

large power valves in push-pull in the output stage.

When all is finished and adjusted, the centre of the front diaphragm will be pulled inwards about three inches, and the back one about an inch.

For the back corner-pieces, cut them 12½ inches long, afterwards sawing off corners as shown. The long side will then be about 11½ inches. The application of celluloid solution to the diaphragm is intended more to fill up the pores or interstices in the weaving, rather than to produce a hard surface of celluloid. Therefore, the application of solution should be in moderation, and by keeping it thin, an even coating will be assured. The surface will still be fabric, and not a shiny, unbroken one.

Matter concerning the linen diaphragm speaker was published on July 12 and July 26 last, but the writer considers that this variation in construction is simpler and better, because correct adjustment of tension may be effected at any time. By suspending the unit, all the vibrations are communicated to the diaphragm and not partly to the framework.

Winding Short-Wave Coils

THE right number of turns for a tuning coil to cover a particular range on the short waves is not easy to determine. The turn numbers for a given diameter of former are sufficiently standardised on the broadcast band, but no two people make their short-wave coils exactly alike. To find the correct number of turns for the main tuning coil for a particular range usually entails either a good deal of "trial and error" work, or the making of a tapped coil, both processes being rather troublesome.

One method of surmounting this difficulty is to procure some rubber-covered flex, and with this wind on the former more turns than are likely to be necessary. Connect one end of the coil to the grid side of the tuning condenser, the other end remaining disconnected. To the filament side of the condenser connect a flex lead with a pin soldered on the end. This pin can be pushed through the rubber insulation at any point of the coil, and thus the correct number of turns can be ascertained.

The flex is now taken off, and the final coil wound on, using the number of turns required. Do not be tempted to leave the cable-wound coil in the set as a permanency. The odd turns at the end would produce dead-end effects, and the large amount of rubber insulation would render the coil inefficient.

An A.C. Tip

STRANGE though it may seem, there is a definite and correct way in which an A.C. eliminator should be switched off. In all cases the mains switch should be turned to the off position before the valves are switched out. Switching on is not so important, though it is as well to turn on the set last, as then the filaments are not subjected to a sudden strain.

A Wireless Use for Vacuum Cleaners

MANY wireless-set users have a vacuum cleaner in the house, and while one does not usually think of running the vacuum cleaner over the wireless set, it should not be forgotten that practically all of these useful domestic instruments have a "blower" attachment by which a strong jet of air can be projected through a nozzle at the end of the tube. This jet of air is of great use in removing dust from a set and particularly for cleaning the spaces between the vanes of variable condensers.

Mounting of Spare Meters

THE amateur constructor usually keeps one or more meters on his bench free from regular service, so that he can have them handy for general testing. For convenience in reading, and for the protection of these delicate instruments, they should be mounted, and the following is a good method:—The most convenient position for a meter is at an angle of 45 degrees. Each meter is mounted on an ebonite panel just large enough to accommodate it, and, if the meter terminals are behind, the required number of terminals can be mounted on top of the panel. The panel is screwed to a base-board with its front edge bevelled off at an angle of 45 degrees. The average moving-coil meter is practically unaffected by the angle, but a few readings should be taken at various angles before mounting, to see if there are any discrepancies.

Waterproofing Aerial Ropes

An Effective Method

ALTHOUGH the electrical and insulating efficiency of the aerial should naturally receive first attention, it is not wise to forget all about the other components of the aerial system. For instance, aerial guy ropes, after they have been in use for a season or two, often show signs of deterioration owing to their continual exposure to inclement weather.

An effective waterproofing preparation is as follows:—

Dissolve two pounds of ordinary alum in a bucket of boiling water. Allow the water to cool, and then steep the aerial ropes in this liquid for two days. After the lapse of this time remove the rope from the alum solution, and, without any rinsing, hang it up to dry.

By this simple procedure the rope will be rendered waterproof for at least a year. The process is an efficient one; its cost is almost negligible, and it is clean to carry out.

The process may also be applied to the waterproofing of fabrics which are used to cover up any articles or instruments of electrical and radio use which may have a temporary or a permanent position out of doors.

RADIO DIRECTORY

What to Buy and Where

CITIES

- AERIAL MASTS** Domestic Radio Co., Ltd.,
300 Queen Street, Auckland.
- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.
Chancery Street, Auckland.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CROSLEY RADIO** Abel, Smeeton, Ltd.,
27-29 Customs St. E., Auckland.
- CROSLEY RADIO RECEIVERS** G. G. Macquarrie, Ltd.,
120 Willis Street, Wellington.
- CROSLEY RADIO** Abel, Smeeton, Ltd. Rep.: G. MOSE
James Street, Mangarei.
- DAYTON All-Electric Radio** ... Superadio, Ltd.,
147 Queen Street, Auckland.
- EMMCO RADIO PRODUCTS** Johns, Ltd.,
Chancery St., Auckland.
- EMMCO RADIO PRODUCTS** Thos. Ballinger & Co., Ltd.,
Victoria St., Wellington.
- EMMCO RADIO PRODUCTS** L. B. Scott, Ltd.,
Worcester St., Christchurch.
- KING RADIO RECEIVERS** ... F. J. W. Fear & Co.,
63 Willis Street, Wellington.
- LISSEN RADIO PARTS AND KITS** All Radio Dealers:
- LOUDSPEAKER AND TRANSFORMER REPAIRS** A. E. Strange,
404 Worcester Street, Christchurch.
- MAJESTIC RADIO RECEIVERS** Kirkcaldie & Stains,
Chief Wellington Agents, Lambton Quay.
- MULLARD VALVES** All Radio Dealers.
- PILOT 1930 PARTS AND KITS, ETC.** Abel, Smeeton, Ltd.,
27-29 Customs Street East, Auckland.
- PILOT 1930 PARTS—PILOT SUPER WASP KITS, GILFILLAN, KELLOGG and ATWATER KENT SETS** Harrington's, N.Z., Ltd.,
138-140 Queen St., Auckland.
40-42 Willis St., Wellington.
- RADIOLA RECEIVERS** Chas. Bennett, Ltd.,
619 Colombo Street, Christchurch.
- RADIOLA RECEIVERS and Expert Radiola Service.** Farmers' Trading Co., Ltd.,
Hobson Street Auckland.
- RADIO REPAIRS AND SERVICE** E. G. Shipley,
135 Manchester Street, Christchurch.
- DIAMOND DRY BATTERIES** Royds-Howard Co.,
553 Colombo Street, Christchurch.

COUNTRY TOWNS

- CROSLEY RADIO** J. C. Davidson,
Main Street, Pahiatua.
- CROSLEY SETS** Abel, Smeeton, Ltd. Rep.: C. Ruscoe,
409 Devon Street, New Plymouth.
- CROSLEY RADIO** D. A. Morrison & Co.,
Victoria Avenue, Wanganui.
- MAJESTIC ELECTRIC RADIO** Berryman's, The Home of Music
Palmerston North.
- MAJESTIC, ATWATER-KENT AND RADIOLA ELECTRIC SETS** Radio House, Hamilton.
G. S. Anchor. Manager.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers.