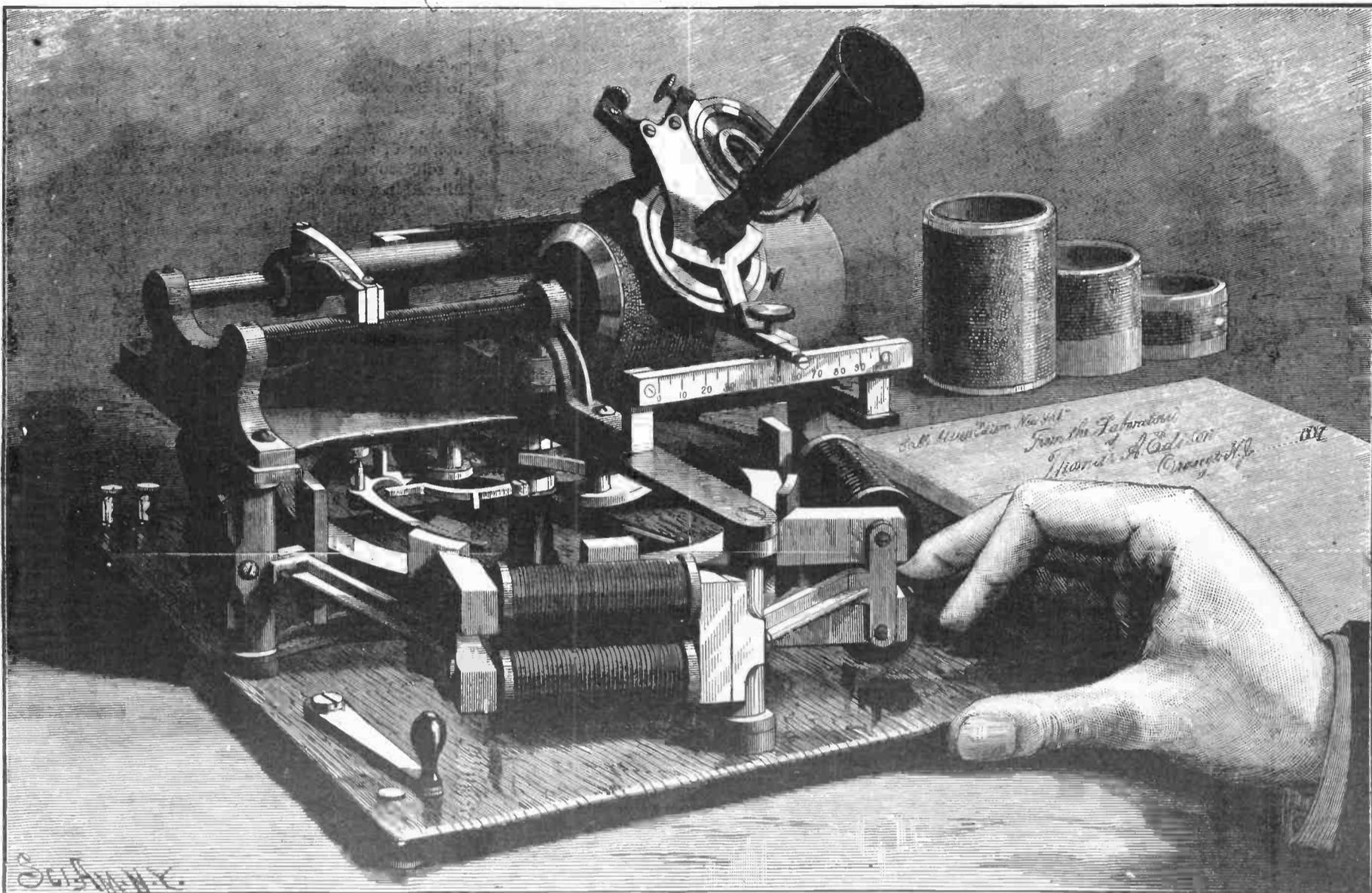
Very truly yours,
Charles W. Vavra
445 E. 80th Street
New York, N. Y. 10021

Editor: Since there is an increasing interest in the small cabinet radios, such as Emerson, Clarion, etc., we will give them more space in the future.

COMPLAINING LETTERS

Letters commenting on the newsprint on which the November and December 1974 editions of *The Horn Speaker* were printed have been rare. We have plans for *The Horn Speaker* to be bigger than ever. See note on page one. At any rate we want to know how you feel.

ILLUSTRATIONS OF PHONOGRAPHS AND GRAPHOPHONES JUST BEFORE 1890



TALKING MACHINE, EDISON'S WONDERFUL PHONOGRAPH.

The development of this 1887 Edison phonograph was Thomas A. Edison's response to the Bell and Tainter graphophone, which was patented in 1886 and put on public exhibition in 1887, about a decade after Edison invented the phonograph. He made more improvements in 1888 on the phonograph which was primarily designed for stenographic application. This engraving which documents itself in time and place appeared on the front page of *Scientific American* on December 31, 1887.

