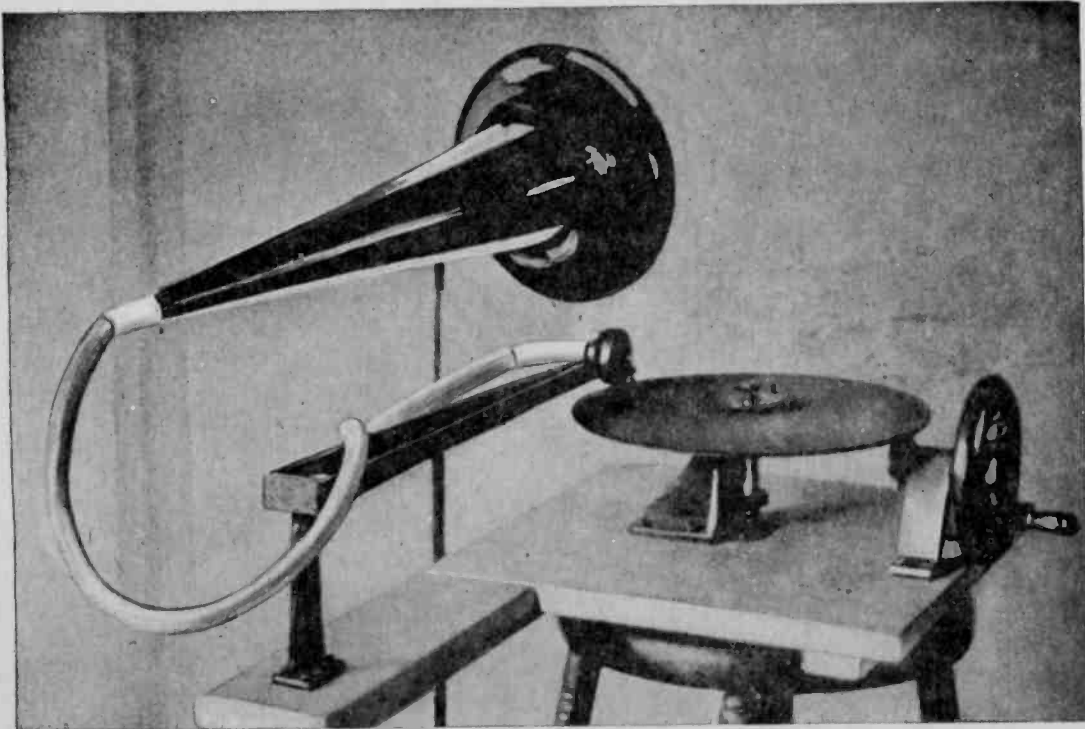


EDITOR: *Jim Branshaw*

FORMERLY NAMED:  
 THE ANTIQUE RADIO AND PHONOGRAPH NEWS  
 NOW NAMED:

# THE HORN SPEAKER



FIRST DISK TALKING MACHINE (GRAMOPHONE). EXHIBITED IN 1888

The following words are a quote from, Emile Berliner, Maker of the Microphone, by Frederic William Wile, The Bobbs Merrell Co. 1926, P. 189.

## EMILE BERLINER

### INVENTS THE GRAMOPHONE

After having fully satisfied himself that the lateral cut was the only logical and perfect process for correctly recording the voice, Berliner's next step was to rig up a turn-table similar to that used nowadays on disk talking machines. His machine was hand-driven, which meant the turning of a handle during the whole time a record was played, but it contained a fly wheel that insured regularity of motion. A small framework that could be moved side-wise by a screw held the recording sound box. On the turn-table Berliner laid a heavy round glass plate made for the purpose, which could be taken off and blackened over a smoky flame. The recording sound box was carefully adjusted, so that an elastic stylus just touched the smoky surface of the glass plate. In this manner a flat disk record was finally produced. After the record had been "fixed" by shellac varnish, Berliner took it to Joyce, who quickly turned out the first flat disk-record made by the photo-engraving process. This historic "pancake" has an honorable place among scientific relics in the National Museum at Washington.

While Berliner reproduced from this first disk record, he noticed that even when he disengaged the screw mechanism the record groove itself would hold the stylus of the sound box. Immediately he realized that in voice reproducing the screw mechanism could be discarded. It has never been used since then.

