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THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

THE HORN SPEAKER

off the Record

Ben Franklin's Philosophy

There are two ways of being happy—we may either diminish our wants or augment our means—either will do, the result is the same; and it is for each man to decide for himself, and do that which happens to be easiest.

If you are idle, or sick or poor, however hard it may be to diminish your wants, it will be harder to augment your means.

If you are active, or prosperous, or young, or in good health, it may be easier for you to augment your means than to diminish your wants.

But if you are wise, you will do both at the same time, young or old, rich or poor, sick or well; and if you are very wise, you will do both in such a way as to augment the general happiness of society.

A Rousing Edison Record

At the Baltimore Convention of the Associated Advertising Clubs of America held in June, William Whitehead, Manager of the *Sunset Magazine*, San Francisco, was chosen President. They raised the roof when the nomination was seconded, and after the noise and smoke of battle cleared away, A. B. McAllister, six feet two in his stocking feet, with a voice like thunder, started to sing his native song "I Love You California"—the love song of the Pacific Coast. Every one had been supplied with a copy of the song, and the volume of sound, rising higher and higher, fairly made the ceiling tremble. This song, so popular with Western people, is available on Edison Record 1838. Get it, and play it; then you'll know why it is so enthusiastically sung.

Stamping Out the Indecent Song

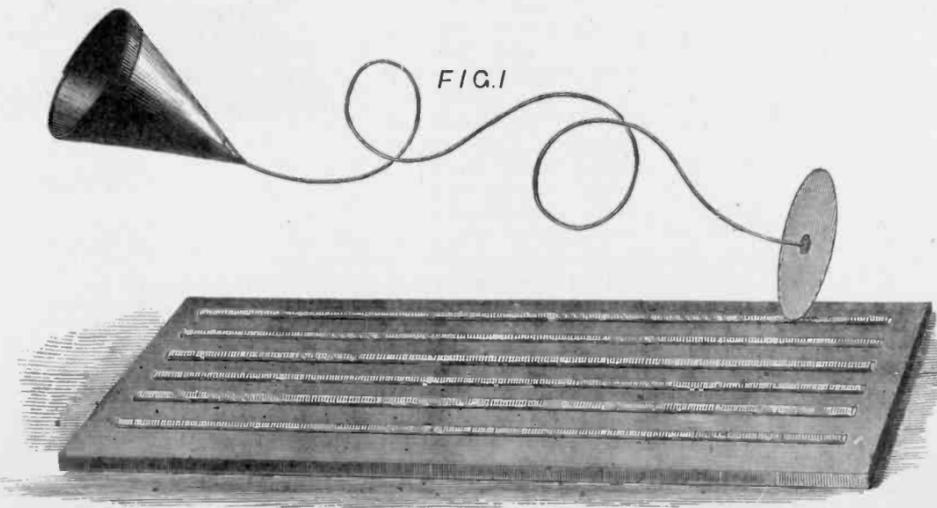
The National Federation of Musical Clubs has addressed itself to a task distinctly worth while. It has resolved to stamp out the indecent song. Inasmuch as the Federation is representative of over 100,000 musicians there is encouragement to believe that much will be accomplished.

THE PHONOGRAM, November 1913

A SIXPENNY PHONOGRAPH.

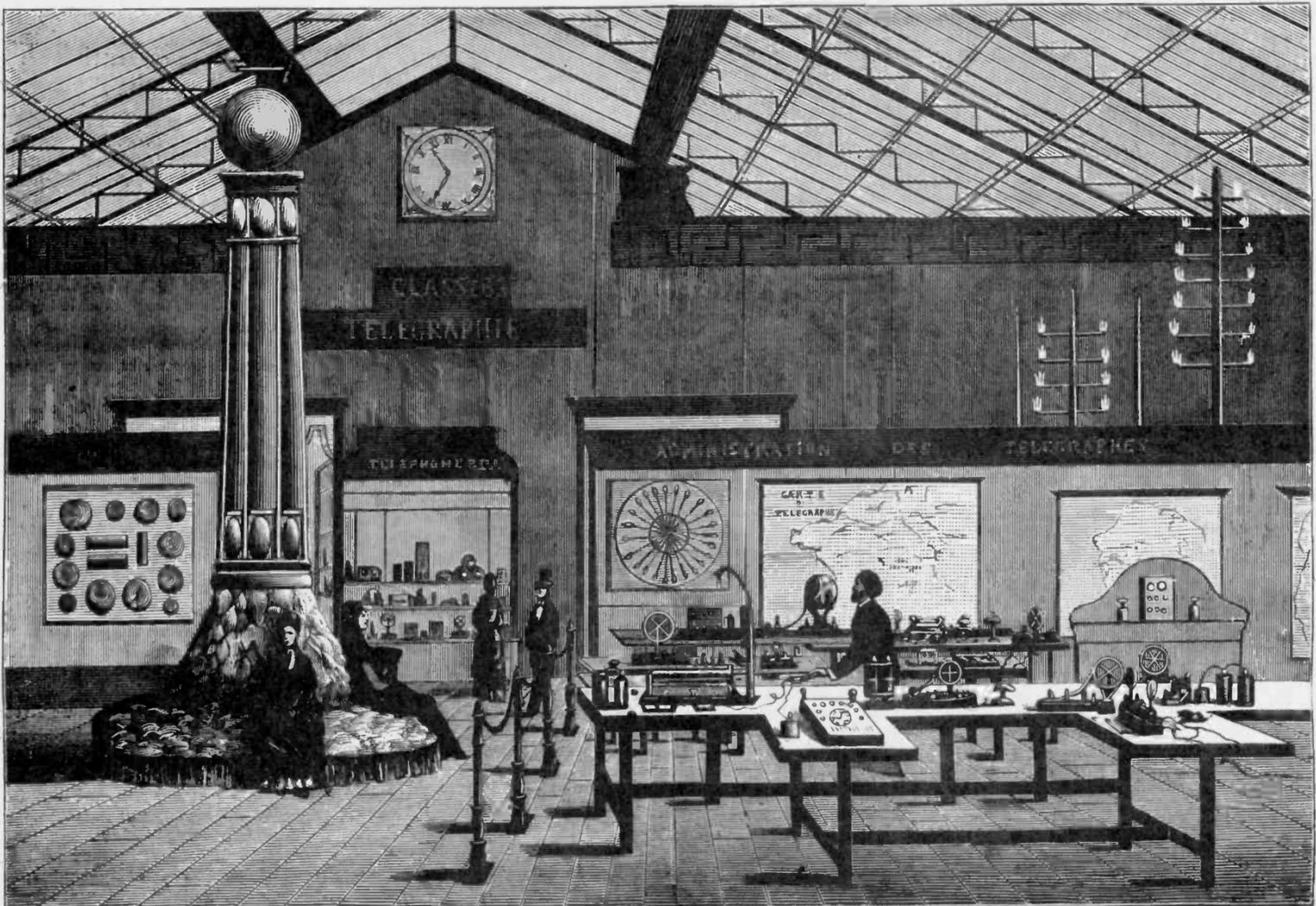
When a great scientific discovery or invention is announced to the world, such, for example, as the telephone of Professor Graham Bell, the microphone of Professor Hughes, or the phonograph of Mr. Edison, it is pretty certain in a short time to be followed first by spurious and unauthorized imitations, which, if the invention be protected, are nothing more or less than direct infringements of the patent, and after that by highly interesting modifications of the apparatus either for the extension of the principle, developing further physical facts, or to analyze those already discovered; or else for the reduction of the instrument to its simplest possible form, so as to place in the hands of the teacher as well as in those of the million a scientific toy which can illustrate and render familiar the principle which lies at the base of the more important and typical apparatus.

The sixpenny phonograph, which is represented in Fig. 1, consists, first, of a hollow cone of pasteboard, about one inch and a half in diameter, whose apex is connected to the center of a similar sized pasteboard disk by means of a lead wire about sixteen inches long; and, second, of a small board or tablet, on which is fixed one or a larger number of short lengths of lead wire, each of which bears upon its upper surface a phonographic embossed record corresponding



A SIXPENNY PHONOGRAPH.

