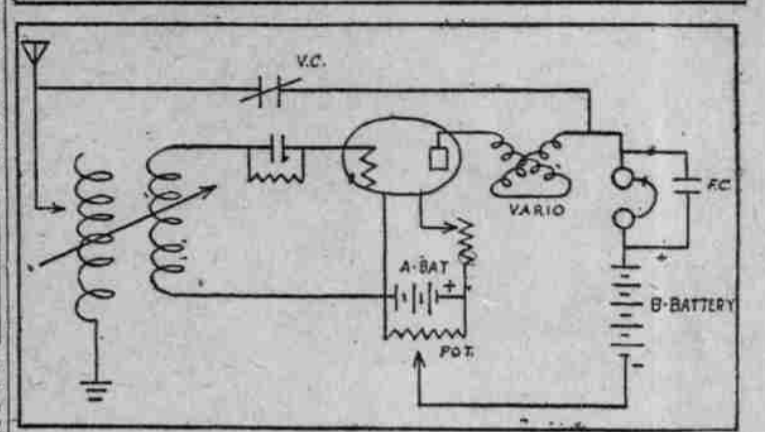


ALABAMA RADIO FAN HAS UNUSUALLY GOOD HOOK-UP

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Reports From The Oregonian Station Heard Clearly—Potentiometer Important Feature of Set.



Hook-up used by an Alabama amateur, who reports that The Oregonian station is heard clearly with this receiver.

After various experiments with the ability to govern potentiometer, he has nearly at last found a hook-up which can often be brought up from a whisper to a fairly strong audibility.

It is quite unusual in that the variable condenser, instead of being placed in the antenna circuit, is put between the antenna and the telephone receivers. This sharpens the tuning

considerably and helps to feed back the plate current into the grid through the variable condenser. If any of the Portland fans want to rig up a set like Holt's, all they need is a standard variocoupler, one variometer, a potentiometer, and a .0005 mfd. variable. A small fixed condenser, preferable of .001 mfd. is placed across the telephone receivers.

High hopes are held out for the success of the experiment, since it will mean a great deal for the international auxiliary language. Both ido and Esperanto are suitable but need careful trial.

Interference in broadcasting which has been a serious problem for more than 1,500,000 receiving stations in the United States, may be solved by a selective variometer circuit. The latter is said by Alfred Crossley of the navy engineering bureau.

Under present conditions, receiving stations with the above mentioned hook-up will be able to receive stations which are almost in constant service.

It is interesting to note that the new variometer circuit is being used by the navy engineering bureau for the purpose of receiving stations which are almost in constant service.

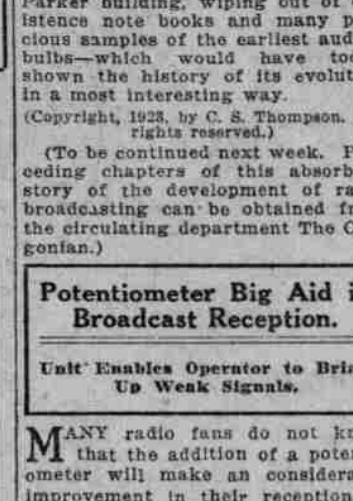
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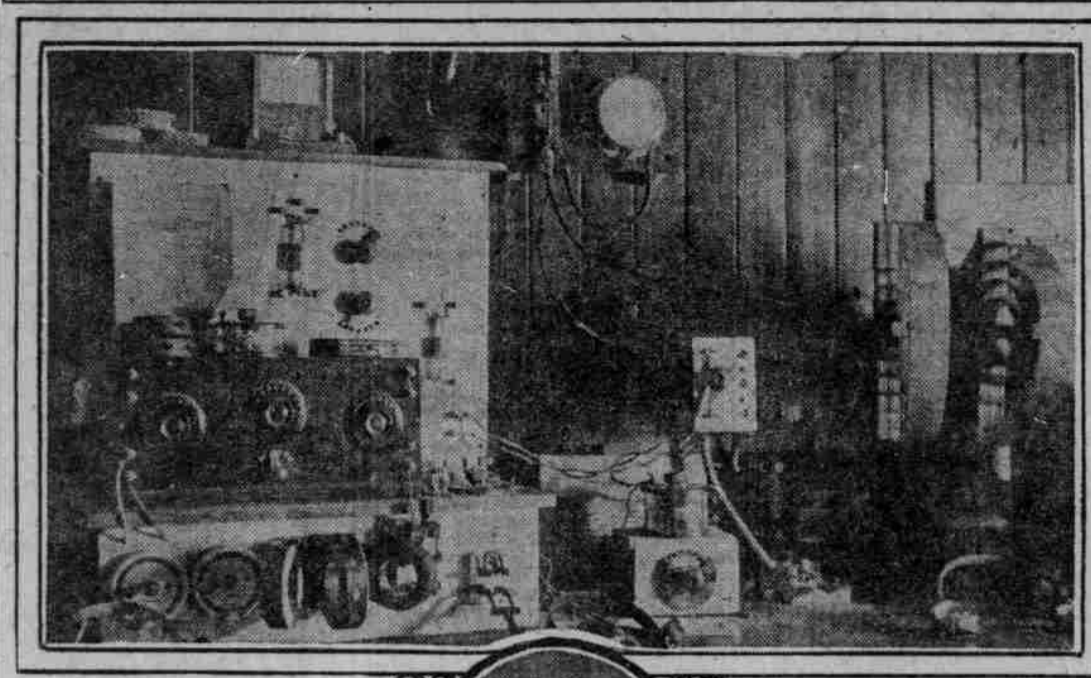
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MODERN RADIO SET OF HIGH EFFICIENCY IS INSTALLED AT MOUNT ANGEL COLLEGE

