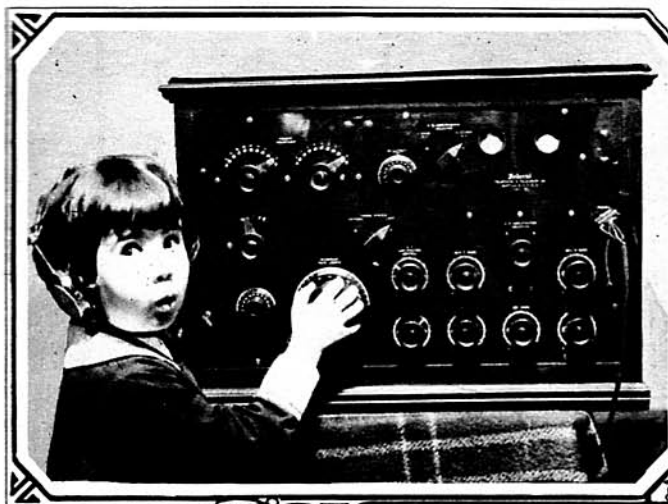


Radio Events In Pictures



Baby Peggy, a Million Dollar Screen Star, and One of the Most Popular Child Actors, Gets Her First Radio Treat. Baby Peggy Didn't Register Much While the Classical Number Was on the Air, But as Soon as WEAJ Let Out Jazz Strains She Gave a Distinct "O-O oh" and Then the Camera-man Snapped. © Foto Topics. The Problem of Interference Caused By the Squeals and Howls That Are Sent Out Through the Air By Neighboring Regenerative Sets Has Become Acute, and People Are Hoping That Legislation Will Soon Be Enacted That Will Prohibit the Use of All Sets That Radiate. The Plan Followed by a Number of Radio Fans in the East is Original, if Nothing Else. The Annoying Party is Warned and if the Person Still Persists in Causing Unnecessary Squeals, His Aerial is Cut Down and a KKK Warning Sign Attached. Several of These Cases Have Been Reported. © K. & H.



P. R. Fortin, of the Radio Department of the General Electric Company, Has Developed a Device Which Will Make the Piano Solo a Real Feature of a Broadcasting program at WGY. The Device, in Brief, Consists of a Magnet Between the Poles of Which is Pivoted a Suitable Coil System. The Magnet is Firmly Fastened to the Frame of the Piano and the Coil is Anchored to the Sound Board. By Means of This Pick-up Device All Tones in the Piano Are Faithfully Converted Into Corresponding Electric Currents Which Control the Radio Transmitter. When Heard on the Loud Speaker the Piano is No Longer a Twinkling Sound. The Listener Gets All the Characteristics of This Percussion Type of Instrument, the blow of the hammer, the singing tone and the Overtones.

The Future Of Radio Broadcasting

By MARTIN P. RICE*

ELECTRICITY as a servant of man was almost unknown 50 years ago and its conspicuous achievements in lighting, traction, power, ship propulsion, and communication are all within recent years. So the word "electric" has almost become a synonym for speed, progress, and accomplishment. Unlike other new developments which are frequently held back by their own limitations, the progress of electric application is limited chiefly by human inertia and conservatism.

Thus while the incandescent lamp was invented by Edison in 1879 and has since been so perfected that it furnishes the best light available and more economically than kerosene or candles, yet it is now used in less than half the houses in the United States. Electric locomotives capable of exerting greater power than any steam locomotive and operating so efficiently as to save enormously in coal consumption have been available for many years, yet only two per cent of our railroad mileage has been electrified. The complete utilization of water power which is practicable through electrification would be a tremendous factor in conserving our coun-

try's fuel resources, yet only one-fifth of our available water power has been developed.

In spite of the great strides which electricity has made, we must admit that with one notable exception, we have been relatively slow in realizing its full possibilities. The notable exception is, of course, radio broadcasting. Never in the history of the world has any invention been so eagerly, so rapidly, and so universally adopted. Three years ago it was an almost unknown art. Today there are 600 broadcasting stations, and the receiving sets are numbered in millions. As a method of communication it has taken its place with the telephone, telegraph, and post office, but it is more than a method of communication. With the printing press and the moving picture it is one of the three greatest factors in forming and influencing public opinion.