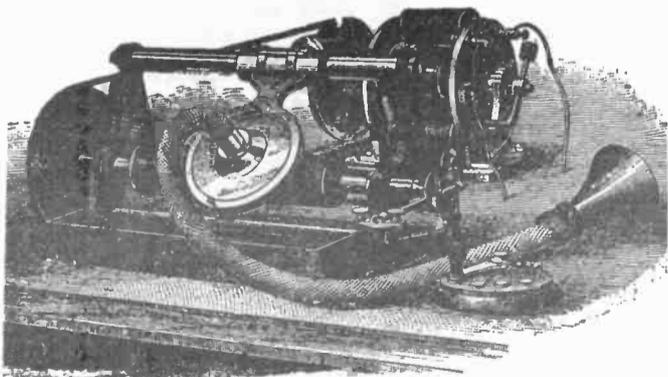
This same issue of 1887 predicted in addition to business use a wide use of the Edison phonograph. "A very interesting and popular use of the phonograph will be the distribution of the songs of great singers, sermons and speeches, the words of great men and women, music of many parts, the voices of animals, etc. so that

the owner of a phonograph may enjoy these things with little expense."

The size of its cylinders are interesting. The same *Scientific American* article mentioned this: "Mr. Edison informs us that the whole of Nicholas Nickleby could be recorded upon four cylinders each 4 inches in diameter and 8 inches long."

Another quote, from the same source, that mentions rigid backing and size is: "The little wax cylinders upon which the record is made are provided with a rigid backing and the cylinders are made in different lengths; the shortest 1 inch long having a capacity of 200 words, the next in size 400 words, and so on."

For more information on this phonograph see the January 1973 edition of *The Horn Speaker*.

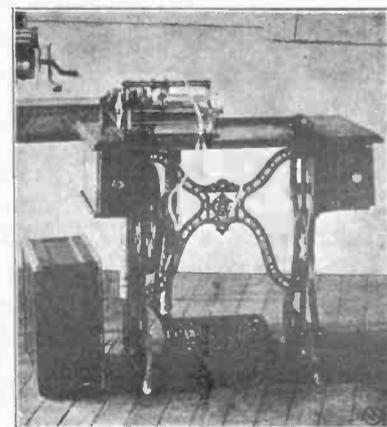


The Bell and Tainter graphophone that employed a motor for constant speed and convenience. The graphophone was developed in a laboratory financed by Alexander Graham Bell and was introduced to the world with wax records and a "floating stylus."



Brown Brothers

This 5:30 a.m. photograph of Edison on June 16, 1888 shows the "improved" phonograph.



Courtesy Columbia Phonograph Company.

The treadle graphophone of 1887 in which the principle of Bell and Tainter's patent was applied.

BOOKS

PROCEEDINGS OF THE 1890 CONVENTION OF LOCAL PHONOGRAPH COMPANIES

For phonograph enthusiasts who enjoy reading about the growing pains of the phonograph industry Proceedings of the 1890 Convention of Local Phonograph Companies is now available from the Recording Technology Series of Series Editor, Danny R. Hatcher with the Country Music Foundation Press in Nashville, Tennessee. The Foundation Press explains its purpose: "The series is dedicated to documenting the relationship between the art of recording and reproducing music and the technological advancements which have influenced the quality and quantity of recorded material."

Even though there are no illustrations in this well constructed paperback, (one photograph of the delegates on the cover) the dialogue of the convention delegates paints a picture of how the phonograph was directed for use as a business dictating machine and of how they felt about using the phonograph for entertainment.

Jesse Lippicott's ability to manage the North American Phonograph has been the subject of some controversial opinions. By reading these Proceedings that were recorded on cylinders and later transcribed and printed, the collector is able to read "the real thing" that is not flavored by modern partisans who want to promote their favorites.

Since fewer than one hundred copies of the Proceedings were originally printed, a reprint of this early test of the phonograph has long been needed.

Here is a sample of the dialogue that contains some of Lippicott's speeches:

The Chairman: I have the pleasure of introducing to you, Mr. Jesse H. Lippincott, President of the North American Phonograph Company and I am certain we would like to hear something from him in connection with these matters.

Mr. Lippincott: My personal experience which has brought me in contact with the public in actual leasing of machines is very limited. Whatever I have learned must certainly be a reflex of what you have heard tonight. When I first entered into the business, I was so much charmed with the machines that I thought every person would receive the same impression that I had, and I presume most of the gentlemen present felt just as I did. A somewhat intimate knowledge of the business, however, leads me to the conclusion, that while the machines make a very

