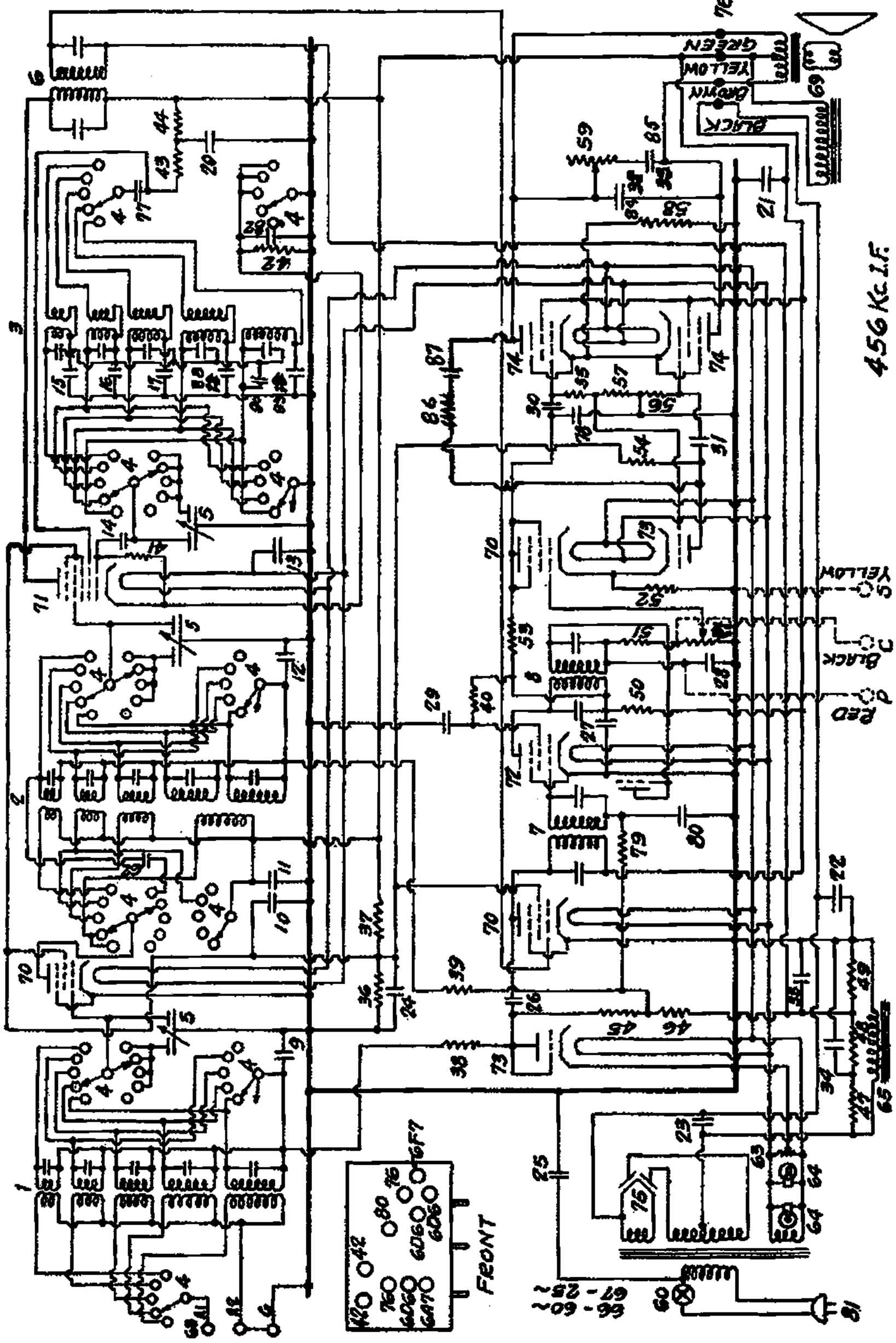
MODEL 1014, Centurion
Schematic, Socket, Parts

CROSLEY RADIO CORP.

