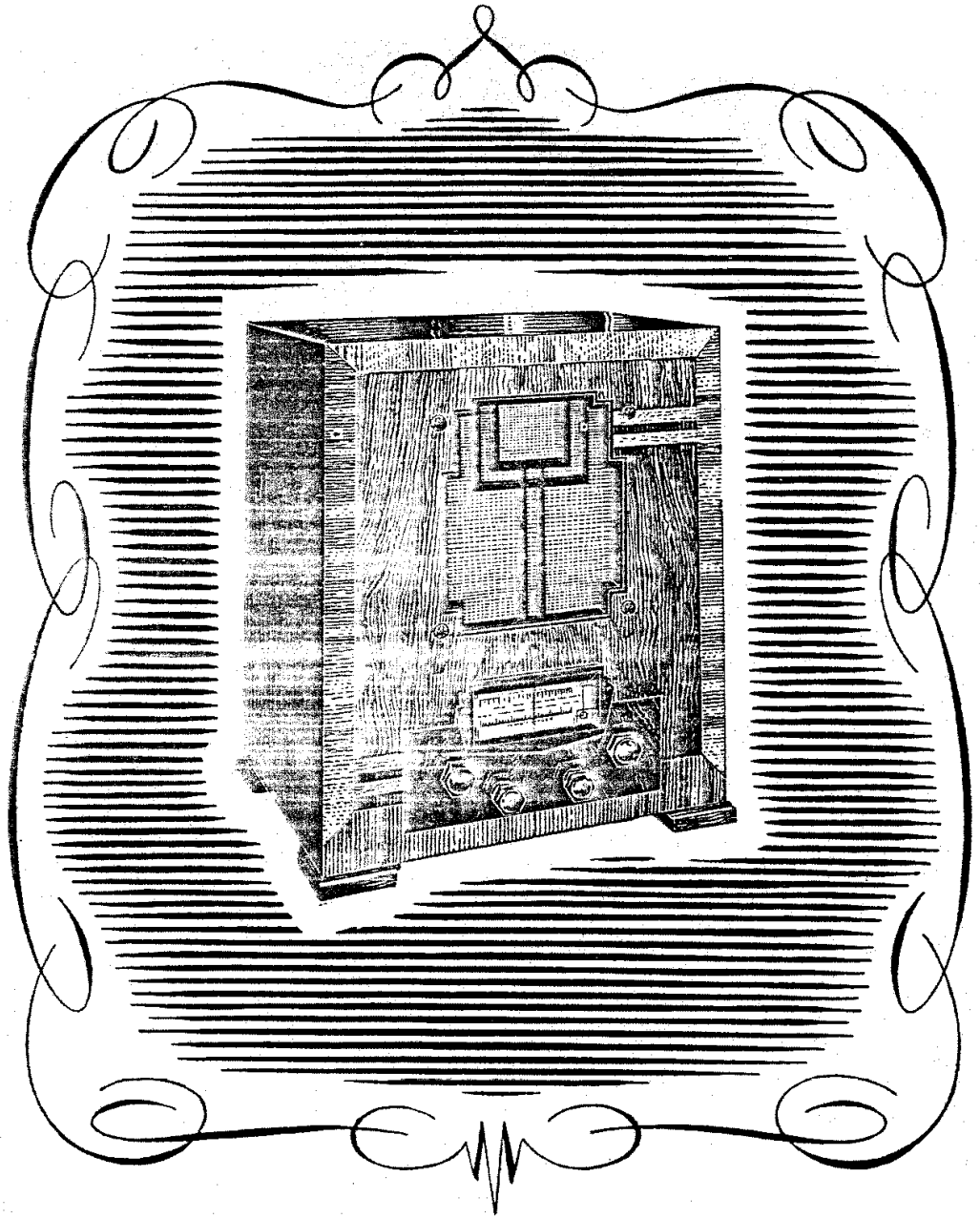
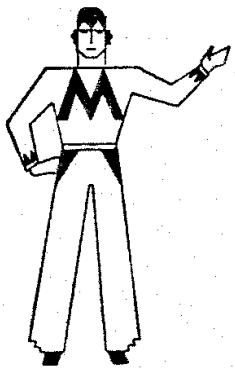




MARCONIPHONE SERVICE MANUAL

MODELS 262 - 286 D.C.

PART I. MODEL 262—4-VALVE D.C. SUPER-HETERODYNE

PRIVATE AND CONFIDENTIAL—TO THE TRADE ONLY.

1934 *Series.* *No.* 15. *July,* 1934 *Part No.* 17165

DISMANTLING.

CHASSIS.

1. Remove fibre back and wood panel.

2. Release multiple speaker cord from spring clips on right-hand side and top of cabinet, and disconnect tag ends of cords from speaker transformer.

Refer to circuit diagram (page 4) when re-connecting transformer.

3. Remove four knobs from front of cabinet.

4. Take out the four screws (heads are on underside of cabinet) fixing chassis to cabinet.

The felt discs covering the heads of the fixing screws serve to prevent accidental shock when mains are incorrectly connected. Don't forget to replace these discs.

SPEAKER.

1. Disconnect tag ends of multiple cable from speaker transformer.

Refer to circuit diagram, Fig. 1, when re-connecting cable.