Continued on page 6



THE FRENCH TELEGRAPHIC ANNEX.

on the Air

TELSA HONORS

According to Nick Basura, The Electronics Hall of Fame will be thinking of including Nikola Tesla among their previously honored ranks of men, who have achieved greatness in electronics.

The Minnkota Power Co-operative of Grand Forks, North Dakota has a yearly award for Tesla, according again to Basura.

Nick Basura is trying to locate money for The Franklin Institute to honor the name of Nikola Tesla by giving an award for outstanding work in some kind of scientific achievement.

Basura's address is: 3414 Alice Street, Los Angeles, California 90065.

NORTH AMERICAN RADIO ARCHIVES

"N. A. R. A. was founded to serve the growing public interest in radio history and to promote services which will create a greater appreciation and understanding of radio's past," a statement furnished by N. A. R. A.

N. A. R. A. wants the general public to significantly realize the knowledge of radio broadcasting. Also, of course, they want to gather and preserve materials about radio broadcasting, which will be curated and inventoried by catalogs.

The mailing address for N. A. R. A. is: P. O. Box 13114 Station E, Oakland, California 94661.

RADIO RERUNS

Meta-Com is supplying radio reruns on cassette to program collectors. According to Meta-Com, you can relive the first radio broadcast in history as well as other classics such as the Gene Tunney-Jack Dempsey fight. This "Collector's Edition" contains over 2 hours on 4 individual cassette.

More information can be obtained by writing to James L. McCann, Meta-Com Inc., 711 W. Broadway, Minneapolis, Minnesota 55411.

LETTERS

EDITOR'S MAILBAG

Sir:

I'm considering two old broadcast receivers I've found in an antique shop. But I can't find any information on either one of them in the reference material I have at hand. Can anyone help me?

One set is marked "CHELSEA", the cabinet is the type "Kennedy" used, slant front. (Shown on Page 1 of December, 1972 Horn Speaker.) I can't find any other markings on this set.

The second set is marked "Akrydyne" or "Akrodyne" written in script on the front panel. That's all I can find on this set. It's an almost square set.

That new feature showing the sets by name, model, price, etc., you've recently started is worth the price of the paper many times over. I see you're through the letter A and C so decided to write.

Thanks,
Emil J. Patrick
2111 Ridge Road Ext.
Ambridge, Pa.
15003

Dear Sir,

I recently came into possession of an old Radio called the RCA Radiola 18.

Could you mail me any information on this working radio?

I will gladly repay you any reasonable amount for the service. Thank You.

Sincerely,
James E. Dennis
12341 Otchipwe Ave. N.
Stillwater,
Minnesota 55082

Dear Mr. Cranshaw,

I would like to compliment you and your staff on such a fine publication as the Horn Speaker. I have met many new friends as a result. I would like to make a simple suggestion, however.

As you probably know, antique radios of some types are getting rare and the supply is diminishing. Consequently, when someone offers a real classic for sale in a publication the first one who reads it and wants it gets on the telephone and buys it. The Antique Trader to which I subscribe has a unique system worked out where everyone in the country receives their issue on approximately the same day giving everyone an equal chance. Apparently, they have consulted with postal authorities and have determined the number of days mail takes to get to certain areas. At any rate my issue is mailed several days ahead of those closer to their headquarters.

In last month's issue I had an ad and one week before I received my copy I started getting replies. It surprised me when I got long distance calls. Would it be possible for your magazine to have the same system as The Antique Trader? As a result of receiving my copy a week later than other people, I have missed out on several opportunities to buy nice radios. In this respect, I find your ads to be of little help unless someone has an adequate supply of an article. Wouldn't it be possible to mail east coast and west coast subscriptions a little earlier? I hope you do not consider this letter as criticism of your fine publication but as a suggestion to improve your ad coverage.

Sincerely,
Donald Patterson
1220 Meigs Street
Augusta, Georgia 30904

EDITOR: A Good Idea.

PROFESSOR EDISON'S NEW CARBON RHEOSTAT.

In quadruplex telegraphy it is vital to the working of the system to perfectly balance the electrical current.

The common method of doing this is to employ a rheostat containing a great length of resistance wire, more or less of which may be thrown into or cut out of the electrical circuit by inserting or withdrawing plugs or keys. This operation often requires thirty minutes or more of time that is or might be very valuable.

To remedy this difficulty Mr. Edison has devised the instrument represented in the engraving, Fig. 1 being a perspective view and Fig. 2 a vertical section.

A hollow vulcanite cylinder, A, is screwed on a boss on the brass plate, B. Fifty disks—cut from a piece of silk that has been saturated with sizing and well filled with fine plumbago and dried—are placed upon the boss of the plate, B, and are surmounted by a plate, C, having a central conical cavity in its upper surface. A pointed screw, D, passes through the cap, E, at the top of the cylinder, A, and projects into the conical cavity in the plate, C. The screw is provided with a disk, F, having a knife edge periphery which extends to the scale, G, and serves as an index to show the degree of compression to which the silk disks are subjected.

The instrument is placed in the circuit by connecting the cap, E, with one end of the battery wire and the plate, B, with the other end.

The principle of the instrument is identical with that of Mr. Edison's carbon telephone. The compression of the series of disks increases conductivity; a diminution of pressure increases the resistance. Any degree of resistance within the scope of the instrument may be had by turning the screw one way or the other.

In this instrument the resistance may be varied from 400 to 6,000 ohms, and any amount of resistance may be had by increasing the number of silk disks.

Fig. 2.

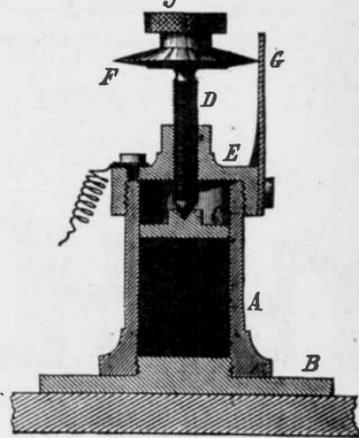
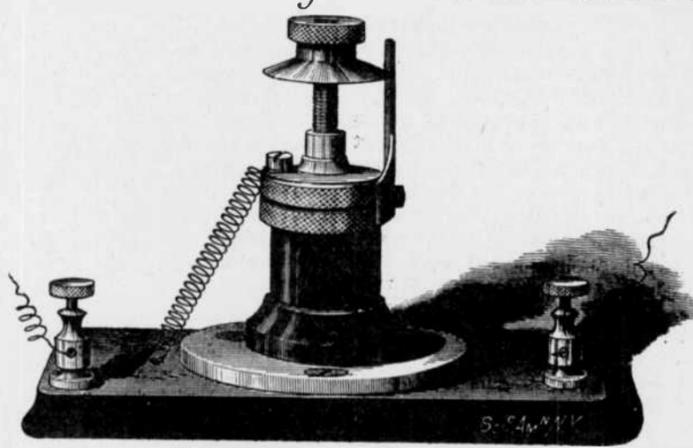


Fig. 1.



PROFESSOR EDISON'S NEW CARBON RHEOSTAT.

SCIENTIFIC AMERICAN, July 26, 1878

Dear Mr. Cranshaw,

I would like to ask you if you know who may have a bracket to fit a type "E" RCA phonograph. I have the cradeled horn and the turntable but no bracket.

Thanks for your great publication.

Sincerely,
Michael F. Kaplan
275 Harrow
San Antonio,
Texas 78227

Dear Mr. Cranshaw,

I have received my first three issues of "The Horn Speaker" and I find it both enjoyable and informative.

The articles "Lee DeForest's Progress For 1902" and "The Construction Of A Rotary Spark Cap" in the January 1973 issue were particularly interesting. Could you tell me where I can find more detailed information on spark-gap transmitters and receivers? I find this type of transmission quite interesting and would like to learn more about the systems, their construction, operation, etc.

Sincerely Yours,

Allen T. Fincher
307 Country Club Drive
Suffolk, Va. 23434
April 9, 1973

Dear Sirs:

Please give me any help possible.