What of the future of this marvelous invention which makes it possible for a speaker to address an audience of millions, reproducing sound so faithfully that a whisper or the rustle of a sheet of manuscript is projected hundreds of miles and so rapidly that the voice may be heard across the continent

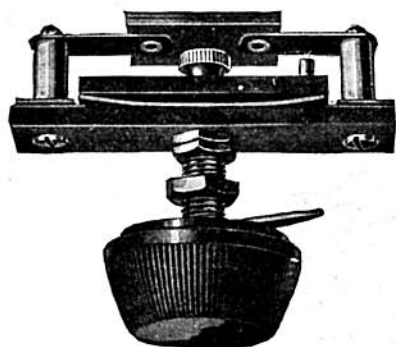
before it reaches a hearer at the end of the room.

Forecasts may be of two kinds: First, the natural and logical developments of an art according to its known principles and laws; and, second, the imaginary extension of the art beyond these limits, and we may readily, although reluctantly, dispose of the latter by predicting that the most fanciful flights of the imagination are probably inadequate pictures of the future of radio just as the fairy tales of the last century fell short of the actual accomplishments of the present day. In other words, we may consider the future of broadcasting as an economic force rather than try to foretell how invention may add to its further development.

The ability to communicate instantly and simultaneously with millions of people is not a power which will be lightly discarded as a fad or a passing fancy. It suggests, with no strain on the imagination, a universal language and the vehicle for complete mutual understanding among the peoples of all civilized nations. Music is a universal language and fortunately music is the foundation of all

(Continued on page 998)

*Director of Broadcasting, General Electric Co.



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continuously as electric contacts are made. These cylinders are turned around by variable angles, according to an irregular sequence, which, however, can be adjusted by means of what is called a "key." A switch enables the machine to be used either for open writing, like an ordinary typewriter, or for cyphering or decyphering. The "key" of the cyphering machine comprises eight letters subdivided into two groups of four each and is adjusted by means of four milled knobs which, in their central position, will shift the corresponding cylinders, according to the first group of four letters, while the second group is adjusted by pushing the knobs into their final positions. The first four letters are read through a window-opening, while the other four appear on the knobs.

The cyphering machine also comprises a counting mechanism, by means of which each letter typed is automatically counted, the actual position of the counter being likewise ascertained through a window opening. A milled knob allows the counter, previous to beginning the operation of the machine, to be set to zero.

When the machine is set to "decyphering," it automatically translates the cyphered text into open writing. As each type corresponding to the cyphered text is pressed down, the cylinders are shifted in the same, though inverted, order as before, so as to reproduce, letter by letter, the original text.

Even apart from its use in wireless telegraphy, the new machine will lend itself to many applications, in common business life, in the diplomatic service and, unfortunately even in war. It would seem for the first time to solve the problem of translating secret messages into a cypher which cannot possibly be detected and of effecting both the cyphering and decyphering automatically and without any loss of time as compared with ordinary typing.

The Future of Radio Broadcasting

(Continued from page 875)

broadcasting today. Undoubtedly it will continue to occupy an important part of the programs, but it will be used with more artistic taste. The best in music will always be available so that public appreciation will become more exacting and the inferior and mediocre will be eliminated. To music will be added the radio play, a form of drama introduced by WGY at Schenectady having characteristics as distinctive in the radio field as the screened play in moving pictures, but preserving at the same time the complete realization of literary form.

Religious services will continue to inspire the vast radio audiences and particularly to cheer and comfort those who are incapacitated through age or infirmity. In spirit they will assemble regularly "to meet the Lord in the air", and there will grow up a religion in which shades of creed will be subordinated to belief in great fundamental principles. Then there will be established a unity of religious peoples which has never before existed.

Graded educational courses will be available at times convenient to those who labor in factories or fields so that the world's educational standards may be greatly advanced by providing opportunities even for those isolated from educational centers or otherwise prevented from attending school and college.

