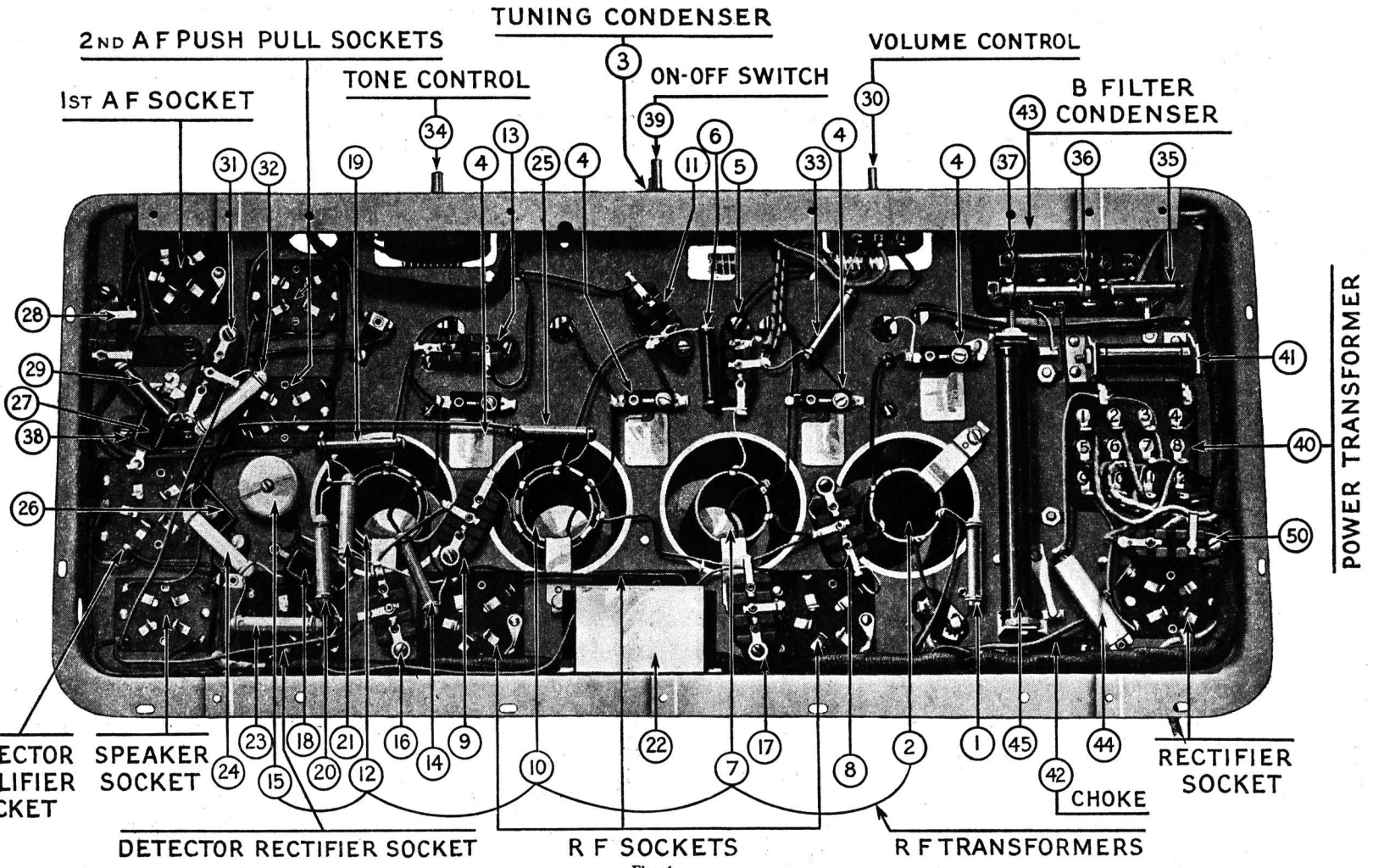

Fig. 4

ADJUSTING COMPENSATING CONDENSERS

The compensating should be done with the Receiver turned to some frequency between 1200 and 1400 kilocycles. Either an oscillator signal or a broadcast signal may be used. Connect a good ground to the Receiver. If an oscillator signal is used, connect the oscillator to the ANT terminal. If a broadcast signal is to be used, connect the antenna to the ANT terminal.

