

# THE HORN SPEAKER

## off the Record

TWO TO THREE THOUSAND HORNS DUMPED

According to an interview with Clarence A. Ferguson conducted by Leo Kimmett during October 1972, the Edison's plant at the time of its closure dumped record moulds, crated Amberolas, and an abundance of equipment in the "meadows" (similar to swamp) of New Jersey. Mr. Ferguson said that he saw two or three thousand disc horns that were thrown away. He added that Thomas Edison was not aware the dumpings due to sickness.

The interview between Ferguson and Kimmett is contained in a 26-page booklet named THE EDISON PHONOGRAPH COMPANY AND RELATED OPINIONS OF Clarence A. Ferguson.

THE JOHN EDWARDS MEMORIAL FOUNDATION, INC.

For record collectors and historians interested in the serious study, public recognition and preservation of that form of American folk music commonly referred to as country, western, country-western, hillbilly, bluegrass, mountain, cowboy, old time and sacred" and the study and preservation of parallel material referred to as race, blues and gospel. For more information write: The John Edwards Memorial Foundation, Inc. at the Folklore and Mythology Center, University of California, Los Angeles, California 90024.

Garry B. Schneider  
6971 Pearl Rd. Apt. 4  
Cleveland, Ohio 44130

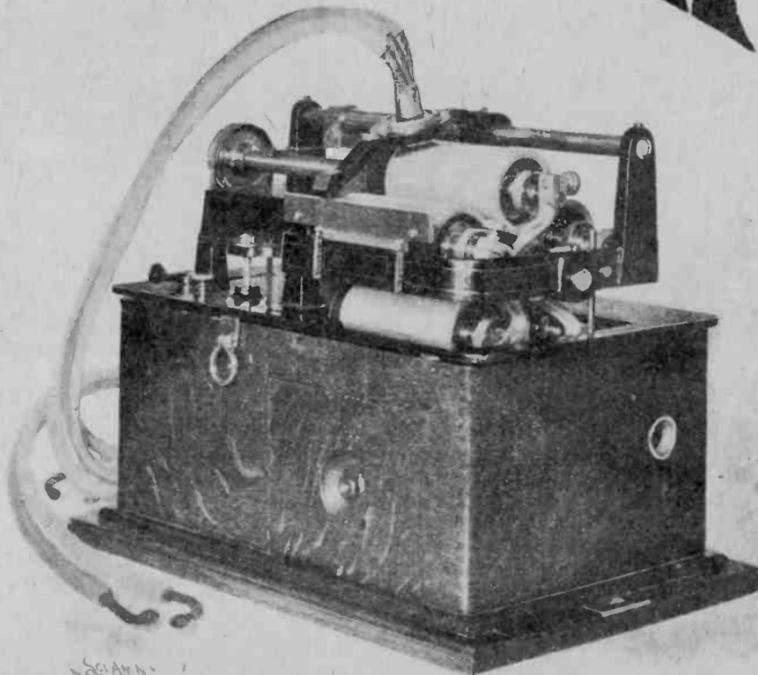
### MULTIPLEX PHONOGRAPH.

The phonograph, wonderful as it is, has been rendered more useful and more enjoyable to everybody, and at the same time more profitable to exhibitors, by an exceedingly simple improvement recently completed and patented by Mr. George W. Moore, of Atlanta, Ga.

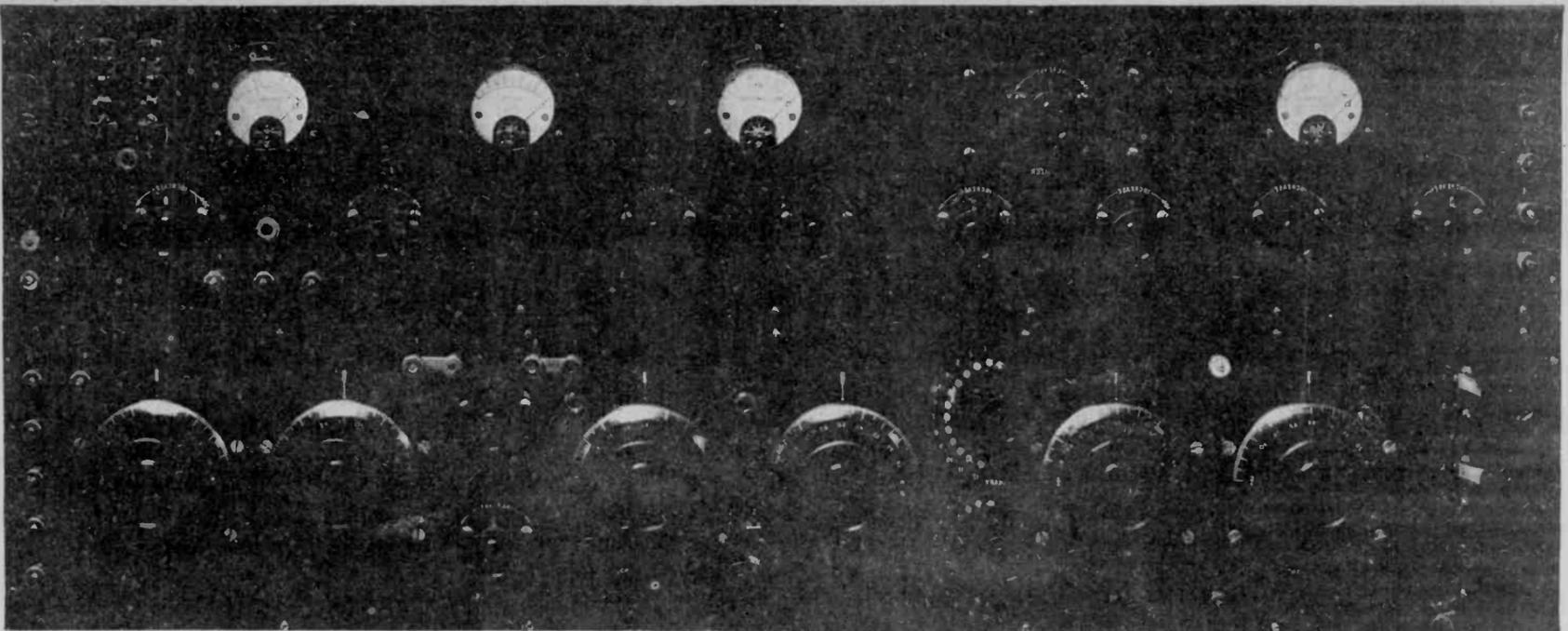
This improved attachment increases the capacity of the machine fivefold, the construction being such that five cylinders are held in position for instant use. The improvement does not in any way affect the working parts of the machine.

The attachment has a frame holding a screw-threaded mandrel, which is driven by a belt connection with the spring motor contained in the case which forms the base of the machine. In the space usually occupied by the record cylinder is placed a reel in which are loosely journaled five mandrels, each having at the end adjoining the screw a half clutch and a conical cavity. The clutch fits its counterpart on the end of the screw, and the conical cavity re-

Continued on page 4



THE MULTIPLE PHONOGRAPH.



Model L-Super-Heterodyne, containing six stages of R. F. Amplification and one audio amplifier, two detectors and oscillator.

### EXPERIMENTERS INFORMATION SERVICE

The 1922 catalog of E. I. S. features the Armstrong super-heterodyne receiver built from EIS blue print and drawings 30067-75. How-

ever, the name Armstrong is not used in naming the similar and later Model L featured in the 1925 book MODERN RADIO RECEPTION by Charles R. Seutz. This 1925 book was more or less

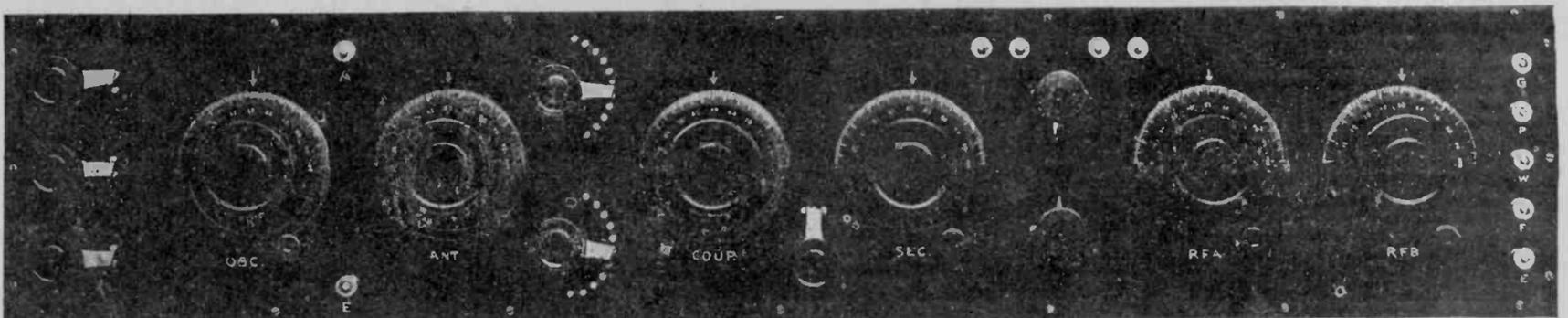
published to prove that C. R. Leutz or EIS "was solely responsible for the successful introduction of the Super-Heterodyne System to Broadcast listeners." The 1922 catalog promotes the sale of super-

