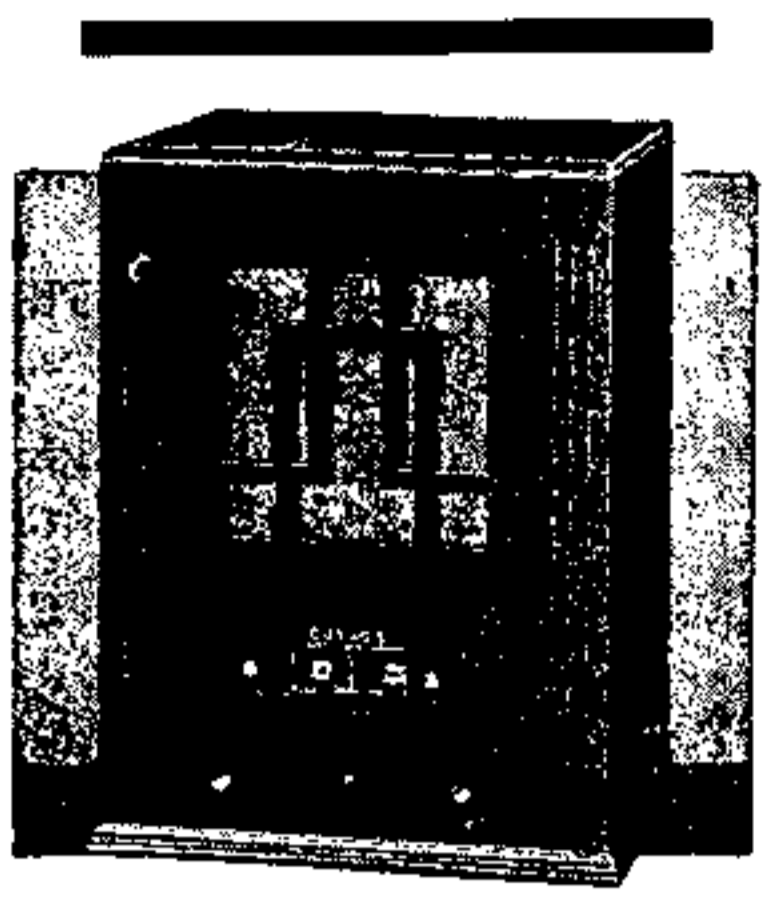


COSSOR SERVICE MANUAL

for MODELS 333/4/5



MOD. 333 IS CHASSIS ONLY.
 MOD. 334 IS SIMILAR CHASSIS IN SMALL CABINET.
 MOD. 335 IS AS ILLUSTRATED ABOVE.
 THE CHASSIS COMPRISES A VARIABLE-MU SCREEN GRID HIGH-FREQUENCY STAGE, FOLLOWED BY A CUMULATIVE GRID DETECTOR, AND POWER OUTPUT. PROVISION CAN BE MADE FOR GRAMOPHONE RECORD REPRODUCTION.