Besides its reproducing superiority, the gramophone mechanism was of materially greater simplicity. For reproducing a phonograph-graphophone record, because it was done in a soft material, a fine screw mechanism was required to propel the reproducing sound box and stylus needle across the record lines. In the gramophone record, which was in hard material like metal or composition, the record disk is merely revolved; the needle of the sound box is dropped into the groove, and this, while playing the music, not only vibrates the diaphragm (throwing the music into the horn), but also propels the needle across the record disk at the same time. It will be seen that this *automatic* propulsion is necessarily smoother than where propulsion is caused by an outside, unrelated force. The self-propulsion which Berliner originated was eventually applied to all existing talking machines as soon as Berliner's patent expired in 1912.

## Famous Radio Patents

By CHARLES H. KESLER

Member of Bar of District of Columbia, and of New York Patent Law Association

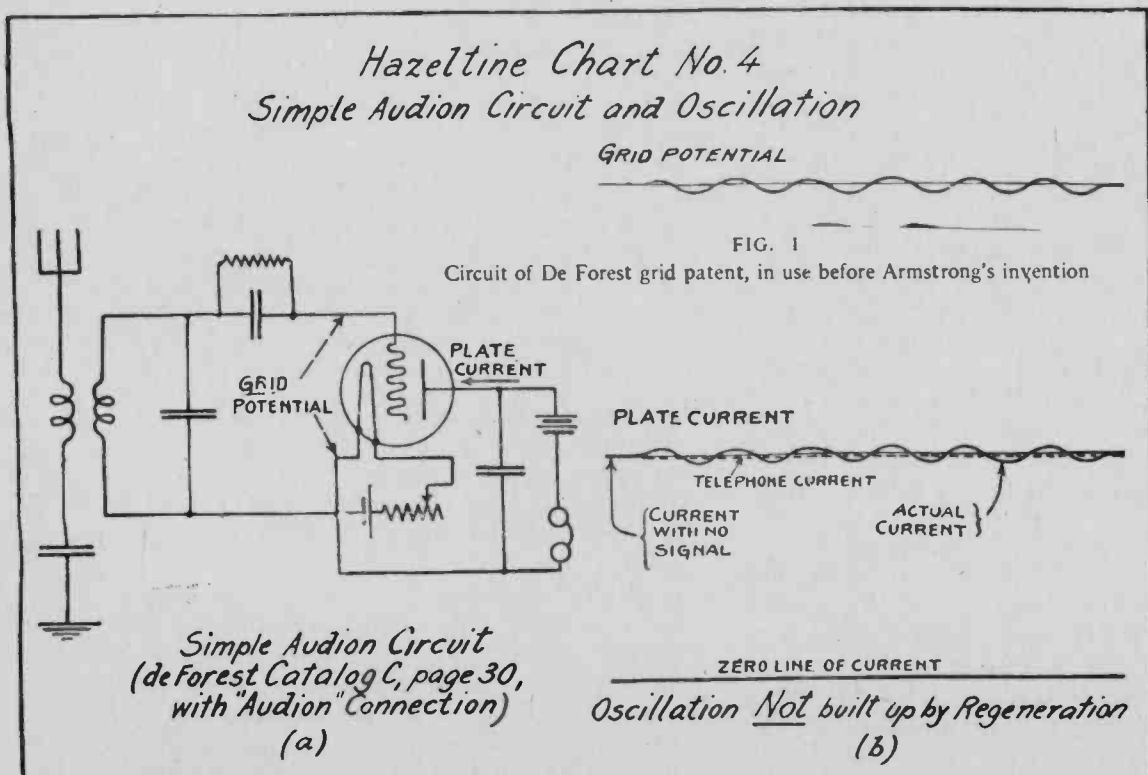
WHILE several courts have decided that the Fleming patent covers the audion when used as a detector, such courts are divided on the question of infringement when the audion is used as an amplifier and as a generator of oscillations.

Beginning in 1912, Armstrong, De Forest, Hogan, Langmuir, Meissner, Vreeland, Waterman, Weagant, and others, while using the audion as a detector, independently observed that it could oscillate or generate oscillations. These observations and investigations have resulted in numerous inventions involving the oscillating tube circuit and amplification, the most noteworthy of which is the Armstrong circuit. With the impetus given to the use of

tubes by these investigations, it is but natural that the question should arise as to whether such improved circuits infringed the Fleming patent.

