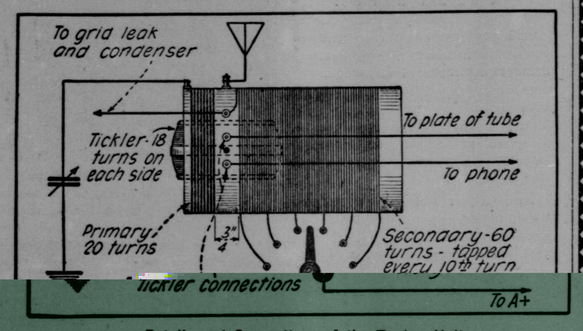
RADIO

(Edited by G. Douglas Wardrop, Editor of Radio Merchandising.)



Details and Connections of the Tuning Unit.

By JOHN H. BOSTOCK

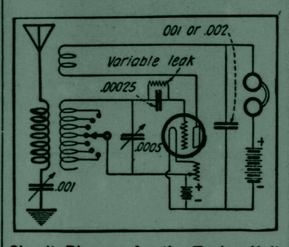
For the radio fans who have built single-circuit sets—and I know that they are now wishing they had expended a little further and made the popular honeycomb or variometer set—this article is written.

As you have found out, the single-circuit set, while giving louder signals, also brings in interference. The main reason you built your single-circuit set was that it was inexpensive. Now I feel sure there are many fans who, like myself, have been trying to reduce interference. To these fans I offer the results of my experiments. You can alter your present single-circuit receiver very easily by just substituting the new tuning arrangement. Looking at the diagram, you will notice that the circuit is almost identical with the usual honeycomb circuit; i. e., primary, secondary and tickler, and yet the whole thing is nothing more than a vario-coupler.

A description at this time is, therefore, not out of place. A tube of insulating compound or cardboard 4 inches in diameter (if the latter, it should be well shellacked) is obtained and some No. 24 D.S.C. wire. The tube will need to be about 7 inches long. Starting from one end, make a hole for a binding post ¼ inch down and commence winding from the post. After winding 20 turns, make another hole for the binding post—this completes the primary; no taps are required. Leaving ¾ of an inch, make another hole and start winding the secondary. Wind 60 turns and tap every tenth turn; this completes the secondary. The tickler is the usual wooden ball, and is wound with 36 turns of wire, 18 on each side. Now place the tickler in the tube. The ball should rotate between the primary and secondary turns, and the small sketch will further make this understood. After the tickler is placed in the tube, make two more binding post holes in the tube between primary and secondary for tickler connections. This makes the whole tuning arrangement complete.

After drilling, you can commence the hook-up. Color each circuit as it is wired and no mistakes will follow. I do not think I need explain further. If your skill has been sufficient to produce your single circuit, you will have no difficulty with this one.

Just a little word of caution. I have found that on most receivers the small .001 fixed condenser shunting phone or "B" battery is omitted. This circuit will positively not oscillate properly if this condenser is not included. The antenna I now have is about 120 feet



Circuit Diagram for the Tuning Unit Described.

long and I find the 20 turns on the primary quite sufficient for waves from 150 to about 800 meters. The primary condenser is in series with the ground and not shunted across the primary. This to me seems a little better than the usual shunt. I also find that the secondary condenser is very sharp in tuning and that the primary condenser acts as a vernier. I would advise the use of a vernier condenser in the secondary, but for the primary it is not necessary.—Radio News.

Range of Reception Is Greatest Over Water

The range of transmitting and receiving radio messages depends upon the nature of the territory lying between the transmitting and the receiving stations, the greatest range for a given power being obtained over water. Any metal, particularly iron or steel, lying between the stations, will cause loss of signal strength. Such metal may either be in the form of artificial structures such as building frameworks or tin roofs, or may be in the form of ore deposits. Some regions of the country are noted for their poor location for radio reception. In many places it is possible to receive effectively from all directions but one, and it is usually found that in this direction a metallic structure or metal deposit is responsible for the lack of reception.

Good Indoor Antenna Coiled Into Spiral

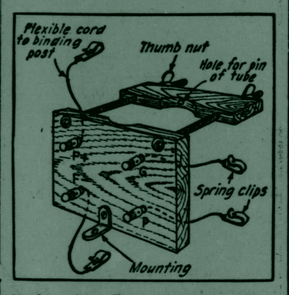
A new type of indoor antenna which rivals the loop can be made in a moment with nothing more than 100 feet of wire. The wire is coiled into a long spiral and suspended by one end. Number 16 or 18 insulated wire works well, although many other kinds are quite as good, heavier wire being, in general, better than light wire. Wind the coil on any convenient tube; suspend it from a window and it will rival an outdoor aerial. It cannot be counted upon to give results with a crystal set, but is practical for any kind of vacuum tube receiver. It is almost always better than bedsprings, piano strings, or wires about the room.—Radio Digest.

Fit-All Tube Socket Makes Changing Easy

There are so many kinds of tubes now on the market, the bases of which are of different sizes, that it is necessary to connect up a new socket whenever it is desired to change tubes.