2. Remove four nuts holding speaker to baffle.

Do not forget to replace the plain washers and the locking washers when re-assembling. Do not interfere with the cross-headed screws on front of cabinet.

REPLACEMENT OF PILOT LAMPS.

1. Remove the perforated metal plate from the bottom of cabinet.

2. Slack off the round-head screw holding the lamp bracket assembly and slide the bracket to one side.

Replacement lamps, which must be of the 6-volt screw-in type, must be screwed in firmly. A spot of wax or a slip of paper should be employed if lamp is slack in the holder.

REMOVAL OF COMPONENTS.

If a wave-change switch, volume control, condenser block of other component is removed for servicing, care must be taken to restore wiring to its original position after re-assembling the component.

The correct replacement of the wave-change switch wiring is particularly important if the ganging of the instrument is to be preserved.

If switch is removed from chassis, re-wire according to Fig. 6, and re-gang the instrument as detailed in Service Manual No. 14 (Models 278-280).

FOR PHYSICAL DETAILS OF THIS CHASSIS AND FURTHER INFORMATION, REFER TO MODELS 278-280 SERVICE MANUAL.

VALVE TABLE.

		DSB (V.1)	VDS MET (V.2)	DH MET (V.3)	DPT (V.4)	Remarks.
ANODE FEED m/A	AVO SCALE	0·012	0·012	0·012	0·12	If screen voltages or feed are abnormal anode readings will be affected.
		Radio : 3·0 to 1·0 Gram. —	Radio / Gram. } Zero to 4·0	Radio : 2·5† Gram. : 2·0	} 24·0	
ANODE/FRAME VOLTS	AVO SCALE	1200	1200	1200	1200	
		Radio : 140 Gram. : 150	Radio : 160 to 140 Gram. : 165 to 150	Radio : 60† Gram. : 80	} 160	
Parts which should be checked if anode voltages and current are abnormal		CK4, R2, CK1, L11 (I.F.T.1) C5, L7 and L8, C22, C25	CK4, R2, L13 (I.F.T.2), R5, VR2, C5, C22, C25 Anode screening	CK4, R9, R10, R11, CK2, R12, VR3, C22 C25	CK4, R16, C20 and primary of T2, R17, C22 C25 VC4	
SCREEN FEED m/A	AVO SCALE	0·012	0·012	—	0·012	If anode voltages or feed are abnormal, screen readings will be affected
		Radio : 0·8 to 0·25 Gram. : —	Radio / Gram. } 0 to 0·75	—	4·0†	
SCREEN FRAME VOLTS	AVO SCALE	1200	1200	—	1200	
		Radio : 60 Gram. : —	Radio / Gram. } 85 to 50	—	127	
Parts which should be checked if screen voltages and current are abnormal		CK4, C22, C25, R3, R4, R5, VR2, C6, C7 Switch S1 : Contacts G and H	CK4, C22, C25, C6 and C7, R3, R4, R5, VR2	—	CK4, C22, C25, R15, C19, VC4, C21, R17	
GRID BIAS (Volts)	AVO SCALE	—	120	12	12	
		Cannot be measured	27-2·5 metallising to frame	Radio : 0 Gram. : 1·0*	6·0 measure from cathode to frame	* Measure from moving arm VR3 to metallising, or, if VR3 is absent, measure between filament and cathode of this valve.

All readings are ± 10 per cent.

† Varies according to signal.

NOTE.—Where two readings are given, the first is for volume control at minimum ; the second when volume control is at maximum.

Total H.T. Feed : 35 to 36 m/A. Leakage to H.T. negative (all valves removed) may be measured at mains terminal B (+), 2·8 to 3·7 m/A.

Valves which are in series pass 0·25 amp. Failure of one valve will prevent the others from functioning. Voltage across each valve (measure across filament), 16 volts (AVO 120V Scale).

All the above readings were taken on a 235-volt supply, thus, if your supply is different, the readings (especially H.T. voltages) will vary accordingly.

H.T. voltage measurements should be made using the chassis as the negative pole.