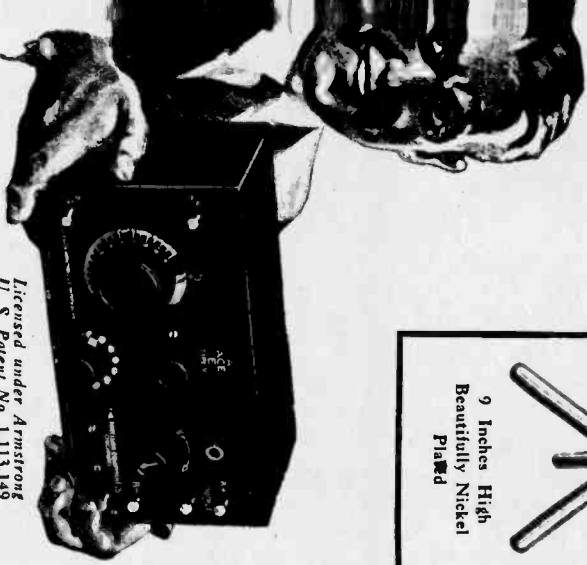
A tube when oscillating is acting in a reverse manner. Instead of putting an oscillating current into the tube to get a rectified or direct pulsating current, a rectified current is imposed on the tube and an oscillating current is obtained. The action is analogous to that of an electric motor which, while producing motion, when current is passed through it, will produce a current when its armature is mechanically rotated. Neither Fleming nor De Forest contemplated this use of their tubes at the dates of their inventions.

The district federal court in New York has decided that the Fleming patent covers the



**E \$20**  
**V**  
 Armstrong  
 Regenerative  
 Receiver

1923 ads



Licensed under Armstrong  
 U. S. Patent No. 1,113,149

**MARTIAN BIG FOUR**  
 The Wonderful High Grade Crystal Radio Receiving Set  
 SIMPLICITY EFFICIENCY QUALITY  
 The Martian Sliders (2) for sharp tuning produce cleanness and volume  
 One, two, three or four headsets can be used. One to eight persons can "listen in" at one time.  
 Tuning Coil is non-shrinkable.  
**Anyone Can Install and Operate the Big Four**  
 Guaranteed to receive concerts from all broadcasting stations within a radius of 30 miles.  
 If your dealer cannot supply you, we will send you a Martian Big Four set prepaid anywhere in the United States upon the receipt of Price, \$7.50  
**JOBBERS and DEALERS - WRITE OR WIRE FOR DISCOUNT SHEET**  
**WHITE MANUFACTURING COMPANY**  
 93-107 Lafayette Street  
 Newark, New Jersey

**off the Record**

Rick Wilkins called to tell me that he has prepared a 800 word manuscript on record collecting. The Horn Speaker has been earnestly seeking manuscripts that will benefit record collectors. The Horn Speaker is eager to print Wilkins' work as well as others.

**on the Air**

The Horn Speaker is still in the process of preparing the March 1925 Radio News Directory for reprint. Many people have asked about back issues of The Horn Speaker. Many are available at 50¢ each. To simplify matters the January, 1973 issue of The Horn Speaker will be Volume II No. 1. The January 1972 issue of The Horn Speaker or The Antique Radio News as it was called then, was numbered No. 30, a number which grew out of retail sales tabloids. Anyway, No. 30 is the first issue.

Classified ads for the September issue will be 4¢ a word, which is a substantial cut in price to promote more classified ads. Since most readers appreciate photographs of the "for sale" items, a cost of only \$2.00 in addition to the ad will be charged for printing photos of your "for sale" items.

**Age Radio**  
 the pioneer  
 wireless and radio  
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 about the rough-  
 mble early days  
 w industry.  
 hundreds of photos and data on wireless and  
 equipment.  
 he only available collector's handbook.  
 can't lose; ten-day moneyback guarantee.  
 Radio, Box 2045, Palos Verdes Peninsula,  
 California 90274  
 check to VINTAGE RADIO for \$3.95 per  
 copy (\$4.15 in California), Postpaid.



State \_\_\_\_\_ Zip \_\_\_\_\_

WANTED  
 1933 ec. of  
 17557 Ho. a  
 Calif. 914  
 FOR SALE:  
 Phonograph 1  
 hand wind cons  
 black chippenda  
 feet high, 31 1  
 2' deep, very go  
 ition. Reasonab  
 Frank E. Dandola, 1  
 Bay Ridge Ave., Brook  
 19, New York.

ANTIQUE radio parts dis-  
 covered in San Francisco  
 warehouse. Untouched in  
 50 years. SASE for list.  
 Geo. M. W. Badger, W6RXW  
 341 La Mesa Drive, Menlo  
 Park, Ca. 94025.

