



INSTRUCTIONS

FOR USE OF

PHILIPS

ALL-ELECTRIC RECEIVER

MODEL 2553

Description

This five-valve receiving set for both long-distance and local reception may be used either with an outdoor aerial or with a Philips frame aerial. It is suitable for connection to D.C. mains of approx. 110 volts, 150 volts, 220 volts or 240 volts.

The apparatus, in connection with a pick-up, can also be used for electrical reproduction of gramophone music.

The set must contain the following Mullard valves with standard base:

P.M. 13 metallized, 5-pin H.F. screen-grid valve,

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P.M. 3 D, 4-pin detector valve,

P.M. 24 X, 5-pin power valve (penthode),

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It is also necessary to use a Philips regulator lamp 1915, which maintains the filament current practically constant even if there are fairly large variations in the mains voltage. A Philips lamp type 8053 illuminates the tuning dial when the set is switched on.

Opening the set automatically switches off the mains voltage, so that live parts cannot be touched.

How to install the set

Outdoor aerial

The receiving set is extremely sensitive. In order to take full advantage of this, *an efficient outdoor aerial must be used.*

In order to minimize the effect of local disturbances such as are caused by electric motors, etc., the aerial must be installed in as high and open a position as possible. It is important to place the apparatus in the immediate vicinity of the aerial lead-in; in any case the indoor wire must be kept as short as possible.

The aerial system (including the lead-in wire!) must be perfectly insulated and kept away from metal conductors (high-tension and telephone wires, water-pipes, radiators, etc.). Take care that the aerial and lead-in cannot come into contact with climbing plants, etc. If joints in the aerial cannot be avoided, they should be carefully soldered.