Complete Receiving and Transmitting Apparatus Provided So as to Meet Wide Demand for Instruction. All Pacific Coast Stations Within Easy Range.



Complete radio station of Mount Angel College, near St. Benedict, Ore. The apparatus is the work of a member of the faculty, Rev. Benedict Dr. Barr, O. S. B., builder and operator of the station.

The radio station was built primarily for scientific purposes. In accordance with this idea a good deal of the apparatus is home-made. Among such instruments may be mentioned a filament storage battery with automatic charging device, fixed and variable condensers, homecomb and resistance coils, motor balance, copper spark gap electrodes and an oscillation transformer composed of two-inch copper ribbon.

The various parts of the receiving and transmitting sets are mounted in plain view or are easily accessible. The student of radio is thus made acquainted with the exact relation of part to part and acquires a familiarity with the principles involved which could be obtained in no other way.

The entire installation, including aerials, "ground," high-power leads, and all other accessories, is housed in a building of the college staff. The apparatus is the work of a member of the faculty, Rev. Benedict Dr. Barr, O. S. B., who holds a first-class amateur operator's license and is in charge of the electricity and radio class at the college. He is considered one of the best electrical engineers on the coast. The call letters of the college station are 7JD.

RADIO TELEPHONE TRANSMITS FIRST MUSIC THROUGH ETHER

Phonograph Used in Development of Wireless Service for Admiral Evans' Fleet Startles Operator With Real Music.

LEE DE FOREST, Ph. D., D.S.C. In the year 1906, receiving to purchase the equipment for the station. He decided to withdraw from the company which had borne his name, and to devote his time to the development of something which his former associates considered of negligible value.

After years of indelible effort and with most clever engineering skill, three brothers by the name of Cabell had developed a plant consisting of many induction alternators whose various frequencies were those of the entire musical scale. The currents from these machines were controlled by a key-board similar to that of a giant pipe organ, commingled through a system of relays with the telephone wires.

It was accordingly with a high degree of interest that I kept at work in the Parker building laboratory. It was in this same little laboratory, many months earlier, that I had conceived the idea of the first three electrode vacuum tube—first with the "control electrode" a simple band of tinfoil wrapped around the inside of the cathode, and later with a separate electrode on each side of the filament, one the anode, the other the control; and finally with the third electrode in the form of a grid, or a perforated plate, located between the filament and anode.

