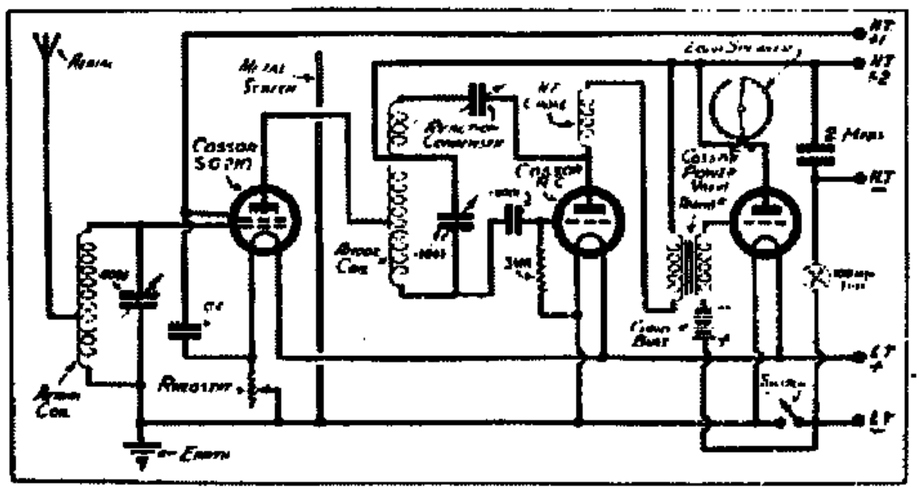
Assembling

With such a highly sensitive receiver as this it is essential that the components used should be of the highest quality, and before commencing the assembly check the following list over making sure their capacities and resistances, etc., are correct.

List of Components

- 2 Logarithmic Variable Condensers ·0005 mfd.
- 2 Slow Motion Dials.
- 1 Reaction Condensers ·0001 mfd.
- 1 Rheostat 20 ohms.
- 1 Push-pull Switch.
- 5 Valve Holders.
- 1 Pair Cossor "Melody Maker" Coils 225-600 metres.
- 1 Pair Cossor "Melody Maker" Coils 900-2,000 metres.
- 1 H.F. Choke.
- 1 Terminal Block engraved and fitted with 5 terminals.
- 1 Terminal Block engraved and fitted with 4 terminals.
- 1 Condenser ·0001 mfd. series parallel type.
- 1 Condenser ·1 mfd.
- 1 Condenser 2 mfds.
- 1 Grid Leak 3 megohms.
- 1 Cossor "Melody Maker" L.F. Transformer. Ratio 3:1.
- 1 9 volt Grid Bias Battery.
- 18 Inches of Rubber covered Flex with Wander Plugs.
- 1 Coil of 22 S.W.G. Tinned Copper Wire.
- 3 Yards of Insulated Sleeving.
- 1 Cossor S.G. Valve. 215 S.G.
- 1 Cossor R.C. Valve. 210 R.C.
- 1 Cossor Power Valve. 220 P.
- 1 Complete Screen Assembly.
- 1 5-Ply Baseboard. 17"×9".
- 1 Panel (Metal) 17"×8".
- 1 Fuse Holder and Bulb.
- 1 Screen Grid Safety Cap.

The Theoretical Circuit



The first stage in assembly is the mounting of the components on the baseboard. The chart above shows the exact disposition and should be followed most carefully, particularly should the valve holders (two of them take the special Cossor coils) be mounted as shown. Four have the anode socket (marked A) to the right, whilst the other faces the back of baseboard. Note also that the transformer has terminal G facing last valve holder.

On the panel are mounted the two variable condensers, a small reaction condenser and a "push-pull" switch. **It is important to be sure that *all* components mounted on this panel are properly insulated by ebonite bushes.** In some types of condensers the fixed vane end plates come flush against back of panel—such condensers should not be used without insulating the end plate, by means of ebonite bushes. An insulating disc should also be inserted between the panel and the resistance element of the rheostat. When fitting the slow motion dials (instructions usually given in carton) rotate the main shaft of the condenser until vanes are closed and lock in this position with the dial reading indicating 100° (or 180° where 0°—180° dials are used). Having completed the mounting of baseboard and panel it is only necessary to fix the panel in position before commencing wiring up.