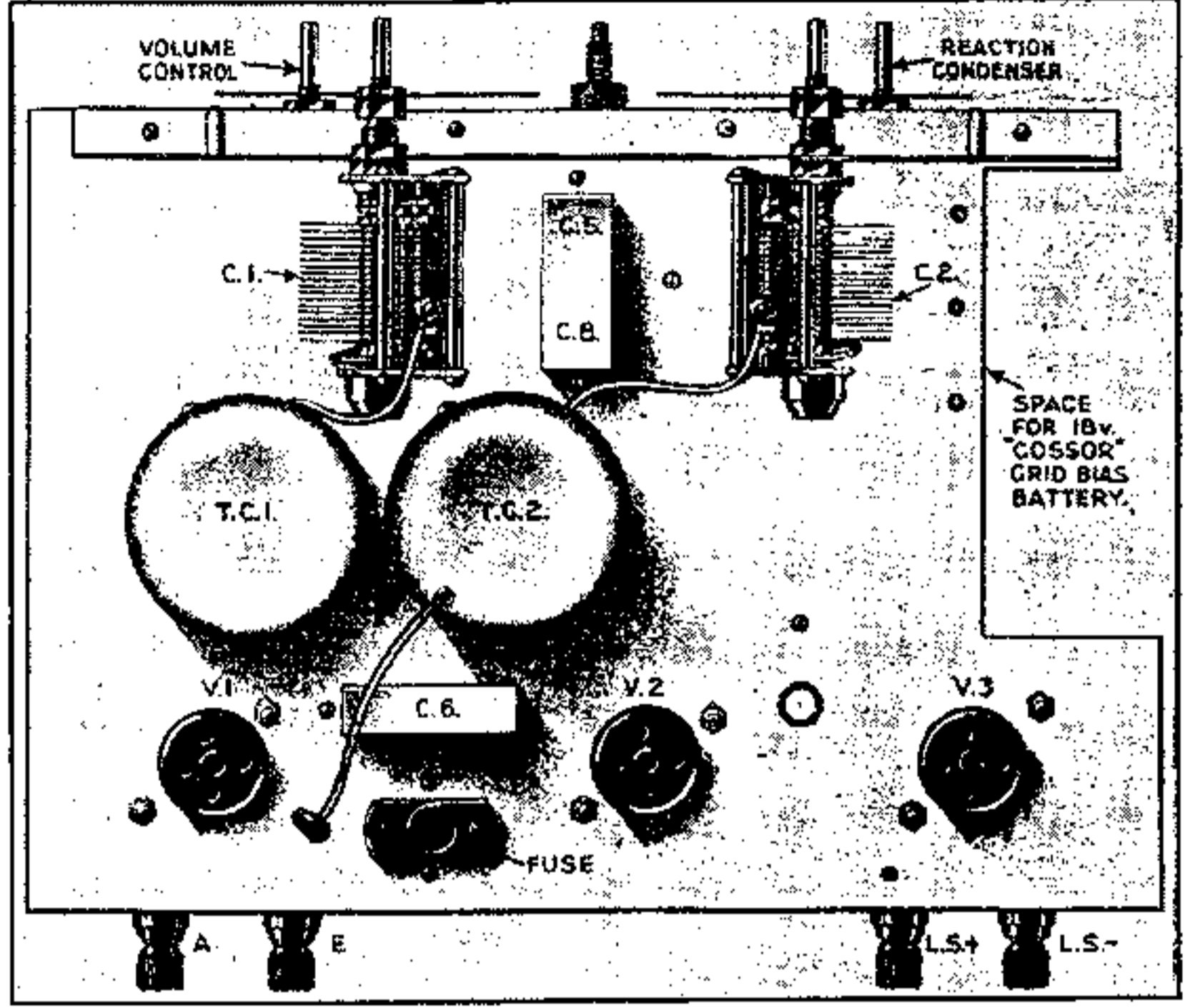
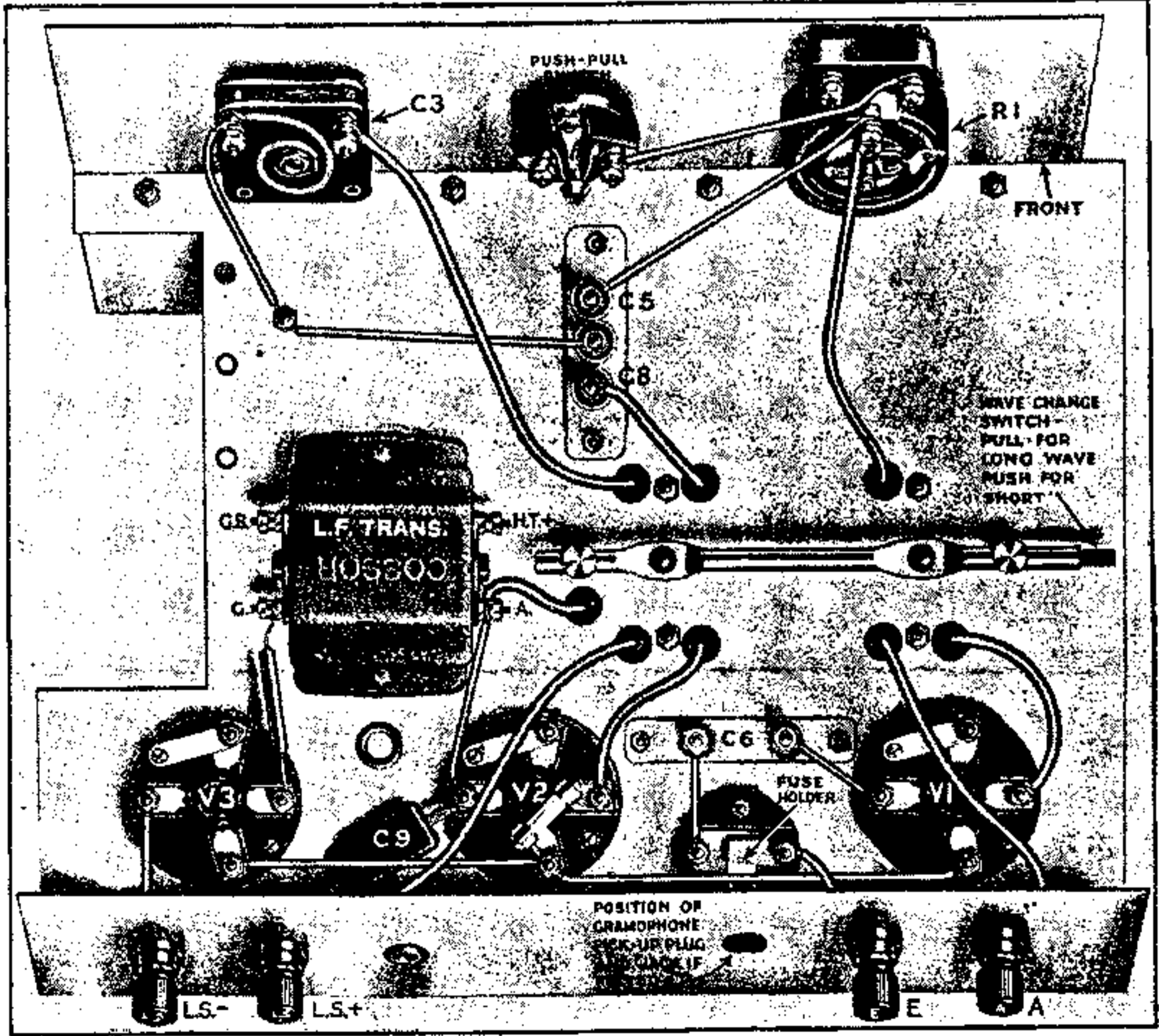