MARCH 1935

Fig. 1—Wiring Diagram of Model 1014 "Centurion"



Item No.	Part No.	See Item 83	Description
50	W —22785		50,000 Ohms Resistor
51	—21237A		60,000 Ohms Resistor
52	W —22975		220 Ohms Flex. Resistor
53	W —23504B		Tone Control
54			On-Off Switch
55			0.00025 Mfd. Condenser
56			10-10 Ohms Resistor
57			Dial Light
58			Filter Choke
59			Power Trans. 60 Cy 110 Volt
60			25 Cy. Power Trans.
61			Ant. Grd. Terminal
62			Speaker (Console)
63			Speaker (Table)
64			Socket 6D6
65			Tube Shield
66			Tube Shield Base
67			Socket 6A7
68			Socket Cushion
69			Tube Shield
70			Tube Shield Base
71			Socket 6F7
72			Tube Shield
73			Tube Shield Base
74			Socket 78
75			Tube Shield
76			Tube Shield Base
77			Socket 42
78			Socket 80
79			Speaker Terminal Board
80			Terminal Board Cover
81			Terminal Board Insulator
82			0.0005 Mfd. 400 Volt Condenser
83			0.00025 Mfd. Condenser
84			5 Megohm Resistor
85			0.02 Mfd. 200 Volt Condenser
86			Cord and Plug
87			.02 Mfd. 200 Volt Condenser
88			Level Control (1 Megohm)
89			0.004 Mfd. 400 Volt Condenser
90			0.05 Mfd. 400 Volt Condenser
91			350,000 Ohm Resistor
92			0.002 Mfd. 300 Volt Condenser
93			Osc. Trimmer Condenser
94			Osc. Trimmer Condenser
95			0.00025 Mfd. Condenser
96			Switch Knob
97			Volume Control Knob
98			Tone Control Knob
99			Station Selector Knob
100			Vernier Knob
101			Escutcheon
102			Escutcheon Lens
103			Escutcheon Gasket
104			Band Change Plate
105			Volume Control Plate

Item No.	Part No.	See Item 83	Description
1	W —32379		0.25 Mfd. 400 Volt Condenser
2	W —32378		0.25 Mfd. 400 Volt Condenser
3	W —34000		15,000 Ohms Resistor
4	W —32350		10,000 Ohms Resistor
5	G1 —34003		3 Megohm Resistor
6	G1 —34002		150,000 Ohms Resistor
7	G1 —34000		100,000 Ohms Resistor
8	G2 —34000		1,400 Ohms Flex. Resistor
9	G10—34000		7,000 Ohms Resistor
10	See Item 85		7,000 Ohms Resistor
11	See Item 80		300,000 Ohms Resistor
12	W —32300		300,000 Ohms Resistor
13	W —2010413		800,000 Ohms Resistor
14	W —29815		150,000 Ohms Resistor
15	W —30826		60,000 Ohms Resistor
16	G1 —34005		450 Ohms Flex. Resistor
17	W —231914		300,000 Ohms Resistor
18	G2 —32004		2,700 Ohms Resistor
19	W —231914A		150,000 Ohms Resistor
20	W —29815		150,000 Ohms Resistor
21	See Item 84		300,000 Ohms Resistor

Item No.	Part No.	See Item 83	Description
22	W —32379		0.02 Mfd. 200 V. Condenser
23	W —32378		0.01 Mfd. 400 V. Condenser
24	G8 —34000		1500 MMfd. Condenser
25	W —32350		0.05 Mfd 200 V. Condenser
26	G1 —34003		0.00025 Mfd. Condenser
27	G1 —34002		0.00025 Mfd. Condenser
28	G1 —34000		1047 Mmfd. Condenser
29	G2 —34000		3104 Mmfd. Condenser
30	G10—34000		1050 Mmfd. Condenser
31	See Item 85		
32	See Item 80		
33	W —32300		6. Mfd. 300 Volt
34	W —2010413		8. Mfd. 475 Volt Condenser
35	W —29815		8. Mfd. 475 Volt
36	W —30826		12. Mfd. 475 Volt Condenser
37	G1 —34005		0.05 Mfd. 400 Volt Condenser
38	W —231914		0.01 Mfd. 400 Volt Condenser
39	G2 —32004		0.01 Mfd. 400 Volt Condenser.
40	W —231914A		0.0001 Mfd. Condenser
41	W —29815		0.01 Mfd. 400 Volt Condenser
42	W —23815		0.05 Mfd. 400 Volt Condenser
43	See Item 84		0.05 Mfd. 400 Volt Condenser