The use of radio for broadcasting news, market, stock and weather reports will be greatly extended supplementing these functions of telephone, telegraph, and newspaper.

These are some of the obvious developments of radio broadcasting which may be expected in the immediate future as they do not demand any radical advance in our present technical knowledge. They do, however,

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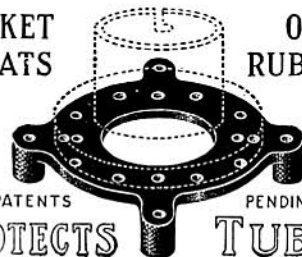
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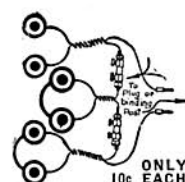


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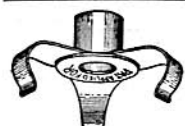
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necessitate some consideration of the question, "Who will undertake to broadcast?" because broadcasting today involves a serious responsibility. Whether broadcasting develops along the line of its technical possibilities or remains stationary depends largely on those who undertake the job. The inquiry is particularly pertinent now when a score or more broadcasting stations are relinquishing their licenses every month and about an equal number of new stations are coming "on the air." This condition, which was predicted a year ago, results largely from a lack of understanding as to the cost and responsibility of broadcasting. A modern well equipped high power station costs not less than \$150,000 and the annual cost of operation is approximately \$100,000. Obviously a department store, newspaper, or other enterprise supported largely by local trade cannot afford to broadcast far outside of the area it serves. Such stations will naturally be short-lived unless they limit themselves to low power and short programs. Even then it is probable that better results for all concerned would be obtained in such cases by renting broadcasting facilities from those established to render such service.

We may, therefore, assume that the number of broadcasting stations will decrease rather than increase, and that the high power stations with daily programs will be operated by interests of national scope. The Radio Corporation of America and the great electrical manufacturing companies will continue to broadcast on a large and expensive scale because the sale of receiving sets is dependent on the continuance of good broadcasting and also because of the friendly relations which broadcasting may establish with the public.

Another development worthy of mention is the distribution of broadcasting over telephone or electric lighting systems. This plan is entirely practicable and may be employed to a considerable extent in metropolitan areas, but will never supercede general broadcasting. The one quality of radio broadcasting which has gripped public interest is its universal freedom. It reaches everywhere and is free for all who supply themselves with receiving sets.

Thus while broadcasting involves an enormous expense without any direct returns, it may be expected to continue on an improved and more comprehensive plan, becoming an established means of disseminating news, music, education, entertainment and religious services. Fortunately most of the important broadcasting stations are quite conscious of the great responsibility they have accepted and they are seriously studying the problems involved with the views of rendering the listening public a real and permanent service.

Improved Loud Speaker Horn for Indoor Use

(Continued from page 901)

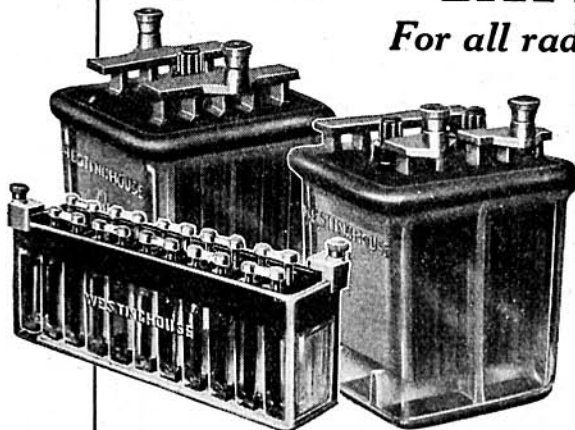
practical certainty that in a large auditorium with fair acoustical qualities, two or three loud speakers using the described type of horn, will give excellent results. Naturally, tests for placing the horns will have to be made in every case, as the length, width and height of the auditorium will govern the situation.

Only the horn of the size illustrated has been made and used. However, there should be no question from the acoustical standpoint why different sizes of double horns, equipped with different types of microphones should not work satisfactorily.

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