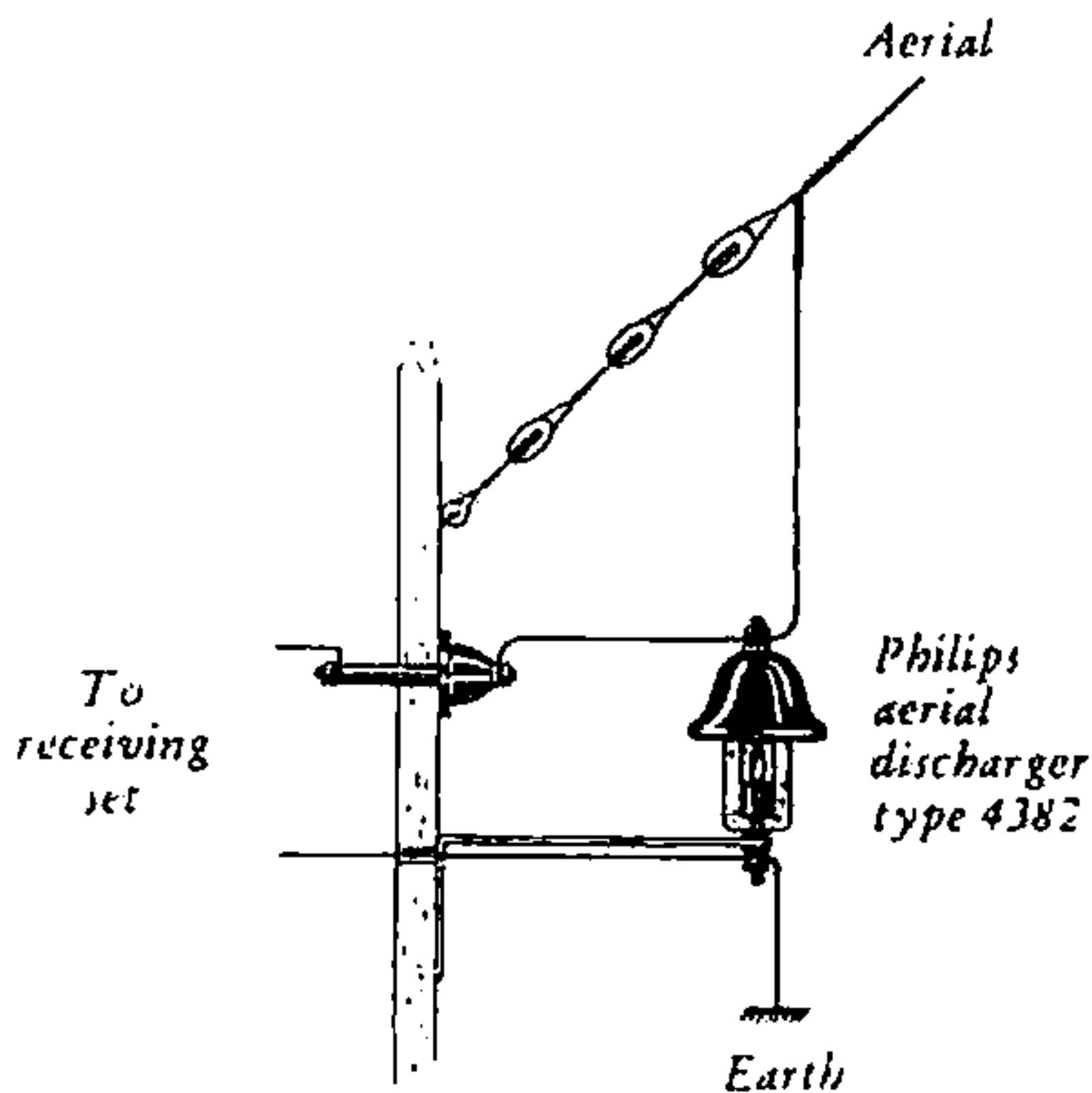


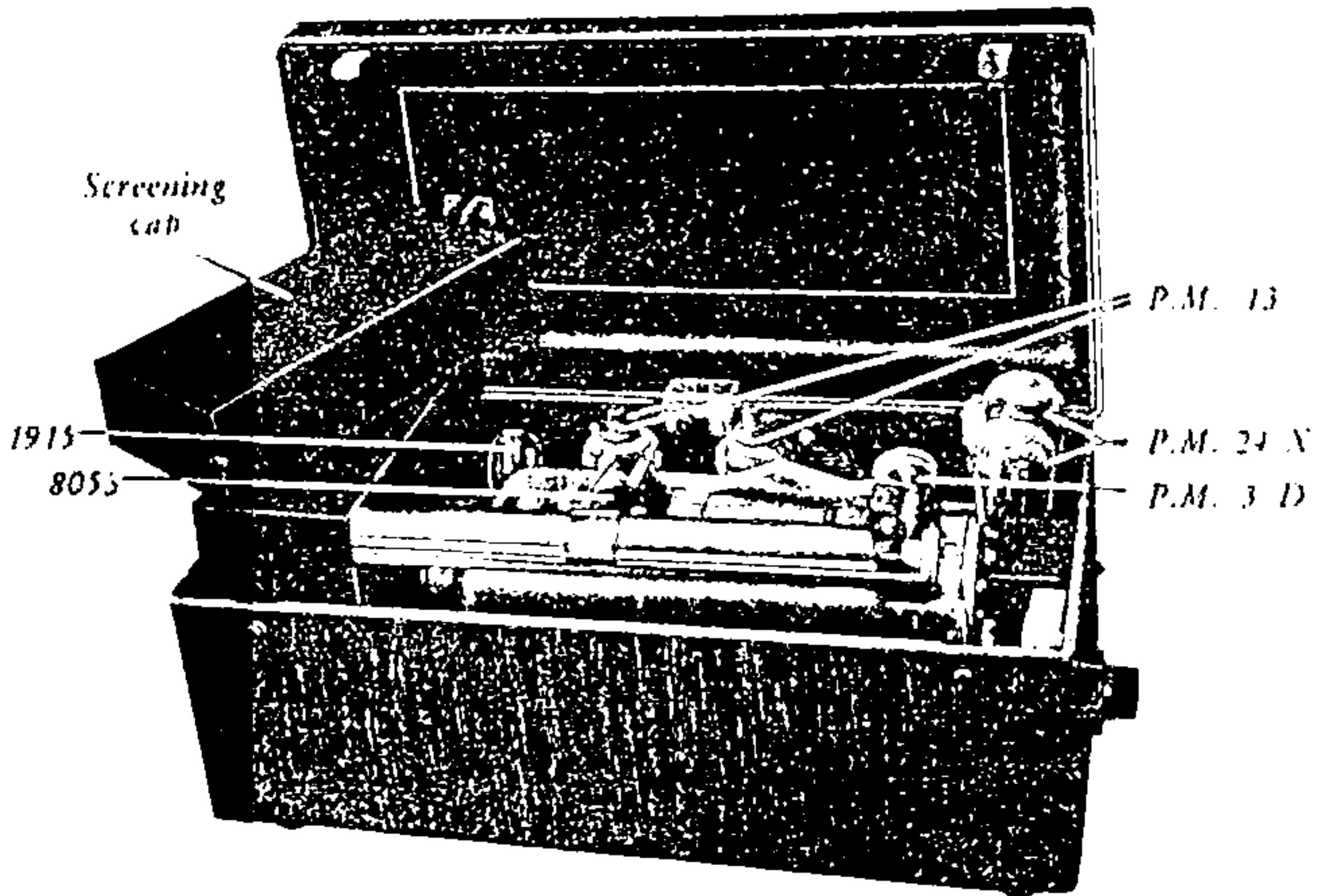
Fig. 1

For protection of the receiver against heavy discharges in the aerial due to atmospheric influences, we recommend the use of a Philips aerial discharger, type 4382.

The method of connecting this discharger is shown in fig. 1.

Frame aerial