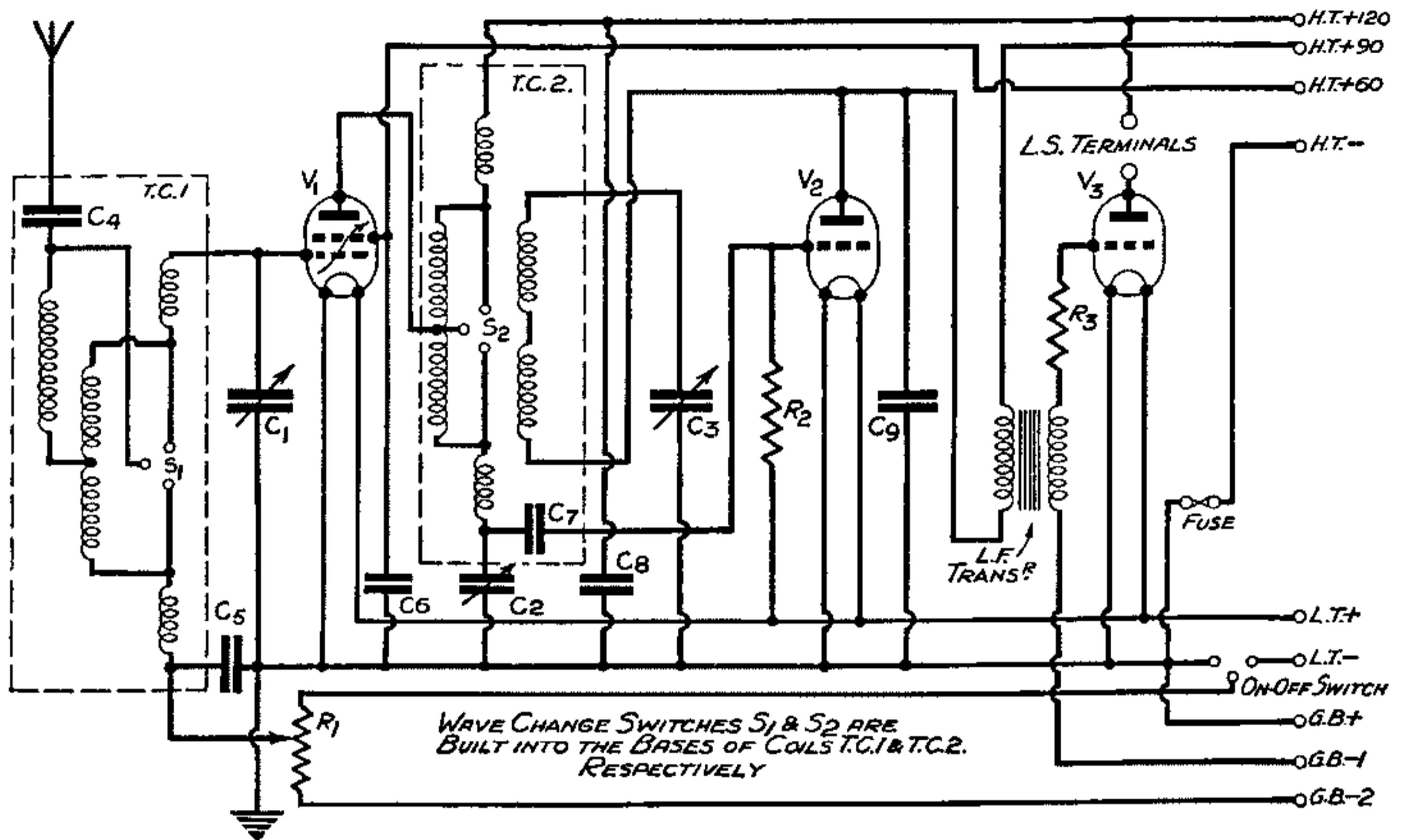
Illustration on right shows plan view of chassis.

