

and at right angles to each other. The ebonite panel is drilled to take the two condensers and terminals for aerial, earth and 'phones. If square busbar is used to wire up the receiver, the two crystals can be held in position by this wire. If not, then two clips will have to be devised to hold the detector cartridges away from the baseboard. Do not screw metal clips direct to the wooden baseboard, but mount on a small strip of ebonite.

Wiring.

THE wiring is a comparatively simple matter, and no error can be made if the diagram is followed closely. The two aerial coils are joined in series and the two free ends joined to aerial and earth terminal respectively. The two sets of moving plates of the condensers are joined together and also run to the earth end of each coil, that is the end of the secondary under the aerial coil. This wire also joins to one end of 'phone terminal, which ter-

whether the crystal detectors are connected the correct way round.

This can be determined only by actual test. Listen to the strength from the local station and reverse either, one, not both, of the crystal detectors and note signal strength again. It will be either louder or softer and the constructor will soon know which is the right way round. If a gauged condenser is used and signal strength does not seem up to scratch, a midget balancing condenser will be found useful to adjust both coils to resonance with the transmitting station.

Using an Output Transformer.

IF the reader has a push-pull output transformer it would be quite worth while to include it in the set as a trial. To connect up the transformer break the three wires marked with a small cross. Connect the two outside ones to the centre tapped prim-

Keeping a Crystal Set in Order

THERE is very little to go wrong with a crystal set, but, nevertheless, there are a few points about the maintenance of this class of receiver which are worth watching. For instance, the telephones themselves should not be worn for very long periods, and then put away without being wiped gently with a fine cloth, or otherwise moisture may collect in the diaphragms, which will eventually rust the telephones, and probably do a good deal of damage.

(Telephones are extremely sensitive instruments, so all wiping, etc., should be very carefully done.)

It is especially important not to bend the diaphragms of the telephones in any way. Another important point is to keep the whole set free from dust. This is especially true of the crystal

itself, which should be kept as clean as possible, and not handled with dirty fingers.

If sensitive spots become difficult to find, the crystal should be broken in order to get a new surface. The cat-whisker itself also should not be neglected, and should be kept sharply pointed, the degree of pressure upon the crystal itself being varied according to the pressure which gives the best results. The most important proviso of all is to keep contacts clean. If the set is kept covered over and free from dust, and the foregoing precautions are taken the set will give continuous satisfactory service.

VALVE tubing such as is used for bicycle tyres makes an excellent device for preventing the shorting of leads against a screening box and can easily be slipped over the wire before soldering inside the box is carried out.

Components for Full Wave Crystal Set

- Two Variable Condensers, .0005 m.f.d. (separate or gauged).
- Two Crystal Detectors.
- Two Cardboard or Ebonite Formers, 3in. dia., 4in. long.
- Panel.—Wood or Ebonite.
- 4 Terminals.
- Fixed Condenser, .001 m.f.d.
- 22 Gauge D.C.C. Wire.

minals are bridged by the .001 fixed ary and the middle one to the centre condenser. The other 'phone terminal tap. Short circuit the 'phone terminals and connect the two 'phone detectors. The free end of detectors leads to the secondary of the transformer. It is not worth the expense of buying a special transformer for the job and the arrangement described This finishes the wiring and a test will be an improvement over the usual will have to be made to determine crystal set.

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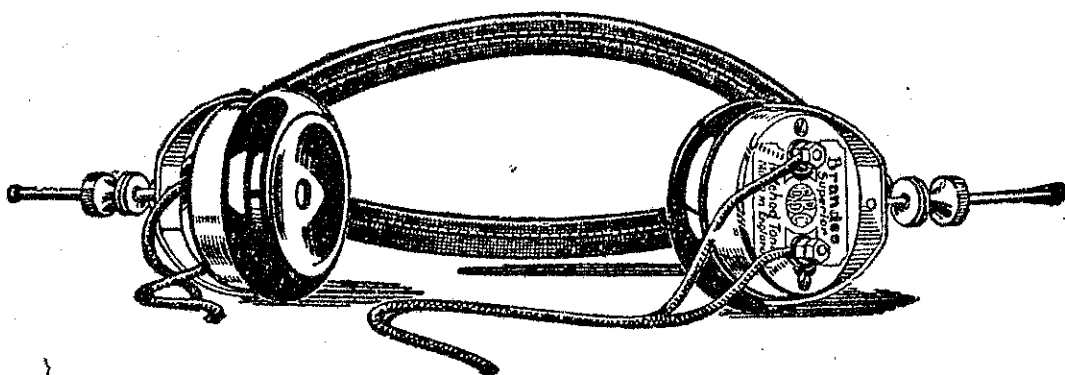
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