great impression when they are first shown, an impression somewhat lessened the second time and each time falling off, yet the public, except to a very limited extent, do not act on first impressions, that, therefore, it has become a matter very largely of education, and the sooner we awake to the fact that the phonograph business demands the best that is in every man to carry it on successfully, the sooner our hopes will be realized. In other words, no man can carry on this business merely from a speculative standpoint, thinking that he can sell out and double or treble his money. That cannot be done. The only way to be successful in this business is for the men who put their money into it to take the active business management of it. There is no doubt that if they try to carry on at the same time other lines of business they will not be successful. The telephone came in and supplied a want that had never been filled before. To-day we are trying to a certain extent at least, to supplant an industry that is already established, namely, that of the stenographer. While I think there has been a great deal of time lost in the past, yet there is no doubt in my mind, as to the future. When the gentlemen took up the franchises and organized their companies they had the instruments before them and saw exactly what they might expect. They knew just as much about it as we did. We did not try to palm something off on them that they could not see and recognize, and therefore all the blame and criticisms of the North American Phonograph Company we think we should rather divide up. The earlier machines were not precisely what the public wanted, but we have done everything we could in the past year to try to improve them. The factories have done everything they could. My attention was called a few days since to a letter which had been sent out probably last fall, in which it was stated we would soon be able to furnish a new cylinder. The statements that we made were based upon statements that came to us from what we considered reliable sources, namely, from the two factories that furnish our machines and furnish our supplies. I think some of you gentlemen were in New York last fall and were shown the cylinder with a red colored base. That cylinder was shown to us and we were informed that within a certain length of time we would receive those and they would obviate all the difficulties heretofore urged with regard to the breaking of cylinders. Some two months afterwards it was discovered that the difference in expansion and contraction between the base and the wax was such that it was utterly impossible to furnish these cylinders; so that while in the past we have made

statements which were not warranted, yet every time we have deemed that we had sufficient authority to make the statements. A great many of these things require months of experimenting, even after we think we have really got just what the public want.

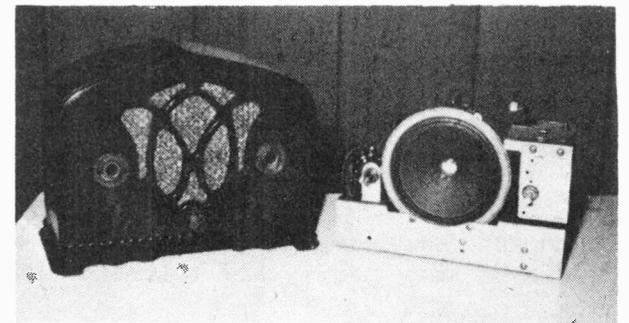
I do not know that I can say much except that I am very glad to find that while some of the gentlemen admit that they have not been successful, the same unbounded faith seems to exist as to the future; and I hope in the near future all our hopes will be realized.

This 6 X 9, 210 page soft-bound book that contains a researched introduction by Raymond R. Wile and a survey of local phonograph companies by Oliver Read and Walter Welch can be purchased for only \$6.95 plus 25¢ for postage and handling by ordering from The Country Music Foundation Press, 700 16th Ave., South, Nashville, Tennessee 37203.

CLASSIC RADIO NEWSLETTER

J.W.F. Puett now publishes a quarterly called the Classic Radio Newsletter. Puett has become famous for his research on the radios that were of the finest in quality. \$1.00 and 4 self addressed stamped envelopes sent to Puett, 3008 Abston Dr., Mesquite, Texas will make you a subscriber.

FIND OF THE MONTH



This is an Emerson model #250, manufactured in 1933 and sold at retail for \$30.00 it is an AC/DC model it is one of the first "compact" radios with a built in antenna. It started the trend to multiply radios in homes. It made Emerson, almost overnight, the "world's largest maker of small radios," according to Fortune magazine.

Incidentally, this radio was found in the town dump in East Quogue, L. I., New York, and purchased by myself from the dump custodian for "TWO DOLLARS" the only repair needed was a replacement of one tube.

You truly never know when or where a "discovery" will be made.

Charles W. Vavre
445 E. 80th. Street
New York, N. Y. 10021

SUBSTITUTION OF TUBES WITH SOLID STATE DEVICES

I have played around with methods of using old battery sets without wasting away precious battery tubes. The substitutions worked well in my AK and Freshman, and in my case, used junk box parts. The main problems to overcome are breakdown voltage of the FET and filament control of gain. In Fig. 1, is seen the basic ckt. Q₁ is any silicon transistor with a BV_{CEO} of 80 volts or more. It is biased to give an emitter voltage (or drain voltage of Q₂) of 18.3 volts with a 90 volt B+. Filament control is accomplished by using the No. 2 gate of a FET, Q₂. The 15 ohm resistor substitutes for the missing filament of a 1/2 amp. tube.

Unfortunately, the high u of modern devices (even tempting tubes like a 6C4) cuts off these "subs" in

old sets designed for max. gain. The modified ckt. FIG 2. will alleviate this problem, if it occurs. In the revised ckt, No. 1 gate or our grid is separately biased by means of the pot. In set-up, the receiver is adjusted for normal operation, with all filaments at max. The pot is then set for the previous noted performance. The "sub" should be used in the position adjusted for. The set filament polarity for that position should be checked prior to this, of course. The FET I used was a TV-tuner type MPT-131, but many others should work well. Also, try to use a small 50k triapot for space utilization, such as a CTC variety. One of my "subs" was enclosed in the bulb of a dead 01A. If anyone knows how to open these reliably, I would like to know the trick. If excessive gain is noted, ad a few k of resistance at point "A" and re-adjust.