Illustration on right shows underneath view of chassis.



Note. THESE RECEIVERS ARE ONLY SUPPLIED BY US IN KIT FORM.

THEORETICAL CIRCUIT DIAGRAM



FAULTS AND THEIR PROBABLE CAUSES

NO H.T. VOLTAGE TO ANY VALVE.

Check fuse and holder, see that on-off switch is pulled out and that the three points are in good contact with the centre spindle. Check leads and wander plugs.

NO L.T. VOLTAGE TO VALVES.

Check switch as above, and see that accumulator is fully charged, see that its terminals, and the L.T. leads and spade connectors from set are continuous and free from corrosion.

L.T. VOLTAGE BUT NO CURRENT.

Valves have "flashed" owing to excessive voltage having been applied to their filaments. All connections and leads must be checked. It is not possible to give particulars of faults causing the "flashing" as it may be brought about in numerous ways. It is possible for the fuse, which is only inserted as a precautionary measure to remain intact, even though the valves have "blown."

Verify the fact that no short is taking place before new valves are inserted.

NO CURRENT TO 220 V.S.G. (V1).

Check screened lead from TC2 for continuity, and see that adaptor plug is making good connection with plate of terminal valve. Check H.T. + 120 battery lead and wander plug.

NO CURRENT TO 220 V.S.G. (V1).

Check screened lead from TC2 for continuity, and see that adaptor plug is making good connection with plate of terminal valve. Check H.T. + 120 battery lead and wander plug.

LOW CURRENT TO V1.

NOTE. THAT THE CURRENT CONSUMPTION OF THIS VALVE, VARIES WITH THE POSITION OF THE POTENTIOMETER. Check "Screen grid" circuit for continuity, and see that the H.T. + 60 plug is inserted in the correct battery socket. The valve may be worn out or faulty. Try current passed by test valve of similar type.