FOR SALE: Crystal radios,  
 horn phones, battery  
 radios, hurdy gurdy grind  
 organs, etc. Send SASE  
 for free list to S.  
 Leonard, Speakeasy Antiques,  
 799 Broadway, New York N. Y.  
 10003. Tel. 212-389-4144.

FOR SALE: Antique radios,  
 parts, books and magazines.  
 R. Watson, 388 Concord Road,  
 Bedford, Mass. 01730.

NEED Crosley Model 52  
 Schematic. R. A. Misk  
 5524 N. Major Ave.,  
 Chicago, Illinois 60630.

BUY, SELL, TRADE & RE-  
 FAIR all wind-up phono-  
 graphs: Wanted Edison  
 & Columbia reproducers,  
 horns & 2 min. records.  
 Ken Wood, 1731 E. Austin  
 Nacogdoches TX 75961.

I AM INTERESTED in  
 four-minute Edison  
 phonograph cylinders.  
 Kent Biffle, 1259  
 Tenneco Bldg., 1010  
 Milam St., Houston,  
 Texas 77002.

LOTS of old type radio  
 tubes; new and used.  
 1 large old floor model  
 phonograph; 1 small old  
 portable phonograph; lots  
 of old 78's records.  
 Clement V. Lechnir, Dir-  
 ector of Experimental  
 Physics, 221 South Mar-  
 quette, Prairie DuChien,  
 Wisconsin 53821. SASE

WANTED: Rider's Technical  
 of Schematics, Vol.  
 "Pat" Patterson  
 83, Longview,

comic books,  
 little books,  
 pulps, any radio and  
 cereal giveaways,  
 rings dealing with  
 radio shows. Rogofsky,  
 Box HS1102, Flushing,  
 New York 11354.

NEED knobs and four-  
 prong type speaker for  
 1931-2(?) Atwater Kent  
 Model 61. Mark Oppat,  
 31800 Balmoral, Livonia,  
 Michigan 48154.

INTERESTED in buying or  
 trading for collections  
 of radios or parts. Ham  
 equipment available for  
 trade. Walt Jackson,  
 W5ZYA, 2929 N. Haskell,  
 Dallas TX. 75204 Day time  
 214 526-2023, 214 262-7855  
 evenings or weekends.

WANTED, advertising  
 and technical lit-  
 erature on McMurdo  
 Silver and Scott radios  
 and associated items.  
 J. W. F. Puett, 3008  
 Abston Dr., Mesquite,  
 Texas 75149.

MANUAL  
 I. F. E.  
 P. O. Box 21  
 Texas 75601.

FOR SALE: Scott Pl.  
 harmonic, good condit-  
 ion, 30 tubes, \$175.00;  
 Scott All Wave, double  
 tuning, restored, \$115.00;  
 Radiola III good condition  
 with old style TD 11s,  
 \$65.00; Curved-top Philco  
 model 61, \$42.00; Steinlite,  
 needs restoring, \$25.00;  
 Radiola superheterodyne,  
 \$60.00; Freed Eisemann NR-7  
 \$45.00; Mega Phono horn,  
 blue and brown, \$25.00;  
 Magnavox horn speaker fair  
 condition, works, \$25.00;  
 Leader Horn speaker \$45.00.  
 Jim Cranshaw, 9820 Silver  
 Meadow Dr., Dallas TX  
 75217, Phone 214-286-1673.

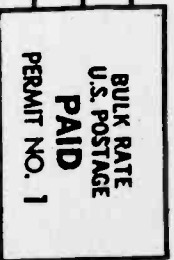
PROFESSIONAL CW operators,  
 retired or active, com-  
 mercial, military, Gov't,  
 police, etc. Invited to  
 join Society of Wireless  
 Pioneers, W7GAQ/6, Box 530  
 Santa Rosa, CA. 95402.

**THE HORN SPEAKER**

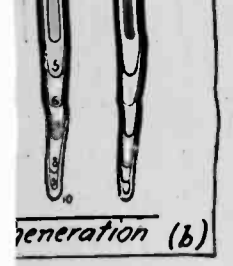
P. O. Box 12

Kleberg, Texas 75145

POSTMASTER: If undeliverable  
 return requested



Bary B. Schneider  
 6971 Pearl Rd. apt. 4  
 Cleveland, Ohio  
 44130



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the filing date of Meissn  
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was awarded to  
examiner of interfe  
ground that Armstrong  
ved a date of invention  
the filing date of Meissn



he should have done. Although he was suc-  
cessful, he was successful only after going to a  
lot of trouble and expense to prove his point of  
early invention.