As an alternative to an outdoor aerial a Philips frame aerial may be used. In this case the frame aerial together with the set may be placed anywhere provided that no large metallic apparatus, e.g. a radiator, is in the immediate vicinity.



Earth connection

The best earth is obtained by making connection to an earthing tube or to a metal plate buried in a vertical position in damp soil, immediately beneath the receiver. Generally speaking, however, connection to a clean main water-pipe by means of a clamp will be sufficient. The earth connection of a lightning arrester, too, can very well be used for this purpose.

The earth connection must be as short and direct as possible.

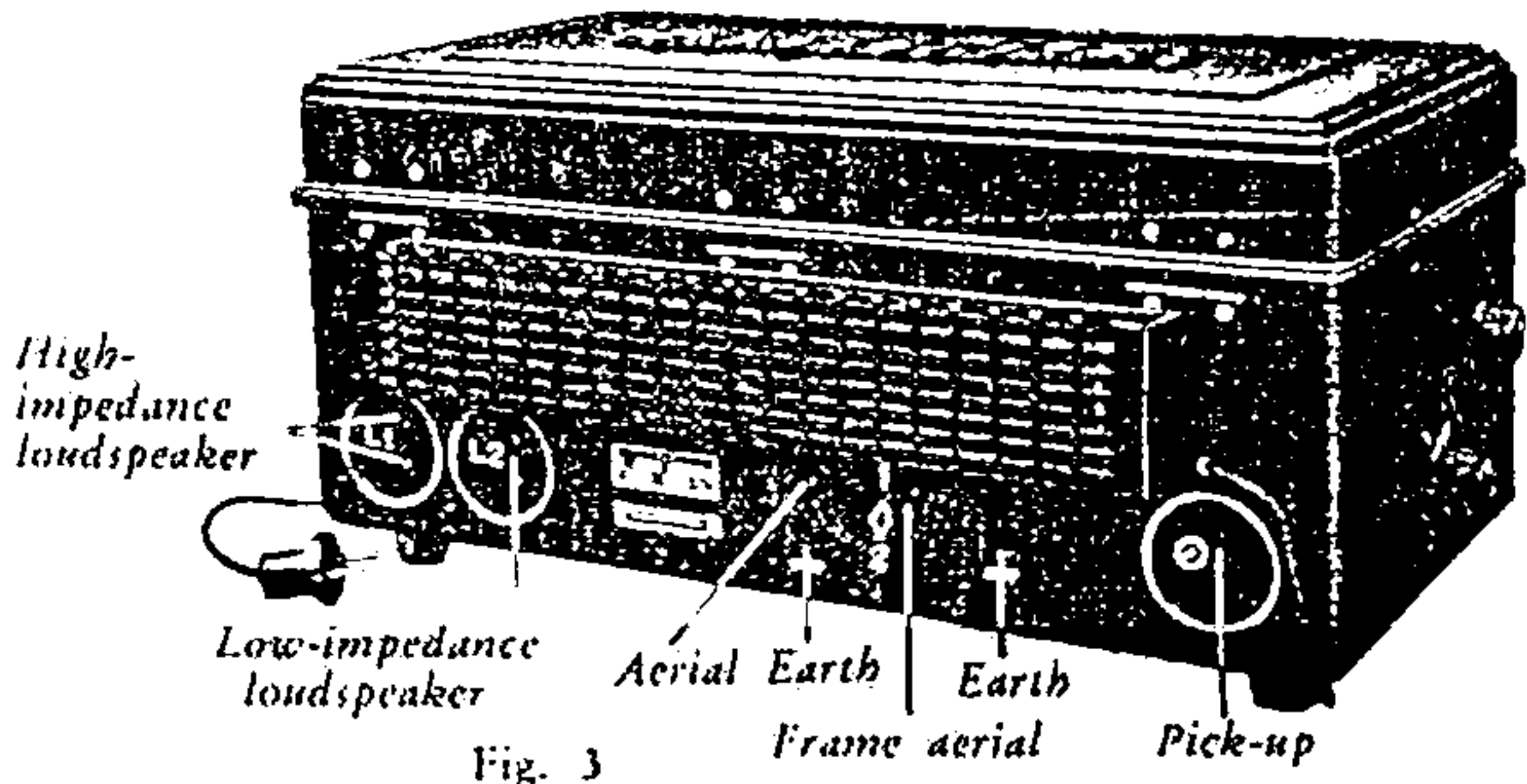
Gas-mains or central heating systems should under no circumstances be used as an earth.