Item No.	Part No.	Description
1	G32—32000	Ant. Trans. Assembly
	G8 —34005	Ant. Coil Assembly Only
	G4 —34008	Ant. Coil Shield Assembly Only
	W —34458	Alignitg Condenser Assembly Only
2	G20—32001	Inter. Trans. Assembly
	G7 —34458	Inter. Coil Assembly Only
	G5 —34458	Inter Coil Shield Assembly Only
	W —34462	Aligning Condenser Assembly Only
3	G25—32002	Osc. Trans. Assembly
	G3 —34458	Osc. Coil Assembly Only
	G5 —34458	Osc. Coil Shield Assembly Only
	W —34462	Aligning Condenser Assembly Only
4	G8 —34002	.000025 Mfd. Condenser
	B —34646	Band Change Switch
5	G22—33002	Variable Condenser Assembly
	G20—32000	Dial Drive Assembly
	W —34607A	Dial Hand
	W —34605B	Band Spread Pointer
	G4 —27134	Dial Light Bracket Assembly
	W —32123	Light Diffuser
	W —32214	Diffuser Retainer
6	G27—33004	1st I. F. Trans. Assembly
	G28—32004	2nd I. F. Trans. Assembly
7-8	G29—32004	3rd I. F. Trans. Assembly

PARTS LIST—MODEL 1014 "CENTURION"

Figures in first column refer to parts shown in diagrams.

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MODEL 1014, Centurion
Chassis, Trimmers
Voltage, Data