When using the ear-method, the signal from the oscillator should be very weak, and the volume control of the Receiver turned on full. Tune the Receiver sharply. Using the fibre-wrench, adjust the fourth Compensating Condenser until maximum volume is obtained. The fourth Condenser is the one nearest the detector tube. Then adjust the other Compensating Condensers in the same manner—proceeding with the third, then the second, and then the first.

If the meter-method is to be used, tune in a strong broadcast signal between 1200 and 1400 kilocycles, using the regular antenna connected to the Receiver. The volume control may be turned down so that the volume is not annoying. Connect the negative terminal of a 250-volt high-resistance voltmeter (preferably 1000 ohms per volt) to the ground terminal of the Receiver. Connect the positive lead of the voltmeter to the screen-grid terminal of the third 24 tube. This can be done by wrapping a fine wire around the prong of the tube, or by using an adaptor such as is commonly used for pick-up work. This tube must be in the socket and operating when making the adjustment, and the tube shield put back in place.

Tune the Receiver sharply. Then check the adjustment of the Compensating Condensers, starting with the fourth. Adjust each one to the point of maximum deflection of the voltmeter needle.

NEW TUNING SCALE ILLUMINATION

The tuning scale used in the Models 96 and 96-A is translucent and is illuminated by means of a pilot lamp placed inside the drum of the tuning condenser. In case it is necessary to replace the pilot lamp, remove the screw fastening the lamp bracket to the condenser housing and bring the bracket out over the top of the condenser. Replace the lamp and fasten the bracket in place again. This can be done without removing the chassis from the cabinet.

REPLACEMENT PARTS

No. on Figs. 3 and 4	Description	Part No.
①	Antenna Resistor	3526
②	First R. F. Transformer	3744-A
③	Tuning Condenser	4000-D
④	Compensating Condenser	3722-A
⑤	By-Pass Condenser	3615-F
⑥	Resistor	3542
⑦	Second R. F. Transformer	3744-B
⑧	By-Pass Condenser and Resistor	3615-C
⑨	By-Pass Condenser and Resistor	3615-B
⑩	Third R. F. Transformer	3744-C
⑪	By-Pass Condenser	3615-E
⑫	Fourth R. F. Transformer	3744-C
⑬	By-Pass Condenser	3615-E
⑭	Resistor	3766
⑮	Fifth R. F. Transformer	3775-B
⑯	By-Pass Condenser and Resistor	3615-B
⑰	By-Pass Condenser and Resistor	3615-C
⑱	Condenser	3774
⑲	Resistor	3769
⑳	Resistor	3767
㉑	Resistor	3767
㉒	By-Pass Condenser	3583
㉓	Resistor	3767
㉔	Resistor	3768
㉕	Resistor	3769
㉖	By-Pass Condenser	3082
㉗	By-Pass Condenser	3082
㉘	Condenser	3793-C
㉙	Resistor	3769
㉚	Volume Control	4093
㉛	By-Pass Condenser	3615-D
㉜	Resistor	3768
㉝	Resistor	3542
㉞	Tone Control	4037-A
㉟	Resistor	3542
㊱	Resistor	3766
㊲	Resistor	3656
㊳	Input Transformer	3537
㊴	On-Off Switch	4095
㊵	Power Transformer (60 Cycle)	3752
㊵	Power Transformer (25 Cycle)	3753
㊶	C Resistor	3763
㊷	Choke	3422
㊸	Filter Condenser (60 Cycle)	3754
㊸	Filter Condenser (25 Cycle)	3755
㊹	Resistor	3764
㊺	B Resistor	3762
㊻	Out-Put Transformer	2848
㊼	Field Coil	2850
㊼	Voice Coil and Cone	2794-B
㊽	Pilot Lamp	3463
㊿	Condenser (LOC)	3793-B
	Knob (Vol. Control)	3579
	Knob (Tuning Condenser)	3580
	Dial Indicator	4006
	Scale	4118
	Speaker Plug and Cable (Short)	L-1101-A
	Speaker Plug and Cable (Long)	L-1102-A

NOTE: The first two Compensating Condensers ④ are 3772-A; the third and fourth Condensers are 3968-A.