Inserting the valves

Open the apparatus after pressing both buttons in front of the set. Then remove the screening cap, after having pushed the clamp aside (do not bend it!). Carefully remove all packing and push the valves well home in their sockets, as shown in fig. 2. Then replace the screening cap. Make sure that it is re-inserted in its correct position; to facilitate this, the cap has been provided with guiding pins which fit into corresponding holes. Finally, close the cover again.

Connection

The following connections must be made to the sockets at the rear of the set:



Connect the earthing lead to the socket marked " /// "; the other socket marked " /// " may serve for earthing auxiliary apparatus (if any).

If an outdoor aerial is used, connect it to the socket marked " Ψ ".

When a Philips frame aerial is used, the plugs "1" and "2" of the frame must be connected to the corresponding sockets of the set.

The loudspeaker should be connected in the following manner:

a) a high-impedance loudspeaker such as the Philips

electro-magnetic loudspeaker models 315, 2019 and 2024, to the sockets marked "L1".

- b) a low-impedance loudspeaker such as a Philips moving-coil loudspeaker (with disconnected input transformer), e.g. model 2109, to the sockets marked "L2".

A pick-up or a Philips pick-up equipment may be connected to the sockets marked "⊙".

Finally, insert the two-pin mains plug in a wall-socket. The receiving set is to be connected only to a mains supply of the voltage for which it is adjusted. If connection is made to a supply of higher voltage serious damage may result.

The voltage for which the set is adjusted is indicated inside and at the back of the apparatus.

Adaptation of the set to another voltage may be effected only by a radio dealer.

When switching on the receiving set for the first time by pushing forward the mains switch (see fig. 4), the following points should be borne in mind:

- 1) Set the change-over switch (see fig. 4) at one of the waveband positions and the local-distance switch (see fig. 5) at position "1". If no reception can be obtained, the two-pin mains plug must be reversed in the wall-socket. The plug has a dash on one side. Once the right position has been found the wall-socket can be marked accordingly, in order that the plug may in future always be correctly inserted. The correct position depends upon the polarity of the supply.
- 2) If a humming sound is heard in the loudspeaker, the small two-pin plug which is inserted in two of the three sockets in front of the regulator lamp 1915, must be removed and inserted in the centre and spare sockets. The correct position of this plug depends upon whether the negative or the positive of the supply is earthed.

How to operate the set

Switching on

In order to switch on the apparatus, push forward the mains switch (see fig. 4).