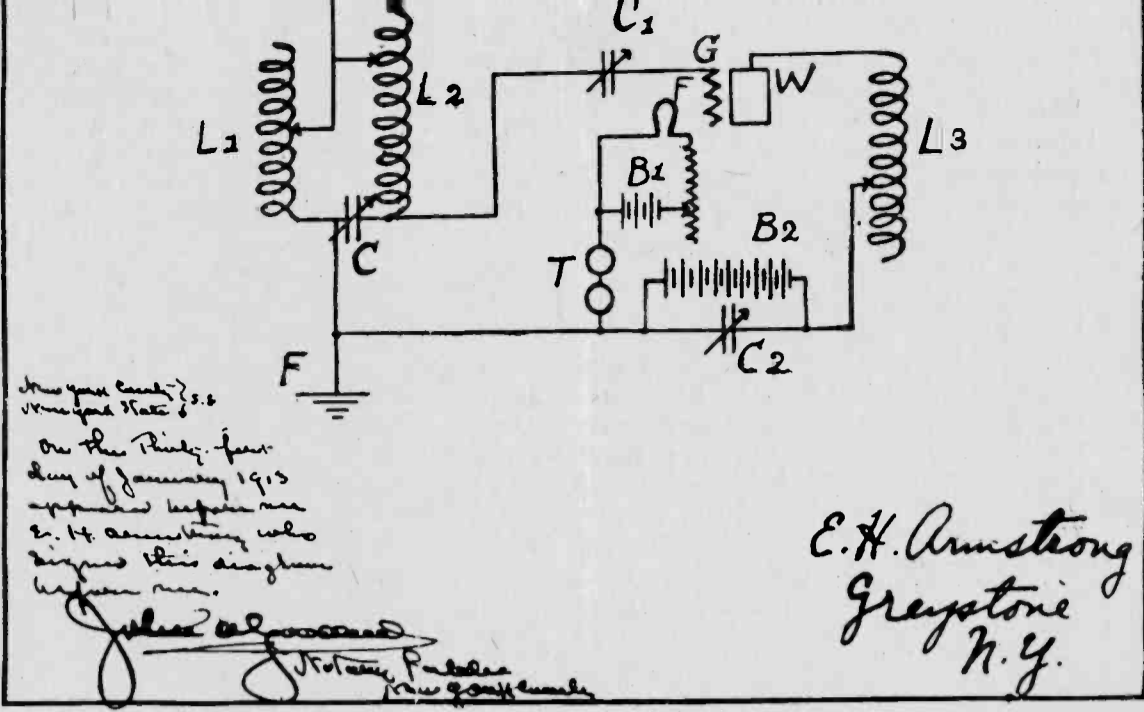
It is a misconception that a large number of  
inventors have, that they should keep their in-  
ventions secret, at least until the application  
has been filed. How do they expect to prove  
priority of invention, either in a patent office  
interference or in a suit without witnesses, with-  
out something tangible such as a sketch or  
apparatus which can be authenticated by  
others? When an invention is conceived,  
make a sketch of it and have it signed and dated  
by several witnesses. Be sure that they under-  
stand the invention. But a mere sketch is not  
an invention. The sketch must be reduced to  
practice, as it is called; the invention must be  
reduced to practice. One way of reducing an  
invention to practice is to make the device or  
assemble the circuit, and also to make  
it work or perform the function for  
which it is intended. This does not  
mean a "model" but a full-sized ac-  
tual practical thing that will work.  
Then have Bill Smith and Henry  
Jones see the thing and understand  
what it is. Let them see it work and  
point-out to them the results obtained.

To strengthen still further the chain of evidence,  
sit down and write out everything that was  
done at the demonstration and make a sketch  
of what was seen and have everyone sign and  
date it. Now an invention has been made which  
can be proved, and if the invention as made  
checks up with the original sketch, the "date"  
of the invention is the date of the original sketch;  
provided diligence is exercised in the reduction  
to practice, the application can then be filed at  
leisure, but preferably as soon as possible.