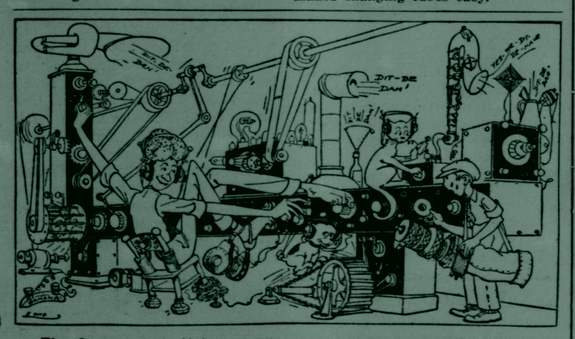
The drawing shows a socket which will hold any tube.

Simply insert the tube so that the pin fits in the little hole on the back part of the socket. Then tighten up the thumb nuts until the tube is se-



An Ingenious Form of Vacuum Tube Socket Particularly Useful for Experimental Purposes. It Will Fit All Tubes Except the UV-199 and C-299.

cure. Connect the flexible cords with the small spring clips to their proper prongs on the tube, according to the marked binding posts on the front of the socket. The sketch shows how they are connected. Such a socket makes changing tubes easy.



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DIRECTS MOVIE ARMY OVER TELEPHONE LINE

EVEN "RED SEA" MADE TO OBEY VOICE ON WIRE CALLING FOR EBB AND FLOW

Telephones are proving of invaluable service in the production of motion pictures, and without their aid much time would be lost and the expense of making the pictures would be much greater.

Probably the most extensive use of army field telephones since the World War was made in the recent production of "The Ten Commandments." The telephone was used to guide both Pharaoh's army and the Israelites, to direct the turning on or off of the Red Sea and also accompanied Moses on his journey to Sinai.

This emergency telephones system was not strung on poles, but was laid along the ground to follow the director or his assistant to any point desired. It consisted of a six-mile roll of wire mounted on a sand sled drawn by horses, and by its use the camp and the 2,500 players engaged in making the picture were always kept in close touch with headquarters.

AN EARLY SWITCHBOARD

In the early days of telephone switchboards, many different types were evolved and of these perhaps the most interesting was the pyramid type. The first telephone exchange to be opened in the South was at Richmond, Va., on April 1, 1879, and this exchange was equipped later with the pyramid type switchboard.



Pyramid Type Switchboard—1880-82

This particular switchboard, which has the appearance of a lampshade, was a marvel in its day, but its day was not a long one, for inventions at that time were many and improvements were being constantly made as the telephone was being developed.

The switchboard was about three feet square, with an operator's position on each of its four sides. Each line terminated on a cord and plug arranged in numerical order. Connections were made by inserting the plugs of two lines into the holes in brass strips mounted on the four sides of the cupola. As many lines could be connected together as there were holes in the brass strip.

There was also a long brass strip across the lower edge just below the connection strips. This was connected to the generator which was used to ring a subscriber's station, the operator simply touching the tip of the plug to the generator strip as she passed the plug up to the connection strip.

'HASTE MAKES WASTE' IN SIGNALLING THE OPERATOR

If, after putting in a telephone call, it is necessary to recall the operator, she should be signalled by moving the receiver hook up and down the entire length of the slot—slowly.

A great many people when anxious to get a quick response, jiggle the hook, not realizing that when they do so, the signal barely flickers, or does not show at all. When the hook is moved up and down slowly, the signal lamp will glow and go out at regular intervals, thus attracting the operator's atention, but unless the signal lamps are given a chance to function properly there can be no response.

IF YOU AREN'T THERE YOU NEEDN'T ANSWER

ENGLISH TELEPHONE SALUTATION ONE OF MANY THAT SOUND QUEER TO AMERICANS

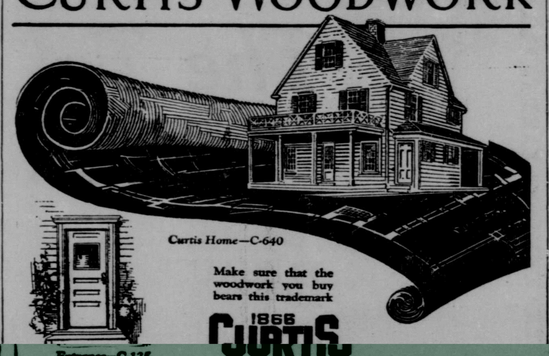
"Are you there?" says the Englishman when he answers the ring of his telephone, and presumably if you are not ,then you don't talk.

However, the more familiar hello is used to some extent throughout the British Isles, while on the continent it is seldom used at all. The nearest approach to it perhaps is the "Allo" of the Frenchman. In Germany, Switzerland and several other countries, when a person answers the phone he simply says "Mr. ....," giving his own name. This follows the practice being encouraged in this country.

If you are in Japan and hear the term "Moshi moshi" don't be startled. It sounds like a popular drink, but it isn't. It is simply the Japanese way of saying hello over the telephone.

In Spain the telephone salutation of the subscriber is "Oiga" meaning "I hear," to which the operator responds "Diga," which means "I say." The Italian, when called to the telephone, grasps the receiver in his hand and shouts "Pronto" over the wire, while in Sweden the usual salutation is "Hallo."

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