Michael Stosich
414 Assembly Drive
Bollingbrook, Ill.
60439

FIG 1

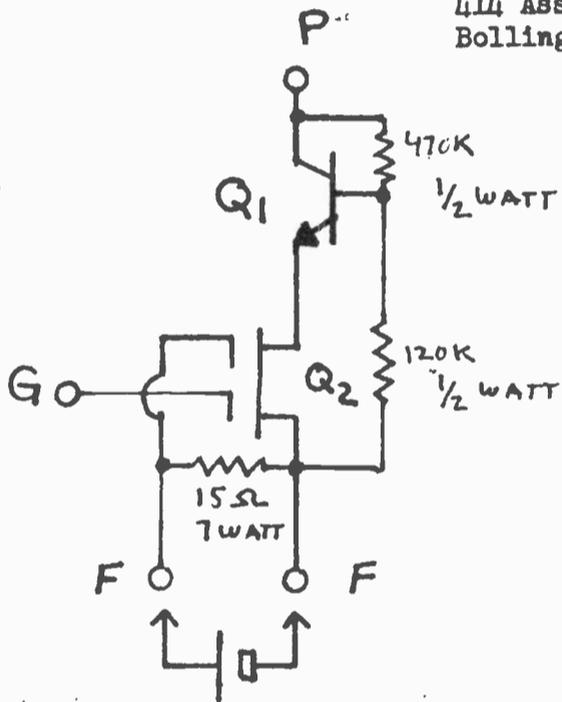
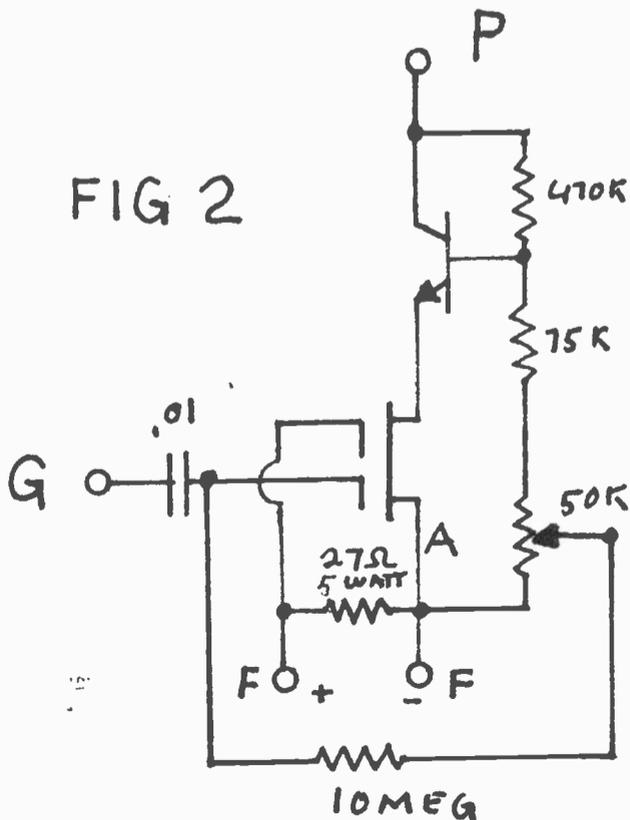


FIG 2

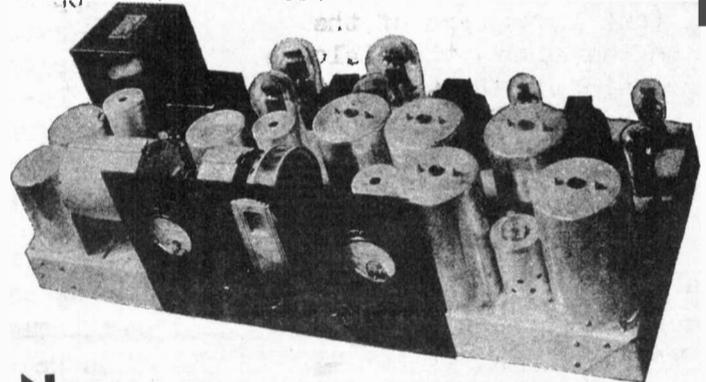


SOLID STATE 01A

THE CLASSIC RADIO
By J.W.F. Puett

The Norden-Hauck Electric & Manufacturing Company produced a classic sixteen tube receiver in 1933. Today, the Admiralty Super-15 is indeed a rare classic. At the time this article is being written, not even one Admiralty Super-15 is known to exist. The Scott Allwave Deluxe, the Lincoln, and the McMurdo Silver Masterpiece II were numbered among its competition. Most collectors are familiar with the earlier classic Norden-Hauck sets of the late twenties, but there has been very little emphasis on the ac powered receivers manufactured by Norden-Hauck in the early thirties. I would certainly like to correspond with anyone who owns an example of a later model Norden-Hauck.
J.W.F. Puett, 3008 Abston Drive, Mesquite, Texas 75149.