EXCESSIVE CURRENT TO V1.

See that H.T. + 60 and H.T. + 90 leads have not become interchanged. Check potentiometer to see that "slider" is not "earthed" to chassis. This is probably the case if current does not vary with volume control positions. Test Grid Bias battery and its associated leads.

NO OR LOW CURRENT TO V2 (210 H.L. met.).

Check primary of L.T. Transformer for continuity. Test H.T. 90 lead and filament of valve. The valve may be worn out.

EXCESSIVE CURRENT TO V2.

Test resistance R2 for continuity. See that the H.T. + 90 lead is inserted in correct battery socket.

NO OR LOW CURRENT TO V3 (220P).

Check loudspeaker connections, and the "winding" of the former in the case of the Model 335. See that lead H.T. + 120 is in its correct position and that the end cells of battery are in good condition. Valve may be worn. Replace with test valve. Grid bias voltage to this valve (G.B.-1) may be excessive.

HIGH ANODE CURRENT TO V3.

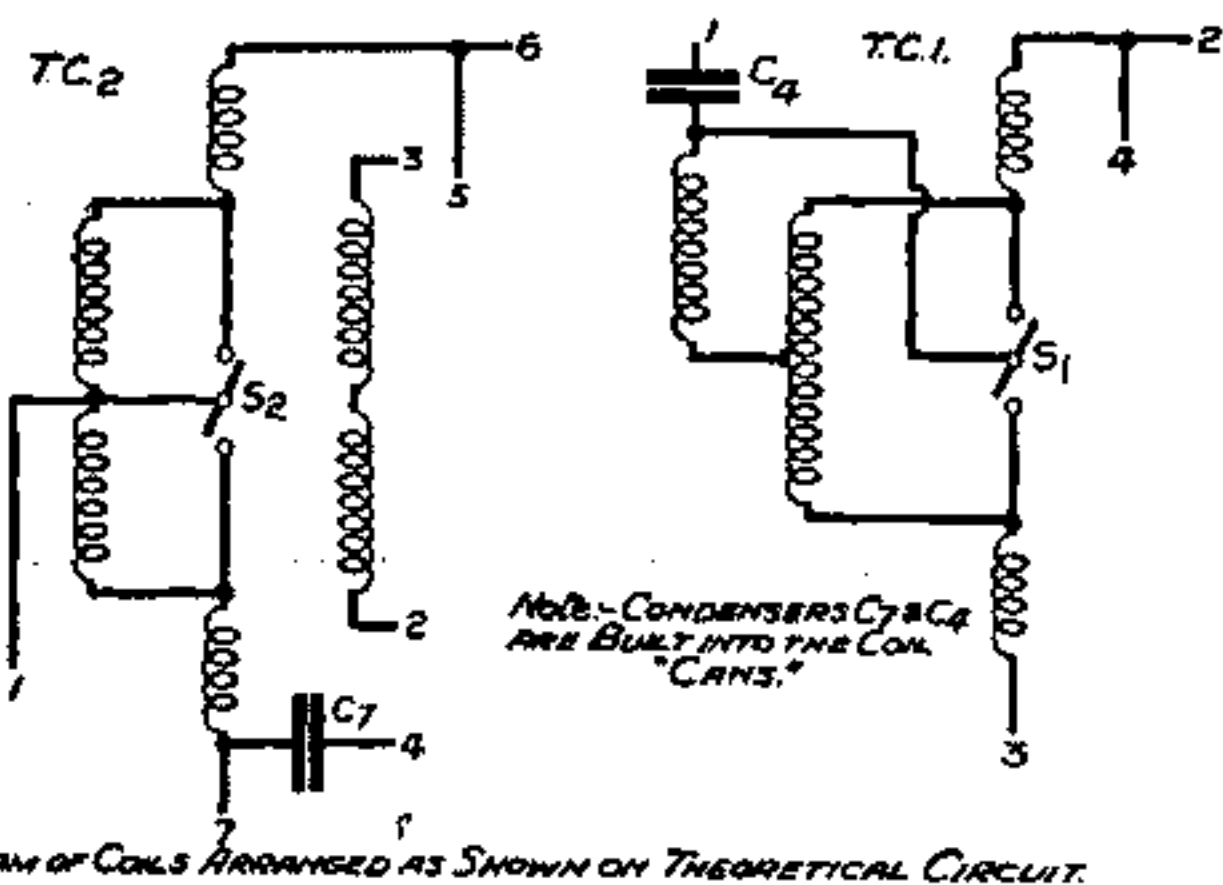
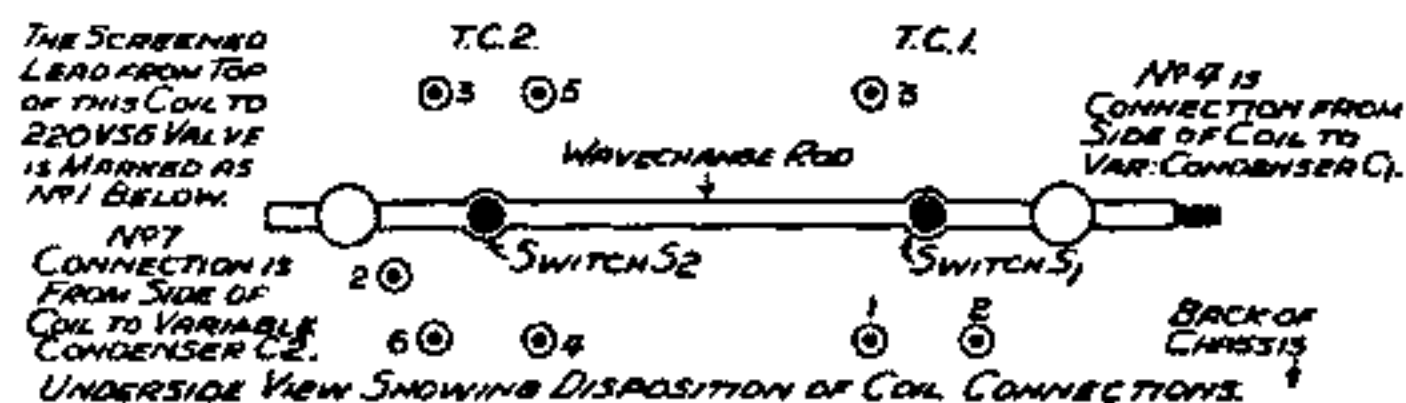
Secondary of L.F. Transformer and resistance R3 should be tested for continuity. Valve may be faulty, or too little grid bias voltage is being applied to the grid.