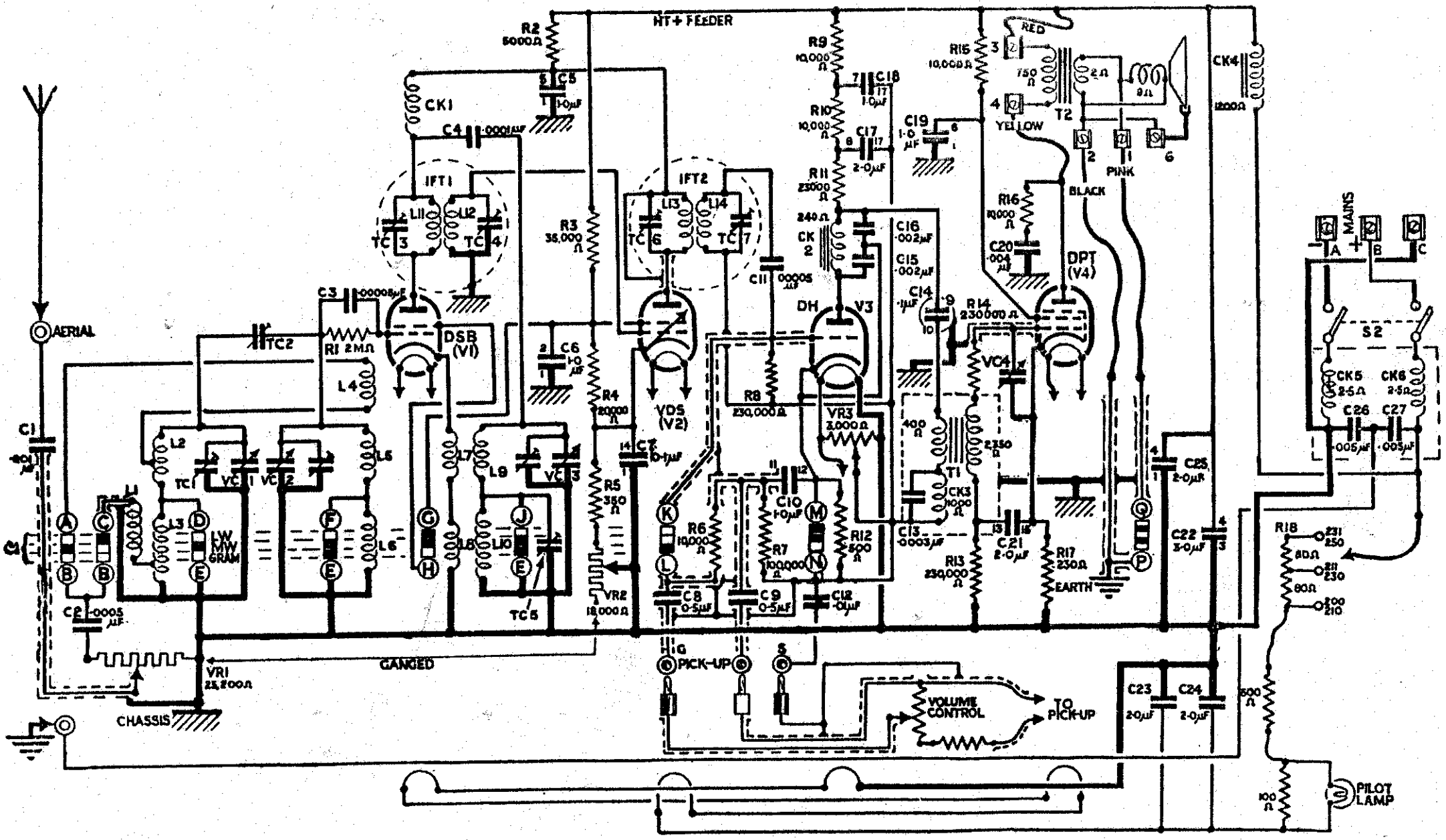


Fig. 1.

HUM CONTROL.—As the result of improvements in the design of this instrument, it has now been found possible to dispense with the Hum Control (VR3).

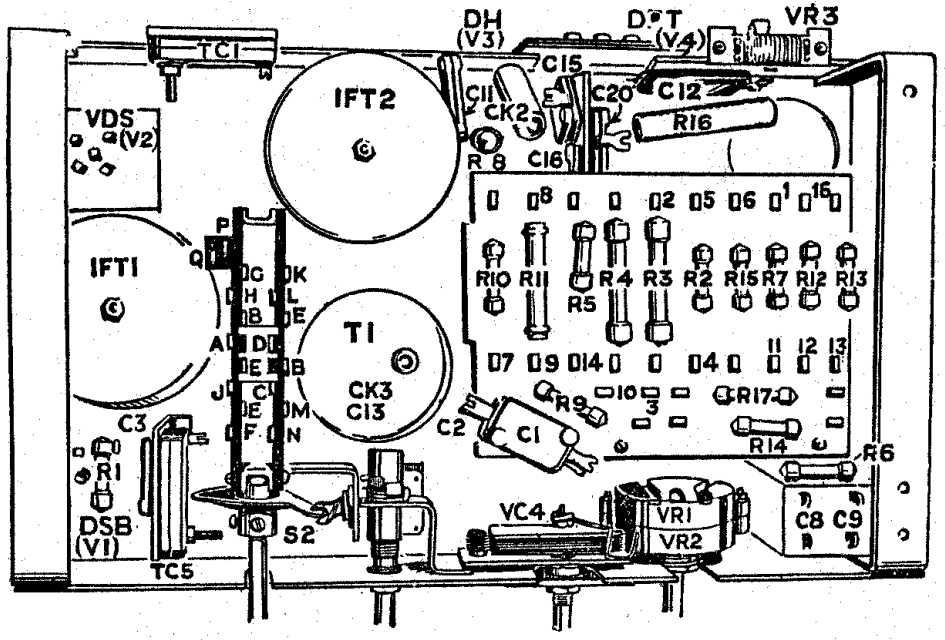


Fig. 2.

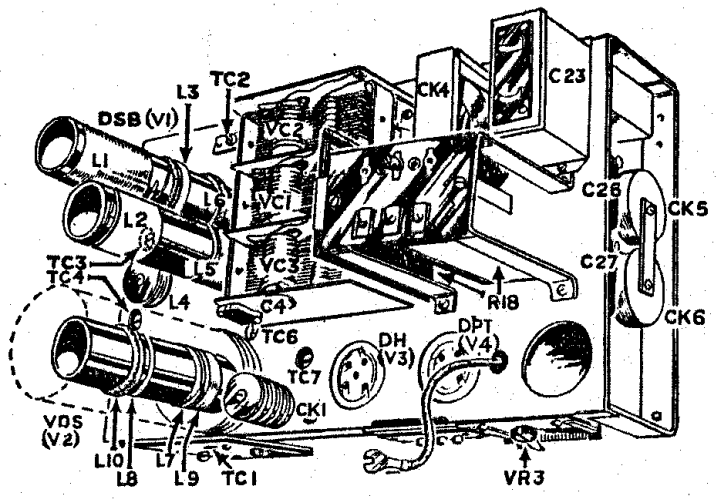


Fig. 3.