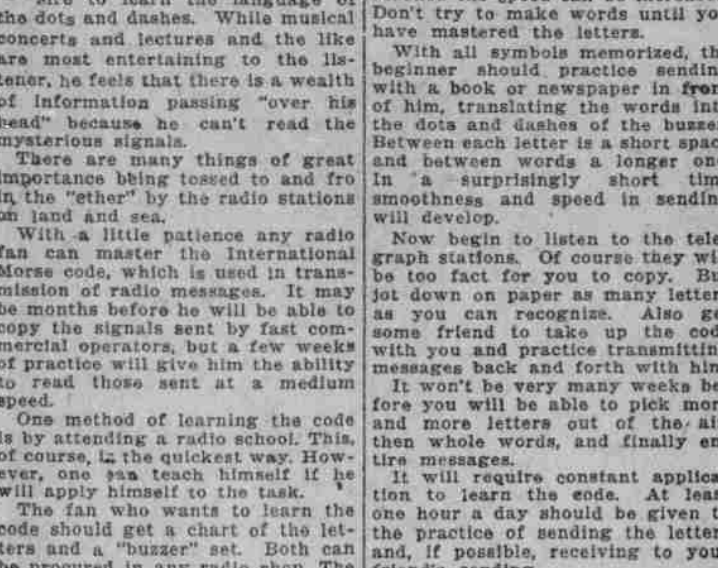
There, also in that same upper room, I had discovered that this three-electrode tube, which had just been christened "audion," would actually amplify telephone currents. In that room, then, there was born the tiny little glass baby which was destined to rule the world of electronic communication.

It was in the course of these experiments of 1907 that the phonograph was first used to actuate the microphones of the radio telephone transmitter. The phonograph was regularly used at this time in the development of some 20 small telephone transmitters for installation on Admiral Evans' battleships and destroyers, prior to their round-the-world cruise.

During those busy nights and days the other around New York was kept thoroughly astirated with music from "Il Trovatore"; and more than one ship's operator working with his, then new, carbonium crystal detector, had sudden doubts as to his sanity or sobriety, when above the rattle of the sixty-cycle spark he heard distinct and clear music or human voices.

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RADIO QUERIES AND ANSWERS

Editor Radio Department—(1) Can I regenerate my telephone receivers with dry cells? (2) How can you tell if a tube is wearing out? (3) How can you tell if a tube is wearing out? (4) How can you tell if a tube is wearing out?

Editor Radio Department—(1) Why is copper wire used on a tuning coil instead of brass? (2) When I turn my variable condenser to a certain spot, I hear a loud click followed by a faint tone. What is the reason for this? (3) Iron is highly resistant to electric current and it is not a conductor. Why is it used in the construction of a radio receiver?

Hints for Fans. The best tuning of the loose secondary turns in use are just outside, and not directly under, the turns of the primary. For this reason, primary and secondary windings are distributed in the same order.

Editor Radio Department—(1) Can I produce regeneration in my receiver with only one variometer? (2) Using a one-stage amplifier, would I have to have two batteries? (3) Will 25 double diodes covered wire work for wireless? (4) How can you tell if a tube is wearing out?

Editor Radio Department—Am using a three-honeycomb regenerative receiver and it doesn't work very good. I only hear you once in a while. Can you give me a hook-up of a circuit which you think will work better? (1) Yes, place the variometer in the plate circuit. (2) Either two or three batteries or one of 45 volts which is tapped for various voltages can be used.

Editor Radio Department—I have a honeycomb receiver used in connection with detector and two-step amplifier and would like to know if you could kindly send me a hook-up using the honeycomb coils as a short-distance telephone transmitter. Also would like the above for both telephone and V.T. Every regenerative receiver will act as a transmitter for short distance.

Radio Sale to be Continued Until Our Stock is Sold

Stock is not complete now, but if you need anything in the radio line it will pay you to find out if we have it before buying elsewhere. A few bargains left are listed below:

Table listing various radio equipment items and their prices. Items include Kilbourne & Clark Receiver, Westinghouse receiver, and various vacuum tubes.

Every article on sale at reduction of 20% or more! No C. O. D.'s, No Charge Accounts. No Mail Orders Accepted for Less Than \$10.00. Postage Must Accompany All Orders.

Advertisement for The G.E. Set, a complete crystal receiver with vacuum tube operation, priced at \$50. Includes details about the set's features and availability.

Advertisement for Hallock & Watson Radio Service, located at 192 Park Street, Portland, Ore. They offer a variety of radio services and equipment.

Advertisement for E.L. Knight & Co., located at 440 Washington Street, Portland, Ore. They offer a variety of radio services and equipment.