THE WHOLE WORLD SPEAKS—
Thru



The New ADMIRALTY SUPER-15

MULTI-WAVELENGTH SUPERHETERODYNE
In design and engineering, the world's most advanced Radio Receiver. This great new 16-Tube Model opens up a vast new stage of magnificent entertainment. Dependable long distance reception with the lure of overseas programs via short waves, as well as your favorite broadcasts as they originate at the station. This is the true Romance of Radio that awaits you. The Admiralty Super-15 provides the maximum in sensitivity, selectivity and quality of reproduction ever promised.

Complete literature sent on request. Address
NORDEN-HAUCK ELECTRIC & MFG. CO.
402 Cherry Street, Philadelphia, Pa. U. S. A.
"Builders of the Highest Class Radio Apparatus in the World."

1933 advertisement

1923 advertisement



THE Federal No. 57
RADIO FREQUENCY
RECEIVING SET

the most sensitive receiver
that has yet been built.

→ **\$98.00**

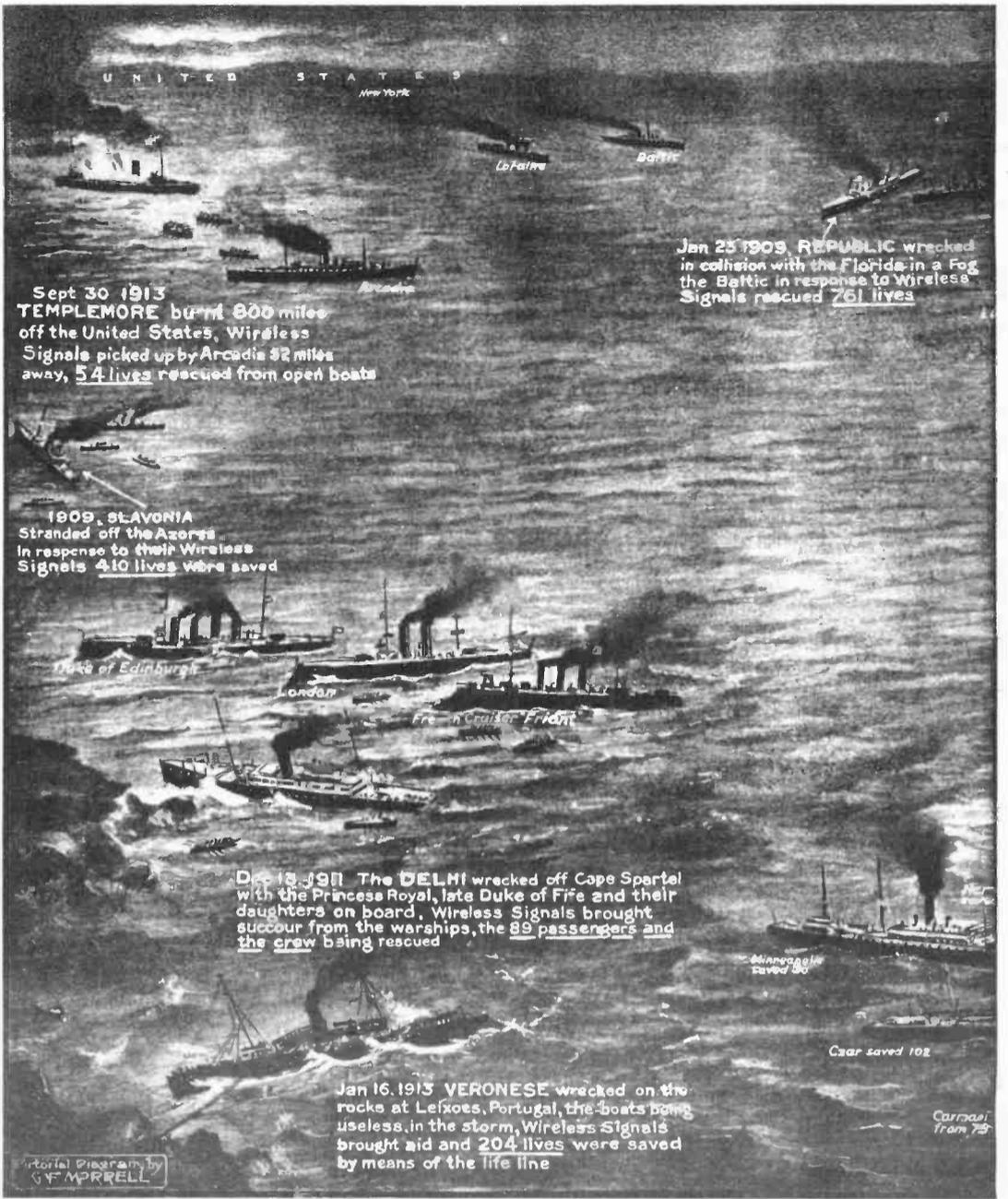
WRITE FOR BULLETIN No. 119-W

Federal Telephone and Telegraph Co.
BUFFALO, NEW YORK

A LONG CAREER OF RADIO ACE, JACK BENNY, ENDED WITH HIS DEATH, DECEMBER 26, 1974.