PHILADELPHIA STORAGE BATTERY COMPANY

Ontario and C Streets, Philadelphia, Pa.

PHILCO

Radio Service Bulletin—No. 14

Models 96 and 96 A Receivers

Model 96 Receivers are for operation on 110-120 volt, 50-60 cycle AC lines
Model 96 A Receivers are for operation on 110-120 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

TUBE		FILAMENT VOLTS	PLATE VOLTS	SCREEN GRID VOLTS	CONTROL GRID VOLTS	CATHODE VOLTS	PLATE MILLI-AMPERES
TYPE	CIRCUIT						
24	1st R. F.	2.15	155	95	0	5.3	4
24	2d R. F.	2.15	155	95	0	5.3	4
24	3d R. F.	2.15	155	95	0	5.3	4
27	Det.	2.15	0		−.5	.7	0
27	Det. Amp.	2.15	27		−.5	5.5	0
27	1st A. F.	2.15	85		−2.0*	5.5	2.5
45	2d A. F.	2.2	250		41		28
45	2d A. F.	2.2	250		41		28
80	Rectifier	4.5					43/Plate

*This is read with Volume Control off.
NOTE: Do not allow receiver to oscillate while taking readings. Keep R. F. shield on and tune to eliminate oscillation. Have antenna and ground connected.

Table 2—POWER TRANSFORMER VOLTAGES

TERMINALS	A.C. VOLTS	
1—2		Primary
3		Center Tap 80 Tube
4		Center Tap 45 Tubes
5—6	2.67	Heaters for 24 and 27 Tubes
7—8	2.68	Filaments for 45 Tubes
9—12	750.	Plates 80 Tube
10—11	5.0	Filament 80 Tube
Rubber Covered Lead		Center Tap for 24 and 27 Tubes

Table 3—RESISTOR DATA

No. on Figs. 3 and 4	Resistance	Color
①	5,000	Golden Yellow
⑭—㊱	13,000	Belgium Blue
㊲	25,000	Auto Buff
⑥—㉝—㉟	70,000	Jade Green
⑳—㉑—㉓	100,000	Silver Gray
㉔—㉜	250,000	White
⑲—㉕—㉙	500,000	Battleship Gray
㊺	8,300	Long Tubular
㊶	800	Short Tubular
㊹	70	Flat Wire Wound

Table 4—CONDENSER DATA (Other Than Filter Block)

No. on Figs. 3 and 4	Capacity MFD	Volts D.C. With Receiver Turned On
⑤—⑪—⑬	.05	...
⑨—⑯	.05 with 250 ohm Resistor	160
⑧—⑰	.05 with 250 ohm Resistor	110
⑱	.00005	...
㉒	.50	...
㉖	.00025	...
㉗	.00025	30
㉘	.015	30
㉛	.05	66
㊿	.015	...

MODEL 96 CONDENSER BLOCK PART No. 3754

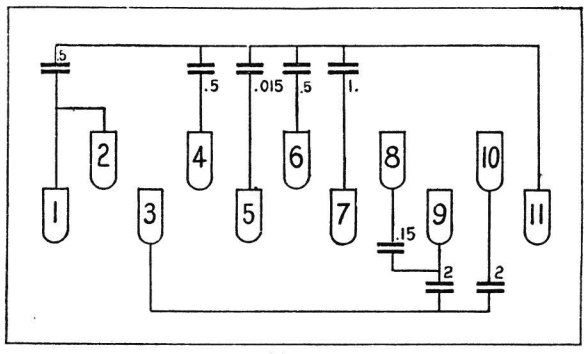

Fig. 1

MODEL 96-A CONDENSER BLOCK PART No. 3755

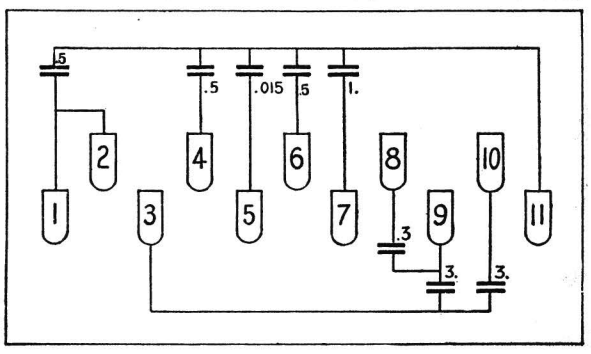

Fig. 2

NOTE: Filter Condensers—Parts No. 3754 and 3755—formerly had 1 mfd. capacity between terminals 1-11 and 6-11. The old and new condensers are interchangeable.