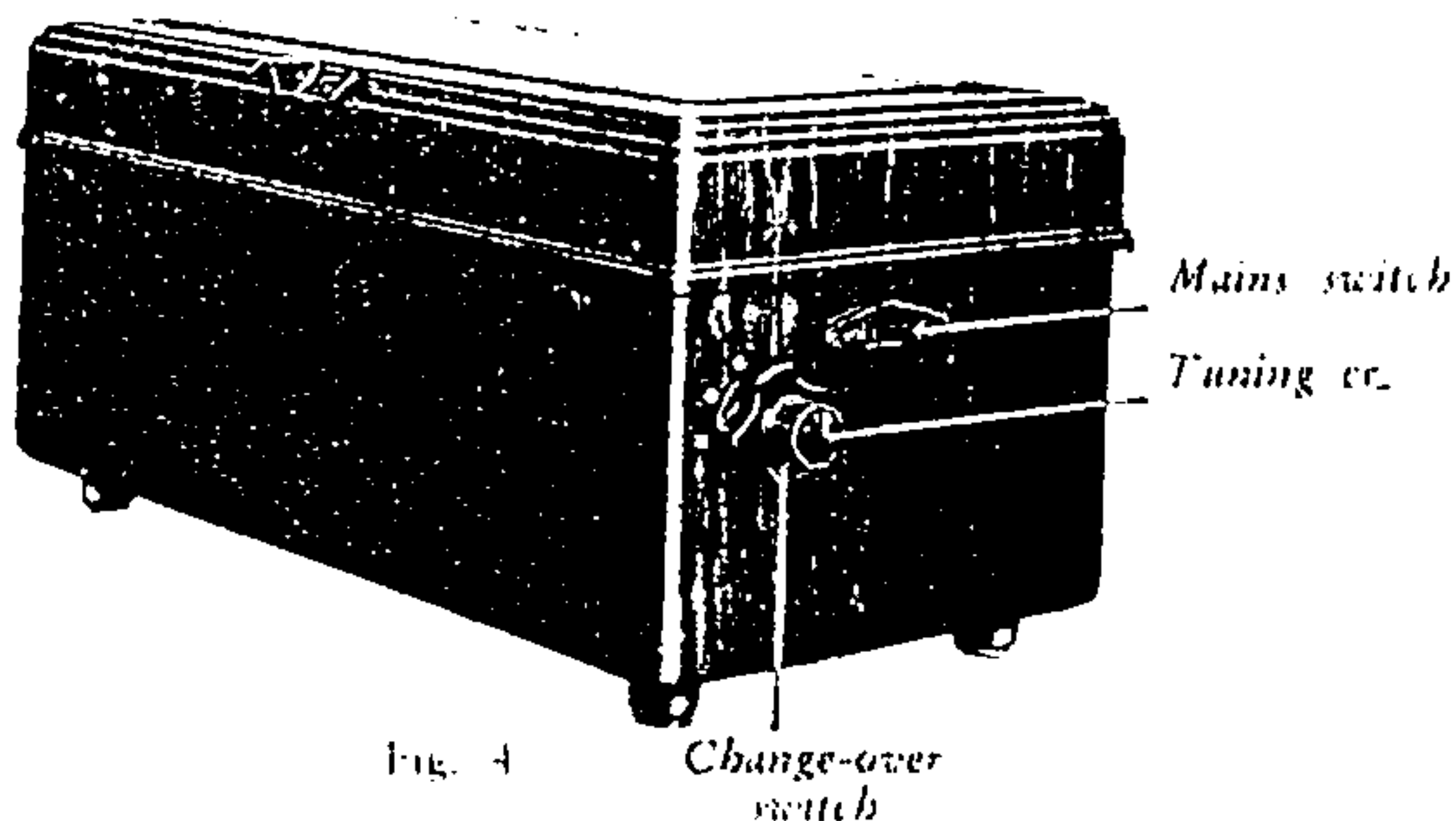


Fig. 4

Adjusting the set

Set the change-over switch (see fig. 4); which is mounted on the same axle as the tuning control, at one of the following positions:

200 m— 500 m (1,500 kc/s—600 kc/s).