FIRST PARTNER—Jack started his stage career at the age of 17 when Cora Salisbury, pianist, teamed up with him and started a vaudeville tour that led Benny into the entertainment business for keeps.



Sept 30 1913
TEMPLEMORE burnt 800 miles off the United States, Wireless Signals picked up by Arcadia 82 miles away, 54 lives rescued from open boats

1909, **SLAVONIA**
Stranded off the Azores In response to their Wireless Signals 410 lives were saved

Dec 13 1911 The **DELMI** wrecked off Cape Spartel with the Princess Royal, late Duke of Fife and their daughters on board, Wireless Signals brought succour from the warships, the 89 passengers and the crew being rescued

Jan 16, 1913 **VERONESE** wrecked on the rocks at Lefloes, Portugal, the boats being useless in the storm, Wireless Signals brought aid and 204 lives were saved by means of the life line

Jan 25 1905 **REPUBLIC** wrecked in collision with the Florida in a Fog the Baltic in response to Wireless Signals rescued 761 lives

Artorial Program by G.F. MURRELL

1974 AD

PUETT ELECTRONICS

PUETT ELECTRONICS

MAILING ADDRESS: LIST NUMBER 10
3008 Abston Drive Mesquite, Texas 75149

HOW TO ORDER:

- (1) ALL CHECKS OR MONEY ORDERS MUST BE MADE PAYABLE TO J.W.F. PUETT.
- (2) Please state whether new or used tubes are desired and whether a half-price used tube is desired when a new tube is out of stock. REFUNDS are mailed with your invoice for out-of-stock tubes, or when, by customer request, a used tube is substituted for an out-of-stock new tube.
- (3) All orders are shipped parcel post - no C.O.D. INCLUDE 15% FOR POSTAGE AND HANDLING. INSURANCE RATES ARE 30¢ for orders under \$50.00. TEXAS RESIDENTS ADD 5% STATE SALES TAX.

MINIMUM ORDER \$3.00

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 open filaments or shorts 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, and no liability beyond that which is covered by postal insurance.

IN TABLE 3, THE SYMBOL n INDICATES THAT A TUBE IS AVAILABLE NEW AND THE SYMBOL u INDICATES THAT THE TUBE IS AVAILABLE USED.

IN TABLE 4, THE SYMBOL n INDICATES THAT A TUBE IS AVAILABLE NEW AND THE SYMBOL u INDICATES THAT THE TUBE IS AVAILABLE USED.

all are used, thoroughly tested			
RADIOTRON	CUNNINGHAM	SYLVANIA	MAJESTIC
10	312A	5Y22L	G-27
UX210	6X326	5X227	G27S
UY224	G327	5Y551	G35S
UY227	6X332	5X280	A.P.
UX226	6X345		
35	80		
37	80		
UX240	6X380		
UX245			
71A			
UX280			
866			

01A new in original cartons (new style)	\$6.00
Cunningham 6X350 used	\$5.00
Radiotron UX-200 new in original cartons	\$7.00
Westinghouse projection bulb (very old)	
Type T20 C13P 500 watt new	\$4.00
Western Electric WE212F used	\$15.00
Type 852 used	\$15.00
Arcturus Type 56 (blue glass) used	\$5.00
Arcturus Type 27 (blue glass) new in original carton	\$7.00