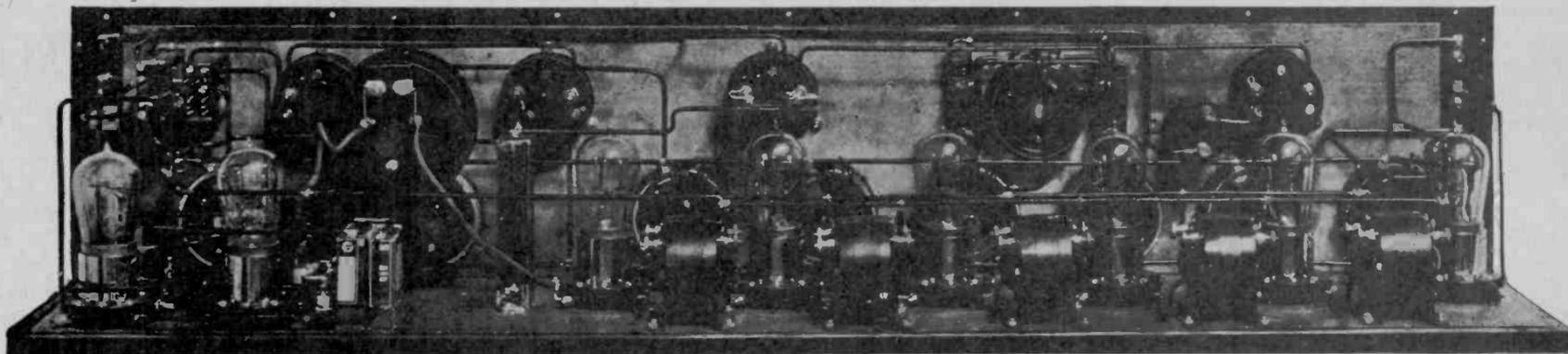
heterodynes to broadcast listeners as well as all other buyers of radios. In 1924 R. C. A. manufactured and sold to home broadcast listeners the Radiola super-heterodyne radio, well known to experienced

radio collectors. Since R. C. A. was licensed under the Feddender and Armstrong patents, it had full rights to manufacture and sell completed super-heterodyne sets for

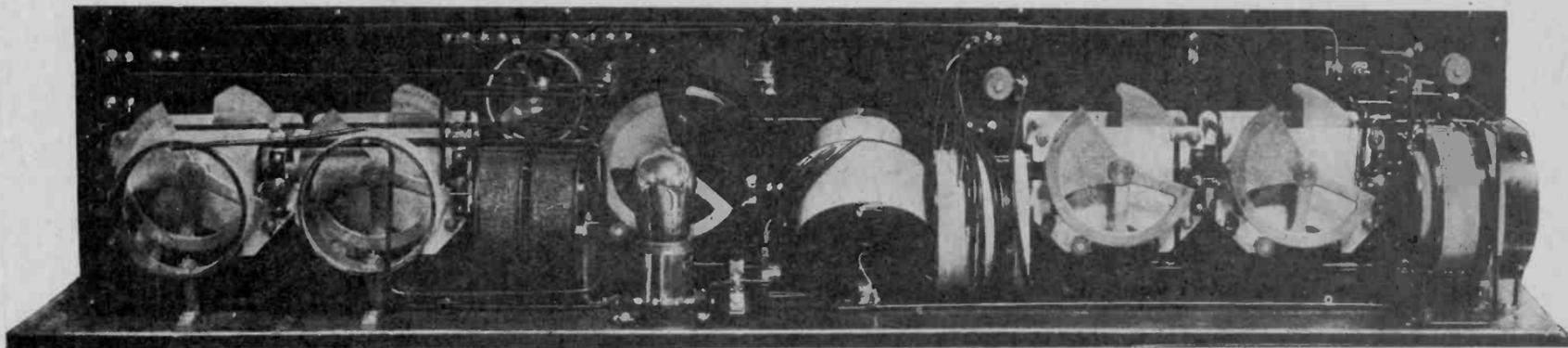
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### ARMSTRONG SUPER HETRODYNE RECEIVER





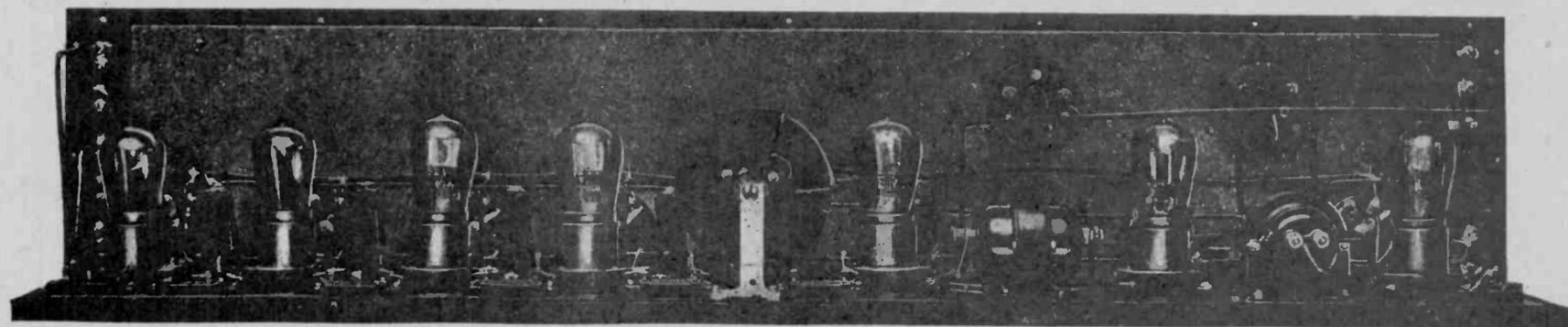
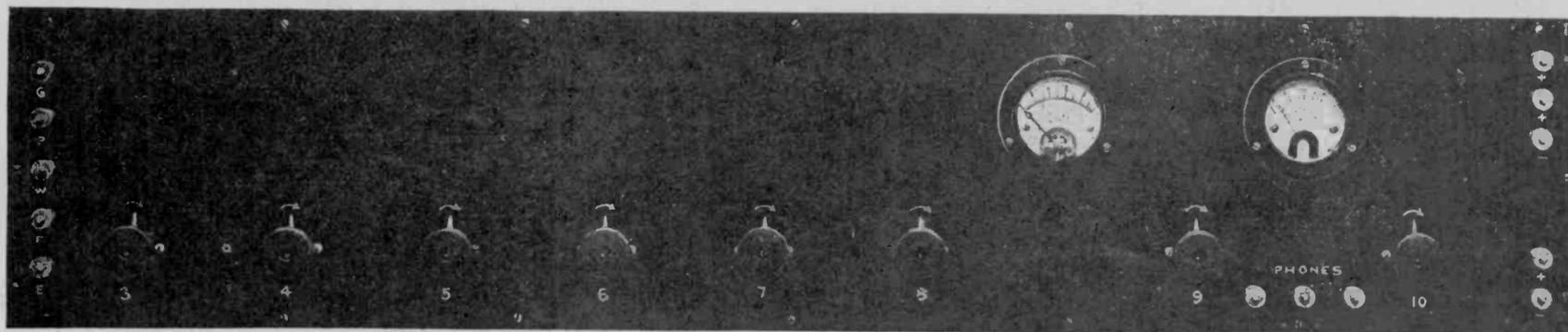
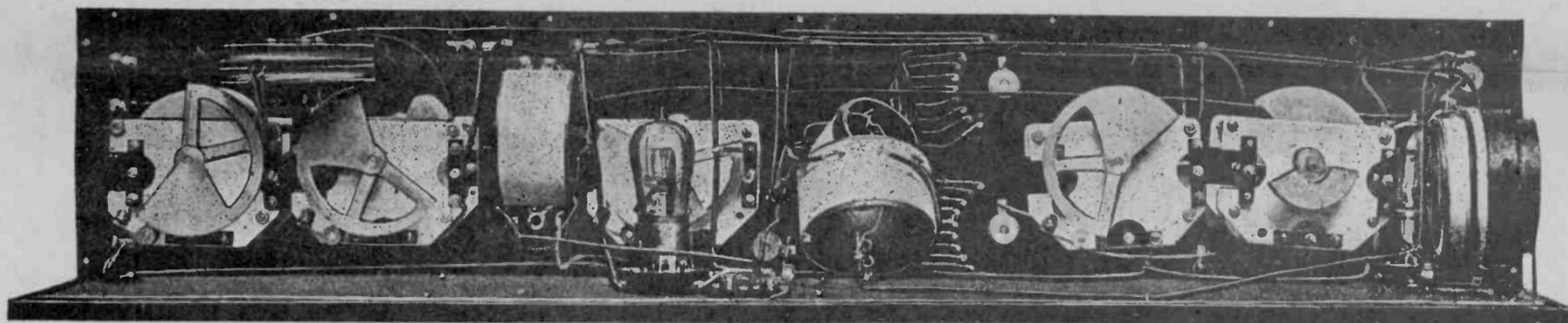
Model L Super-Heterodyne, rear view amplifier section. In the latest design of this type receiver, it is recommended that the Radio Frequency Transformers each be individually shielded in iron cases. The output transformer should be contained in a copper shielding case. The audio transformers should be shielded in iron cases. The interior surfaces of the cabinet and rear of panel should be shielded with 10-ounce copper.