300 m— 800 m (1,000 kc/s—375 kc/s).

800 m—2,000 m (375 kc/s—150 kc/s).

,) (for reproduction of gramophone records).

The local-distance switch (see fig. 5), when set at position "II", renders it possible to receive a powerful local transmitter without overloading the apparatus. *For reception of more distant transmitters always set this switch at position "I".*

Tuning

a) When using an outdoor aerial.

In order to tune in a station, first turn the volume control (fig. 5) as far as it will go in the direction of the arrow and then turn the tuning control (see fig. 4) until a station is received.

Tuning on higher wave-lengths is effected by sliding the illuminated scale to a higher position by means of this control. The correct tuning position for a station will be found by adjusting to maximum volume by means of the tuning control.

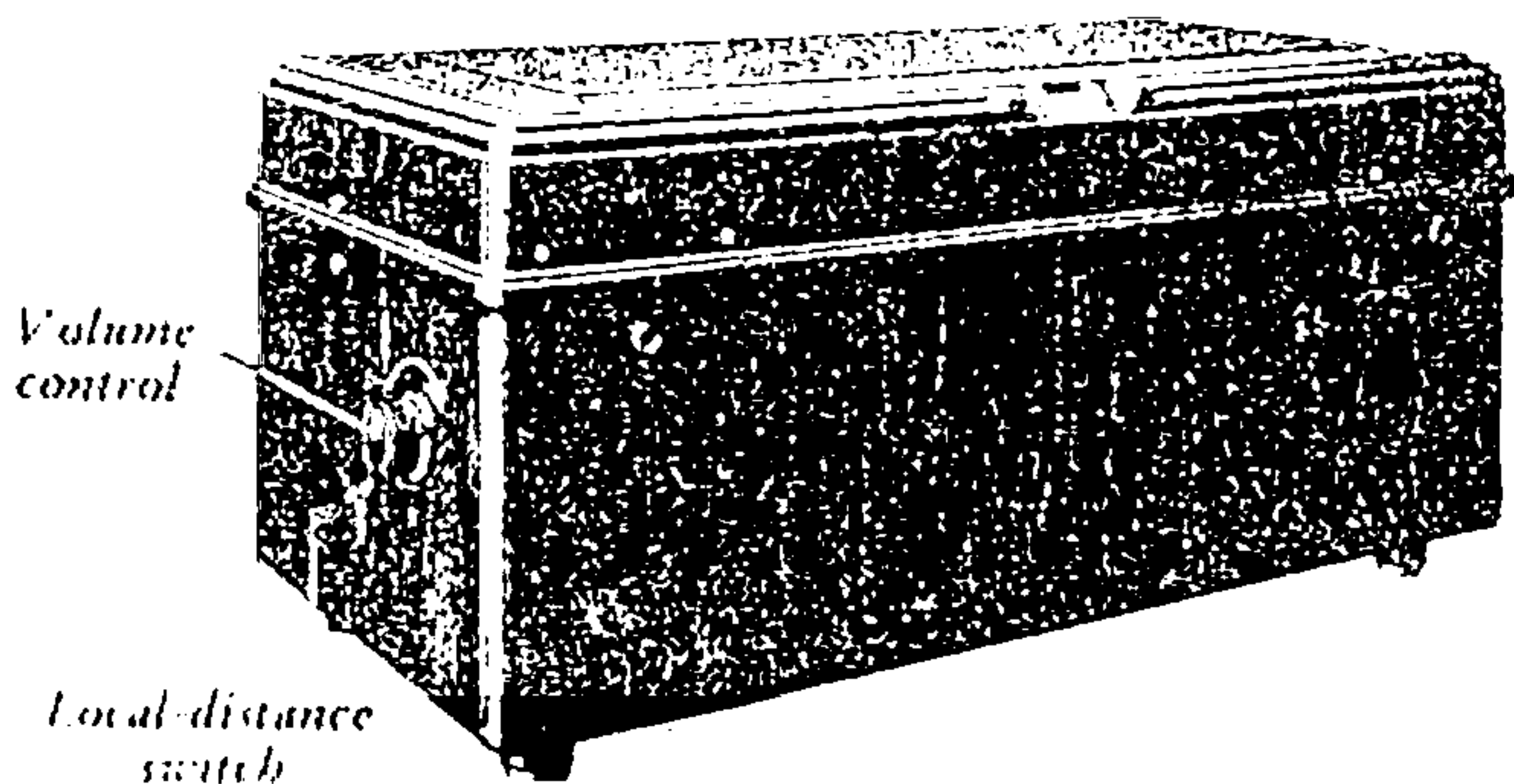


Fig. 5

When tuning in a very powerful station, first turn the volume control slightly backwards in order to obtain a sharp and exact tuning adjustment.*)

Volume may be reduced to the required value solely by means of the volume control.

b) When using a frame aerial.

When Philips frame aerial is used, the following method of operation should be followed:

First tune in the set once and for all by using the frame aerial as an auxiliary aerial. For this purpose remove the plug marked "2" of the frame from its original socket and insert it in the aerial socket marked "1" (see fig. 5).

Then make a note of the different positions of the tuning scale of the apparatus (in the three wavebands) at which music or speech is heard.

After this the plugs marked "1" and "2" of the frame aerial should be re-inserted in their original position. Set the change-over switch of the apparatus and the waveband switch of the frame for the wave-length range in which reception is desired.

Set the tuning scale of the apparatus at one of the noted positions

*) If a powerful station is tuned in while the volume control is turned too far in the direction of the arrow, an incorrect tuning adjustment with consequent distortion will probably result.

and turn the volume control as far as possible in the direction of the arrow. Then turn the tuning control of the frame aerial until the maximum volume is obtained.

Ascertain the most favourable direction of the frame. Maximum volume is obtained when the plane of the frame aerial points in the direction of the transmitter.

Finally, adjust the sound to the desired intensity by means of the volume control of the receiving set.

Performance

Powerful reception is possible from all stations of sufficient power whose wave-lengths range between 200 and 2,000 metres. Under favourable conditions, particularly at night, weak and very distant stations can also be well received.

Connecting a pick-up

Gramophone record reproduction by means of a good electrical pick-up is much better than that obtained by means of a gramophone with an ordinary sound-box. All details of electrically-recorded records will be perfectly rendered; moreover, the volume can be adjusted to the desired strength by means of a volume control.

Philips pick-up is strongly recommended.

When reverting to radio reception there is no need to disconnect the pick-up leads from the receiving set.

Use of a tone filter

When receiving certain stations the quality of reproduction may sometimes seem rather highly pitched; this can be softened by means of a Philips tone filter type 4006, which must be inserted in the sockets marked "L1" (see fig. 3).

If a high-impedance loudspeaker is used at the same time, insert its plug in the sockets of the tone filter.

Switching off

In order to switch off the apparatus, push back the mains switch.

Some remarks

When the foregoing instructions have been carried out, the receiver should give entire satisfaction, the set having been thoroughly tested before being packed.

If, after being installed, it does not work quite satisfactorily the following possibilities should be considered:

- 1) The valves may make poor contact; push them well home in their sockets. If one of the valves makes bad contact or has become defective, the dial-lamp will generally cease to burn brightly, as it is connected in series with the valves. A burnt-out dial-lamp will therefore also prevent reception.
- 2) The aerial or frame, earthing or mains connections may make poor contact. Go over all these.
- 3) The aerial-earthing switch, if any, may be in the wrong position. Check this.
- 4) The local-distance switch may be in the wrong position. Set this at position "I".
- 5) The mains plug may be wrongly inserted in the mains socket. Insert it the reverse way.
- 6) The mains socket may not be alive. This can be tested, e.g. with a table-lamp.

If a valve is suspected of being faulty, one can make sure about its condition by substituting another valve of the same type. The dial-lamp type 8053 can easily be removed by opening the lid of the set and withdrawing it from its holder.

Should the receiving set develop a defect consult your dealer, who will if necessary communicate with us.



IN ORDER TO TAKE FULL ADVANTAGE OF THE GREAT SENSITIVITY OF THIS RECEIVING APPARATUS, USE AN EFFICIENT OUTDOOR AERIAL!