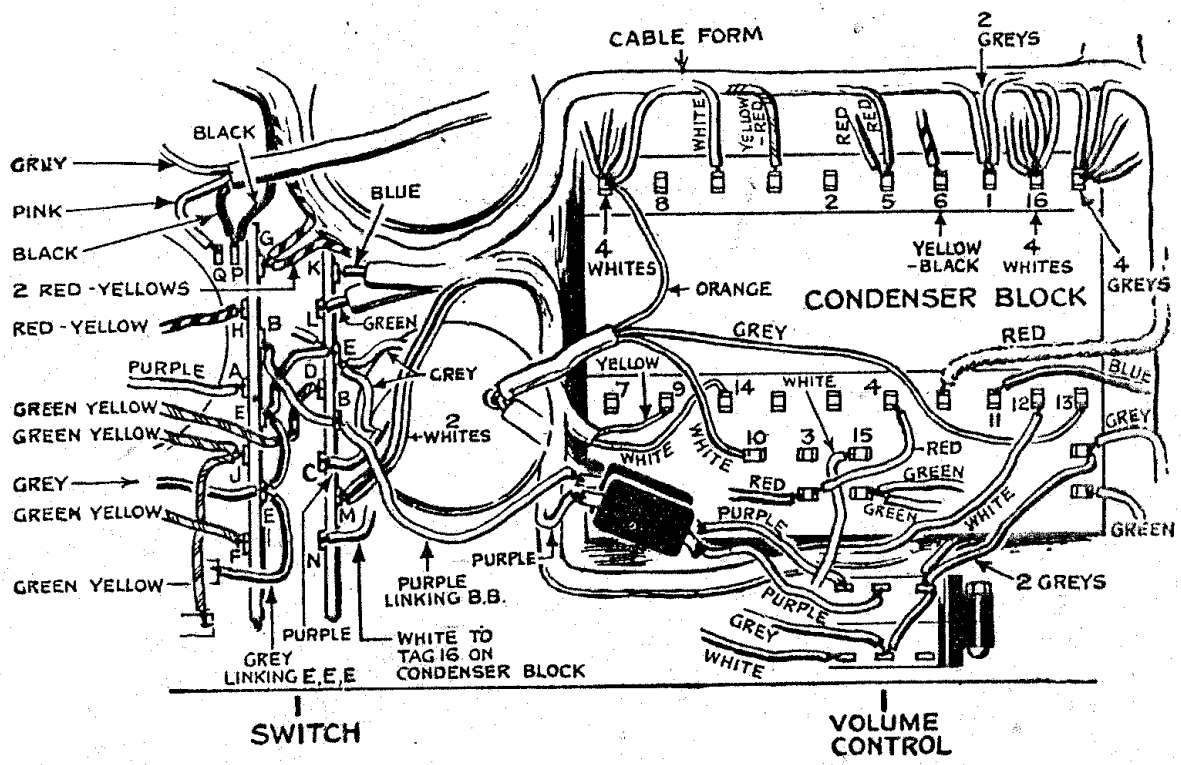


Fig. 6.

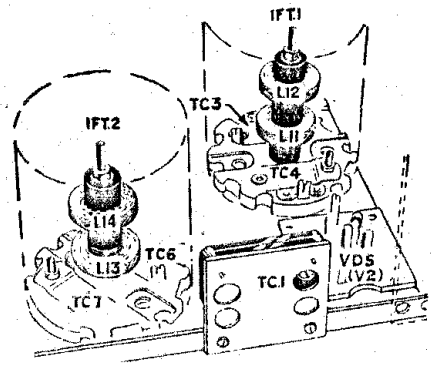


Fig. 4.