Model L Super Heterodyne, rear view Receiver Section. Component parts, right to left, Oscillator Coupler, Oscillator Condenser, Antenna Tuning Condenser, Primary Load Coil, Antenna Coupler, Secondary Tuning Condenser, Detector Tube, Input Coupler, Secondary Load Inductances and Input Tuning Condensers. Oscillator Tube is located in back of the Oscillator Coupler. In the latest design of this type receiver, it is recommended that all the component parts be individually shielded, as well as the interior surfaces of the cabinet and back of panel.

Above, continued from the front page are the rear views of the E. I. S. Model L.

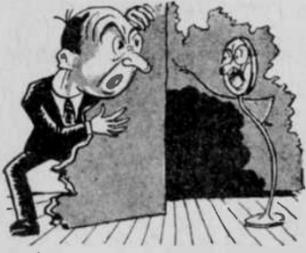
Below, continued from the front page is a rear view of the Armstrong Receiver followed by the amplifier and its rear view.



**10 TUBE SUPER-HETRODYNE RECEIVER**  
**PRICE LIST OF PARTS**  
 Drawings No. 30067-75 \$10.00

|   |       |        |  |       |       |   |       |          |
|---|-------|--------|--|-------|-------|---|-------|----------|
| 2 Bias Batteries                            | ..... | \$ .90 | 1 Secondary Load Coil—Complete   | ..... | 2.25  | 2 Sets Copper Shieldings                              | ..... | 10.50    |
| 1 Condenser .001 MF                         | ..... | .45    | 6 4" Dials & Knobs 2 1/2"  | ..... | 9.00  | 100 ft. Wire No. 12 Tinned Copper                     | ..... | 2.00     |
| 10 General Radio Improved Sockets, Type 156 | ..... | 12.50  | 5 General Radio Switches, Type 139A                                      | ..... | 4.75  | 100 ft. Empire Tubing, Black Impregnated              | ..... | 11.00    |
| 10 Paragon Rheostats No. 25                 | ..... | 15.00  | 4 Special Variable Condensers .001 MF G. R. 239 with special long shafts | ..... | 64.00 | Drilling Panels                                       | ..... | 4.00     |
| 8 Lavite Output Resistors, 48,000 OHMS      | ..... | 20.00  | 1 Special EIS Condenser .00027   | ..... | 4.75  | Miscellaneous Nuts & Screws                           | ..... | 3.03     |
| 2 Transformers, Radio Corp. U V 712         | ..... | 14.00  | 27 Binding Posts GR 138X   | ..... | 4.05  | 1 Radio Frequency Transformer—Complete                | ..... | 6.00     |
| 1 Radio Frequency Coupler—Complete          | ..... | 6.00   | 33 Contact Points GR 138D  | ..... | 1.32  | 4 Lavite Resistor Mountings, 2 Resistors per Mounting | ..... | 2.00     |
| 1 Oscillator Coupler—Complete               | ..... | 6.00   | 2 Formica Panels 40 x 8 x 1/4  | ..... | 19.20 | 1 Potentiometer R. C. Type PR536                      | ..... | 2.00     |
| 1 180° Coupler—Complete                     | ..... | 6.00   | 2 Meters—Flush Type, Jewell No. 53 Black                                 | ..... | 15.00 | 2 Condensers .00025 35c. each                         | ..... | .70      |
| 1 Primary Load Coil—Complete                | ..... | 2.60   | 5 Grid Condensers Dubilier .002  | ..... | 5.25  | 1 Wavechange Switch G.R.                              | ..... | 2.10     |
|   |       |        | 4 By-Pass Condensers Dubilier No. 600, .005 MF                           | ..... | 4.00  | 4 Closed Jacks, 1 open                                | ..... | 4.45     |
|   |       |        | 7 Grid Leaks & Mounts RC Type PR 523, JX543                              | ..... | 8.75  |   |       |          |
|   |       |        | 2 Mexican Mahogany Cabinets, Piano Finish, Varnished                     | ..... | 28.00 |   |       |          |
|   |       |        |  |       |       |   |       | \$295.00 |

Engraving and Graining \$18.20 extra.



# don't peek behind the mike

Disillusionment Awaits the Listener  
Whose Curiosity Leads Him Into  
a Radio Broadcasting Studio

By  
Dale  
Wimbrow

Illustrated by J. P. Ronan

RADIO NEWS FOR MARCH, 1930



THERE seems to be a general craving to look behind the scenes, see behind the curtain, or sorta pierce the veil of the unknown, so to speak. Especially has this been true of show business in general, and of movies and radio in particular.

I question whether the craving should be satisfied. Sometimes knowing too much becomes more irksome than knowing not enough.

Without becoming lugubrious let me point out that the Creator has seen fit to clothe certain things in mystery and uncertainty. Nor do I regard this as mere happenstance. On the contrary, I believe it to be a deliberate method instituted by an intelligence too shrewd to show or allow mankind to know too much.

Never till the day I hold a lily in my hand and assume some measure of dignity at last, shall I forget the first time I visited Hollywood and saw them run the Grand Canal of Venice into a papier-mâché trough, from a fire-hydrant, while a Venetian swain below ogled a fair damsel above with her head through a window. He was standing on a spot where a wooden support ran beneath the flimsy structure representing the bank, while she maintained her precarious equilibrium on a stepladder behind the false front.



Sprouting a grassy lawn from a board floor in zero weather

Later, when I saw the finished picture, the buildings along the Grand Canal looked as old as time and as stable as eternity. Needless to say my enjoyment was spoiled. 'Twas all I could do to restrain audible speculations as to what would have happened had the gallant teetered a bit; and all the way through the showing I half expected to see the sweet Venetian Juliet take a nose dive into the Canal.

Ah, dear Picture Fan and Radio Listener, stay on your own side of the fence! We assure you with emphasis and unctious that the grass is greener where you are. Sure, we have grass too, but a scrub billy goat would starve to death on it. Nay, he'd probably be poisoned, for our grass is dyed straw—sewed to gunny-sacks. For a fact, we can sprout a luscious lawn in five minutes on a board floor in zero weather!

Any time I see a parka-hooded arctic hunter I begin to pant in sympathy. Up before my mind's eye comes a vision of sledge dogs and furbooted "mounties" toiling through great drifts of rock salt and avenues of stunted hemlock. One swerve of the sledge would have made that hemlock forest look like the aftermath of a cyclone, for they had only been stuck deep enough in the salt



A Chippendale studio ship in a gale

to make 'em stand upright, and the actors—oh, yes. The actors were cussin' the realistic property man who had insisted that the costumes be actual fur. Each of them was undergoing a miniature Turkish bath, with not even a cool plunge to look forward to with relief.

And so it went—and so it goes in radio. You hear a subway train hittin' 'er up around the curves, and you want us to sit down and tell you that it's only Harry Swan running a roller skate around a turn-table. Harry confided to me the other day that he had been created all wrong. "Why?" I asked. "Because," grumbled he, "they expect me to be an airplane, a submarine, and a traffic cop all at one time, and I ain't no durn centipede—I'm goin' in fer character parts."

Not long ago WOR presented the chariot race of Ben Hur. I said WOR presented it, but I wish to amend that. The Lone Star Rangers and yours truly presented it. The basis of my amendment is that the race was essentially made possible by the horses, and we were the horses. A couple more experiences like that and I'll beat any fire horse that ever munched hay, to the tap of the gong. It was a cinch for Ben Hur (whom I think was Allyn Jocelyn) to climb up in his imaginary chariot and cluck encouragingly to the team, but from then on it was distinctly up to the team. I was the rear section of the "off" horse in the winning combination and Fred Vettell did duty as the fore part. We stood in one spot on a wooden platform and worked our feet up and down in a sort of double expansion goose-step. I placed my face to his back and my hands on his hips and we proceeded to swoop down that etheristic race course. Every time we came in front of Nero's box in the home stretch, we stamped harder, then easier, and softer as the race supposedly continued on into



The Western Mail Express—a roller skate on a turn-table

the quarter stretch, back field, then gradually increased the crescendo as we rounded into the home stretch again.