O		6X175		14C5		55	
1A3	523	6X175	14C5	55	14C5	55	55
1A4	524	6X175	14C5	55	14C5	55	55
1A5	525	6X175	14C5	55	14C5	55	55
1A6	526	6X175	14C5	55	14C5	55	55
1A7	527	6X175	14C5	55	14C5	55	55
1A8	528	6X175	14C5	55	14C5	55	55
1A9	529	6X175	14C5	55	14C5	55	55
1B1	530	6X175	14C5	55	14C5	55	55
1B2	531	6X175	14C5	55	14C5	55	55
1B3	532	6X175	14C5	55	14C5	55	55
1B4	533	6X175	14C5	55	14C5	55	55
1B5	534	6X175	14C5	55	14C5	55	55
1B6	535	6X175	14C5	55	14C5	55	55
1B7	536	6X175	14C5	55	14C5	55	55
1B8	537	6X175	14C5	55	14C5	55	55
1B9	538	6X175	14C5	55	14C5	55	55
1C1	539	6X175	14C5	55	14C5	55	55
1C2	540	6X175	14C5	55	14C5	55	55
1C3	541	6X175	14C5	55	14C5	55	55
1C4	542	6X175	14C5	55	14C5	55	55
1C5	543	6X175	14C5	55	14C5	55	55
1C6	544	6X175	14C5	55	14C5	55	55
1C7	545	6X175	14C5	55	14C5	55	55
1D1	546	6X175	14C5	55	14C5	55	55
1D2	547	6X175	14C5	55	14C5	55	55
1D3	548	6X175	14C5	55	14C5	55	55
1D4	549	6X175	14C5	55	14C5	55	55
1D5	550	6X175	14C5	55	14C5	55	55
1E1	551	6X175	14C5	55	14C5	55	55
1E2	552	6X175	14C5	55	14C5	55	55
1E3	553	6X175	14C5	55	14C5	55	55
1E4	554	6X175	14C5	55	14C5	55	55
1E5	555	6X175	14C5	55	14C5	55	55
1E6	556	6X175	14C5	55	14C5	55	55
1E7	557	6X175	14C5	55	14C5	55	55
1E8	558	6X175	14C5	55	14C5	55	55
1E9	559	6X175	14C5	55	14C5	55	55
1F1	560	6X175	14C5	55	14C5	55	55
1F2	561	6X175	14C5	55	14C5	55	55
1F3	562	6X175	14C5	55	14C5	55	55
1F4	563	6X175	14C5	55	14C5	55	55
1F5	564	6X175	14C5	55	14C5	55	55
1F6	565	6X175	14C5	55	14C5	55	55
1F7	566	6X175	14C5	55	14C5	55	55
1F8	567	6X175	14C5	55	14C5	55	55
1F9	568	6X175	14C5	55	14C5	55	55
1G1	569	6X175	14C5	55	14C5	55	55
1G2	570	6X175	14C5	55	14C5	55	55
1G3	571	6X175	14C5	55	14C5	55	55
1G4	572	6X175	14C5	55	14C5	55	55
1G5	573	6X175	14C5	55	14C5	55	55
1G6	574	6X175	14C5	55	14C5	55	55
1G7	575	6X175	14C5	55	14C5	55	55
1G8	576	6X175	14C5	55	14C5	55	55
1G9	577	6X175	14C5	55	14C5	55	55
1H1	578	6X175	14C5	55	14C5	55	55
1H2	579	6X175	14C5	55	14C5	55	55
1H3	580	6X175	14C5	55	14C5	55	55
1H4	581	6X175	14C5	55	14C5	55	55
1H5	582	6X175	14C5	55	14C5	55	55
1H6	583	6X175	14C5	55	14C5	55	55
1H7	584	6X175	14C5	55	14C5	55	55
1H8	585	6X175	14C5	55	14C5	55	55
1H9	586	6X175	14C5	55	14C5	55	55
1I1	587	6X175	14C5	55	14C5	55	55
1I2	588	6X175	14C5	55	14C5	55	55
1I3	589	6X175	14C5	55	14C5	55	55
1I4	590	6X175	14C5	55	14C5	55	55
1I5	591	6X175	14C5	55	14C5	55	55
1I6	592	6X175	14C5	55	14C5	55	55
1I7	593	6X175	14C5	55	14C5	55	55
1I8	594	6X175	14C5	55	14C5	55	55
1I9	595	6X175	14C5	55	14C5	55	55
1J1	596	6X175	14C5	55	14C5	55	55
1J2	597	6X175	14C5	55	14C5	55	55
1J3	598	6X175	14C5	55	14C5	55	55
1J4	599	6X175	14C5	55	14C5	55	55
1J5	600	6X175	14C5	55	14C5	55	55
1J6	601	6X175	14C5	55	14C5	55	55
1J7	602	6X175	14C5	55	14C5	55	55
1J8	603	6X175	14C5	55	14C5	55	55
1J9	604	6X175	14C5	55	14C5	55	55
1K1	605	6X175	14C5	55	14C5	55	55
1K2	606	6X175	14C5	55	14C5	55	55
1K3	607	6X175	14C5	55	14C5	55	55
1K4	608	6X175	14C5	55	14C5	55	55
1K5	609	6X175	14C5	55	14C5	55	55
1K6	610	6X175	14C5	55	14C5	55	55
1K7	611	6X175	14C5	55	14C5	55	55
1K8	612	6X175	14C5	55	14C5	55	55
1K9	613	6X175	14C5	55	14C5	55	55
1L1	614	6X175	14C5	55	14C5	55	55
1L2	615	6X175	14C5	55	14C5	55	55
1L3	616	6X175	14C5	55	14C5	55	55
1L4	617	6X175	14C5	55	14C5	55	55
1L5	618	6X175	14C5	55	14C5	55	55
1L6	619	6X175	14C5	55	14C5	55	55
1L7	620	6X175	14C5	55	14C5	55	55
1L8	621	6X175	14C5	55	14C5	55	55
1L9	622	6X175	14C5	55	14C5	55	55
1M1	623	6X175	14C5	55	14C5	55	55
1M2	624	6X175	14C5	55	14C5	55	55