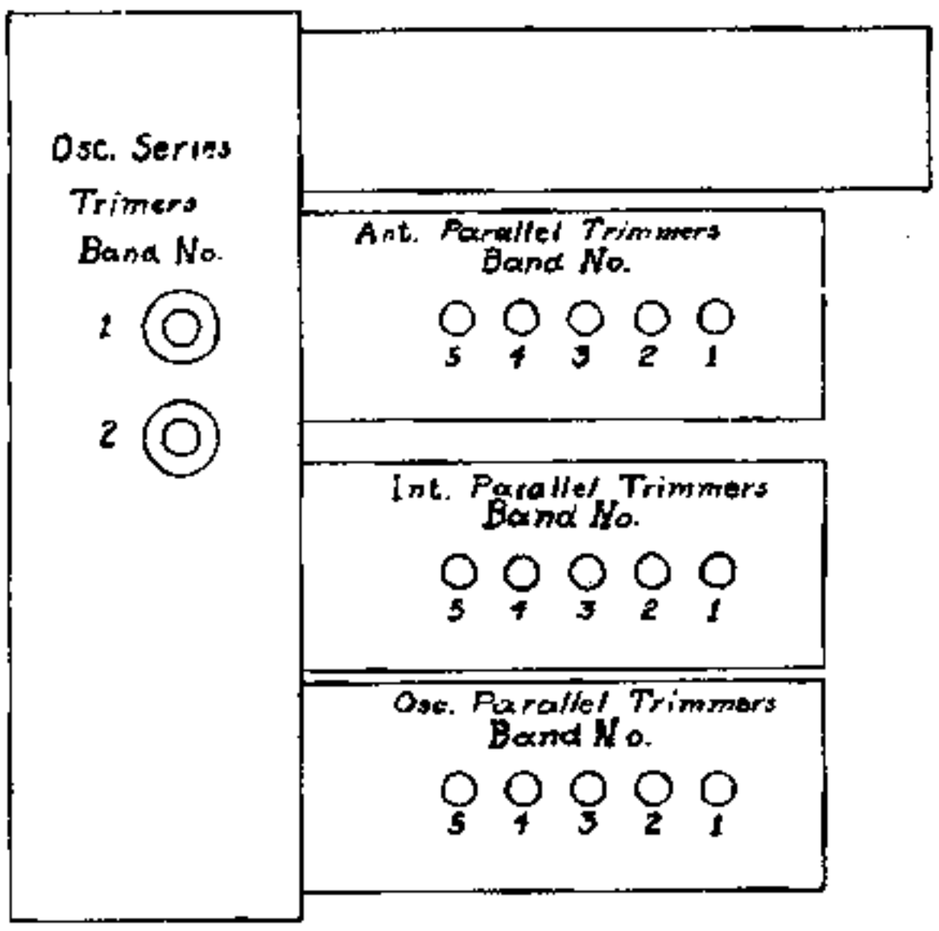

Fig. 3 End View

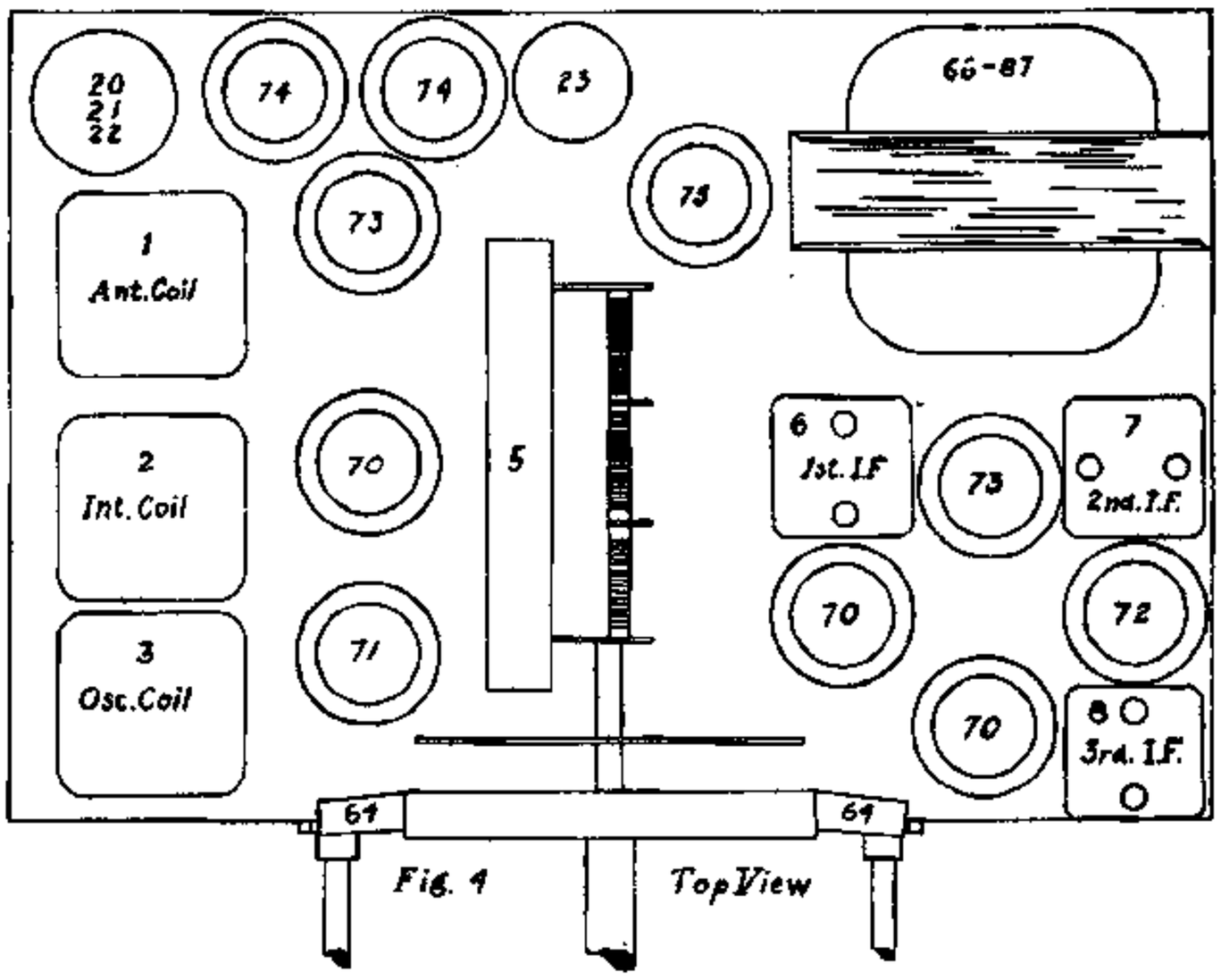

Fig. 4 Top View

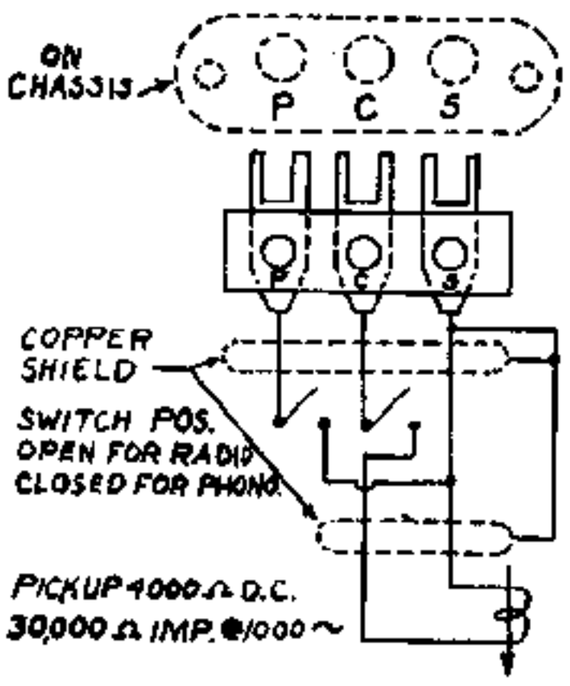

Fig. 5- Phono. Connections

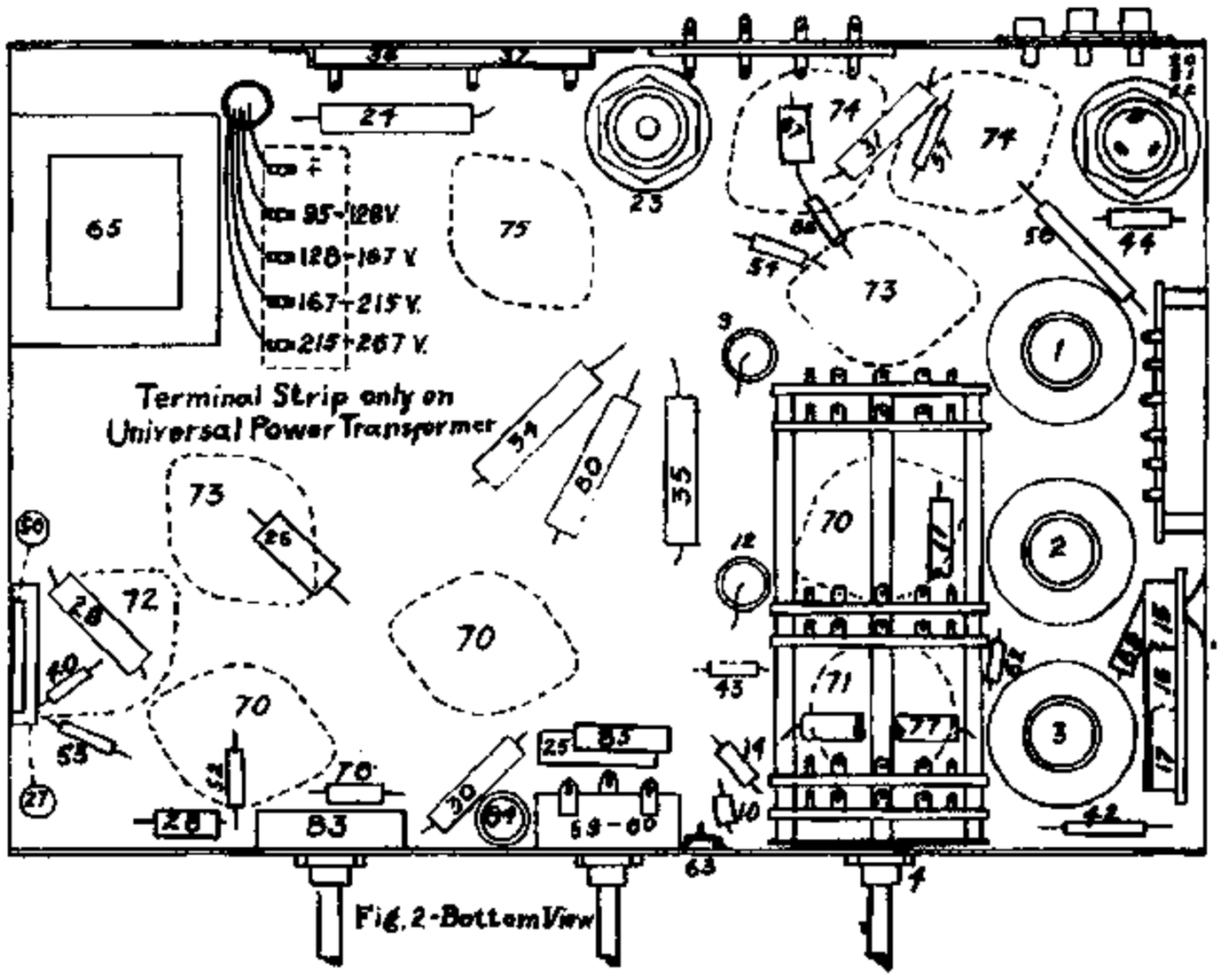

Fig. 2-Bottom View

TUBES AND VOLTAGE LIMITS

The following are the tubes and voltages measured from the tube contact to chassis with a 500,000 ohm 500-Volt voltmeter with receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 volts 60 cycle. Voltage limits are plus or minus 10% of values given.

TUBE VOLTAGES—MODEL 1014 "CENTURION"

Type	Where Used	Ef	Ek Bands 1-2	Ek Bands 3-4-5	Eg	Esg	Esup.	Ep	Es1	Ep1
6D6	R. F. Amp.	6.3	0	0	x	100	0	250	—	—
6A7	Osc. Mod.	6.3	11.0	0	x	100	0	250	—	—
6D6	1st I. F.	6.3	0	0	x	100	0	250	—	—
6F7	2nd I. F. & Det.	6.3	0	0	x	75	—	240	0	0
76	A. V. C.	6.3	0	0	x	—	—	x	—	—
6D6	1st A. F. Amp.	6.3	4	4	0	40	40	40	—	—
76	Phase Inv.	6.3	4	4	0	—	—	50	—	—
(2) 42	Output	6.3	16	16	0	250	—	245	—	—
80	Rect.	5.0	—	—	—	—	—	—	—	—