Never have I heard of such a short race course; we were constantly in front of the grandstand. It must have lasted nearly a millennium, and all the time Freddy and I were trying to decide whether our composite horse was a pacer, runner or trotter. John Quine and Emerson Williams, who represented the opposing turn-out, either decided that their horse was a single-footer or else they were loafing on the job. One time, coming up the home stretch for the ninety-nine thousandth lap, I panted out to Freddy. "Hey, what gait is this Hur guy's horse supposed to have?" Three laps later Freddy gasps out. "I don't know and I ain't got breath enough to answer fool questions." Still the chariots continued to sweep around the arena, and just as I was about to give up the ghost I looked over at John and Emerson single-footin' along and looking comparatively fresh. I got mad and calling on my reserve, I rounded the next curve on two wheels. Then came the great crash when Ben Hur sideswiped his opponent and rode on to victory. Part of that crash was my knees hittin' the board platform.



"His wife uses a whisk-broom to get him out of bed"

Under cover of the cheering of the populace, which had stood there sardonically leering while five singing gentlemen wilted their collars, and generally made asses, instead of horses, of themselves, I staggered through the crowd toward the studio exit. Leonard Cox rushed up. "Keep yer dignity, man," he hissed, "keep on yer dignity." "Dignity hell!" I wheezed. "It's all I can do to keep on my feet."

If any of you heard Ben Hur's chariot race you heard five good men and true lose fifty pounds of healthy fat.

Yes, so it goes. Wendell Hall insists that I'm the best cow he ever heard. That comes from playin' a ukulele on the farm, but anyhow I can always rely on Wendell to cast me for the part anytime he has a cow character. I enjoy it, though, because I like cows; they've got such expressive eyes. So any time I play a cow part I think about her eyes. Thus is my artistry sustained.

Once we had a canary bird on a program. Dickey was a marvel. He could whistle the scale chromatic or aromatic. He was a real canary champ. But if any of you had happened to glance into the studio while Dickey was twittering his stuff you'd have seen a two-hundred-pound gent with head cocked to one side, and lips puckered up as if inviting a kiss from Mother Nature. We have another famous canary at Columbia Broadcasting System. Harry Swan looks like a burglar, but he whistles like a feathered prima donna.

And there's Jimmy Whipple's program "40-Fathom Trawlers." You're welcome in Jimmie's office if he isn't too busy, but a certain chair therein is decidedly taboo. He guards it with watchful and zealous care. It's only an old, decrepit, loose-jointed piece of junk, that some antique shop palmed off as



The studio chariot-race

Chippendale, or what have you. Well, it's chipped all right, and cracked and pock-marked, but something must serve as the creaking of masts, cordage and rigging as the good ship heads out to sea.

For several years radio fans have fondly believed that Art Gilham, "The Whispering Pianist," is fat, forty and bald. Gilham, who has entertained in every broadcasting station in the country many times, over a period of seven years, tells his audience that he is bald-headed and weighs 357 pounds. As a matter of fact, he wears huge tortoise-rimmed "specs," has a shock of hair like a floor mop, and is so thin that his wife uses a whisk-broom to get him out of bed. He talks incessantly about his coffee. If audiences only knew the truth, he drinks it often and black, in order to keep from becoming entirely transparent.

Oh, I could go on and on and on, but this article can't last forever, and besides I must preserve some of the secrets of the business. P. T. Barnum and Tex Guinan were both right in their day. Them days is gone now, for people no longer care to be regarded as suckers, but they do delight in mystery, doubt, and uncertainty. Women finally got wise to themselves and, lo, how the mighty (short) skirts have fallen. Although, if I may be allowed an irrelevance, they'll be back up again as soon as we men have forgotten which women were bow-legged. But getting back to the folks. Even while reveling in mystery, they still reach out in the mistaken endeavor to discover things they never should know.



"A two-hundred-pound canary"

Don't do it, people. Stay on the other side of the studio door while you're still happy. You've had the curtain held back for about fifteen minutes while I've tried to show you that "all is not gold that glitters," and from now on I shall insist that the closed door remain closed.

While you peeped behind the scenes, you may have had a giggle at what you saw, but at that you'll never believe in a chariot race again. I'll assure you I shall never participate in another. We've both been cured, but what have you gained? Part of the illusion is gone, and with it lots of the enjoyment. Take my advice, and have faith in us. Express your faith in letters. Tell us our train wreck was a bang-up smash, that our chariot race moved you to tears, and that our canary bird warbled with all the inspiration of spring, but as you value your diversion and entertainment, stay in front of your loud speaker.



Express your faith in letters

RADIO DIAL, May 16, 1935

## Olsen and Shutta at Shubert



ETHEL SHUTTA



GEORGE OLSON

George Olsen and his marvelous music, with Ethel Shutta as featured vocalist, will be the attraction at the Shubert Theatre in Cincinnati, week beginning Friday (May 10). Olsen, with Miss Shutta, has been on a tour of vaudeville houses throughout the country, since concluding his unusually successful engagement at the College Inn in Chicago. Both are well-known in radio circles, having been featured on several network commercials.

THE HORN SPEAKER is planning to run an article about restoring "oldies" to their original sales condition in the April edition.

THE HORN SPEAKER will gladly print the name and addresses of any museum that has an E. I. S. display.

### PROFESSOR MORSE.

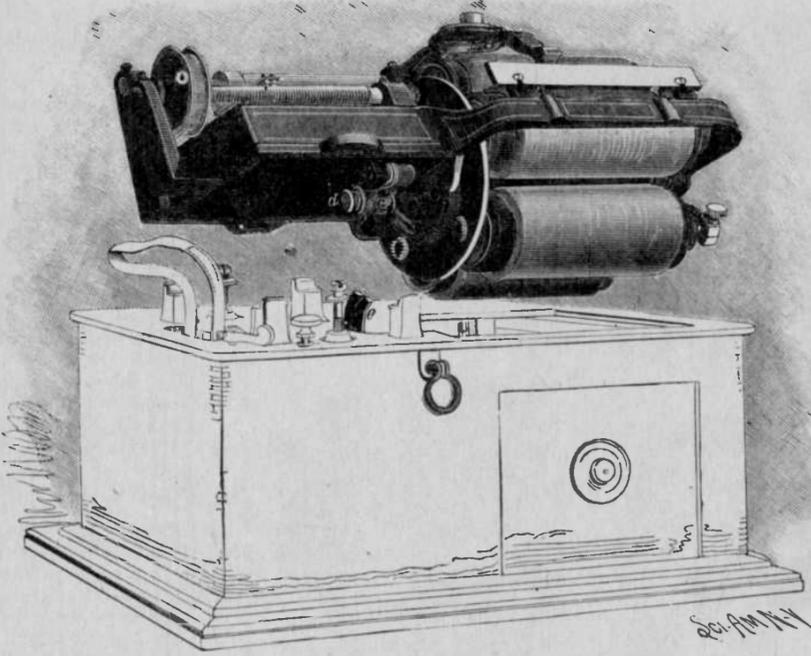
Our engraving is an excellent portrait of the late Professor Morse, of telegraphic fame. Once in a while, for the gratification of his friends, he would produce the various decorative honors that were bestowed upon him by the crowned heads of Europe, and some of these are represented in our picture.

All the principal nations of Europe gave him tokens of distinction. So early as 1848 the Sultan presented him a decoration set in diamonds. Gold medals were awarded him by Prussia, Austria and Württemberg. France made him a Chevalier of the Legion of Honor. Denmark gave him the cross of Knight of the Danneborg; Spain, the cross of Knight Commander of the Order of Isabella the Catholic. At the instance of the Emperor of the French, representatives of the European States—France, Russia, Sweden, Belgium, Holland, Austria, Sardinia, Tuscany, the Holy See, and Turkey—met at Paris to decide upon a collective testimonial to him, and the result of their deliberations was a vote of 400,000 francs. Scores of learned societies, all over the world, admitted him to membership. In 1856, the telegraph companies of Great Britain gave him a banquet in London. In 1858, the American Colony in France entertained him at a grand dinner in Paris. On the 29th of December, 1868, the citizens of New York gave him a dinner at Delmonico's. In June, 1871, a bronze statue of Professor Morse, erected in the Central Park by the voluntary contributions of telegraph employes throughout the country, was formally unveiled, with an address by William Cullen Bryant; and in the evening a reception was held at the Academy of Music, where one of the first instruments used on the original line between New York and Washington was placed upon the stage and connected with the wires, that Professor Morse might send, with his own hand, a word of greeting to all the cities of the United States and Canada.