Victor Radio Cabinet Model Size 50" High. Width 26" X 18-1/2" Walnut Finish. Model No. Victor Radio R-52 Serial # 18204.

Receiving Equipment By Victor Talking Machine Company, Camden, N. J.

Alden E. Bryson
P. O. Box 323
Sylva, N. C. 28779

Dear Sirs:

...I estimate the radio was made in the early twenties, but would appreciate any conclusive data. It is not the year perhaps that make make the radio worth anything monetarily, but the rarity of the model itself. The name of the radio is RCA Victor. It is a Combination record cutter, four band radio, and record player. The model number is 381, and the number on the chassis is 005263. Another number is present also that refers us to the instructions and that number is 25014. The top of the radio lifts to reveal the record player and cutter, with the cutting weight and microphone. The radio is approximately 43 inches high, thirty two inches wide and eighteen inches deep. The weight is about one hundred and fifty pounds. The wood is a deep mahogany I believe. On the reverse side of the photos is an explanation of each. Any information on this radio you or your readers may have would be appreciated. Thank you for your cooperation and time.

Yours Truly,
Robert Barnes
2010 Winthrop St.
No. Dighton, Mass.
02764

Dear Sirs:

Recently we acquired a RCA Loop Antenna, patented in 1908.

We would appreciate any information you could give us on this antenna, specifically, how it is wired, and if it is a desirable "new antique" that would be purchased by anyone.

Could you please help us with any information you have on this, we will wait your reply.

Sincerely yours,
Ann J. Alzmann
101-36 133 Street
Richmond Hill,
New York 11419

The Berliner Telephone Patents Case before the Supreme Court.

The case of the United States against the American Bell Telephone Company was argued in the United States Supreme Court on November 11. In some respects the case is regarded as among the most important before the court, as it involves the validity of the Berliner patents, owned by the Bell Company.

Attorney-General Harimon, Solicitor-General Conrad, and a number of attorneys representing special interests, appear in connection with the suit of the United States, while the Bell Company has a heavy array of counsel, including Messrs. James J. Storrow, James H. Choate, and Frederick P. Fish. The Standard Telephone Company is represented by General James McNaught and Myron Francis Hill, who have filed a brief on two points in behalf of the government. The Standard Company has no direct interest in the litigation, except as it affects the general use of telephones. It is said that a decision in favor of the government would tend to open the telephone to public use.

ROYAL E. HOUSE'S TELEPHONE OF 1868.

We illustrate in the cuts accompanying this article an object of much interest at the present day, when the telephone controversy has reached such proportions. It is an "electro-phonetic receiver," for use in telegraphy, invented by Royal E. House, and patented by him in letters patent No. 77,882, of 1868. This name was given it by the inventor. It is really a telephone.

A box of generally cubical form has one end closed with a diaphragm. Two slender bars of metal are attached to the diaphragm, one near the center, the other below it. These bars the inventor terms "limiters." The upper limiter limits the motion of an armature working over a magnet, so that it cannot come in contact with the poles. The other limiter prevents the armature from receding too far from the poles. The armature is pivoted at one end. Its inner and free end strikes the lower limiter; it is provided with an extension at the pivoted end that extends upward at right angles to the armature. The end of this arm bears against the upper limiter. An electro-magnet operates this armature, and is situated below it in the bottom of the box, and is connected to binding posts. A tension spring is used to adjust the pull of the pivoted armature away from the magnet.

The box has attached to it an ear trumpet or reflector that surrounds and extends outward from the diaphragm. Both limiters have adjusting screws. By these their freedom of movement may be varied. They can be adjusted so that they will be in contact one at a time only with the armature and arm. In this case a make and subsequent break, or corresponding and considerable changes in intensity of current, will produce two blows, the first on the upper limiter and the second on the lower. On the other hand, by screwing out the limiter screws to a fuller extent, this oscillation will be gradually reduced until no break is possible. Then makes and breaks of the current, or variations in intensity, will no longer produce blows, but a true telephonic sound on the diaphragm. If connected in circuit with a microphone transmitter, it will talk; and if two are connected having closed or ground circuit with battery, or if steel or cast iron magnet cores are used without any battery, they will act as receivers or transmitters, and form a complete telephonic system.

The apparatus is a perfect telephone, immeasurably superior to anything shown in the Bell patents of 1876 or 1877. The subject of Figs. 1 and 3 of our drawing is a reproduction of the model accompanying the patent, which model was destroyed in the Patent Office fire. Its sides in the elevation are broken away to show the interior construction. In the section it is shown in use as a receiver. The inventor's idea of his ear

Owing to the importance of the interests involved, the court granted nine hours for argument, which will continue the case for about three days. Judge R. S. Taylor, of Indianapolis, opened the argument on November 11 in behalf of the United States.

HISTORY OF THE SUIT.

The suit began February 2, 1893, when the Attorney-General filed a bill in equity against the American Bell Telephone Company and Emile Berliner, asking for the annulment of its patent. An alternative prayer was made that if the patent was not declared wholly null and void, it should be repealed in part, as the court determined proper. The Berliner application for patent was filed June 14, 1877, but the patent was not issued until fourteen years thereafter.

The main points raised by the United States are:

First—That the patent is void for illegal delay in its issue.

Second—That it is also void on the ground that a prior patent was granted upon the same application to the same applicant for the same invention.

The patent covers what is known as the microphone. The Attorney-General will set up that the Bell Telephone Company "designedly and with intent to thereby prolong its monopoly, delayed and prolonged the

pendency of the application for more than thirteen years after its control of the patent."

The Bell Telephone Company, in its answer, points out that the United States officials from the first have had entire control of the application for patent, and an express denial is made that there was any fraud, accident, or mistake. The company maintained that it had not designedly delayed the issue of the patent, with a view to extending its rights. It alleged that if there was any slowness, it was the act of the plaintiff itself, the United States.

The case was tried in the United States Circuit Court for the District of Massachusetts, where the contentions of the United States were sustained. The Bell Company appealed to the Circuit Court of Appeals, where the preceding decision was reversed on the ground that there was no evidence of dereliction of duty in the Patent Office, and the bill in equity of the United States was dismissed.

The case now comes before the Supreme Court on an appeal by the United States from the decision of the Court of Appeals. The same points first presented, as to delay, are still foremost, and the arguments of counsel on November 11 were directed mainly on these points.—Washington Post.

trumpet was that it should operate as a reflector of sound waves. He gives directions for constructing the interior surface of such form as to reflect the sound waves to a focus to be occupied by the listener's ear. For this end he directs the use of mirrors to reflect light, thus to determine experimentally the proper curve.

An interesting feature in this instrument is the way it lends itself to the use of any

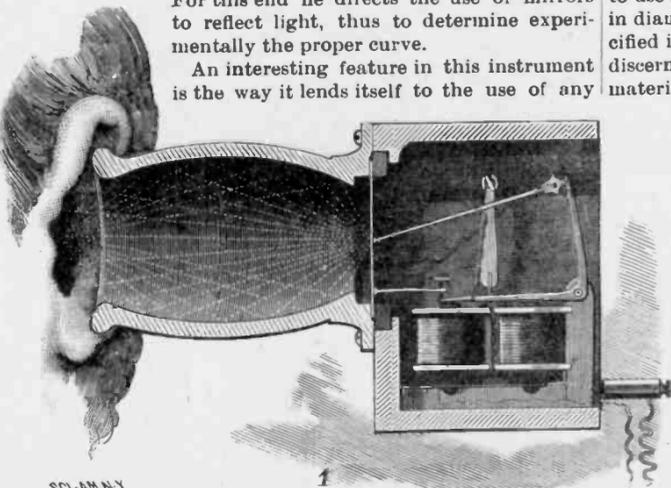
material for the diaphragm. In this respect it resembles strikingly Bell's instrument of the 1876 patent. In both of the systems, the armature is distinct from the sounding part. The inventor's idea was, if desired, to use large diaphragms. Some as large as eight inches in diameter have been constructed, this size being specified in the patent, and work very well. It is easy to discern in the instrument a great flexibility as to size, material, and other modifications, its system of adjustment is so complete.