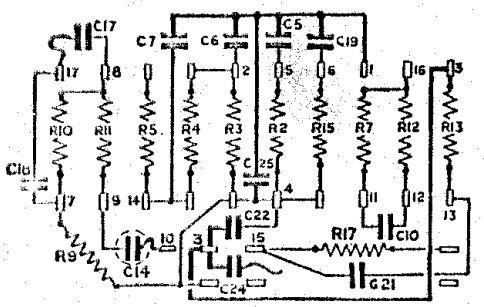
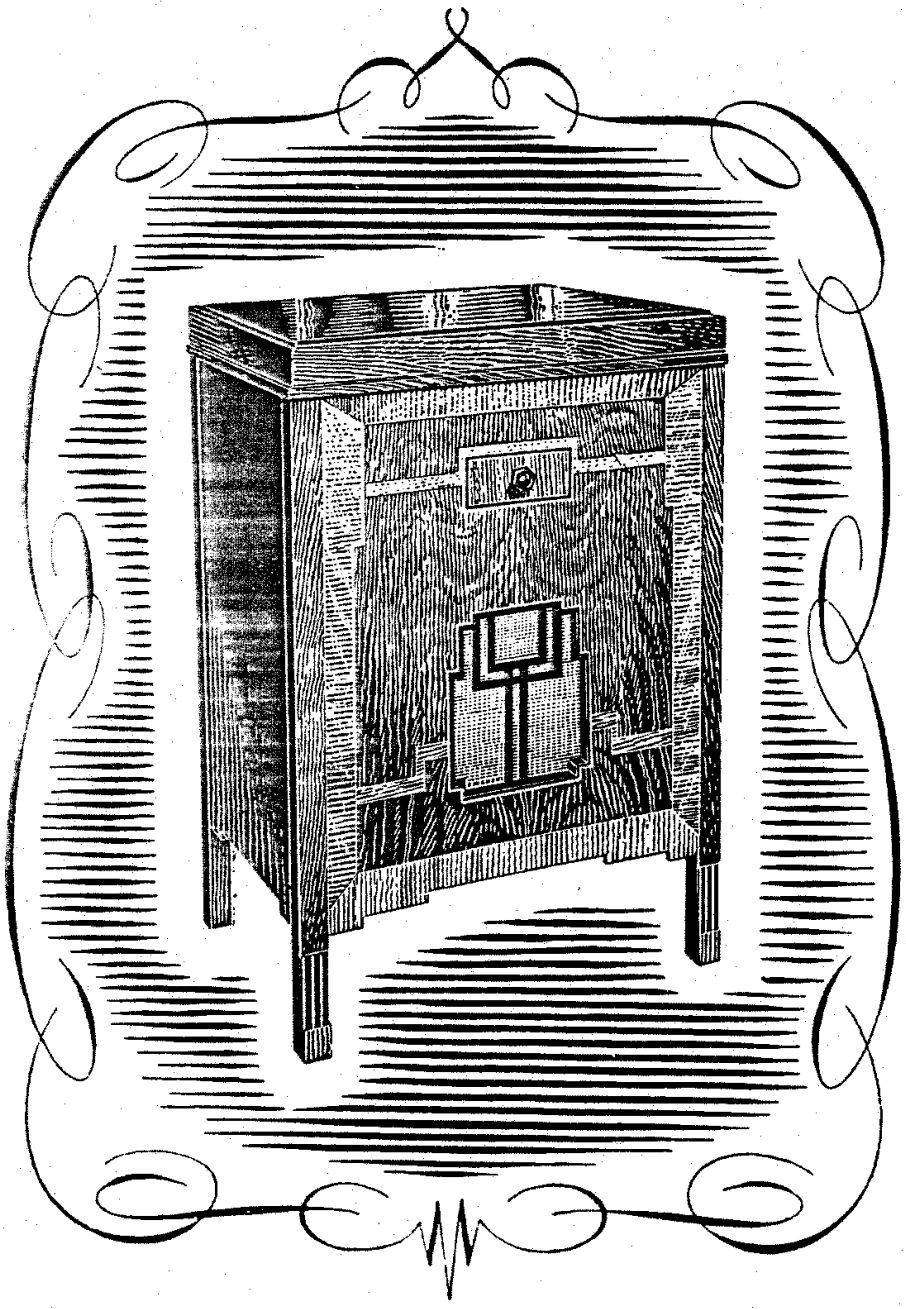


Fig. 5.



PART 2.—INFORMATION RELATING TO MODEL 286 ONLY

POWER CONSUMPTION.

Radio, 65 watts (approx.).
Gram., 125 watts (approx.).

DIMENSIONS.

Height.	Width.	Depth.
34 inches.	23 inches.	16 inches.

WEIGHT.

87 lb. nett.

MOTOR.

Type 25F. See separate service instructions.

REFER TO MANUAL No. 14, 1934 SERIES (MODELS 278–280), FOR DISMANTLING INSTRUCTIONS FOR MODEL 286 D.C.