SCIENTIFIC AMERICAN, April 20, 1872

COMING NEXT MONTH:  
1884 AMERICAN BELL TELEPHONE

READ ABOUT IT IN THIS



PHONOGRAPH WITH FIVE CYLINDERS.

ceives the conical end of the screw. This construction insures the centering of the mandrels and at the same time lifts the clutch end of the mandrel in the reel, so that it has no bearing at that point. The reel is capable of sliding longitudinally to permit of shifting the cylinders, and it is pushed forward by a spring having sufficient strength to hold the clutch in engagement while the machine is working.

In the end of the reel are five equidistant cavities, a, for receiving the pawl, b, as shown in the detail view. This pawl consists of a short stud held in a ball joint in the swinging arm, c, with the free end of the pawl pressed against the end of the reel by a spring. The arm, c, swings on a pivot concentric with the reel, and is provided with a spring for carrying it back against a stop at the point where the pawl enters one of the cavities, a, in the end of the reel. A stud, d, projects from the free end of the arm, c, in line with the axis of the pawl, b. This stud serves the double purpose of holding the ball end of the pawl in its cavity and of receiving the fork, e, by which the arm is swung when

it is desired to shift the cylinders. The fork, e, is attached to a rod, f, which projects through the front of the phonograph base. After having moved the reel carrying the record cylinders one-fifth of a revolution, the arm, c, being carried back by its spring, the pawl, b, drops into one of the cavities, a, and when it is desired to shift the record cylinders, a forward movement of the rod, f, causes the arm, c, to swing, thereby swinging the pawl, causing it to shift from an oblique position, bringing it parallel with the axis of the arm, c, thereby increasing the distance between the reel and the arm, disengaging the clutch connecting the mandrel with the screw, and then moving forward the reel one-fifth of a revolution until the pawl, b, strikes the stop, g. When the arm, c, is returned to its original position, the spring on the reel carrying the record cylinders moves the reel forward, bringing the clutch of the next record cylinder in order in line with the screw. The continued movement of the arm withdraws the pawl from the cavity in the reel and carries the pawl back ready to

be engaged with the next cavity in the reel.

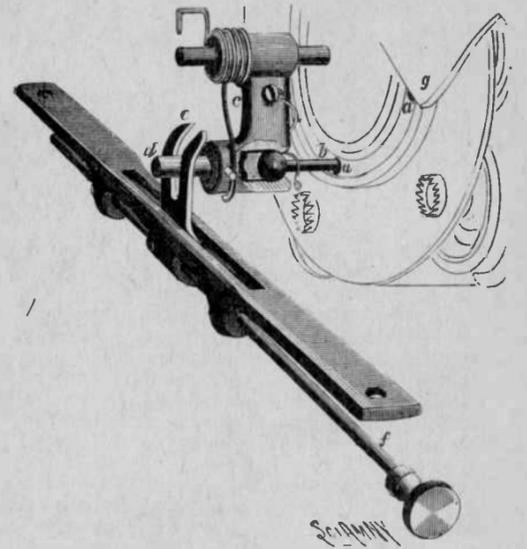
This simple and ingenious contrivance enables the user of the phonograph to shift from one record cylinder to another even while the phonograph is in operation, the reproducing apparatus being adjusted to admit of this movement. The engagement of the pawl with the stop after the movement of the reel prevents the throwing forward of the reel by its own momentum.

This attachment greatly increases the capacity of the phonograph and renders it more valuable for business purposes. It has been shown by months of constant use that a phonograph with this attachment will net the exhibitor much larger profits than the single machines. It is obvious that the number of cylinders need not be limited to five, as the principle involved can be as readily adapted to ten or twenty as five.

As a "nickel in the slot" machine, reproducing the songs and

recitations of celebrated artists, and the latest and most popular airs of musical composition, the phonograph has achieved great fame and popularity. It has been exhibited all over the globe, winning praises everywhere.

If the capacity of the machine had been larger, its



THE SHIFTING MECHANISM.

usefulness would have been greater, and the profit arising from its exhibition would have been proportionately large.

To this idea is due the multiplex attachment. Having five cylinders where the old phonograph had only one, the multiplex necessarily increases the resources and commercial value of the machine in proportion to

the number of additional cylinders, while occupying the space of only one machine.

This useful improvement in phonographs is controlled by the Multiplex Phonograph Company, 1395 Broadway, New York.

**RADIOS**

The series of radios at the top of the next page are from the March 1925 issue of RADIOS NEWS in a new layout.

SCIENTIFIC AMERICAN, November 28, 1896

1896



- A PIANO
- BANJO
- CORNET
- SAXOPHONE
- CLARINET
- ORGAN
- BAND
- ORCHESTRA
- ORATOR
- PUBLIC READER
- FRENCH TEACHER
- GERMAN TEACHER
- SPANISH TEACHER
- OPERA ARTIST
- MUSIC HALL SINGER
- ETC., ETC., ETC.

**\$25.**

**DESCRIPTION OF MACHINE.**—The above cut represents the Spring Motor Berliner Gramophone, entertaining friends in the parlor. Will run three Records without rewinding: is of solid construction, and not likely to get out of order; is thoroughly well governed, and will give you better satisfaction than any talking machine at any price. The tone is louder and more natural, the Records indestructible, and the whole outfit thoroughly satisfactory. This Spring Motor Machine is \$25. Two selections with each machine. Extra Records 60c. each, \$6 per doz.

We have a hand-machine which is thoroughly regulated so that anybody can turn it properly, provided with every equipment necessary, for \$15.00.

We have a smaller hand-machine which is provided with ear-tubes only, and which gives very good satisfaction, at \$10.00.

We guarantee satisfaction or we will return your money, less express charges, on all United States orders.

Send Money by Registered Letter, Money Order, or New York Draft. Catalogue Free. Sold only by See front page "Scientific American," May 16, 1896.

**NATIONAL GRAMOPHONE COMPANY,**  
894 Broadway, New York City.

**FOR YOUR COLLECTION OR MUSEUM**

**An Unusual Oscillation Detector**

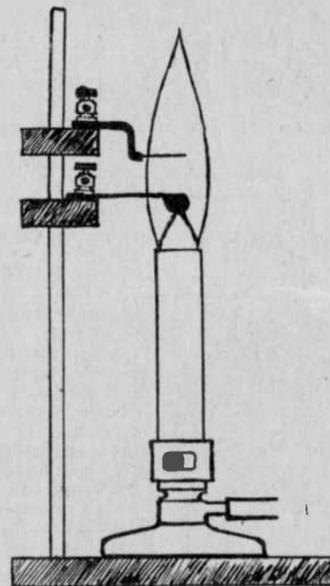
By JOHN L. HOGAN, Jr.

At the present time a great deal of attention is being paid to wave detectors, or, in other words, to devices which will respond to high frequency electrical oscillations. It is possible that too much stress is being laid upon the development of this element of all wireless systems,

opportunity of observing the beautiful phenomena at first hand was had, and, while the detector now to be described is at present of little practical value, it is of great interest as the progenitor of the "Audion" and offers a fascinating field for experimental work.

The type of the original hot-gas detectors probably most worthy of description is that using a conducting flame as its sensitive element and which has been called the Flame-Audion. Essentially this consists of a screened flame made conductive and having two electrodes projecting into it.

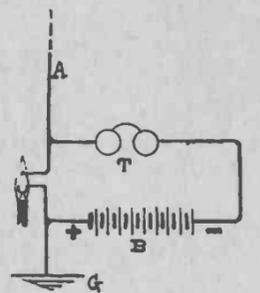
In a paper read before the American Institute of Electrical Engineers during the winter of 1907 it is stated that one of the best forms of the flames detector is a Bunsen burner using coal gas and having in its flame two electrodes, one of them (the lower) being a small platinum trough, and the upper a platinum point. The trough contains some alkaline salt and is so located in the flame that it is at a comparatively cool spot, yet is kept hot enough to continually vaporize the salt, while the "point," which may very well be a small (.001") platinum wire, is placed in the very hottest part of the flame, and kept from 1/8" to 3/8" above the trough. The salt preferred is potas-



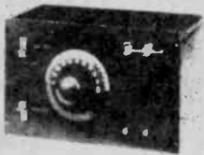
and that in the excitement of producing "new receivers" more important improvements are being overlooked. However, be that as it may, interest now seems to center on detectors, so a note on the application of a novel principle to them should not pass without attention.

In 1905-1906 the writer conceived the idea of using a conducting gas as a detector, it seeming that, because of the delicacy of a column of conducting gas a very sensitive apparatus might be produced, and that, on account of the perfect "healing" action, the detector would be very constant (if properly designed). A few experiments were performed, when it was found that the same ground had been previously covered, and the tests were not continued. However, an

sium hydroxide, which may be bought in sticks at any drug store, and the flame must be kept well saturated with the gas from the vaporizing salt. The electrical circuits are connected as shown in the diagram, the polarity always being as



(Continued on Page 5)



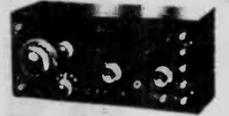
TRADE NAME: Concert Junior.  
TYPE: Crystal set.  
CONTROLS: One.  
AERIAL: Outdoor.  
PRICE: \$3.50 without accessories.  
MANUFACTURER'S NAME: The Concert Radio Phone Co.