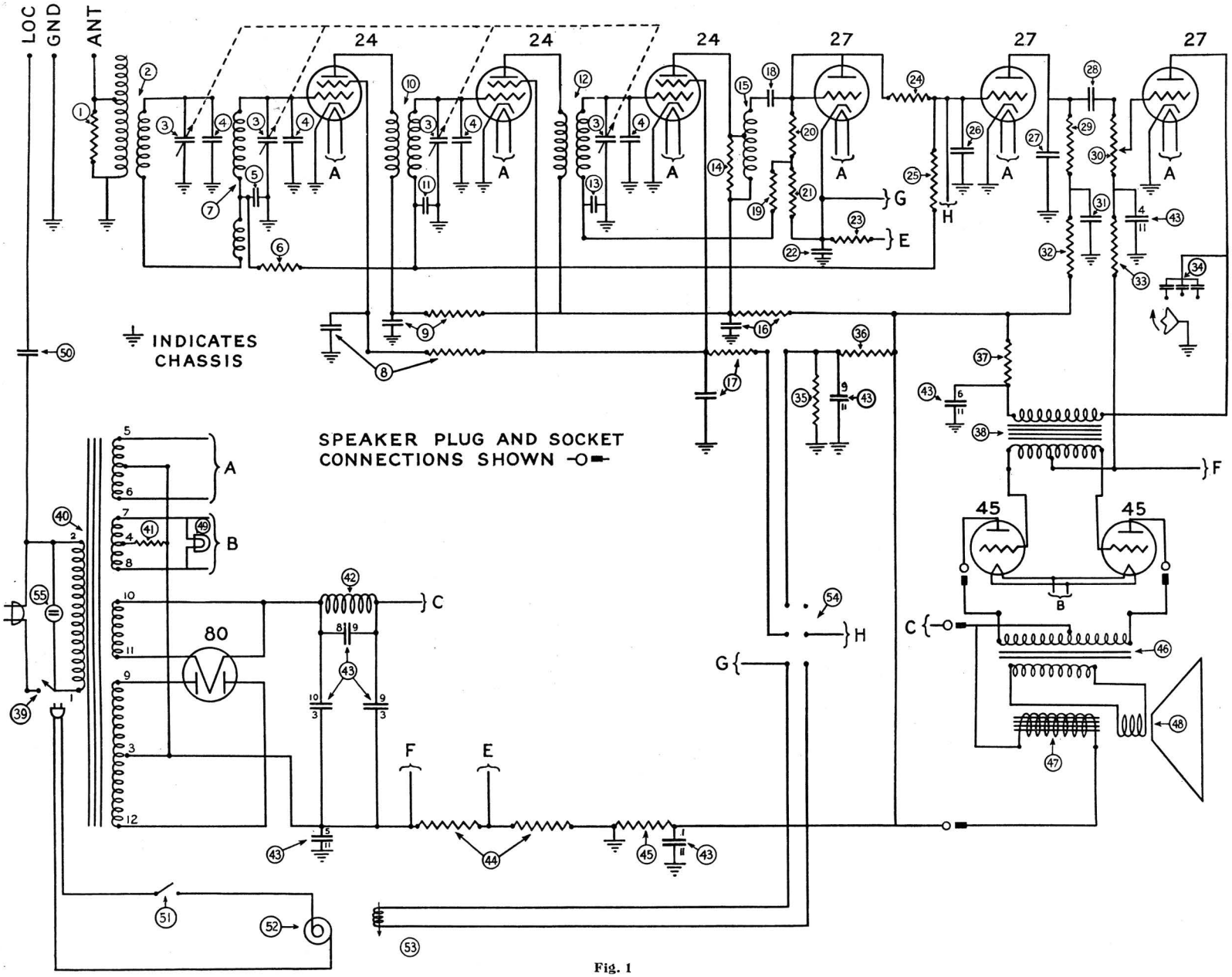

Fig. 1