Wiring Instructions

Reference to the chart above, together with the point-to-point wiring instructions given below will show how easily the wiring may be correctly accomplished. By following through the point-to-point instructions and checking off each wire as completed no possible chance of making a mistake can occur. When connecting up be sure that each terminal is securely fastened—to obtain a good electrical contact, a pair of pliers should be used. Wires should be covered with the insulated sleeving. Make one loop in wire—thread on sleeving and cut to correct length, then complete by making other loop in wire. Finally connect battery leads to the terminal strips as marked and insert valves and coils as instructions above.

Important.—To avoid possibility of damaging valves by a High Tension short circuit Wire No. 33 must be replaced by a fuse holder and 100 milliamps. fuse.

Point-to-Point Wiring

Wire No.	Positions on Set
1	From first coil holder to E.
2	From first coil holder to A.
3	From first coil holder to fixed vanes on first condenser.
4	From first coil holder to Grid terminal on first valve holder.
5	From terminal E to metal screen.
6	From L.T. + to first valve holder.
7	From H.T.1+ to terminal A on first valve holder.
8	From terminal A on first valve holder to ·1 mfd. condenser.
9	From first valve holder to ·1 mfd. condenser.
10	From moving vanes on first condenser to terminal on screen.
11	From ·1 mfd. condenser to insulated terminal on rheostat.
12	From first valve holder to second valve holder.
13	From second coil holder to terminal on top of Cossor S.G. valve (through hole in screen). The bare wire must never be allowed to touch the screen when the H.T. battery is connected up.
14	From centre terminal condenser to second coil holder.
15	From terminal on rheostat to switch.
16	From switch to terminal on metal screen.
17	From terminal on metal screen to condenser.
18	From condenser to grid of second valve.
19	From second valve holder to third valve holder.
20	From second valve holder to third valve holder.
21	From second valve holder to condenser.
22	From second coil holder to 2 mfds. condenser.
23	From fixed vanes of second condenser to terminal A on second coil holder.
24	From moving vanes of condenser to second coil holder.
25	From switch to 2 mfds. condenser.
26	From fixed vanes of condenser to H.F. choke.
27	From H.F. choke to terminal A on second valve holder.
28	From H.F. choke to terminal A on Cossor "Melody Maker" Transformer.
29	From H.T. terminal on Cossor "Melody Maker" Transformer to 2 mfds. condenser.
30	From 2 mfds. condenser to moving vanes on second condenser.
31	From moving vanes of second condenser to H.T. 2+.
32	From 2 mfds. condenser to L.T. —.
33	From L.T. — to H.T. —. This wire must be replaced by fuse.
34	From H.T. 2 + to L.S. +.
35	From terminal G on Cossor "Melody Maker" Transformer to grid terminal on third valve holder.
36	From terminal A on third valve holder to L.S. —.
37	From terminal G.B. to 7½ volts negative on grid bias battery.
38	From H.T. — to + socket of grid bias battery.

Operating Notes

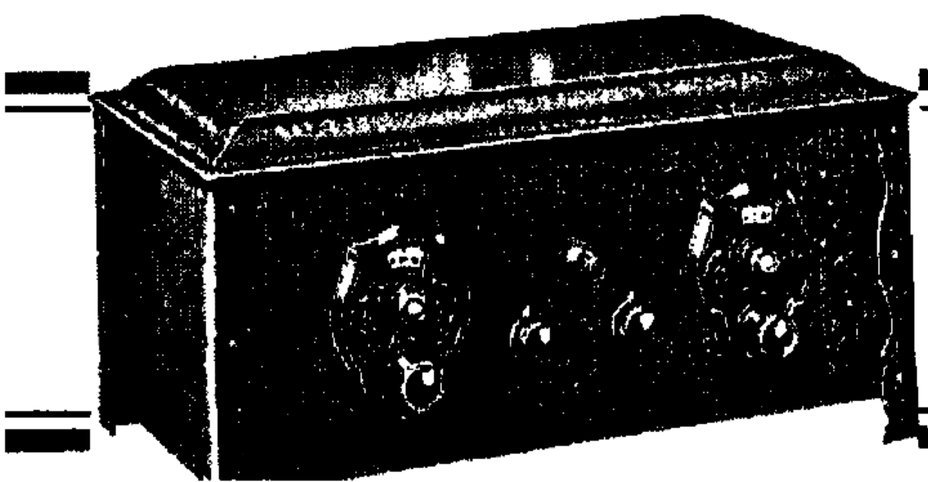
(1) **SWITCH ON THE BATTERIES.**—Having assured yourself that all batteries are correctly connected, switch on by pulling out small central knob.