TRADE NAME: "Console with Duo-Dyne Receiver 770."  
MODEL: 772.  
TYPE: Same as the 770 receiver with built-in loud speaker.  
TUBES: Four.  
BATTERIES: None furnished, but may be self-contained.  
CONTROLS: Three.  
AERIAL: Indoor or outdoor.  
PRICE: \$140.00 without accessories.  
MANUFACTURER'S NAME: Globe Electric Company.



TRADE NAME: "Crosley Regenerative."  
MODEL: 50.  
TYPE: Armstrong regenerative.  
TUBES: One.  
BATTERIES: None furnished.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$14.50 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.

TRADE NAME: "Crosley Regenerative Receiver."  
MODEL: 52.  
TYPE: Armstrong regenerative.  
TUBES: Three.  
BATTERIES: Not furnished.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$30.00 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.



TRADE NAME: Concert Monotube.  
TYPE: Three circuit regenerative.  
TUBES: One.  
CONTROLS: Three.  
BATTERIES: Not furnished.  
AERIAL: Outdoor.  
PRICE: \$12.50 without accessories.  
MANUFACTURER'S NAME: The Concert Radio Phone Co.

TRADE NAME: "Console with Duo-Dyne Receiver 900."  
MODEL: 902.  
TYPE: Same as Model 900 with Magnavox built-in loud speaker.  
TUBES: Five.  
BATTERIES: furnished.  
CONTROLS: Three.  
AERIAL: Indoor or outdoor.  
PRICE: \$310.00  
MANUFACTURER'S NAME: Globe Electric Company.



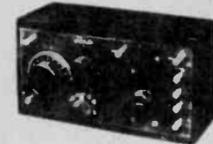
TRADE NAME: "Crosley Regenerative Portable."  
MODEL: 50-P.  
TYPE: Armstrong regenerative.  
TUBES: One.  
BATTERIES: Dry cell, self-contained.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$16.00 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.

TRADE NAME: "Crosley Regenerative Receiver."  
MODEL: 52 special.  
TYPE: Armstrong regenerative.  
TUBES: Three.  
BATTERIES: Not furnished, but can be contained in cabinet.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$35.00 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.



TRADE NAME: Concert Tritube.  
TYPE: Three circuit regenerative with two stages of audio frequency.  
TUBES: Three.  
BATTERIES: Not furnished.  
CONTROLS: Three.  
AERIAL: Outdoor.  
PRICE: \$35.00 without accessories.  
MANUFACTURER'S NAME: The Concert Radio Phone Co.

TRADE NAME: "Crosley Amplifier."  
MODEL: 51-A.  
TYPE: Audio frequency amplifier.  
TUBES: One.  
BATTERIES: None furnished.  
PRICE: \$14.00.  
MANUFACTURER'S NAME: Crosley Radio Corp.



TRADE NAME: "Crosley Regenerative Receiver."  
MODEL: 51.  
TYPE: Armstrong regenerative.  
TUBES: Two.  
BATTERIES: None furnished.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$18.50 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.

TRADE NAME: "Crosley Regenerative Receiver, Portable."  
MODEL: 51-P.  
TYPE: Armstrong regenerative.  
TUBES: Two.  
BATTERIES: Self-contained in cabinet.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$23.50.  
MANUFACTURER'S NAME: Crosley Radio Corp.



TRADE NAME: "Crosley Amplifier."  
MODEL: 50-A.  
TYPE: Two-stage audio frequency amplifier.  
TUBES: Two.  
BATTERIES: None furnished.  
PRICE: \$18.00.  
MANUFACTURER'S NAME: Crosley Radio Corp.

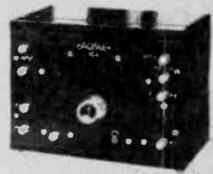


TRADE NAME: "Crosley Regenerative Receiver."  
MODEL: 51 special.  
TYPE: Armstrong regenerative.  
TUBES: Two.  
BATTERIES: None furnished, but may be contained in cabinet.  
CONTROLS: Two.  
AERIAL: Outdoor.  
PRICE: \$23.50 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.

TRADE NAME: "Crosley Tridyn."  
TYPE: Armstrong regenerative; reflex and tuned radio frequency.  
TUBES: Three.  
BATTERIES: Not furnished.  
CONTROLS: Three.  
AERIAL: Outdoor or indoor.  
PRICE: \$50.00 without accessories.  
MANUFACTURER'S NAME: Crosley Radio Corp.



TRADE NAME: "Console Receiver."  
MODEL: 6-C.  
TYPE: Tuned radio frequency.  
TUBES: Six.  
BATTERIES: Contained in cabinet.  
CONTROLS: Three.  
AERIAL: Indoor or outdoor.  
PRICE: \$220.00 without accessories.  
MANUFACTURER'S NAME: Benson Engineering Co.



### SUPER-HETERODYNE, ADMIRALTY MODEL "L" Do Not Depart From These Specifications by Substituting SPECIFICATIONS—List of Material Required

|   | Price   |
|---|---------|
| 2 Cabinets, African Mahogany, Standard Finish                 | \$28.00 |
| 2 Panels, Grade M, Black Formica, Plain                       | 19.20   |
| 6 Dials and Knobs, 4" with 2 1/2" Knobs                       | 9.00    |
| 1 Stopping Condenser, .001 M. F. Dubilier, Type 601           | .45     |
| 27 Binding Posts, G. R. Type, 138X                            | 4.05    |
| 1 Ammeter, 0-5 Amps. D. C., Weston                            | 8.00    |
| 1 Voltmeter, 0-10 Volts D. C., Weston                         | 8.00    |
| 10 Rheostats, General Radio                                   | 22.50   |
| 2 Grid Leaks and Holders, Radio Corp., UP 523, UX 543         | 2.50    |
| 2 Grid Condensers, .00025 M. F. Dubilier, Type 601            | .70     |
| 5 By Pass Condensers, .005 M. F. Dubilier, Type 600           | 5.00    |
| 4 Variable Condensers, Spec. G. R. Type 239, with long shafts | 54.00   |
| 5 R. F. Transformers, UV 1716, Radio Corp. or Model C         | 42.50   |
| 10 Sockets, G. R. Type 156                                    | 10.00   |
| 1 Oscillator Coupler, Special                                 | 6.00    |
| 2 Transformer Condensers, .00025 M. F. Dubilier 601           | .70     |
| 1 R. F. Coupler, Special                                      | 8.50    |
| 1 R. F. Transformer Tuned, Special                            | 8.50    |
| 1 180 Degree Coupler, Special                                 | 6.00    |
| 1 Special Condenser, .00027 M. F.                             | 4.75    |
| 1 Primary Load Coil, Special                                  | 2.60    |
| 1 Secondary Load Coil, Special                                | 2.25    |
| 5 Switches, 139A General Radio Type                           | 4.75    |
| 1 Wave Change Switch, General Radio, 139A Special             | 2.10    |
| 33 Switch Contracts, General Radio Type, 138D                 | 1.32    |
| 4 Closed Jacks, Premier Adjustable, No. 131                   | 3.80    |
| 1 Open Jack, Premier Adjustable, No. 133                      | .65     |
| 1 Audio Transformer, General Radio                            | 5.00    |
| 1 Potentiometer, General Radio                                | 3.00    |
| 100 ft. Wire, No. 12 Soft Drawn Copper Tinned, Round          | 2.00    |
| 100 ft. Tubing No. 12 Black Impregnated Empire Tubing         | 11.00   |
| Nuts and Screws, Miscellaneous                                | 3.03    |
| 2 No. 751 Bias Batteries, 4 1/2 Volts each, Eveready          | .80     |
| Shielding, 9 ft., 14 in. by 12 oz. Soft Drawn Copper          | 5.25    |
| 1 IMF Condenser 21K, W. E. Co.                                | 2.00    |

#### EXTRAS

|                                      |       |
|--------------------------------------|-------|
| Milliammeter 0-100, Weston           | 9.00  |
| 0-100 Voltmeter, Weston              | 13.00 |
| Panel Drilling, Labor                | 4.00  |
| Engraving and Graining Panels, Labor | 18.20 |

#### UNUSUAL DETECTOR

there drawn. The battery, B, is arranged with a multiple point switch so that any voltage from six to thirty or forty (approximately) may be had in steps of one cell at a time. It is sometimes advantageous to have even a closer variation, since the voltage at which the flame is most sensitive seems to be very critical. This brief description will enable any reader to construct an operative "Flame-Audion" so there is no need of going into further detail. It will be found that the flame is wonderfully sensitive when properly adjusted, and that the only reason it cannot be used in actual wireless telegraphy as a commercial receiver is that it is impossible to maintain a steady flame under the usual operating conditions (at sea, for instance). Even in the laboratory, with a flame screened by a lamp chimney, it is exceedingly difficult to keep the gas column constant, and every draft of air registers itself as a sound in the telephones. However, the "Flame-Audion" will be found almost unbelievably sensitive at times, and the principle is well worth careful study. Some highly interesting further developments of the "gas detector" will be treated in a future paper, but much of the time until then might be well spent in constructing, testing and operating one of these novel flame receivers.