The two figures described above are exact copies of the patent drawings. To adapt it to modern use some minor changes in proportions and material have been introduced, which are illustrated in Fig. 2. The frame or body is constructed of cast iron. The magnet cores are screwed into one arm of this frame, and bobbins are placed around them. An ebonite ear or mouth piece screws on the open end of the frame, and clamps the metallic diaphragm in position. This ear piece is made shorter than was the corresponding part of the model of the patent. A two branched limiter is substituted for the pair of separate limiters of the original. The result is a more compact instrument. A cover of brass or German silver incloses the principal working parts. Binding posts are attached

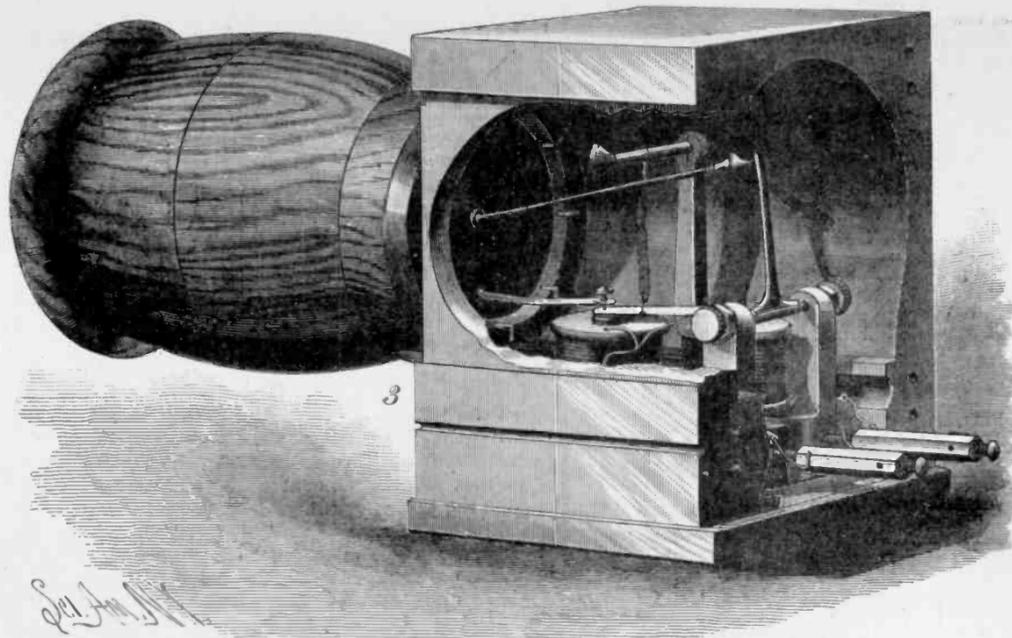
to one of the arms of the frame opposite to the magnets. Thus the frame forms the back piece of the magnet. The double limiter is provided with adjusting screws. This instrument is a serviceable, distinct telephone. We very recently were present at a trial of its capacity over a fair length of line. Four Leclanche cells were in circuit. The same instruments were used for receivers and transmitters. The action was perfect. There was no choice of sounds. Sibilants were as clearly transmitted as any other utterances. The writer in listening to them had several standards. He had listened to one of the first of the Bell telephones in 1877 or thereabouts, at the Stevens Institute in Hoboken. The other standards were reproductions of the Reis telephones, which he had also experimented with. The House telephone was far superior to either of these. Its work was fully as good as that of the Bell telephone and Blake transmitter of to-day. The modern instruments, it will be noticed, do not differ except in constructive detail from the device of the patent. They are a true reproduction of it. It is most interesting to place the name of the inventor of the first printing telegraph by the side of Reis, Edison, Bell, and Gray, as the inventor and constructor of one of the early telephones.

The Wallace Telephone Co., of 150 Broadway, N. Y., will soon be prepared to supply these instruments.

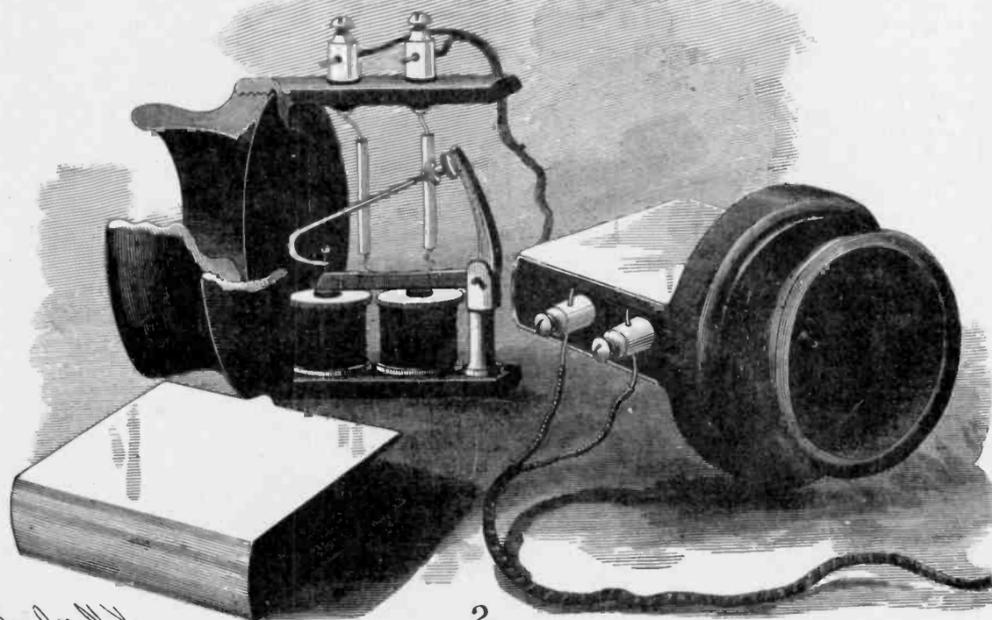
SCIENTIFIC AMERICAN,
November 13, 1886



ROYAL E. HOUSE'S TELEPHONE OF 1868.



ROYAL E. HOUSE'S TELEPHONE OF 1868.



HOUSE'S MODERN PHONETIC TELEGRAPH.

WILL ROGERS

Quotes from P. J. O'Brien's book, WILL ROGERS, 1935



Franklin D. Roosevelt, James Roosevelt, Senator McAdoo, and Chairman James A. Farley, enjoying Rogers' humor at the Democratic Convention in Chicago.



This cartoon by Stookie Allen appeared in a recent edition of the New York Daily Mirror. It attracted universal attention and admiration. The Smithsonian Institution at Washington requested of the artist the original drawing to be preserved among its archives. It is an excellent portrayal of the life of Will Rogers.

1935



Will Rogers as a cadet at the Kemper Military Academy at Boonville, Mo.



Back in 1904, Will Rogers made his first appearance on the New York stage as a gum-chewing, wisecracking cowboy.

ROGERS ON THE RADIO

"Nothing that makes people acquainted makes friends. If somebody invented something where nobody knew anything about anything, that would be really a forward step in world peace.

"You never argue with a woman unless you are married to her. Nations never fight unless they know each other. But what would we do without a radio? At any hour of the day or night, tune in and somebody is telling you how to live, how to vote, how to drink, how to think, when to wash your teeth, when to wash your hair, when to cut your whiskers, when to see your doctor, and how to see your doctor, and when to see your priest, and when to see your preacher, and how to put on fat, and how to take off fat, and how to make the skin stay white and how to make it stay black.

"Honest, no other nation in the world would stand for such advice as that. But we do, and we like it. So the only thing that can make us give up our radio is poverty. The old radio is the last thing moved out of the house when the sheriff comes in.

"It's an invention that has knocked nobody out of work and that gives work to many people. That is something you can't say for many inventions. So, as bad as it is, I don't know, it is the best invention I think that has ever been."

FROM A FINAL BROADCAST

For one of his final broadcasts over a nation-wide network, Will Rogers visited Sacramento, California's capital, at a time when the Legislature was about to be adjourned for lack of funds.