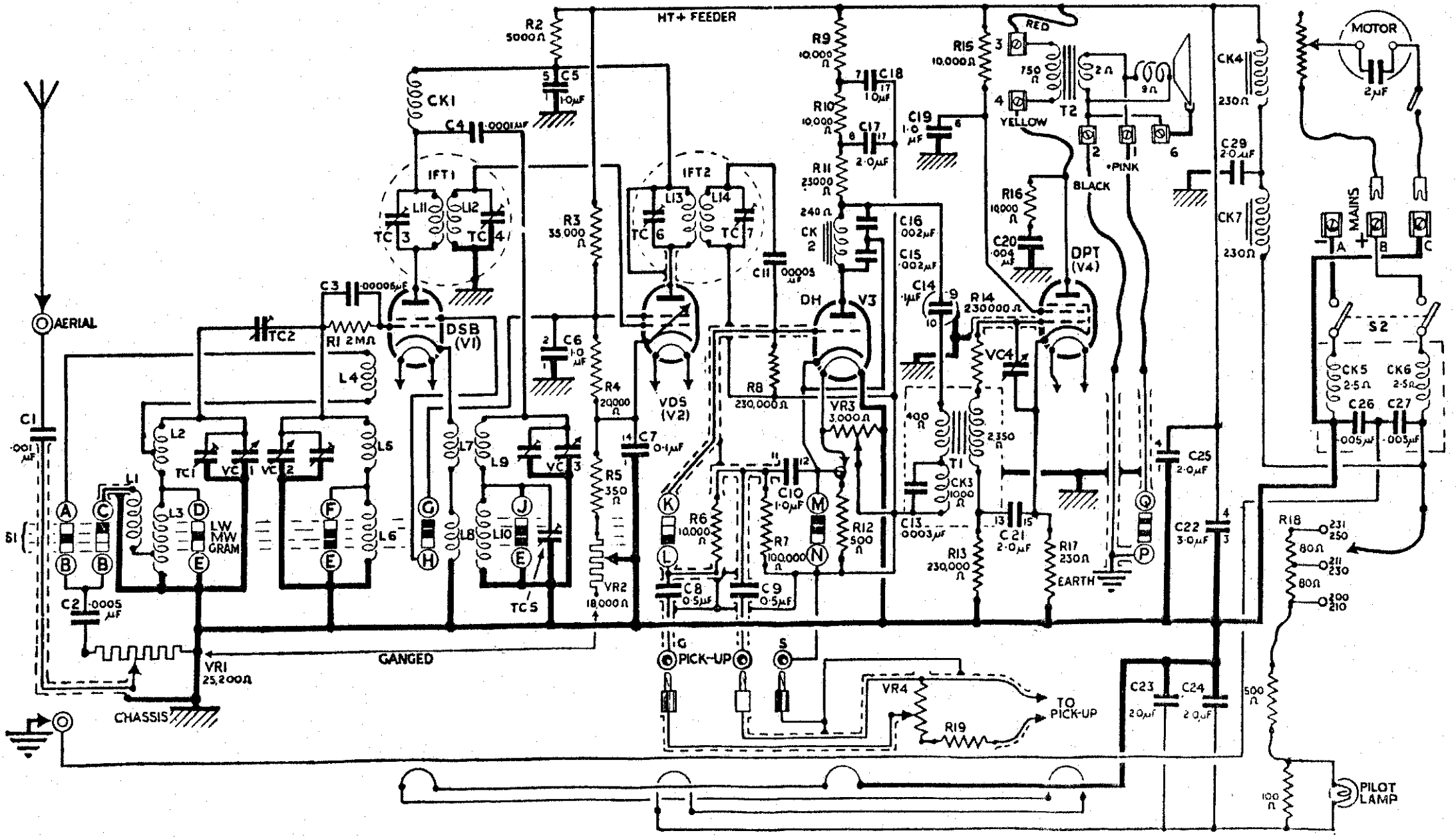


Fig. 7.

HUM CONTROL.—As the result of improvements in the design of this instrument, it has now been found possible to dispense with the Hum Control (VR3).

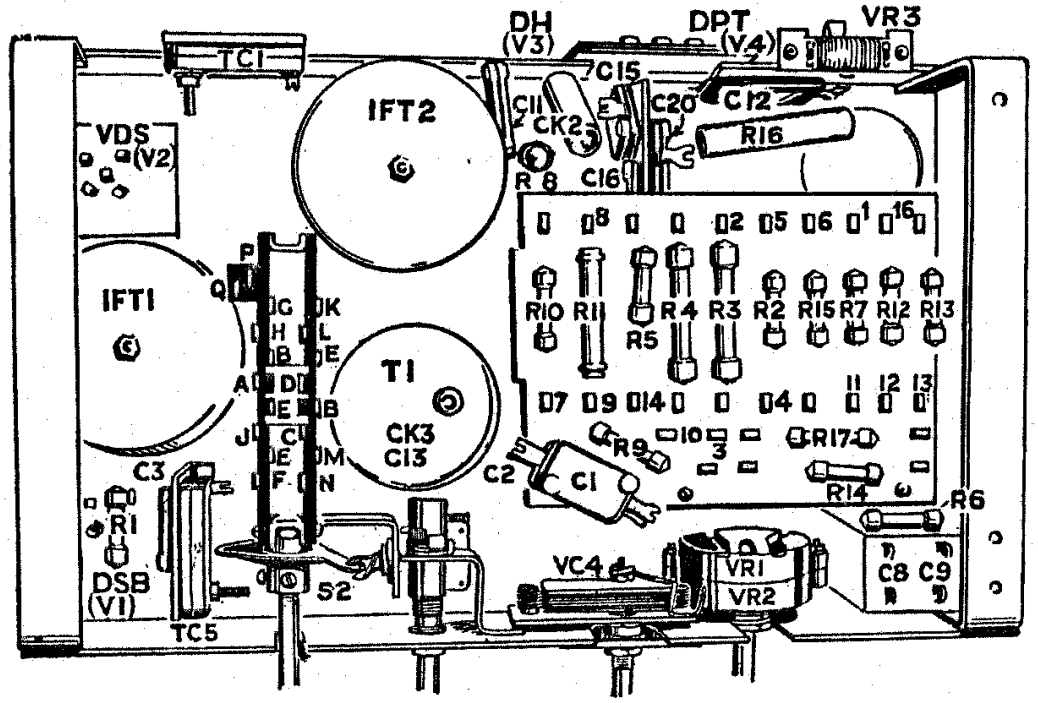


Fig. 8.