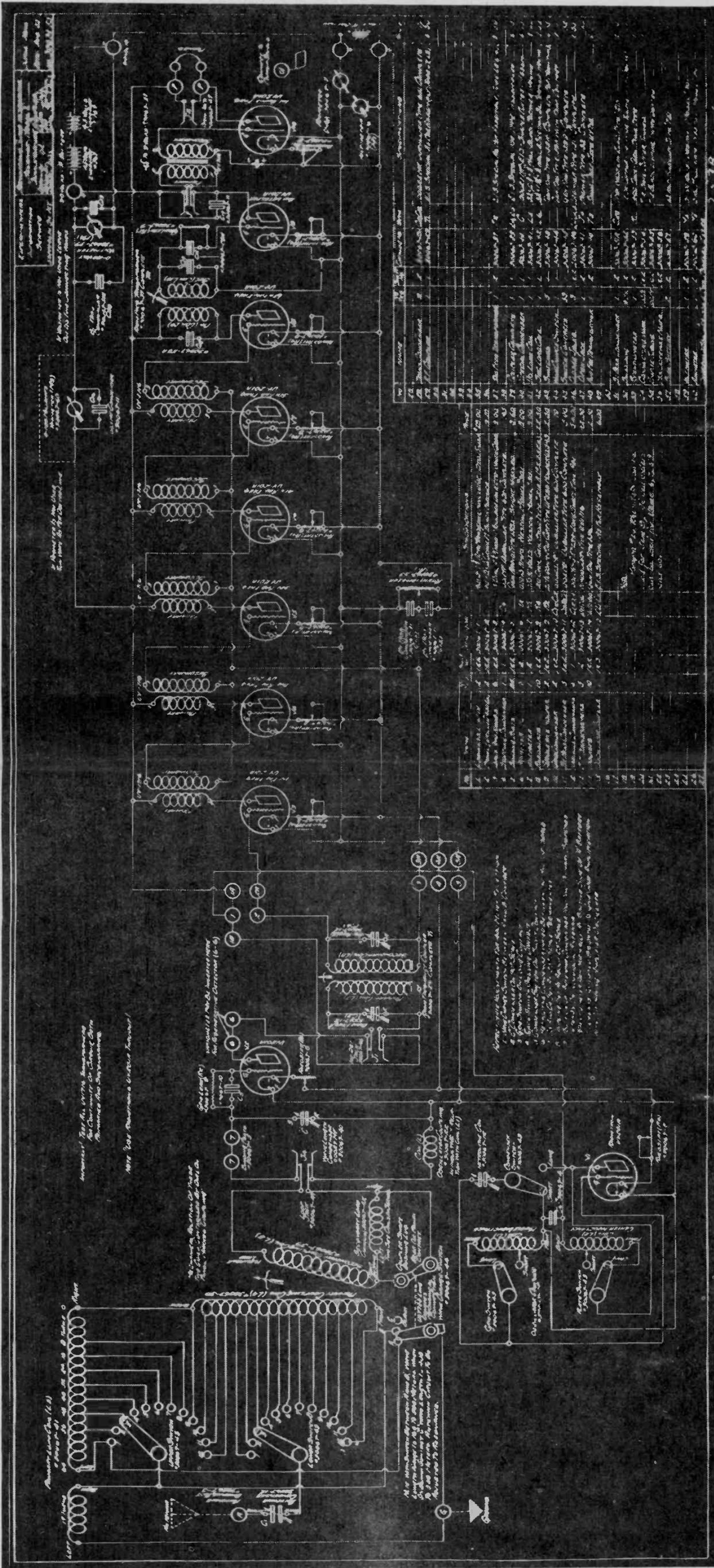
#### E. I. S. Continued

homes. R. C. A. through its sales manager, Elmer Bercher, formerly with DeForest in 1903 and later with Marconi, maintained that R. C. A. sales were "directly and seriously affected by unlicensed infringers selling and offering for sale such receivers." Of course, these charges were directed at Experimenters Information Service as well as to any others.

Elmer Bucher was noted as saying in his affidavit of June, 1924, "The public demands, and is entitled to have, the very best that inventive genius and engineering skill can contribute." Because of this statement E. I. S. had a defense for business. They realized the advanced state of the art in the E. I. S. receivers and wanted to enter their sets in competition with any other sets and very willing to compete with a Radiola super-heterodyne—even operated by Elmer E. Bucher.

The first super-heterodynes available to the general public are considered to be the Armstrong receivers supplied by the Experimenters Information Service in kits or constructional sets. If other kits were available domestic or foreign, it would be interesting to know.

Schematic Wiring Diagram Model "L" Super-Heterodyne-Experimenters Information Service Drawing 30074-75.



# on the Air

## BROADCASTING BIBLIOPHILE'S BOOKNOTES

The Broadcasting Bibliophile's Booknotes is a monthly report on new publications (books, reprints, reports, periodicals, pamphlets, etc.) in all areas of mass communications. Christopher H. Sterling, editor of the BBB provides details on an average of 30 publications (which, again, includes reprints) on eight to 12 single spaced pages.

The BBB is now in its fourth year.

The address for the BBA is: Christopher H. Sterling, editor, BBB, Temple University, School of Communications and Theater, Philadelphia, PA 19122.

## HELLO AGAIN

For the collectors of old radio programs on magnetic tapes or any other medium HELLO AGAIN is a storehouse of information, much of it is topical. HA is a monthly newsletter which costs \$3.00 yearly. The name and address is: Jay Hickerson, 6 Koczak Ct., North Haven, Connecticut 06473.

## SOUNDINGS

SOUNDINGS, the official publication of the Buckeye Antique Radio and Phonograph Collector's Club, is an informative and entertaining periodical, which is distributed to members of the club at no cost. It is edited by Dave Lieberth and published at the studios of WHLO Radio, 2650 W. Market Street, Akron, Ohio 44313.

## ANTIQUÉ PHONOGRAPH MONTHLY

Allen Koenigsberg, a recognized publisher of books about phonographs, is now publishing a periodical about antique phonographs, records and mechanical music items. The first edition was January, 1973, which is a 5-1/2" X 8-1/2", 8 page stapled booklet. One may subscribe by sending \$5.50 to: Allen Koenigsberg, 250 East 45th Street, Brooklyn, N. Y. 11203.

## THE RECORD MUSEUM

The Record Museum of Lawton, Oklahoma, has 21,000 records, numbered, graded, triple-indexed, shelved and ready for taping. Whit Ozier said that the museum will tape a selection for a charge of 50¢ provided one furnishes the tape and postage. For more details write: Whit Ozier, The Record Museum, 701 Arlington Avenue, Lawton, Oklahoma 73501.

## EDITOR'S MAILBAG

### SHAMROCK INFORMATION

Feb. 10, 1973

Dear Sir:

I was curious as to whether you know anything about a Shamrock Manufacturing Company, outside of Newark, New Jersey. The set has two stages of R. F. amplification, a detector and three stages of resistance coupled A. F. amplification. The set uses OIA's. It was made in 1926 and features single knob tuning. I was wondering if you had any idea of any production or just general "info" on the company. I would be grateful for anything you could tell me.

Sincerely yours,  
Mark S. Evans  
102 Westridge Drive  
Tallahassee, Fla. 32304

EDITOR'S REPLY... During the 1920's, Wyatt Slaughter, radio salesman, sold many of the Shamrock Radios in the Fort Worth area. Does anyone have more "info" for Mr. Evans?

### VERIFY DATE

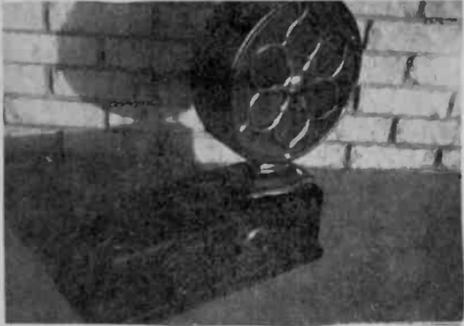
Dear Sir:

I am presently restoring an RCA Victor Portable phonograph, Model O14 Serial # 36023. I would like to verify the date of manufacture of this old phonograph.