O		6A76		12A5		3525		1629	
0A2	6A76	12A5	3525	1629	0A2	6A76	12A5	3525	1629
0A3	6A76	12A5	3525	1629	0A3	6A76	12A5	3525	1629
0B3	6A76	12A5	3525	1629	0B3	6A76	12A5	3525	1629
0C3	6A76	12A5	3525	1629	0C3	6A76	12A5	3525	1629
0D3	6A76	12A5	3525	1629	0D3	6A76	12A5	3525	1629
0E4	6A76	12A5	3525	1629	0E4	6A76	12A5	3525	1629
0Z4	6A76	12A5	3525	1629	0Z4	6A76	12A5	3525	1629
1L4	6A76	12A5	3525	1629	1L4	6A76	12A5	3525	1629
1L6	6A76	12A5	3525	1629	1L6	6A76	12A5	3525	1629
1R5	6A76	12A5	3525	1629	1R5	6A76	12A5	3525	1629
1S4	6A76	12A5	3525	1629	1S4	6A76	12A5	3525	1629
1S5	6A76	12A5	3525	1629	1S5	6A76	12A5	3525	1629
1T4	6A76	12A5	3525	1629	1T4	6A76	12A5	3525	1629
1T5	6A76	12A5	3525	1629	1T5	6A76	12A5	3525	1629
1U5	6A76	12A5	3525	1629	1U5	6A76	12A5	3525	1629
2C26	6A76	12A5	3525	1629	2C26	6A76	12A5	3525	1629
2X2	6A76	12A5	3525	1629	2X2	6A76	12A5	3525	1629
3A4	6A76	12A5	3525	1629	3A4	6A76	12A5	3525	1629
3A5	6A76	12A5	3525	1629	3A5	6A76	12A5	3525	1629
3A8	6A76	12A5	3525	1629	3A8	6A76	12A5	3525	1629
3Q4	6A76	12A5	3525	1629	3Q4	6A76	12A5	3525	1629
3S4	6A76	12A5	3525	1629	3S4	6A76	12A5	3525	1629
3V4	6A76	12A5	3525	1629	3V4	6A76	12A5	3525	1629
6A8A	6A76	12A5	3525	1629	6A8A	6A76	12A5	3525	1629
6A87	6A76	12A5	3525	1629	6A87	6A76	12A5	3525	1629

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FOR SALE: Transformer pair for push-pull 45's. Driver, Sanyo BX. Output Thordarson T-2629. \$4.50 each postpaid. Parke Barnard, 216 Davenport Ave., New Haven, CT 06519.

FOR SALE: RCA Wireless Specialty Co. Faradon Condenser, Model UC1819, page 80 of Greenwood, \$18.00 pp. G. Schneider, 6848 Commonwealth Blvd. Parma Hgts., Ohio 44130.

WANTED

WANTED: McGraw Hill books: Television and radio repairing, Practical Radio servicing, Profitable radio troubleshooting; prefer 1953 to 1956 edition. C. Elmer Nelson, 824 S. Pleasant St., Princeton, Ill. 61356.

WANTED: Radio parts, sets, books, magazines, tubes, catalogues, instruction booklets etc., pre-1930. Western Electric audio and telephone equipment, instruction booklets etc., any vintage. Bill Nangle, 761 No. 29th. St., Milwaukee, Wisc. 53208.

WANTED: Spark equipment, AK Breadboard, Crystal sets, Instructions and diagram for "Radio Receptor" super-het kits; Belts and pulleys for AK 35. Martin Peterson, 1311 W 5 St., Winona Minn. 55987.

WANTED: RCA Horn Speaker, Model UZ-1320 in good condition, "Radio News" and "Popular Radio" for the 1920's and 1930's with covers. J. Albert Warren, Box 279, Church St., Waverly PA 18471.

WANTED: AK 20 lid name plate; AK 30 lid name plate; AK 33 lid name plate; Grebe CR9 lid name plate; Schematic for Murad MA15. Bill Pugh, 2126 E. Myrtle, Phoenix, Arizona 85020.

NEED 2 dial pointer for David Grimes 5B Baby Grand Duplex Radio. One brass vernier tuning knob and bolt for AK Radio. R. E. James, 312 N. 11 St., Guthrie, Okla. 73044.

WANTED: Old radio books, catalogs, Gernsback manuals, Early test equipment. Give price in first letter. William Hemrick, Route 1, Terra Alta, West Virginia 26764.

WANTED: Scott All-Wave 12 cabinet, knobs, escutcheons, speakers. Rauland Lyric R-500 audio transformer. George Harris 3212 - 36th Street, Lubbock, TX 79413.

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"RESOLVED, THAT THE VOLSTEAD ACT SHOULD BE REPEALED."

It is estimated that the debate between Wayne B. Wheeler (right), General Counsel of the Anti-Saloon League, and Ransom H. Gillett (left), General Counsel of the Association against the Prohibition Amendment, broadcast on April 18th from WEAJ, New York, was heard by half a million people. This was the first time that two such leaders of opposing thought faced each other before the microphone on a subject of national interest and importance. At the finish of the debate, questions submitted by the audience were answered by the speakers. A poll of WEAJ's audience showed decisively that Mr. Wheeler won the debate, and that the personal preference of the radio audience on the question, "Should the Volstead Act be Repealed?" was 57% "No" and 43% "Yes."