In some cases, owing to a lack of capital,  
the inventor is unable to reduce his invention  
to practice. In such cases the application  
should be filed as soon as possible, the filing of  
the application being considered a "constructive  
reduction to practice." But a constructive  
reduction to practice is rather sketchy under  
a recent decision, in which it was held that  
the filing of an application cannot be considered  
a constructive reduction to practice where the  
invention shown and described in the applica-  
tion cannot, in fact, be constructed to make  
a practical operative device. So it is better  
to actually try the thing out before filing an  
application, so that the details of the invention  
can be covered and one can feel assured that  
what is shown and described in the application  
is operative.

In an interference proceeding in the patent  
office, the question of who was the first inventor  
among several applicants, or between an ap-  
plicant and patentee, is decided. Testimony  
is taken just as in a law suit. The application  
of the Armstrong patent in suit, for instance,  
was in interference in the patent office with  
the application of Langmuir of the General  
Electric Company, in which interference Arm-  
strong was declared the first inventor.

ending in the patent office at the  
time of an interference between pending  
applications of Armstrong, De Forest, Meissner  
and Langmuir, involving the question as to who  
was the first inventor of the regenerative oscillat-  
ing circuit, Armstrong having filed an applica-  
tion claiming an improvement over  
the invention of the patent in suit,  
the question of regeneration or the  
priority of invention was decided in favor of  
Meissner by the examiner, on the ground that  
Meissner had not previously been in Ger-  
many, and that he had not pro-  
duced his invention earlier than  
Armstrong had done in Ger-  
manically.



*Handwritten notes in German:*  
"Ist das eine...  
...  
On the 21st day of January 1913  
I signed before me  
E. H. Armstrong who  
signed this document  
before me."  
Signature: Julius [illegible]  
Notary Public

*Handwritten signature:*  
E. H. Armstrong  
Greystone  
N. Y.

FIG. 4

The original drawing of the feed-back circuit which largely determined the court in Armstrong's favor



Whether Armstrong will secure a patent  
covering more specifically the feed-back as an  
oscillator depends on the outcome of the  
present interference. With the court decision  
to back him up he is in a very good position,  
I should say. While the court has been very  
liberal with Armstrong, and given the patent a  
very broad interpretation, yet it had no occasion  
to pass on all types of apparatus in which the  
feed-back may be or can be present, either de-  
liberately or intentionally or accidentally or  
incidentally. In radio-frequency amplification,  
for instance, it has been found difficult by those  
who have no desire to infringe the Armstrong  
patent to prevent regeneration by reason of the  
inherent capacity of the tube, such regenera-  
tion being more detrimental to clear reception  
than advantageous.

Although Armstrong lays no claim to cover  
audio amplification by the cascade arrangement,

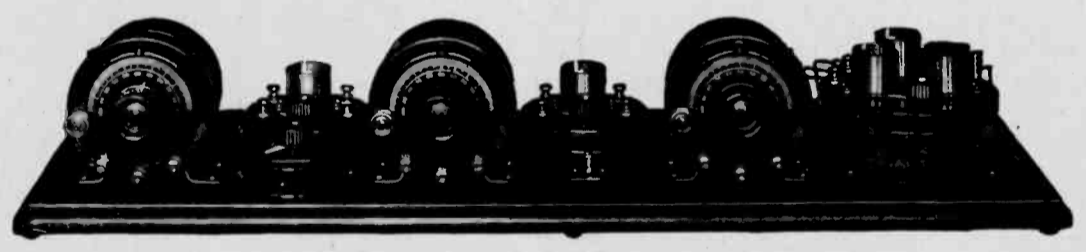
I understand he claims to cover certain arrange-  
ments of radio amplification, where it is neces-  
sary to have circuits tuned to the high frequen-  
cies, and especially when there are adjustments  
capable of varying the amount of regeneration.

It must be admitted that the endeavors  
of engineers to avoid patents have always re-  
sulted in important contributions to the de-  
velopment of the art, yet it is also an advantage  
to know where we stand and it is hoped (with-  
out wishing anyone any hard luck) that the  
courts can soon pass upon the scope of the  
Armstrong patent as applied to radio-frequency  
amplification.

While the Westinghouse Company is the  
owner of the Armstrong patent, fifteen or  
more other manufacturers are licensed under  
it and these as a rule advertise this fact and  
place a notice of the license on their sets. The  
patent expires in 1931.



\* Famous Radio Patents is a reprint of an article from Radio Broad-  
cast, March 1923.



The Atwater Kent Radiodyne Receiving Set

The salesman is not  
lying.  
Oh, by no means!  
Purchasers of this  
set will be able to  
hear 2LO loud and  
clear.  
It is merely neces-  
sary that they move  
to London.