"They just get paid for so many days, and then the money runs out," laughed Will. "There ain't nothing will dampen a man's public spirit more than to cut off his salary, you know.

"A lot of States have tried burnin' down the Capitol to get 'em out, but this way that California's got is the best way."

Commenting on the possibility that Roosevelt might intervene, he continued, "He kind of hates to see any place close down, so I wouldn't be surprised if he don't keep this thing going right on through, you know—like he does the CCC camps. He does that to keep the boys off the streets, and he's liable to give 'em money out here just to keep these State Senators off the same places."

A recent change in California's marriage laws provided him with an opportunity to create a good laugh.

"You know, when you got married in this State—you used to give three days' notice.

"That was longer than most of the marriages in California was lasting.

"So they did away with that. So now you don't have to file anything at all. In fact, you don't have to give your right name, according to this new law. You just pay a small amusement tax, that's all."

The California Legislature had voted to allow the Indians liquor, and Rogers, always proud of his Indian blood, was much amused.

"They passed one here to give the Indians their liquor. I don't mean you actually give 'em liquor but they're allowed to git it if they can. They're allowed to buy it.

"One old California cow-puncher from some county put that over. He told them we ought to give the Indians something back—the land or the liquor—so they compromised on the liquor. We kept the land and gave 'em the liquor. Lo, the poor Indian! The Indian, he's a ward to the Government, but we all are now. Everybody's an Indian."

That led to the latest news about Government relief grants to the States and Rogers congratulated Texas on drawing the "Grand Prize."

"Twenty-nine millions dollars last week—Texas did; New York got next prize of \$24,000,000. Pennsylvania got third with \$23,000,000. And they was all Republicans. Now I think that speaks awfully well of the Democrats. They're not going to let even a Republican starve."



TRADE NAME: "Fada."
 MODEL: Neutrodyne; built-in loud speaker.
 TYPE: Neutrodyne; two tuned radio, detector and two audio.
 TUBES: Five.
 BATTERIES: 6-volt "A," 60 to 90 "B." Not furnished.
 CONTROLS: Three.
 AERIAL: Outside.
 PRICE: \$220.00 without accessories.
 MANUFACTURER'S NAME: F. A. D. Andrea, Inc.

TRADE NAME: "Fada."
 MODEL: Victor Console.
 TYPE: Neutrodyne; two tuned radio, detector and two audio for installation in Victor Console Model Phonograph No. V.V. 215.
 TUBES: Five.
 BATTERIES: 6-volt "A," 60 to 90-volt "B."
 CONTROLS: Three.
 AERIAL: Outside.
 PRICE: \$110.00 without accessories.
 MANUFACTURER'S NAME: F. A. D. Andrea, Inc.



TRADE NAME: "Farrand Godley."
 MODEL: Single 9.
 TYPE: Five-stage neutralized tuned radio frequency, detector and three audio.
 TUBES: Nine.
 BATTERIES: "A," 6 volts; "B," 90 and 22½.
 CONTROLS: One.
 AERIAL: Loop inside or outside.
 PRICE: \$195.00 without accessories.
 MANUFACTURER'S NAME: Farrand Mfg. Company



TRADE NAME: "Farrand Godley."
 MODEL: Single 9 with built-in loud speaker, De Luxe cabinet.
 TYPE: Five-stage neutralized tuned radio frequency, detector and three audio.
 TUBES: Nine.
 BATTERIES: "A," 6 volts; "B," 90 and 22½.
 CONTROLS: One.
 AERIAL: Loop inside or outside.
 PRICE: \$375.00 without accessories.
 MANUFACTURER'S NAME: Farrand Mfg. Company.

TRADE NAME: Federal.
 MODEL: 110.
 TYPE: One radio, detector and one audio.
 TUBES: Three.
 BATTERIES: None furnished.
 CONTROLS: Three.
 AERIAL: Outdoor.
 PRICE: \$105.00 without accessories.
 MANUFACTURER'S NAME: Federal Telephone & Telegraph Corp.



TRADE NAME: Federal.
 MODEL: Type 141.
 TYPE: Two transformer coupled radio, detector and two audio.
 TUBES: Five.
 BATTERIES: None furnished.
 CONTROLS: Two.
 AERIAL: Outdoor or indoor.
 PRICE: \$150.00 without accessories.
 MANUFACTURER'S NAME: Federal Telephone & Telegraph Corp.

TRADE NAME: Federal.
 MODEL: 102 portable.
 TYPE: One transformer radio, detector and two audio.
 TUBES: Four, dry cell type.
 BATTERIES: None furnished.
 CONTROLS: One.
 AERIAL: Outdoor.
 PRICE: \$140.00 without accessories.
 MANUFACTURER'S NAME: Federal Telephone & Telegraph Corp.



TRADE NAME: Federal.
 MODEL: 161.
 TYPE: Three transformer coupled radio, detector and three audio with built-in loud speaker.
 TUBES: Six.
 BATTERIES: None furnished.
 CONTROLS: Three main.
 AERIAL: Outdoor or loop.
 PRICE: \$464.00 without accessories.
 MANUFACTURER'S NAME: Federal Telephone & Telegraph Corp.

TRADE NAME: Federal.
 MODEL: 61.
 TYPE: Three stages transformer coupled radio, detector and two audio.
 TUBES: Six.
 BATTERIES: None furnished.
 CONTROLS: Four.
 AERIAL: Outdoor or loop.
 PRICE: \$223.00 without accessories.
 MANUFACTURER'S NAME: Federal Telephone & Telegraph Corp.



TRADE NAME: "Fada."
 MODEL: Neutro Receiver Grand.
 TYPE: Neutrodyne; two tuned radio, detector and two audio.
 TUBES: Five.
 BATTERIES: 6-volt "A," 60 to 90-volt "B."
 CONTROLS: Three.
 AERIAL: Outside.
 PRICE: \$210.00 without accessories.
 MANUFACTURER'S NAME: F. A. D. Andrea, Inc.



TRADE NAME: "Farrand Godley."
 MODEL: Single 9 in cabinet.
 TYPE: Five-stage neutralized tuned radio frequency, detector and three audio.
 TUBES: Nine.
 BATTERIES: "A," 6 volts; "B," 90 and 22½.
 CONTROLS: One.
 AERIAL: Loop inside or outside.
 PRICE: \$235.00 without accessories.
 MANUFACTURER'S NAME: Farrand Mfg. Company.



TRADE NAME: "Fada."
 MODEL: Neutroreceiver.
 TYPE: Neutrodyne; two tuned radio, detector and two audio.
 TUBES: Five.
 BATTERIES: 6-volt "A," 60 to 90-volt "B."
 CONTROLS: Three.
 AERIAL: Outside.
 PRICE: \$160.00 without accessories.
 MANUFACTURER'S NAME: F. A. D. Andrea, Inc.

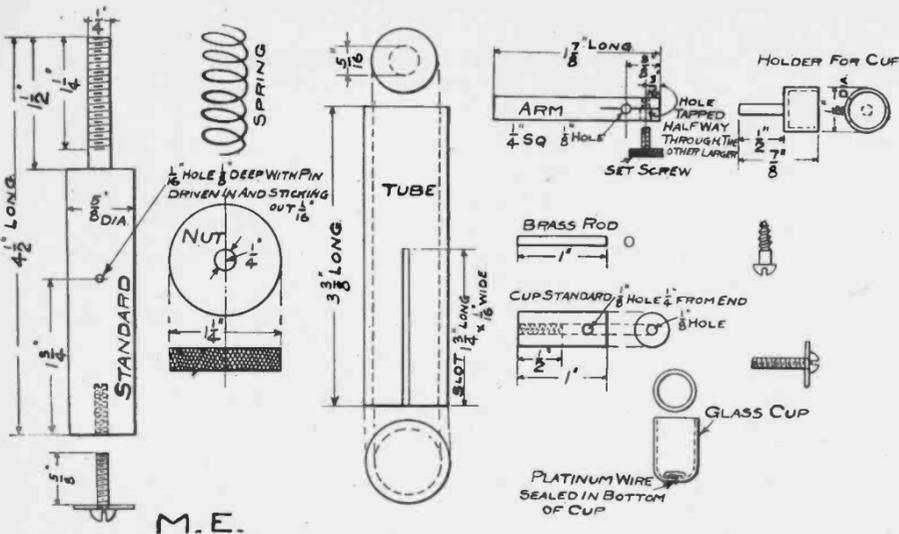


FOR YOUR COLLECTION OR MUSEUM

Bare Point Electrolytic Detector

By H. H. Holden.

