

HERE is an easily-built loudspeaker that gives fine quality reproduction, with prominence to bass notes without losing the higher tones, and eliminating any tendency to "scratchiness" in the latter. This speaker has been designed by the writer to give good volume and quality from any decent amplifier that will give not less than full volume on a good power valve in the last stage.

Only the wood case has to be constructed, and in this work there is ample scope for the amateur cabinet-maker, the finished appearance depending chiefly upon his skill and patience. The novel character of the speaker is in doing away with any kind of paper diaphragm, and making the case as a whole do the duty of a cone.

The Cabinet.

THE accompanying diagrams give all necessary dimensions, the whole being constructed from a piece of seasoned rimu five feet long by 11½ inches

wide, obtainable from any timber yard. The dressed thickness should be exactly 3-8in.

Solid construction is to be aimed at if good tone is required, and all joints should be fastened with ¼in. No. 6 brass screws, and also glued in order to make an airtight joint. Constructors who do not possess a glue-pot can use seccotine.

It will be seen that the body of the speaker is merely a box of correct dimensions, in the front of which is placed an ornamental grille. The sides

are spaced about 3-16in. from the front edges of the box because the front is to be removeable, and the space is left in order to eliminate any chance of rattle from a loose joint. The front is secured to the top and bottom by projecting strips ¼in. wide, behind it.

The bars of the grille are cut from the 3-8in. board, and are planed up to a width of ¼in. They should be cut just short of the inside height of the box, and are secured to the inside of the front with a brad at each end. Put on the middle bar first in the exact centre, then carefully measure the spacing of the next two, nailing them in position.

less than inside of box to allow room to fasten the bars (10-7-8).

The back is the same width as the top and bottom pieces, 8½ inches, and the height must be made an exact fit after the top, bottom and sides are put together. Glue is applied to the inside edges of case, the back is then pushed in and secured by screws.

A neat effect is obtained by rounding off the edge of the front aperture. It should be noted that the front of the speaker projects beyond the box about ¼in. each side.

Finishing the Speaker.

THE outside of the speaker is finished according to taste, with Leonart walnut stain, shellac, or other medium, whilst the interior should be painted black. When all is dry, the Omniphone unit is hung inside the back of the box so that the end of driving spindle rests against the centre. The shaped "foot" is secured to the wood by means of a small piece of coarse cloth, or webbing folded to two or three thicknesses and secured at each end by a ¼in. screw and washer, leaving the unit free to find its level, resting against the back.

The best effect is obtained when this speaker is hung on the wall, the projecting pieces at the back leaving a clear inch space in order not to deaden the vibrations. Its appearance is similar to that of the familiar boxed-in cones, and its performance is equal to some and better than many. If quality is not produced by this speaker, it is a sure sign that the amplifier needs improvement, as the utmost clarity of speech is obtainable if the amplifier can supply it.

If constructors have any difficulty in procuring an "Omniphone" unit, locally, they should write direct to the Rodger Importing Co., Ltd., 159 Manchester Street, Christchurch, the price being 30/., plus postage.

Useful Suggestions

An Improvised Aerial.

A TEMPORARY aerial and earth can be obtained if a receiver is required to be operated out of doors, if a nail is driven into the trunk of a tall tree, ten or twelve feet from the ground, and a similar one as close to the earth as possible. With a piece of flexible wire, join the higher nail to the aerial terminal of the set, the lower one, connect to the earth, or ground terminal of the receiver.

Balanced Valves in Push-pull.

READERS who use push-pull circuits should make a point of checking the emission of their valves from time to time, to see that one or the other has not seriously fallen off, thus upsetting the balance. A paper label should be stuck on each of the push-pull valves, and the emission at zero grid volts for a given plate voltage marked when the valve is new. No elaborate apparatus is necessary to make this check. It is advisable not to keep the valve alight for more than a minute or so at zero grid volts. Some of the modern super-valve valves have a nasty habit of losing a considerable portion of their emission without warning, and a check of the kind mentioned should certainly be made from time to time.

A Novel Loud-Speaker

For the "Omniphone" Unit.

By "Meghom"

RADIO DIRECTORY

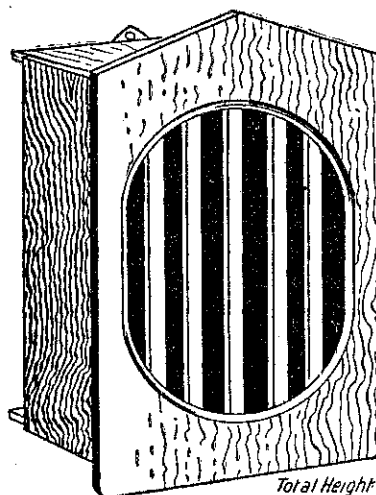
What to Buy and Where

CITIES

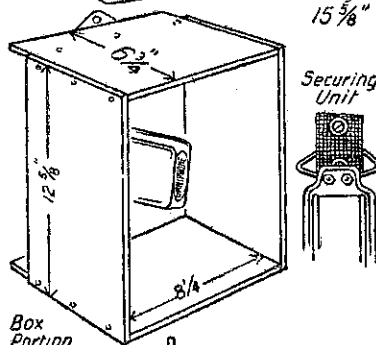
- | | |
|---|--|
| ALTONA & HAMMARLUND, ROBERTS SETS. | Johns, Ltd.
Chancery Street, Auckland. |
| ATWATER-KENT RADIO | Frank Wiseman, Ltd.
170-172 Queen Street, Auckland. |
| BREMER-TULLY RADIO | Superadio, Ltd.,
147 Queen Street, Auckland. |
| BURGESS RADIO BATTERIES, | All Radio Dealers. |
| CROSLEY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

COUNTRY TOWNS

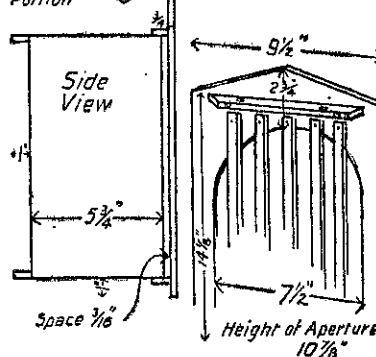
- | | |
|--|--|
| ANCHORADIO, BREMER-TULLY, RADIOLA, BROWN-ING-DRAKE, AND ATWATER-KENT RADIO | Radio House,
Hamilton. G. S. Anchor, Manager. |
| GREBE, ROGERS, CROSLEY, RADIOLA AND KING SERVICE | E. Dixon and Co., Ltd.,
Hawera. |
| SIEMENS BATTERIES, RADIOLA DEALER AND SERVICE | G. C. Carrad.
140 The Avenue, Wanganui. |
| PHILIPS VALVES AND APPARATUS | All Good Radio Dealers. |



Total Height
15 3/8"



Box Portion



The spacing is 7-8in. The front aperture is a half-circle at top and bottom, joined by a straight line each side. The total height of aperture is sufficiently