

the top lugs of the jack No. 2. Join the lug on the same jack with which the previous makes contact when the plug is inserted to the following points. Remaining terminal on valve holder; the loop made in the tuning coil; the moving vanes of the first, or left-hand, variable condenser; one of the outer

run, as shown, to various points—namely, (1) terminal marked G on transformer, (2) free end of crystal detector, (3) free end of grid condenser and leak.

The fixed plates of reaction condenser are formed to plate terminal of the valve and also to the free end

tain amount of C bias is available across the rheostat resistance.

### Components Necessary

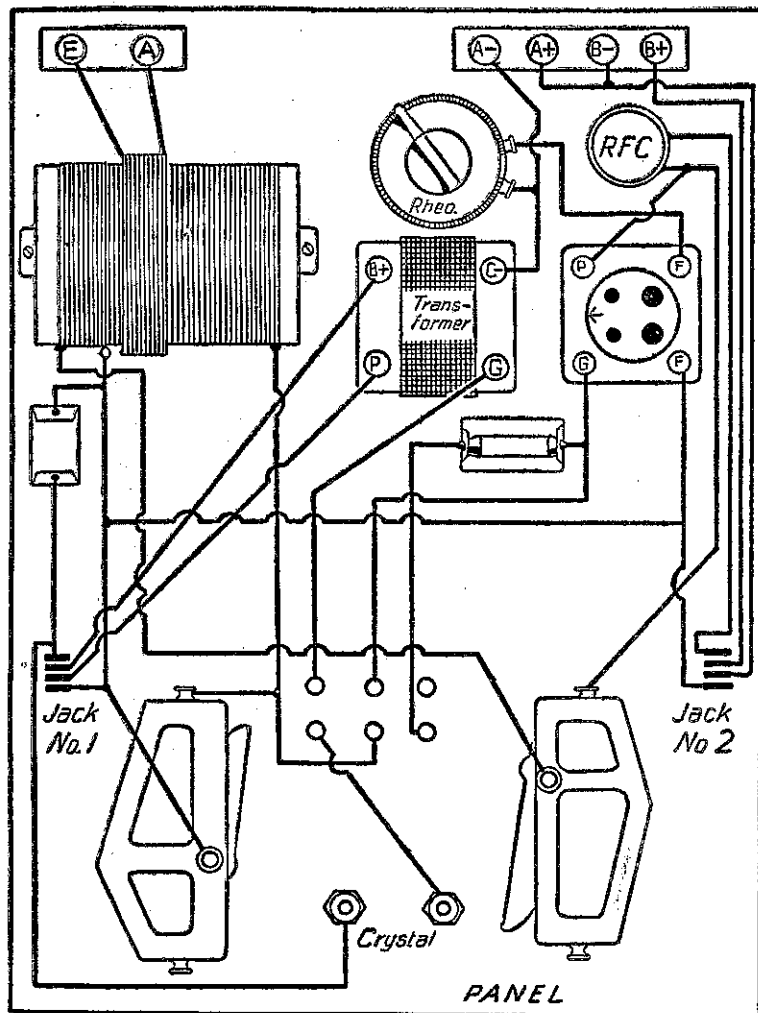
- 1 variable condenser .0005 mfd.
- 1 variable condenser .0003 mfd.
- 1 fixed condenser .001.
- 1 fixed condenser .00025, with grid leak and clip.
- 1 crystal detector.
- 1 double pole double throw switch.
- 1 valve socket.
- 1 R.F. choke.
- 2 jacks as specified.
- 1 intervalve transformer.
- 1 rheostat 20-30 ohms.
- Panel 12in. x 16in. x 3-16in.
- Ebonite or cardboard tubing. 2½in. diameter, 3½in. long.
- ½lb. 24 S.C.C. wire.
- 1 doz. terminals.
- Connecting wire, baseboard, etc.

When operating this set care must be taken not to allow it to oscillate, as it is capable of radiating and dis-

turbing neighbours' reception for miles around unless carefully handled. Finally, there is no necessity to disconnect the batteries or cutting off the rheostat when closing down. Merely take out the speaker or 'phone plug from jack No. 2 as this automatically cuts off the filament supply.

### Tone of Speakers

VERY often the tone of a small cone speaker can be vastly improved by using a baffle board. Obtain a square of wallboard and cut a hole in the centre slightly smaller than the diameter of the cone. Now, with three small clamps fastened by screws or bolts, the rim of the speaker can be fastened into place. It is not generally known that the moving coil speaker is no better than ones costing one-tenth the price if used without a baffle. It will then be realised that even the cheapest speaker needs some sort of a baffle if any of the lower register are to be reproduced.



lugs of jack No. 1, and also to one side of a .001 m.f.d. fixed condenser. Join the remaining two lugs on the jack No. 2, one to one end of the R.F. choke, and the other to right-hand terminal on the strip of four, marked B+.