MODERN ELECTRICS DECEMBER, 1908.



While there are very many excellent detectors, it is acknowledged by most wireless men, especially among operators, that the electrolytic detector is still ahead for sensitiveness, the ease with which adjustment can be kept is alone worth mention.

There are several types of these, the Fessenden, which consists of a very fine platinum wire dipping into a small cup having a platinum wire of larger size in the bottom and containing a dilute solution of either nitric or sulphuric acid.

Then there is the Schoomaker type consisting of a fine platinum point sealed in a glass tube and having a piece of zinc for the other electrode, these being both immersed in a dilute solution of sulphuric acid, and the Stone type, which consists of two small glass tubes, one having a fine wire sealed in one end and extending slightly upward above where it is sealed and a piece of platinum foil sealed into the other tube, also extending slightly upward, the connections being made by filling the tubes with mercury and dropping a wire down into them, the two tubes are pushed through a stopple that will fit snugly into a small vial of dilute acid.

The last two are very sensitive, and need very little attention, except when there is a powerful station nearby transmitting, or when the atmospheric or static electricity is very bad; this is very apt to burn the point down, which will necessitate the rubbing of it over a fine stone until the wire is reached again.

A glass point electrolytic is very desirable for use on the water where there is always vibration of some kind, either from the engines which propel the ship or from the heavy seas, where the bare point would give less satisfactoriness owing to the motion of the liquid in the cup.

The Fessenden bare point type of detector is much favored by the Government, however, in their land stations, as whenever the point gets burned off all that is necessary is to lower the point until it touches the liquid again.

A good bare point detector can be made by obtaining a piece of round brass rod, 4 1-2 inches long, and 5-8 of an inch in diameter; turn one end down to 1-2 inch in diameter, and 1 1-2 inches long, threading it a distance of 1 1-4 inches from the end; drill a hole in the other end half an inch deep, of

any convenient size, and tap same out, making a screw 5-8 inch long to fit it. This is to be the standard.

Make a large nut of brass 1 1-4 inch in diameter, and 1-4 inch thick, drilling and tapping it to fit the threaded end of the standard.

Get a piece of brass tubing 3 3-8 inches long, which will just slide over the standard without binding, cut a slot in it 1 3-4 inches long and 1-16 inch wide.

Cut out a round piece of heavy sheet brass to fit into the end that has not been slotted, and solder it, then drill a hole through the center of it 9-16 inch in diameter to allow the threaded end of the standard to slide through without binding.

In the standard 1 3-4 inches from the bottom drill a 1-16 inch hole 1-8 inch deep, and drive into it a short pin, allowing about 1-16th inch to stick out. This piece fits in the slot of the brass tubing.

Procure a piece of square brass rod 1-4 inch in diameter and 1 7-8 inches long, and drill a 1-8 inch hole through it 3-8 inch from one end; saw into and about 3-8 inch by the hole so as to make it springy, then through the other way drill a small hole 3-16 inch from the end, and tap it about half way (from the outside to the slot), ream out the other side and get a screw to fit it; this will press the ends together more or less, and hold the piece of brass wire onto which the fine platinum wire is to be soldered. This wire should be about one inch long.

Now take a 5-8 inch round brass rod one inch long, drill 1-8 inch lengthwise through the center of it, and tap it out half way in from one end, then drill a 1-8 inch hole 1-4 inch from the end not tapped, having it run into the hole running the other way; tap this latter one out and fit a screw to it; also fit a screw to the other thread 5-8 inch long. This will be the standard for the cup.

Next take a piece of round brass rod 1-2 inch in diameter, 7-8 inch long; turn down 1-2 inch of it small enough to fit the hole in the standard on which it is held, then turn the other end out so as to make a thin cup of it.

The easiest way to make the glass

cup for the electrolyte will be to get a small pill bottle that will set inside of the brass cup and still leave a little space between; cut it off with a file so that it will be 1-2 inch long and seal a piece of about No. 20 platinum wire into the bottom of it, leaving 1-16 inch sticking out on the outside, and making a small curl in the end which is inside the cup, so as to have about 3-8 of an inch of wire inside the cup.

Now put a few drops of mercury in the brass cup (just enough to cover the bottom), and set the glass cup down into it. Next run some sealing wax between them and the brass cup can now be given a heavy coat of black asphaltum varnish to keep it from getting corroded by the acid.

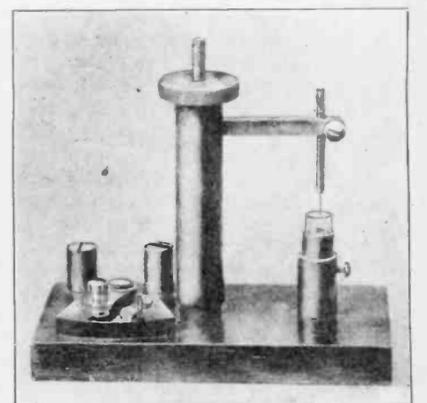


Fig. 1

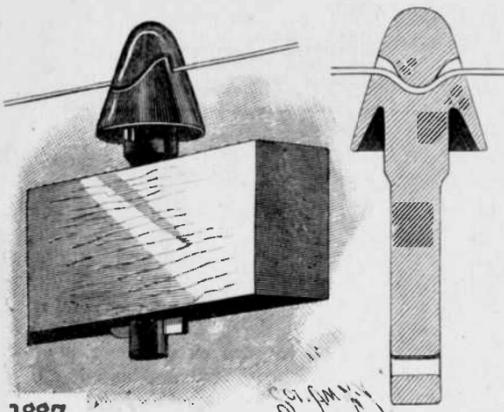
Get a small coil spring that will go inside the tube, having tension enough to push the tube up the whole length of the threaded end of the standard.

Now mount the parts on a piece of board 5 1-2 inches long by 3 inches wide and 1-2 inch thick, placing two binding posts at one end to make connections with.

Fig. 1 shows the complete instrument, and Fig. 2 the different parts.

Note that one of our esteemed contemporaries prints different illustrations of hammers. Shouldn't think it was necessary to give the hint. There is knocking enough without the hammers—"FIPS."

M. E., 12-12-08



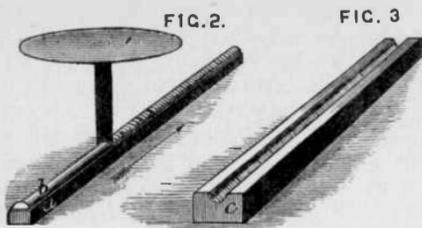
1887

RUGER'S INSULATOR FOR ELECTRIC WIRES.

PHONOGRAPH

to a certain word or sentence, by which it was originally produced. The method is as follows: The upper surface of a rectangular prism of glass, or other hard and rigid material, is thickly coated with stearine wax, which is then scraped into a convex form, as shown in the diagram, Fig. 2, in which *a* represents the glass bar and *b* the convex coating of stearine. This bar is then fixed into a simple phonographic instrument, which, by means of a screw or other mechanical contrivance, traverses it at a suitable speed below a diaphragm. This diaphragm is rigidly held around its circumference by an annular framework (not shown in the diagram), and is in every respect exactly similar to the diaphragm of an ordinary phonograph. To the center of this diaphragm is attached a thin flat plate, whose lower end is cut out to a concave curve to fit the convex surface of the stearine, *b*. When all is properly adjusted, and the temperature is so arranged as to give to the stearine surface the proper degree of hardness to insure the best results, the handle of the instrument is turned, and at the same time words are spoken against the diaphragm, which immediately set up in it vibrations, which are communicated to the plate or style. While this is moving up and down, following the vibrations of the diaphragm caused by the voice, the stearine coating of the bar, *a b*, is steadily drawn in the direction of the arrow below the vibrating bar, receiving from it a phonogram similar to that produced on the tinfoil of an ordinary phonograph.