DISTORTION.

If signals are distorted, check *all* voltages, particularly those of the grid bias battery. Try adjusting the loudspeaker. If no improvement results it is probable that valve has reached the end of its useful period of service.

NO SIGNALS.

Check valves as aforementioned, and test coils for continuity. The coil connections are as shown below. It is necessary to remove plug (for gramo.), if one is fitted.



NO REACTION.

Check connection from coil to reaction condenser, and from the latter to earth. Try increasing detector H.T. voltage. Change valve if necessary.

SET MICROPHONIC OR NOISY.

Change V2, and V1 if necessary.

PICK-UP PLUG AND JACK.

It is necessary to see that the jack is insulated from chassis. The correct type Plug and Jack to use is the "COSSOR" Type 3345 which may be obtained from our nearest depot. One terminal of the jack is connected to the grid terminal of 210 H.L. (met.) V2, whilst a short length of "flex" is taken from the other to the 1½ volts Grid Bias battery tapping.

FINALLY.

It has been assumed in the foregoing text that attention has been given to the aerial and earth installation. It is suggested that an aerial no longer than 40 ft. inclusive of lead in, be used, and an earth lead of thick wire, as short as practicable.

No attempt should be made to repair any component. The component considered faulty should be returned, carriage paid, to our depot in your area, for service under the terms of our guarantee.

Valves should be returned in accordance with instructions printed on the leaflets enclosed in valve cartons.