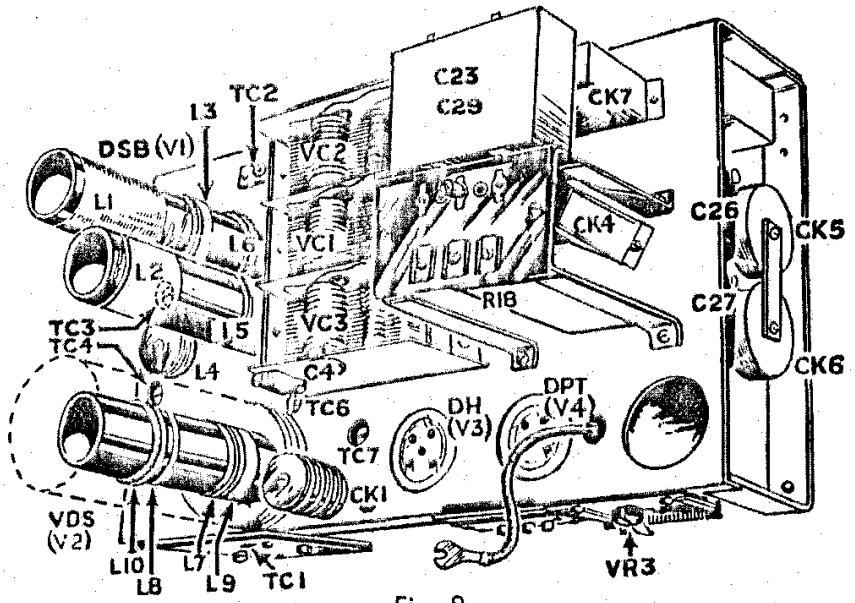


Fig. 9.

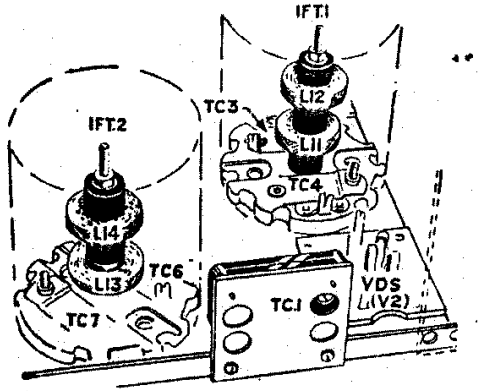


Fig. 10.

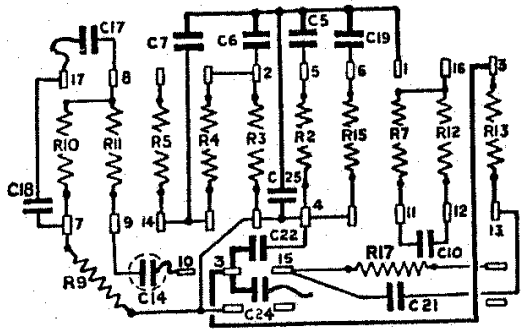


Fig. 11.

RESISTANCE COLOUR CODE

Resistances are coded with three colours :—
BODY colour indicates 1st figure.
END colour indicates 2nd figure.
SPOT colour indicates additional 0's.

BODY and END Colours.
(1st and 2nd figures.)

0	Black.	1	Brown.
2	Red.	3	Orange.
4	Yellow.	5	Green.
6	Blue.	7	Violet.
8	Grey.	9	White.

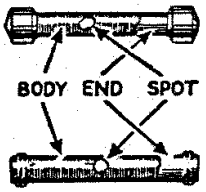


Fig. 12.

SPOT Colours.
(Additional 0's.)

·0	Black.
0·	Brown.
00·	Red.
000·	Orange.
0,000·	Yellow.
00,000·	Green.

WIRING COLOUR CODE

Black	Earth.
White	Cathode.
Red	H.T. positive.
Green	Grid.
Blue	Pick-up.
Brown	Heaters.
Pink	Loudspeaker.
Purple	Aerial.
Orange	Mains.
Yellow	Anode.
Yellow with red tracer ...	Screen of screen grid valve.
Grey	H.T. negative.
Green with black tracer...	Bottom of grid circuit not direct to earth.
Green with white tracer...	Mid position of tuning coil.

ELECTRICAL INTERFERENCE.

Attention is drawn to the activities of H.M. Post Office and the British Broadcasting Corporation in investigating the sources of interference in the reception of Broadcast Programmes from electrical sources exterior to radio receivers, such as tramways, electric signs, motors, X-ray apparatus and similar installations.

WHAT TO DO.

1. Make absolutely certain that the interference is not within the instrument by disconnecting the aerial and shorting the frame aerials.
2. Obtain from a Post Office (or the B.B.C.) a copy of the special questionnaire form issued by them.
3. Fill in the form accurately, giving in addition to the answers required :—
   (*a*) Name of the manufacturer of the receiver.
   (*b*) The manufacturer's Cat. No. of the receiver.
4. Send the questionnaire back as directed, together with **brief** notes as to possible source of interference which your local knowledge may suggest.
5. **Do not** assure your customer that a cure will be effected.
6. The P.O./B.B.C. organisation is one for investigating the **cause** of complaint with a view to ascertaining whether or not a cure can be effected. Such investigations may be both delicate and lengthy and require both goodwill and tact to bring to a successful conclusion. **Do not** suggest to the owner (if known) of the interfering apparatus that your application is in any way a measure of retaliation.
7. It is of the utmost importance that this valuable channel of co-operation with H.M. Post Office and the B.B.C. should not be employed until every possible test has been made to ensure that the interference complained of comes definitely from a source **exterior** to the instrument.

