

A New Receiver

Recent American Invention

A NEW type of radio receiver which combines a specially designed valve with a radically different electrical circuit was demonstrated recently in America. The unique part of the device is that it avoids most of the engineering practices and methods of construction and operation upon which other present-day receivers depend for their operation.

Part of the instrument employs six valves of the 199 type. The audio-amplifier unit has two valves of the new type developed by the inventor. Before the radio frequency amplifier, which employs no tuning circuit to adjust the receiver to the desired wavelength, is placed a special "filter circuit" to exclude all the broadcast energy except that of the station desired.

In enumerating these departures from current radio designs, the inventor stated that his valves, instead of employing negative "C," voltages employ a method of biasing by means of a positive voltage or battery. This method, he explained, combined with the new circuit, affords very large signal gains, or amplification. All of the valves are of the three-element type, using internal parts known to the radio world as "grid," "plate," and "filament." However, the elements are said to function in a quite different way from the ordinary internal parts of a standard radio valve.

The receiver functions as an amplifier over a very wide band of frequencies, without distortion, and the only frequency limiting device in the entire set is the band selector ahead of the radio amplifier and a transformer coupling device which links the set to the loudspeaker. Thus the set would be applicable to radio-vision reception, as well as for broadcast programmes. A majority of the radio-vision test programmes are being broadcast in channels 100 kilocycles wide, whereas the broadcasts of audible programmes are transmitted in channels only ten kilocycles in width.

WHEN using a many-turn tuning coil as an R.F. choke remember that its magnetic field must not extend to other apparatus, or unwanted coupling effects will arise that would not be troublesome if the spacing were O.K.

Storing Spare Wire.

EXPERIMENTS involving the construction of special coils often lead to an accumulation of insulated wire of various gauges. An excellent method of storing lengths of wire of this kind is to wind them on a wooden pole, about an inch in diameter and three feet long. Holes are drilled in the rod at intervals of an inch or so for its complete length. The spare lengths of wire are then wound separately on the pole, and the ends passed through the drilled holes. The rod may then be conveniently supported on two brackets on the wall and left free to rotate so that the particular length of wire wanted may be easily pulled off.

Set-Building Hints.

WHEN building a set if a centre-punch is employed before drilling the necessary holes the accuracy of their positions will be ensured. With very large holes such as those of 3-in. diameter as used for one-hole fixing components, it sometimes simplifies drilling if a small guide hole is made first. In order to ensure that the panel and baseboard will fit nicely into the cabinet, it is best to screw the panel and the terminal strip to the baseboard with all three in place in the cabinet. This should be done before the components are mounted on the baseboard but after those which go on the panel are in place.

Simplifying Tinning Operations.

THE tinning of the ends of the lengths of wire used in wiring a receiver, especially fine or flexible wires, will be greatly facilitated if the soldering iron is adapted for the purpose. The usual trouble encountered in this operation

A Correction

AN error occurred in an article on "Power Transformer Design and Construction," published in last week's issue. In the printed diagram 280 type rectifiers are specified, but not only are these rectifiers incapable of standing the plate voltages called for, but the filament voltage required for them is 5 instead of the 7.5 provided by the transformer. Two half-wave rectifiers (type 281) could be employed in a full-wave rectifying circuit. Valves recommended for use are Marconi or Osram U8 rectifying valves. These are the only full-wave rectifying valves capable of standing up to 500 volts input.

Tips and Jottings

is that it is difficult to put a good coating of solder on the wire without rubbing it about on the iron. If a fairly deep V-shaped groove is filed in one of the faces of the bit (at right angles to the handle) a considerable amount of solder can be melted into it without any risk of its running off.

Using Fixed Condensers.

IN ALL straight circuits with the reaction coil in series with an impedance or resistance, it is advisable to provide a by-pass condenser to ensure satisfactory control with a suitably small reaction coil. In certain other circuits, even though reaction is not used, it is often found that the inclusion of a small fixed condenser will give improved results, and an example of this fact will be found in most reflex circuits where the 'phones are connected in the anode circuit of the reflexing valve. When, on the other hand, no reaction is used, a telephone condenser does not become a necessity, except in special circuits. It may, however, sometimes be found to improve the tone of signals, and for this reason is sometimes provided, though generally in the case of telephone reception the actual improvement is hard to detect.

For Fine Soldering.

WHEN fine wires have to be soldered in a rather inaccessible position, it is often difficult to place the tip of a soldering-iron of ordinary size down into position. A useful method of overcoming this difficulty is to bind a few turns of really stout wire round the head of the iron, leaving a projecting tip. This can be turned, and makes quite a satisfactory iron for soldering fine wires in grooves where the iron itself is too big to enter.

America on Short-Wave

Schedule of W9XF

HAVING just received confirmation from W9XF, Chicago, I thought that the information which they sent me might be of interest to short-wave enthusiasts.

"The transmitter is located at the site of the WENR transmitting station, which is three and one-half miles south of Downers Grove, Illinois, or about twenty-three miles south-west of Chicago. The power output is 5000 watts. The transmitter is operating on a frequency of 6020 k.c.'s at the present time. We are authorised to use the frequencies of 11,800 and 20,500. Separate transmitters will be built at a later date to operate on these frequencies.

"Schedule of WENR and W9XF. Monday:—10.00 a.m. to 10.30 a.m., The Sunshine Hour; 11.15 a.m. to 11.25 a.m., The Sunshine Hour (continued); 11.25 a.m. to 11.45 a.m., Home Service Feature; 5.00 p.m. to 5.30 p.m., The Air Juniors; 7.15 p.m. to 7.30 p.m., Farmer Rusk with 'AG' Talk; 11.00 p.m. to 12.20 a.m., Music Parade; 11.30 p.m. to 11.40 p.m., Comedians.

"This applied to every day of the week except Tuesday 9.00 p.m.—10.00 p.m., when the Utility Securities Concert Orchestra play, and Saturday 12.00 midnight to 2.00 a.m., when DX Air Vaudeville programme is given, and Sunday, when appropriate concerts are given."

I would be very pleased if any short-wave enthusiast would write to me and exchange notes.—H. D. Adcock ("Braeburn," Church Street, Masterton).

WHEN changing coils remember that if the metal pins on these touch the wrong sockets, or other metal, you may burn out a valve, short a battery, or do other damage.

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