The stearine bar is then coated with a fine surface of plumbago, so as to give to it an electrically conducting surface, and it is then electro-plated with copper by the ordinary process. Out of the copper coating so formed the stearine is removed, and a rigid backing of lead or other metal having been run over the outside convex surface of the copper,



A SIXPENNY PHONOGRAPH.

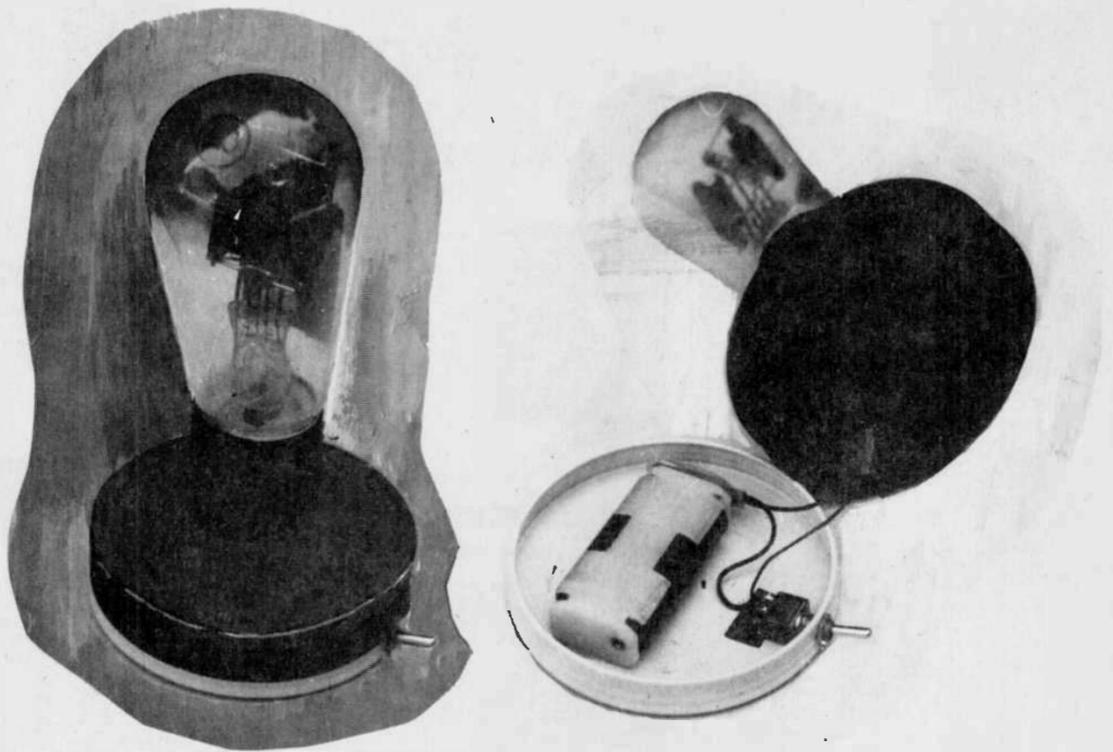
a firm copper lined matrix or mould is formed, the whole presenting the appearance shown in Fig. 3, and consisting of a rectangular block having along the center of one of its sides a semi-cylindrical groove, *c*, of copper, which bears upon its surface certain raised striations corresponding to the depressions which were made by the diaphragm on the surface of the stearine. Into this groove is laid a piece of lead wire of about three or four millimeters in diameter, and the two being put into a press and squeezed together, the surface of the lead wire receives a permanent impression, which is an exact reproduction of the original impression made upon the stearine bar. From one copper matrix a very large number of lead impressions may be made, and we are told that the whole process can be gone through, and lead wires, each containing the record of a short sentence, can be made and sold with a profit for one halfpenny each.

We have had an opportunity of testing this simple little instrument, and the words come out of it with remarkable distinctness, though of course with but feeble power; and among the following words, all of which we have heard it utter, some were unmistakably clear: "Mon cher ami," "Louis Quatorze," "Victor Hugo," "La République," "Octavie," "Bonjour," "Lambrigtot," "Misérable," and "Miracle," and it is a curious fact that while in the phonograph the words "Phonograph," and "How do you do?" come out with exceptional distinctness, so in this instrument the words "Bonjour," and the name of the inventor, "Lambrigtot," are the clearest of those we have heard.

It is only fair to Mr. Edison, the inventor of the phonograph itself, to point out that the plan of producing a phonogram on a stearine surface, and afterwards reproducing it in copper by the process of electrolysis, was suggested by him long ago, but we do not understand that M. Lambrigtot claims any novelty for that portion of the invention, but more especially for having produced a little instrument at the cost of a few pence, which can demonstrate the action of the phonograph and illustrate some of the most beautiful phenomena connected with the science of acoustics.

The sixpenny phonograph described as above in *Engineering*, is a novel affair, but we doubt if it is, after all, as simple and effective as one described and illustrated in our columns some eight months since. Page 118, Vol. 29.

SCIENTIFIC AMERICAN, July 7, 1879

**How To Construct A Night Light Or Tube Display From DUD Tubes**

by Richard M. Cane

Most radio collectors accumulate a good amount of dud tubes after a while, which usually get thrown out or take up space. Here is a use for them, especially the pear shaped ones. Construct this tube display or night light, they make wonderful gifts or trading material, for fellow collectors. They are also an interesting way to display the old tubes, especially for tube collectors.

Start by selecting a tube. Twist the base to see if it is loose, if not try another. I have found that most of the bases are loose, because the cement has dried out with age. Tap the base gently and twist it back and forth several times to loosen it more. Remove the solder from the base pins and remove the base. Make sure the pins are clear of solder. Run a 6-32 tap through one of the larger pins and a 4-40 tap through one of the smaller pins. you do not have to tap the holes if you can find small self-tapping screws of the right size. The wires from the bulb will come through the other two pins.

For a mounting base, I use the metal cans from electrical tape, but you may use any item you think will make a suitable base. Now center the tube base on the top of the can and run a small nail through each of the pins to mark off the base for drilling. Drill three of the holes with a small drill approximately a number 33. For the hole which the 6-32 screw will go use a number 28. For a switch use a miniature toggle. Mount it in the side of the bottom part of the tape can. You can also mount the switch on the top of the can to simplify things. Cut a notch in the side, of the top part of the can so it will fit over the switch. Spray paint the top of the can any color you like. I use flat black. Roughen the surface of the can with sandpaper or steel wool before painting. The bottom of the can is usually white and does not have to be painted.

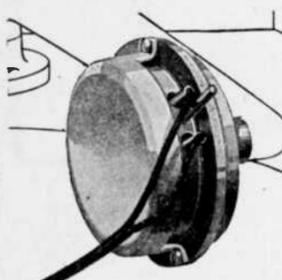
To prepare the tube, carefully break off the thin exhaust tube with a needle nose pliers, allowing you to insert a pilot lamp in the bottom of the tube. Also remove the four wires by twisting back and forth with the pliers. Select a small bulb. I use a PR-2 or 47. With a PR-2 you will use two penlight cells, for a 47 a 9 volt transistor battery. The PR-2 lamp will give off much more light.

Now solder pigtail leads, about ten inches long to the bulb, using thin insulated wire, so it will fit through the base pins. Mount the bulb in the tube using GE Silastic Compound (liquid rubber). Use white or black. Place the bulb in the tube, and squeez some compound around the outer edge of the tube, covering the bottom of the bulb. The Silastic will get firm in about ten minutes, dry in one hour, and cure in twenty four hours.