WE WOULD MENTION THAT OUR GUARANTEE IS ONLY VALID IF "COSSOR" VALVES, AS SPECIFIED, ARE USED.

A Chart, No. C14, is issued, free on application, giving full details for the construction of this receiver. Full details will also be found on the Chart regarding the fitting of gramophone pick-up plug and jack.

PART LIST OF COMPONENTS

CONDENSERS

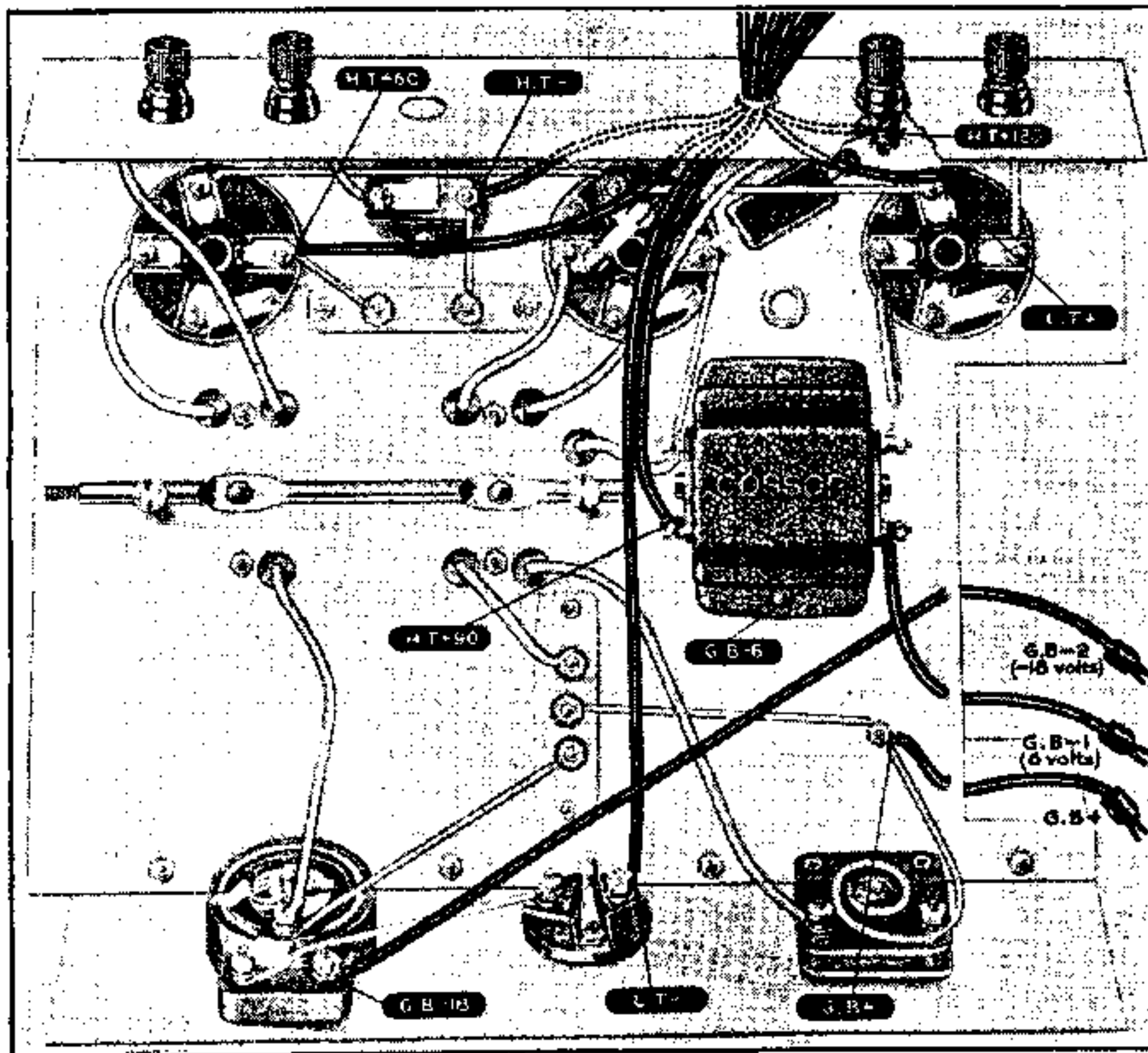
- C₁ VARIABLE CONDENSER—·0005 mfd. (WITH SLOW MOVEMENT ATTACHMENT).
 C₂ VARIABLE CONDENSER—·0005 mfd. (WITH SLOW MOVEMENT ATTACHMENT).
 C₃ REACTION CONDENSER—·0005 mfd. (bakelite dielectric).
 C₄—·0001 mfd. (built into coil can).
 C₅—1 mfd.
 C₆—1 mfd.
 C₇—·0001 mfd. (built into coil can).
 C₈—1 mfd.
 C₉—·0005 mfd.