VOLTAGE DROP ACROSS FILTER CHOKE 20 VOLTS
VOLTAGE DROP ACROSS FIELD COIL 65 VOLTS

x IN ABOVE TABLE INDICATES HIGH RESISTANCE IN CIRCUIT WHICH PREVENTS ACCURATE MEASUREMENT-

ALL Measurements Made With A 1000 Ohms Per Volt Voltmeter From Chassis

(The power consumption at 117.5 volts is approximately 95 watts.)

MODEL 1014,Centurion
Aligrment,Data

CROSLEY RADIO CORP.

MODEL 1014 "CENTURION"

SPECIFICATIONS

The Crosley Model 1014 is a ten tube superheterodyne all wave receiver designed for A.C. operation. It may be obtained for 110 volts, 60 cycles, or with a universal transformer for other voltages and frequencies. (See Universal Power Transformer). It is designed for five band operation covering the following frequencies:

Band 1. 150-350 Kilocycles.
Band 2. 540-1500 Kilocycles.
Band 3. 1500-4000 Kilocycles.
Band 4. 4000-10000 Kilocycles.
Band 5. 10000-22000 Kilocycles.

Bands 1 and 2 are calibrated on the dial in Myriacycles (10 Kc.). Bands 3, 4 and 5 are calibrated in Megacycles (1000 Kc.). It employs a retroactive automatic volume control together with level control, continuously variable tone control, class "A" audio amplification and band spread dial pointer, 36 to 1 ratio.

CIRCUIT DESCRIPTION

The circuit consists of one stage of R.F. amplification, an oscillator-detector, two stages of I.F. amplification, automatic volume control, second detector, two stages of A.F. amplification and power supply. The R.F. stage employs a Type 6D6 tube. A Type 6A7 tube is used as an oscillator-detector. The first I.F. stage employs a Type 6D6 tube and the second stage uses a Type 6F7 tube which also serves as a second detector. A Type 76 tube is used in the A.V.C. circuit and is actuated by the output of the first I.F. stage. The first A.F. stage uses a Type 6D6 tube, connected as a variable mu triode, which is used in conjunction with a Type 76 tube in a phase inverter circuit to drive a pair of Type 42 tubes in push-pull. A Type 80 Tube is used in the power supply.

