

power to actuate them, even the slightest movement of the drive pin is transmitted without loss to them; as a result the speaker is unusually sensitive, and operates with great volume even on moderately strong signals.

The new speaker is capable of handling far more power than is required for all ordinary radio purposes. In

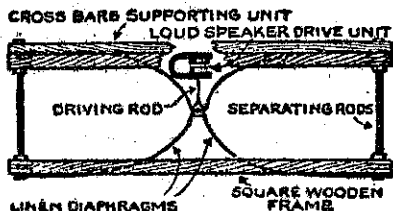


Fig. 4

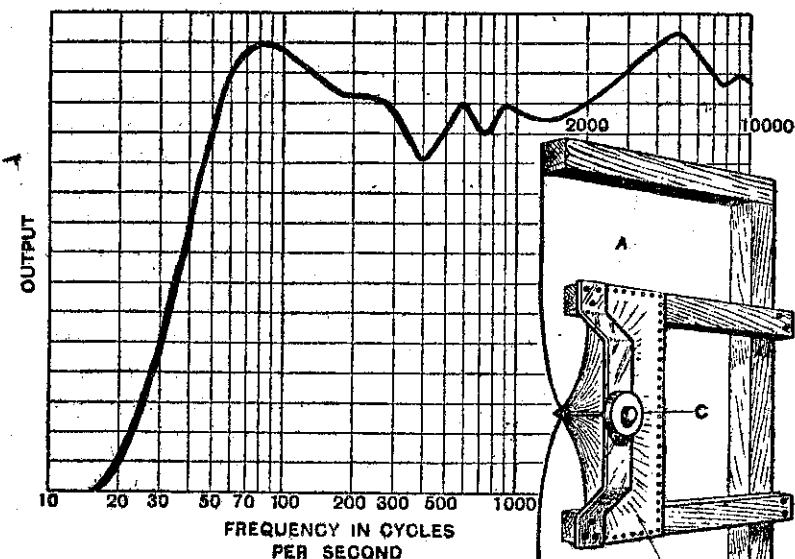
one test, for example, it was used in conjunction with a two-stage transformer-coupled audio amplifier employing two 210-type power tubes in the last stage. A strong local station was tuned in, and a direct comparison was made between this speaker and another of the cone type, of probably the best design on the market to-day. The latter instrument started to rattle when a certain volume level was reached; whereas this linen diaphragm

class broadcast station. Violin music comes through high and clear, without appreciable flattening of the high notes; while the sounds of drums and the low tones of a piano boom forth with clarity and realism. The unexpected responsiveness of the speaker to the low notes is somewhat disconcerting at first to a hearer unaccustomed to such reproduction; but in a room of favourable acoustic properties (i.e., one furnished generously with rugs, thick curtains, and similar echo-killing materials) the "booming" effects quickly lose their unpleasantness.

The loudspeaker may be mounted in a cabinet with its front covered in tapestry. Its performance depends largely on the use of suitable material for the stretched diaphragms, and on the mounting of these in such a way that their tension is correct and will remain so.

Some constructors are mounting the small frame with a screwed rod in each corner, so that in order to tighten both diaphragms it is only necessary to tighten a nut at each corner, then adjusting the nuts on the driving spindle.

A diagram appears showing the response curve for the linen diaphragm, and in comparison with the average loudspeaker it is exceptionally good, as



A response curve and (inset) a sectional sketch showing the mounting of the two vibrating membranes. A, working diaphragm; B, balancing diaphragm; C, driving unit.

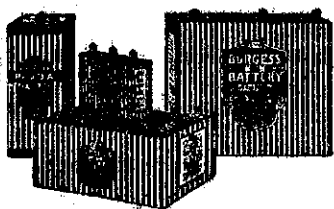
speaker continued to operate without distortion up to the limit of the amplifier.

Volume with Quality.

THE performance of this new loudspeaker, as judged by the ear alone, is remarkable for its brilliancy and faithfulness over the whole range of musical notes transmitted by a high-

variations in proportional output between about 50 and 10,000 cycles are hardly sufficient to be perceptible to the ear. Resonances which seem to be due to the fact that the natural time periods of individual membranes are incompletely suppressed are not so marked as to be in any way objectionable.

BURGESS RADIO BATTERIES



Technical Tips

WHEN the detector valve is coupled to the audio stage by means of a resistance in its plate current, it is necessary to apply a much higher voltage than would be the case if a transformer were used here.

GENERALLY speaking, a wave-trap is not much good for cutting out local interference of the type caused by trams, flashing signs, power lines, etc.

WHEN weak signals are being received it is very often an advantage to increase the value of the grid leak, and 4, 5, or 6 megohms is not an uncommon value to use in such circumstances.

ARC lamps are used for "sunlight" ray treatment are capable of causing tremendous interference with nearby receiving sets.

IT is impossible to exercise too much care in the wiring, etc., when power is being taken from the mains.

RADIO DIRECTORY

What to Buy and Where

CITIES

AERIAL MASTS	Domestic Radio Co., Ltd., Strand Arcade, Auckland.
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. E., Auckland.
FERRANTI RADIO COMPONENTS	A. D. Riley & Co., Ltd., Anzac Avenue, Auckland, and all leading Dealers
CROSLEY SETS	Lewis Eady, Ltd., Queen Street, Auckland.
LOUDSPEAKER AND TRANSFORMER REPAIRS	A. E. Strange, 404 Worcester Street, Christchurch.
MULLARD VALVES	All Radio Dealers.
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, 185 Manchester Street, Christchurch.
METRODYNE RADIO—7v. and 9v. Elec.	Royds-Howard Co., 553 Colombo Street, Christchurch.

T.C.C. CONDENSERS	A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.
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COUNTRY TOWNS

CROSLEY RADIO	J. C. Davidson, Main Street, Pahiataua.
CROSLEY SETS	F. H. Jellyman, Ltd., Devon Street, New Plymouth.
CROSLEY RADIO	D. A. Morrison & Co., Victoria Avenue, Wanganui.
MAJESTIC, ATWATER-KENT AND APEX ELECTRICAL SETS. Also Bremer-Tully, Radiola and Browning-Drake	Radio House, Hamilton. G. S. Anchor, Manager.
PHILIPS VALVES AND APPARATUS	All Good Radio Dealers.