After it has dried run the wires from the bulb through the untapped base pins. Put some Silastic around the bottom of the tube to hold it in the base. With Silastic you can always remove the tube from it's base if you ever have to change the bulb. When it has cured, mount the tube to the mounting base using one 6-32 screw and one 4-40 by 1/4 inch long.

Now wire the bulb to the battery and switch. Place the top of the can on the bottom part and your complete. You can electrify it by using a larger base and a small filament transformer. You can even use a flasher circuit in the base to flash the bulb on and off, if you wish it to be a display. Just use your imagination, and see what you can come up with.

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MISC.

A BRASSPOUNDER from DOWN UNDER collects MORSE KEYS as a hobby and would like to hear from anyone with a similar interest. He is looking for 'spark' keys or early marine but seeks all types and in any condition. Will swap or buy. Please write to Alan Shawmith, VK4SS., 35 Whynot St., West End, Brisbane, Q 4101 AUSTRALIA.

GOT AN OLD RADIO? Want it repaired or restored? Write for free estimate to fix your Crystal set or 1940 Superhet. Bob Lucas, 9014 Mahoning, Houston TX 77036.

FOR SALE OR TRADE

SWAP ONLY: Lot of 11 single-side Victor records plus 5 doubles, mostly popular and operatic songs, good visual condition. 45 phonograph ads from 1905-1920 magazines. Swap for 1920's radio magazines and literature. First reasonable offer takes either lot. Alan S. Douglas, Box 225, Pocasset, Mass. 02559.

FOR SALE: Collector is moving. Selling radios, tubes, speakers, parts, radio magazines, books, Riders Manuals, etc. List available end of July. Send 50 cents & SASE. Frank Krantz, 714 White Horse Pike, Stratford, N. J. 08084.

PROFESSIONAL CW operators, retired or active, commercial, Military, Gov't, police, etc., invited to join Society of Wireless Pioneers, W7GAQ/6, Box 530, Santa Rosa, CA 95402.

WD-11 Adaptors use UX 199, 120 no wiring changes. Radiola III's battery hookup included \$5.25 pp. Keith Parry, 17557 Horace St., Granada Hills, CA 91344.

FOR SALE: RCA original service manuals Vol. I 1933-1937, Vol II 1936-1942, 1931-1932 RCA Service notes. Write for price, SASE. Sneed Greever, 1820 N. Harwood, Dallas TX 75201.

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OUR MAIN PURPOSE

as a club is to bring together collectors and to promote interest in early radio so bring along a friend and introduce him or her to us and the fascination of old radios. Application forms for membership will be available.

FLAME PROOF telegraph key, J-7-A, SASE for further information. Walt's Emporium, P. O. Box 19406, Dallas TX 75219.

FOR SALE: Display your Radio's Schematic along with it. The perfect compliment of every set, \$1.00 each. Cecil Bounds, Pine Springs Route, Carlsbad, N. M. 88220.

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WANTED

WANTED: Black cast part for rear of tone arm for Victor VV 4-20 Victrola, also orthophonic reproducer parts must be good condition, no cracks. If reasonable will take complete arm & reproducer assembly, if not available separately. Also want old 78 RPM records from 1925-1935, Country and Blues. M. V. Blackard Rt 2, Box 38, Trinity, Ala. 35673.

WANTED: Crystal Radio Receiver Schematics from early 1920's including details of construction, wire sizes, etc., also Tesla coil, Jacob's Ladder, etc. George Seidel, 1201 Powell St., Norristown PA 19401, Pho; 215-275-6333.

WANTED: Federal Horn Speaker, headset and schematic drawing, and/or sales literature to match my Federal type 147 Radio. The last audio stage is 371A tube. James J. McGrath, 2 Centerview Drive, West Seneca, N. Y. 14224.

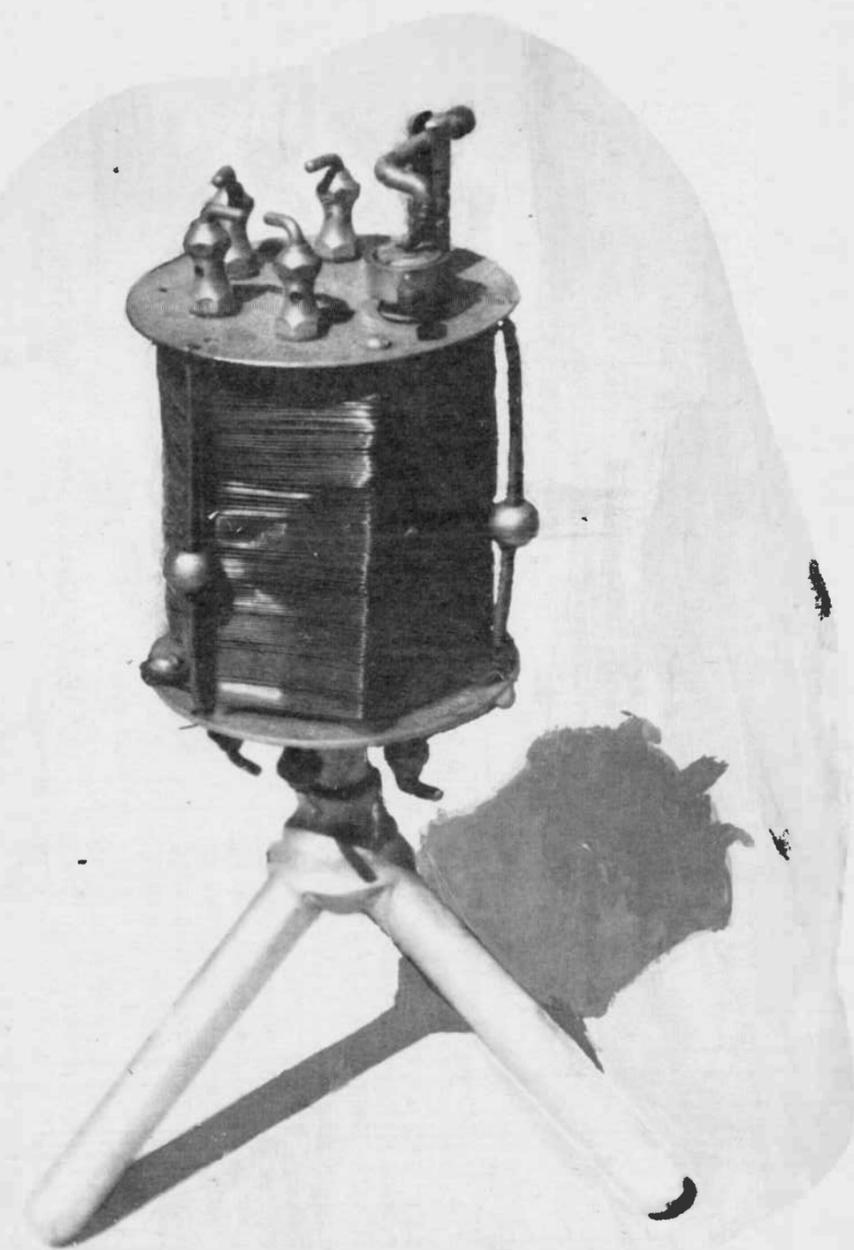
WANTED to buy 1931-32 scanning disc television receiver Televisor Viseonnette by Baird Jenkins, also advertising material, catalogues, photographs. Darcy Brownrigg, Chelsea, Quebec, Canada.

WANTED: Cover for Radiola 33, good condition. Leland Grans, Faulkton, S. D. 57438.

WANTED: December 1926 issue Citizen's Radio Callbook, need not be perfect. Edward Crosby, 441 Cedar Ave., East Greenwich, R. I. 02818.

THE HORN SPEAKER

June 1973



Bearcat Crystal Set 1923

BOOKS

THE FABULOUS PHONOGRAPH

From Edison to Stereo

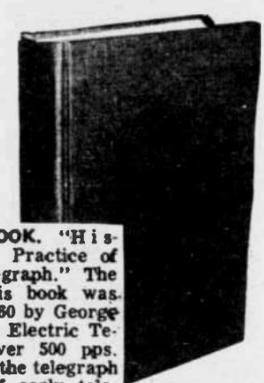
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