UNIVERSAL POWER TRANSFORMER

The Model 1014 chassis for use on other than 110 volts, 60 cycles, is supplied with a universal power transformer designed to operate on 25 cycles and up. When leaving the factory it is wired for the voltage indicated on the name plate. It is possible however by a slight wiring change in power transformer circuit to adapt the set to a different voltage anywhere from 95 to 265 volts. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet, remove bottom from chassis and locate the terminal strip on the bottom of the power transformer. Fig. 2. After careful measurement of the maximum and minimum values of line voltage and determining the average value, unsolder the wire of the A.C. line cord and solder it to the terminal which most nearly represents the line voltage at which the set is to be operated.

PHONOGRAPH PICKUP

Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P.C.S. and the pickup is connected through a double pole—single throw switch to these terminals as shown in Fig. 5.

PEAKING PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and will not need readjustment unless some coil or condenser has been replaced. Do not change the setting of any trimmer condenser unless it is definitely known that the adjustment is necessary. If re-alignment is found necessary, the circuits can be properly adjusted only with the use of a modulated test oscillator and output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the Type 42 tubes and the other terminal to the plate of the other Type 42 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs. Be sure that the meter is protected from D.C. by connecting a condenser. (.1 mfd. or larger—not electrolytic) in series with one of the leads.

PEAKING I. F. STAGES AT 456 Kc.

I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.

II. Set the test oscillator at 456 kilocycles.

III. Turn the volume control of the receiver on full. Turn the station selector until the tuning condenser plates are completely meshed and set the band switch to band No. 5.

IV. (a) Peak both tuning condensers located on top of the first I.F. transformer shown on Fig. 4. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.

(b) Peak both tuning condensers located on top of the 2nd I. F. transformer shown on Fig. 4.

(c) Peak both tuning condensers located on top of the 3rd. I.F. transformer shown on Fig. 4.

V. Repeat IV to insure accurate adjustment of the I.F. tuning condensers.

PEAKING R. F. CIRCUITS

I. Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On bands 1 and 2 this consists of a .0002 mfd. *mica* condenser. On bands 3, 4 and 5 it consists of a *carbon* resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal. If not, loosen nut and set pointer horizontal and tighten nut again. The setting of the band spread pointer is not important.

II. To Peak Band No. 1. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.

(a) Set test oscillator at 350 Kc. Tune station selector to 350 Kc. (35 on dial). Then adjust oscillator parallel trimmer condenser, Fig. 3, for maximum output.

(b) With same dial settings peak the interstage and antenna parallel trimmer condenser for Band No. 1.

(c) (1) Set test oscillator at 150 Kc.

(2) Tune station selector in the region of 15—Band No. 1—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, ⅛ turn and re-tune station selector to 150 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser ⅛ turn and re-tune station selector to 150 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

III. To Peak Band No. 2.

(a) Set test oscillator at 1400 Kc. Tune station selector to 1400 Kc. (140 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 2 for maximum output.

(b) With same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 2.

(c) (1) Set test oscillator at 600 Kc.

(2) Tune station selector in the region of 60—Band No. 2—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, ⅛ turn and re-tune station selector to 600 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser ⅛ turn and re-tune station selector to 600 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

IV. To Peak Band No. 3.

(a) Be sure to change dummy antenna as described in I under Peaking R.F. Circuits.

(b) Set test oscillator at 4 megacycles. Tune the station selector to 4 megacycles (4.0—Band No. 3 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 3 for maximum output.

(c) With the same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 3.

V. To Peak Band No. 4.

(a) Set test oscillator at 10 megacycles.

(b) Tune station selector to 10 megacycles (10—Band No. 4 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 4 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 4 and open ⅛ turn.

(e) Close the antenna parallel trimmer condenser for Band No. 4 and then open ½ turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 9 on the dial and try to tune in the 10 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 10 megacycles and peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another ⅛ turn and re-tune the station selector to the 10 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.

VI. To Peak Band No. 5.

(a) Set test oscillator at 21 megacycles.

(b) Tune station selector to 21 megacycles (21—Band No. 5 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 5 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 5 and open ⅛ turn.

(e) Close the antenna parallel trimmer condenser for Band No. 5 and then open ½ turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 20 on the dial and try to tune in the 21 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 21 megacycles and Peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another ⅛ turn and re-tune the station selector to the 21 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.