Join the remaining outer lug on jack No. 1 to the free end of the .001 fixed condenser, and also to one end of the

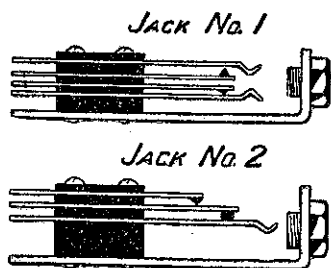
of R.F. choke and the moving vanes of this condenser to the free end of the reaction coil.

The aerial and earth wires, joined to their respective terminals, complete the wiring of the set.

#### Connecting Up.

THE most interesting part lies ahead, and this comes after the batteries have been connected up and all is ready to try out.

Commence first of all with the switch arm thrown over to the left and plug the 'phones into jack No. 1. Adjust the crystal and tune in the local station with the reaction condenser at zero. Now plug the 'phones or speaker into the right-hand jack. If everything is in order the station will roar in at speaker strength. With the 'phones still in jack No. 2 throw the switch to the right and we have a single-valve detector, the crystal and transformer being thrown out of commission. Gradually increase the reaction condenser and with the receiver on the verge of oscillation search for distant stations on the left-hand dial. Adjust the rheostat at the back until the valve operates successfully in the capacities of both detector and amplifier with the minimum of A voltage. This is done with a purpose, as no C battery is provided and a cer-



crystal detector. Join the two centre lugs of jack No. 1 to the P and B+ terminals of the transformer.

Connect the fixed plates of the left-hand variable condenser to the free end of grid coil and to one of the centre lever arms on the D.P.D.T. switch. The opposite switch arm goes to one end of the grid leak and condenser and also to the grid terminal of the valve. The various other switch terminals

## RADIO DIRECTORY

### What to Buy and Where

#### CITIES

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| <b>ALTONA &amp; HAMMARLUND-ROBERTS SETS.</b>         | <b>Johns, Ltd.</b><br>Chancery Street, Auckland.                                   |
| <b>ATWATER-KENT RADIO</b>                            | <b>Frank Wiseman, Ltd.</b><br>170-172 Queen Street, Auckland.                      |
| <b>BREMER-TULLY RADIO</b>                            | <b>Superadio, Ltd.,</b><br>147 Queen Street, Auckland.                             |
| <b>BURGESS RADIO BATTERIES,</b>                      | <b>All Radio Dealers.</b>  |
| <b>CROSLEY RADIO</b>                                 | <b>Abel, Smeeton, Ltd.,</b><br>27-29 Customs St. E., Auckland.                     |
| <b>CROSLEY SETS</b>                                  | <b>Lewis Eady, Ltd.,</b><br>Queen Street, Auckland.                                |
| <b>FERRANTI RADIO COMPONENTS</b>                     | <b>A. D. Riley and Co., Ltd. Anzac Ave.,</b><br>Auckland, and all leading dealers. |
| <b>GREBE RADIO</b>                                   | <b>Howie's,</b><br>Dilworth Building, Custom st., Auckland.                        |
| <b>MULLARD VALVES</b>                                | <b>All Radio Dealers.</b>  |
| <b>PREST-O-LITE. Car and Radio Battery Service</b>   | <b>L. J. Purdie &amp; Co., Ltd.</b><br>97 Dixon Street, Wellington.                |
| <b>RADIOLA RECEIVERS and Expert Radiola Service.</b> | <b>Farmers' Trading Co., Ltd.,</b><br>Hobson Street, Auckland.                     |
| <b>T.C.C. CONDENSERS</b>                             | <b>A. D. Riley and Co., Ltd. Anzac Ave.,</b><br>Auckland, and all leading dealers. |

#### COUNTRY TOWNS

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|-------------------------------------|--|
| <b>CROSLEY RADIO</b>                | <b>J. C. Davidson,</b><br>Main Street, Pahiataua.              |
| <b>CROSLEY SETS</b>                 | <b>F. H. Jellyman, Ltd.,</b><br>Devon Street, New Plymouth.    |
| <b>CROSLEY RADIO</b>                | <b>D. A. Morrison &amp; Co.,</b><br>Victoria Avenue, Wanganui. |
| <b>PHILIPS VALVES AND APPARATUS</b> | <b>All Good Radio Dealers.</b>                                 |