(2) **TUNING IN YOUR LOCAL STATION.**—Set rheostat and reaction knobs with pointer downwards. Turn two main dials slowly keeping readings alike until local station is heard, probably you will hear other stations as you rotate the dials, but you will have no difficulty in identifying your local station. Adjust both dials to give maximum signal strength.

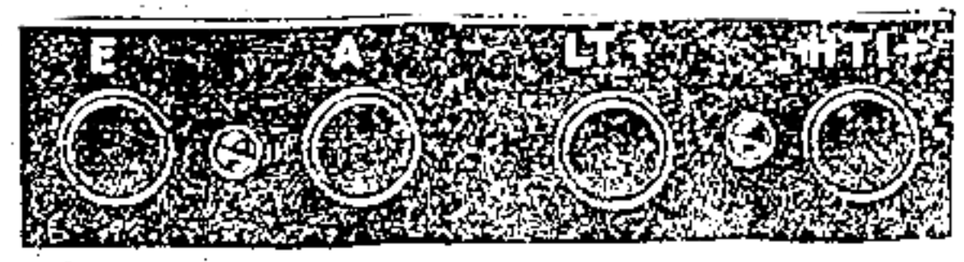
(3) **CONTROLLING VOLUME AND REACTION.**—Volume can now be further modified by turning the rheostat in the desired direction. To sharpen tuning the reaction knob may be manipulated—but under no circumstances should it be left in a position where oscillation or "howling" occurs.

(4) **RECEIVING DISTANT STATIONS.**—Set rheostat to full on position and reaction knob with pointer downwards. Move left-hand dial one degree at a time, swinging the right-hand dial through three or four degrees either side. Continue this way, step by step, keeping both dials at approximately the same reading. When a station is heard adjust both dials to maximum signal strength. The volume can now be varied by means of rheostat. As before, tuning can be still further sharpened and volume increased by means of reaction knob, but oscillation must be avoided. If this occurs turn this knob back slightly. For ease in finding station in the future, log each station as you receive it.

(5) **CHANGING THE WAVE BAND.**—To change from short waves (225 to 600 metres) to long waves (up to 2,000 metres) it is merely necessary to change the blue-covered coils to those wound with orange-covered wire. Be sure to use coils of the same colour—and switch off Set when changing.