RESISTANCES

- R₁ VARIABLE POTENTIOMETER—50,000 Ω graded.
 R₂ (Grid Leak)—2 Ω
 R₃ —100,000 Ω

OTHER COMPONENTS

- TC₁ AERIAL COIL—"COSSOR" TYPE FC 1114 Incorporating C₄ Condenser.
 TC₂ ANODE COIL—"COSSOR" TYPE FC 1115 Incorporating C₇ Condenser.
 L.F. TRANSFORMER, "COSSOR" TYPE SST/301.
 3 POINT PUSH-PULL SWITCH.
 BULB FUSE—150 m/a.



DETAILS OF BATTERY CONNECTIONS

The above diagram shows to which terminals should be fitted the various H.T., L.T. and Grid Bias leads. It is advisable to check each one carefully to avoid damage to the valves through an incorrect battery connection.

BATTERIES

THE BATTERIES TO USE IN CONJUNCTION WITH THIS RECEIVER ARE:—

- 1—2 VOLT L.T. ACCUMULATOR.
 1—120 V. HIGH TENSION BATTERY (A TRIPLE CAPACITY IS SUGGESTED).
 1—18 VOLT GRID BIAS BATTERY.

IF IT IS FOUND NECESSARY to remove the chassis from cabinet, the 4 knobs should be taken off, the wave change knob unscrewed, and the on-off switch knob and knurled locknut taken off. When the loudspeaker leads, in the case of the "Model 335" and the screws at bottom back of chassis are removed, the chassis will slide out.

VOLTAGES AND CURRENTS

ALL VOLTAGES MUST BE TAKEN WHILST THE RECEIVER IS IN OPERATION, AS WHEN BATTERIES ARE FAULTY OR NEARING THE END OF THEIR USEFUL LIFE, THE READINGS WILL BE ERRONEOUS UNLESS THIS IS DONE. THE VOLTAGES ARE TAKEN ACTUALLY AT THE VALVE-HOLDERS.

VALVE V₁—220 V.S.G. (met.).

ANODE VOLTS 120. ANODE CURRENT AT MAX. POSITION OF VOLUME CONTROL 5 m/a.
 SCREEN VOLTS 60.

SCREEN CURRENT 1½ m/a. AT MAX. POSITION OF VOLUME CONTROL.

SCREEN CURRENT ¼ m/a. AT MIN. POSITION OF VOLUME CONTROL.

GRID BIAS 0-18 volts.

VALVE V₂—210 H.L. (met.).

ANODE VOLTS 85-7.

ANODE CURRENT 2.4 m/a.

VALVE V₃—220 P.

ANODE VOLTS. 110-115 (depending on resistance of loudspeaker used).

ANODE CURRENT. 5.5 m/a.

GRID BIAS VOLTAGE. 6.

NOTE.—The reaction control should be in its minimum position when the readings are taken.

VALVES

VALVE TYPES AND THEIR ORDER OF INSERTION, WHEN VIEWED FROM BACK OF SET.

V₁—220 V.S.G. (Met.). V₂—210 H.L. (Met.). V₃—220P.

NOTE.

IT IS ADVISABLE TO KEEP A COMPLETE SET OF NEW OR TESTED "COSSOR" VALVES, AS IT IS VERY MUCH SIMPLER TO SERVICE A RECEIVER KNOWING THAT THE VALVES USED ARE IN ORDER.