Very Truly Yours,  
T. A. Mummert  
5240 Heatherdown Blvd.  
Toledo, Ohio 43614

EDITOR'S REPLY... Someone please help Mr. Mummert with date of this portable.

**FOR SALE OR TRADE**



**FOR SALE:** A-K #35 very sharp: excellent condition; Plays good. \$150.00, without tubes \$120.00. Cecil Bounds, Pine Springs Route, Carlsbad, New Mexico 88220, 785-2363.

**RARE** old Television Collection from 1930's to 1940's, 38 different models, brands and spare tubes. Only collection like it anywhere. Sell one or all, price \$100 ea. & up, or trade. Also 1920 Radios and parts. Charles Seidel, 767 Westwood, Santa Barbara, CA. 93109 (805) 962-3620. P. S. **WANTED** horn phonographs.

**500 NAMES**, addresses of Wireless Antique Radio Collectors, Buyers, Sellers, Societies, Museums. Over one year to compile. A must for any beginning or advanced collector. Saves time and money of how, when, where to find that Antique gear. Booklet \$5.00 postpaid: MIDCO, HS2, Box 15370, Long Beach, CA 90815.

**FOR SALE:** Display your radio's schematic along with it. The perfect compliment of every set, \$1.00 each. Tubes, write needs. Cecil Bounds, Pine Springs Route, Carlsbad, New Mexico 88220, 785-2363.

**FOR SALE:** Kennedy 220 and Amplifier, Radiola 25, Grebe Synchrophase, Grimes Inverse Duplex. Send stamped envelope for list. Paul Giganti, W6GVY, 2429 San Carlos Ave., San Carlos, Calif. 94070.

**FOR TRADE** or Sale new UX200s, UX201As, UX210s, UX30s (Sorry no WD-11s or WD-12s) List SASE, George Haymans, WA4NED, Box 468, Gainesville, Georgia 30501.

WD11 Adaptors use UX199, 12Q, no wiring changes, Radiola III's battery hookup included. \$5.25pp. Keith Parry, 17557 Horace, Granada Hills, CA. 91344.

**FOR SALE:** 3 Atwater-Kent Breadboards. Also 1917 QST magazines. Send stamped envelope for list. Paul Giganti, 2429 San Carlos Ave. San Carlos, CA 94070.

**OLD TUBES** for sale, write for list. SASE please. J. W. F. Puett, 3008 Abston, Mesquite, Texas 75149.

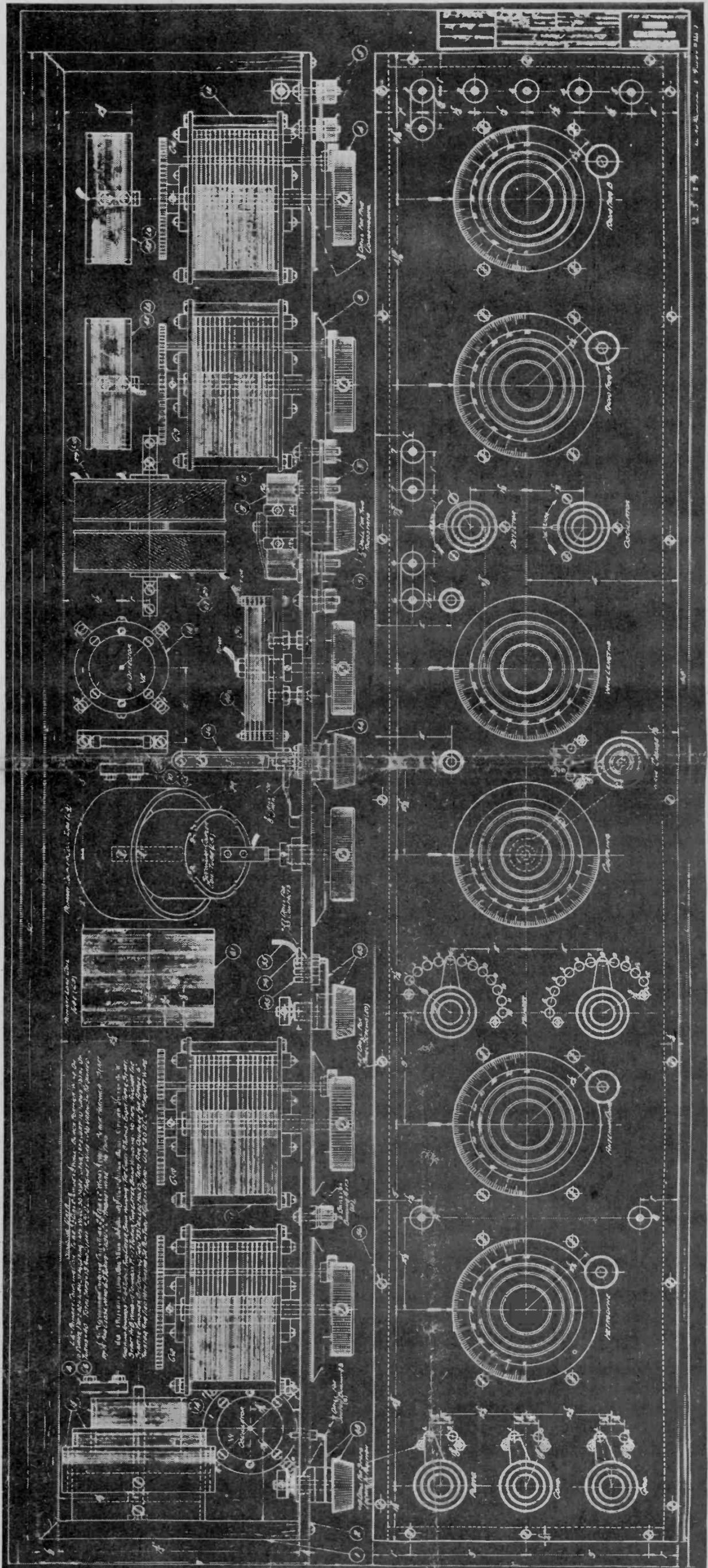
**WANTED**

**WANTED:** Crystal Radiò Receiver Schematics from early 1920's, including details of construction, wire sizes, etc., also Tesla coil, Jacob's Ladder, etc., G. Seidel, 1201 Powell St., Norristown, Pa. 19401, Phone: 215 275-6333.

**WOULD** appreciate any information regarding PATHE windup phono and records. How they work, etc., Mort Paradise, 6611 N. Fairfield, Chicago, Illinois 60645.

**WANTED:** Set of springs for a Thomas A. Edison Phonograph. W. C. Mingus, Box 33, Pearblossom, CA 93553.

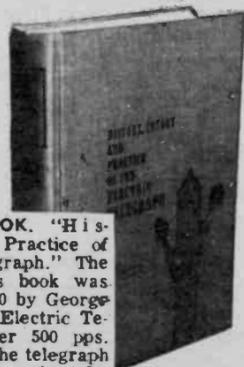
**PLEASE** send any information on Patterson and Peter Pan Radio Co. (local LA. Co.) Phil Barr, 747 Marco Pl., Venice, CA. 90291.



Receiver Section Model "L" Super-Heterodyne. Reproduction of Assembly Blue Print.



NEW Vintage Radio Book 1887 to 1927, 240 pages of photos & data on wireless & radio equipment. Only complete historical guide book known. Money back guarantee. \$4.95 ppd.



**TELEGRAPH BOOK.** "History, Theory & Practice of the Electric Telegraph." The orig. copy of this book was first printed in 1860 by George Prescott, Supt. of Electric Telegraph lines. Over 500 pps. of information on the telegraph & many illus. of early telegraph equipment. Reprints of this book \$7.50 ea., ppd.



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

## BOOKS

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*Sam. F. B. Morse*

### Allen Koenigsberg ANTIQUE PHONOGRAPH PUBLICATIONS

Edison Cylinder Records, 1889-1912, With an Illustrated History of the Phonograph, by A. Koenigsberg, 8 1/2 x 11, 200 pages, coll-binding, @ \$12.95

The Phonograph and How to Use It, Edison Lab Manual, orig. pub. 1900, Facsimile Edition, hard bound, 182 pp., @ \$12.95

1899 Chicago Talking Machine Catalog, 64 pp. @ \$3.25

1907 Edison Phonograph Catalog, 32 pp., @ \$2.95

Set of 5 Antique Phonograph Posters, 12" x 17", 1877-78, @ \$5.00

1906 Columbia Graphophone Catalog, 32 pp., @ \$3.25

1909 Babson Bros. Edison Phonograph Catalog, 16 pp., 8x10, @ \$3.50

1896 Berliner Gramophone Instruction Manual, 8 pp. @ \$1.50

1900 Eldridge Johnson Gramophone Catalog (Consolidated), 40 pp. @ \$3.50

1902 Berliner Gramophone Catalog, 32 pp., @ \$3.25

1909 Victor Talking Machine Catalog, 32 pp., @ \$3.95

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