THE INTERFERENCE MANUAL.

You are advised, in your own interests, to obtain the new Marconiphone Manual "Electrical Interference with Broadcast Reception." This is a most comprehensive treatment of the subject, extending over 32 pages and dealing fully with the symptoms, cause and remedy of all types of interference. In conjunction with the manual, four special 12-inch Records have been made of the various interference noises, each fully cross-indexed for rapid identification.
The nett price of the Manual and Records in an album is 7s. 6d. Orders should be sent to The Marconiphone Co., Ltd., Radio House, Tottenham Court Road, London, W.1.

SPARE PART LIST—MODEL 262 D.C.

Similar to Model 278 (Service Manual No. 14, 1933). Parts different from Model 278, and from Model 262 A.C., are given below.

Part No.	Description.	Retail List Price.	Per
		£ s. d.	
14399	Instruction book	0 0 3	Each.
12151	Model, Warning and patents label	0 0 6	Doz.
14464A	Knob, Switch (Mottled or Brown)	0 0 7	Each.
14463A	Knob, Volume (Mottled or Brown)	0 0 7	,,
14415A	Knob, Tuner (Mottled or Brown)	0 0 7	,,
14414A	Knob, Tone Control (Mottled or Brown)	0 0 7	,,
17053A	Knob, Switch (Mottled or Brown)	0 0 7	,,
17053B	Knob, Volume (Mottled or Brown)	0 0 7	,,
17049B	Knob, Tune (Mottled or Brown)	0 0 7	,,
17049A	Knob, Tone (Mottled or Brown)	0 0 7	,,
16564	Screw, PK, securing knobs	0 0 7	Doz.
14500AZ	Radio unit	10 10 0	Each.
14379A	Plate with aerial and earth sockets and TC1	0 1 9	,,
13517	Screw, securing plate	0 0 1	,,
14398A	Cable form	0 8 6	,,
16046	Loudspeaker fret (vertical bar type)	0 2 6	,,
or 17627	Loudspeaker fret (horizontal "M" bar	0 2 6	,,

SPARE PART LIST—MODEL 286 D.C.

Similar to Model 280 (Service Manual No. 14, 1933). Parts different from Model 280 and from Model 286 A.C are given below.

Part No.	Description.	Retail List Price.	Per
		£ s. d.	
10994	Loudspeaker fret (vertical bar type)	0 2 9	Each.
or 17626	Loudspeaker fret (horizontal "M" bar)	0 2 9	,,
—	Box baffle, with felt	0 5 0	,,
25F	Motor—		
13715A	Turntable spindle and pin	0 1 4	,,
13716	Regulator lever	0 0 4	,,
17512	Unit No. plate	0 0 5	Doz.
5067	Oiling diagram	0 0 2	,,
4948A	Motor resistance	0 11 2	Each
5040	Asbestos	0 0 2	,,
8602	Screw, securing resistance	0 0 2	Doz.
10022A	2 mfd. condenser	0 3 6	Each.
8602	Screw, securing condenser	0 0 2	Doz.
13776A	Motor lead, with six tags	0 2 1	Each.
11802	Lead Tag	0 0 3	Doz.
7216	Soldering Tag	0 0 5	,,
14222A	Motor earth lead, with two tags	0 0 7	Each.
11802	Lead Tag	0 0 3	Doz.
8519	Spade Tag	0 0 1	Each.
14500BF	Radio unit	10 10 0	,,
17053C	Knob, Switch	0 0 7	,,
17053B	Knob, Volume	0 0 7	,,
17049B	Knob, Tuner	0 0 7	,,
17049A	Knob, Tone Control	0 0 7	,,
16564	Screw, PK, securing knobs	0 0 7	Doz.
14989A	Aerial and earth terminal panel, with brackets	0 0 6	Each.
8651	Screw, securing brackets to cabinet	0 0 2	Doz.
12534	Model, warning and patents label	0 0 6	,,
14465	Instruction book	0 0 6	Each.

In order to expedite delivery of spare part orders, please quote :—

1. Model number and unit type number.
2. Spare part number and description as given in the above list.
3. Quantity required.

Order spare parts from :—

E.M.I. SERVICE, LTD.,
SHERATON WORKS, HAYES, MIDDLESEX.

Telephone : Southall 2468.

Telegraphic address : Service, Hayes, Middlesex.

Marconi 262
Sales Points

1. Especially suitable for new Lucerne wave-length conditions.
2. Four valves with the power of six.
3. Compensated L.F. circuits giving unprecedented purity of tone.
4. Superb new permanent magnet Moving Coil Speaker.
5. Distortionless volume control and special tone control.
6. Exceptional freedom from background noise.
7. Handsome figured walnut cabinet.

Marconi 286
Sales Points

1. Especially suitable for new Lucerne wave-length conditions.
2. Compensated L.F. circuits—superb tone on both radio and records.
3. Four valves with the power of six.
4. Magnificent figured and inlaid walnut cabinet.
5. Splendid new permanent magnet Moving Coil Speaker.
6. New electric motor and pick-up.
7. Special tone control and separate distortionless volume controls.