

## Fitting 'Phones

(Continued from page 16.)

two connections going into the output transformer from the set. Disregard the number of wires going into the speaker. The jack on the speaker can be dispensed with (in the case of midge sets a jack cannot be used, as there is no room to mount it) and the phones are connected as shown in Fig. 4, taking no notice of the adaptors. If a jack is used connect as shown in Fig. 6, the two flexible wires go to the two connections on the transformer from which the wire goes to the set.

When you connect headphones to a powerful all-electric radio set, you should be very careful with the volume

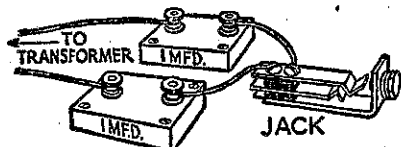


FIG. 6.

control, because if you turn it up too far a sudden loud burst of static might not be too good for your ear-drums. Also it is bad for the ears to pass quickly over a local station when tuning in with the earphones.

A separate volume control could be employed by connecting a 100,000 ohm variable resistance across the phone terminals.

If you get an unpleasant "pong" every time you touch your detector valve you can often overcome this by fixing a little plasticine or chewing gum on the top of the valve and embedding a small piece of lead in this to change the natural vibration period of the valve.

If you are building a portable set remember that the modern anti-microphonic valve holder allows of considerable movement of the valves, and that to protect these sponge rubber, or some similar shock-absorbing material, will be necessary.

## Questions and Answers

(Continued from page 15.)

A.: About £6. The Sparrow Hawk about £3/10/- without batteries.

B. C. (Waitara): What valve should I use in my set, preferably they should be Marconi?

A.: In the first two stages you should use H410; in the next three L410, and in the last stage P410. These remarks hold good for other valves.

2. I live in a valley between hills a quarter of a mile apart and 600 feet high. I have approximately 60 stations on my valve set. Is this good?

A.: We have seen better logs for a set of this description, though your locality no doubt has a tremendous effect upon your reception. Would it not be possible to suspend your aerial between the two hills? You need not employ the whole span as an aerial, but use fencing wire as supports and keep your aerial about 200 feet, including the lead-in.

CURIEUX (Napier): Does corrosion of a bare copper aerial actually lessen the aerial's efficiency with regard to signal strength?—Yes.

2. My aerial is 40 feet at the far end and 20 feet at the lead-in end, and the main span is about 30 feet. Is it efficient for shortwave reception?

A.: Yes, but it would be better if you could get it a little higher at the lead-in; say get on another 10 feet.

W. M. E. (Miramar): Could you supply me with particulars of a closely-coupled primary coil to match a valve with an impedance of 200,000 ohms?

A.: Wind approximately half the number of turns on the secondary on to a former which will just fit inside the two-inch former. Use 36 gauge wire.

A. MATEUR (Petone).—My set weakens then comes back to normal, and within an hour falls off. The "B" eliminator seems satisfactory because it keeps up a steady hum, and the accumulator is fully charged. The complaint has commenced since putting in a new "C" battery. Reverting to the old one is no improvement.

A.: It is difficult to tell you where to look for the trouble. It probably lies in

the transformer, one of the valves, the speaker, or a condenser. It may possibly be a loose connection. Have your valves tested and take your eliminator along and that he knows to be all right.

ask your dealer if he will put it on a set 2. Recently I picked up JOHK. Is this good? I also pick up 6WF, Perth.

A.: Yes, very good indeed. 3. I have constructed the Sparrow Hawk differential adapter, but cannot get anything out of it. The wiring seems O.K. I have reversed the filament leads without making any apparent difference. The third lead from the adapter goes to the anode in the detector valve socket and the grid is left blank. Is this correct?

A.: Yes. There is undoubtedly something wrong with the adapter. Try connecting a pair of phones between the pin that goes to the anode and a suitable "B+" tapping. Connect the filament to the two filament prongs of the detector. We hope you have noticed that your sockets are English type with the pins spaced out like the Southern Cross. The anode is the one by itself, the grid and the two filaments are grouped together. The filaments are the two outside ones.

TELME (Auckland): What valves are used in the "Sellens' a.c. Short-wave Receiver?"

A.: A442, A615, A609, B605. Any valves of the types enumerated will be satisfactory. Note that A442 is a four-volt valve, and in order to break the six-volt current down to four volts a rheostat has been placed in the filament of the first valve.

2. What are all the earths on the by-pass condensers, etc., attached to?

A.: They are connected with the metal panelling which is connected directly to earth.

3. What would be the total cost of the "Sellens' Short-wave Set," including all batteries, valves, etc.?—A.: £10 or £11.

GRID (Hastings): I have a four-valve a.g. set which was damaged in the earthquake. I wish to remodel it. What in your opinion is the most efficient five-valve set within the capabilities of the amateur builder?

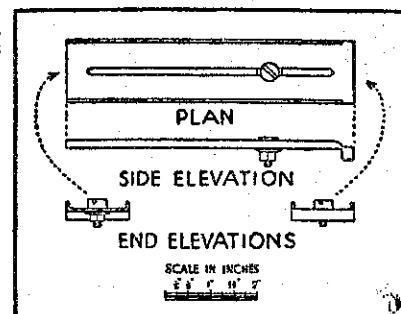
A.: Undoubtedly the Outspan Five, which was published in the "Radio Record" dated February 20, 1931. You will find all data there. You can use the Colvern coil formers without making any alterations in the number of turns.

### Stalloy Cutting Device

A CONSTRUCTOR has shown us a very useful device for cutting stalloy to the correct measurement. Many constructors know that cutting

a large pile of stalloy strips, each one exactly the same length, is not easy unless some means of accurately gauging the length of each is found.

He has made a small device of brass, and the illustration shows it very clearly. The slot width is the same as that desired for the strip, while the



length is somewhat longer than the longest strip. The stalloy will just fit in between the grooves shown in the end and side elevations until they reach the nut. They are then sheered off along the thickened end shown on the right of the side elevation.

The position of the nut, of course, will determine the length of each strip. It is a useful little device, and well worth knocking up by anyone who contemplates cutting a lot of stalloy.

Even for those who cannot get the brass, and have not the means of turning out the nicely-finished device depicted in the plan, there is the possibility that they will be able to adapt the specifications for some little device of their own.

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