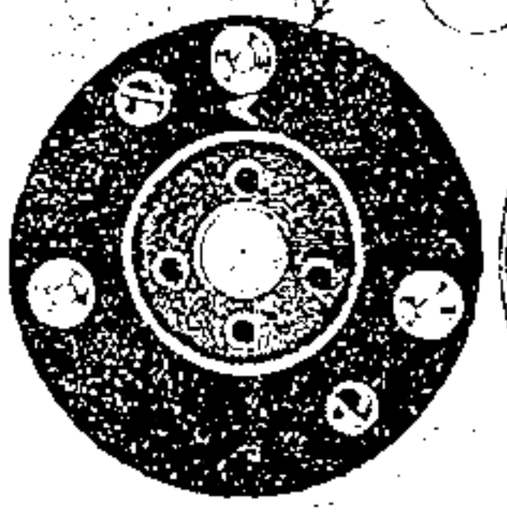


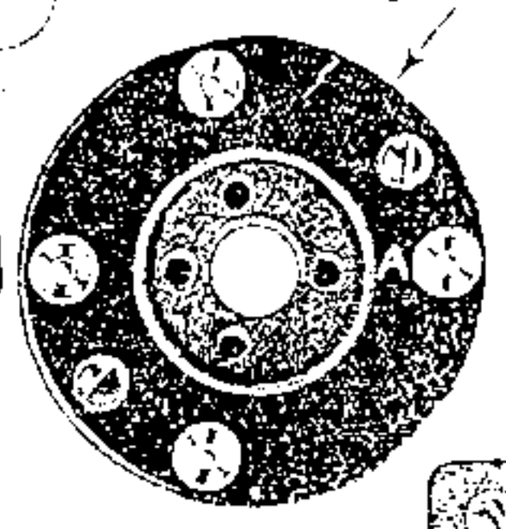
The 1928 Cossor Melody Maker



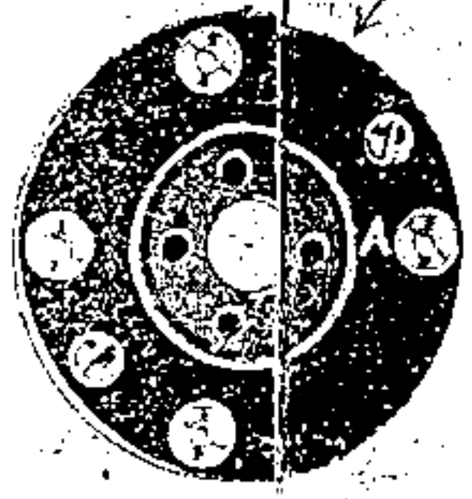
Coil here

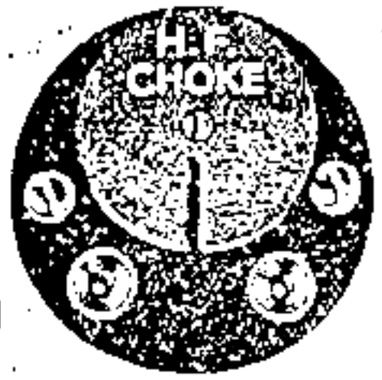
Cossor S.G. Valve



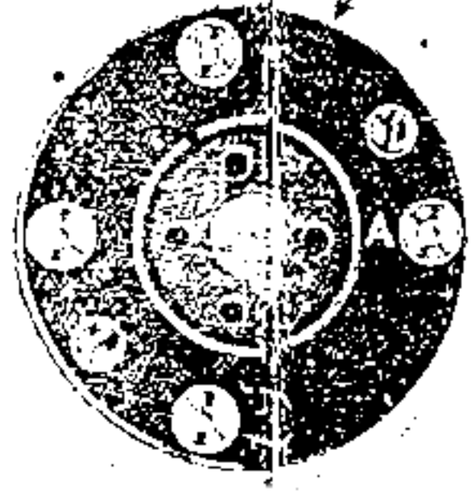


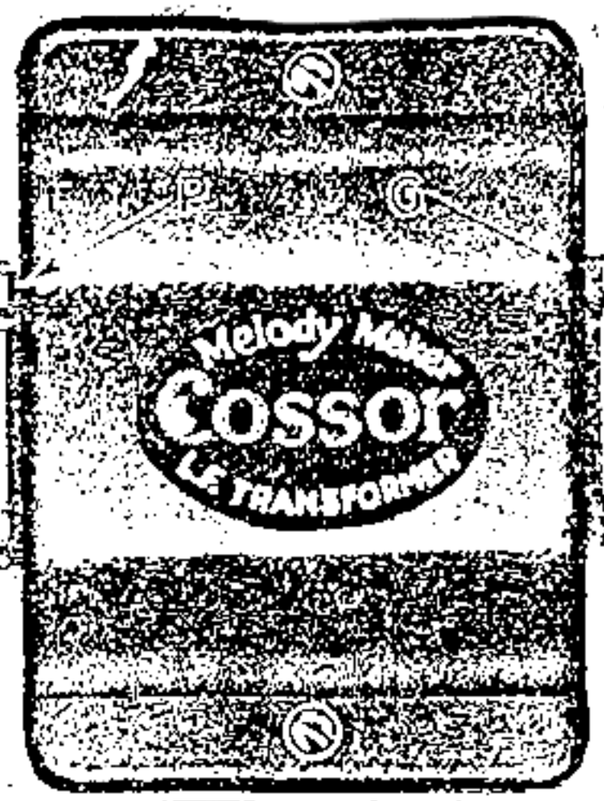
Cossor R.C. Valve



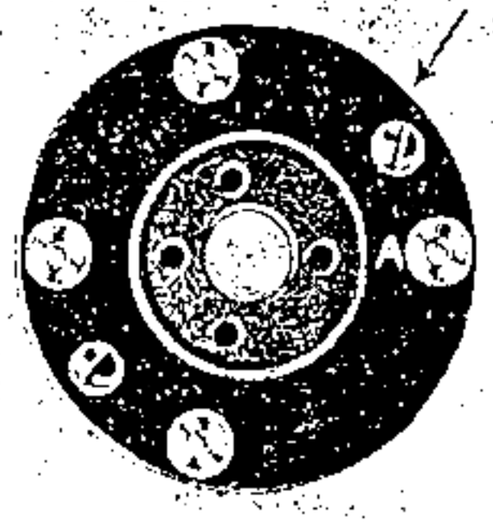


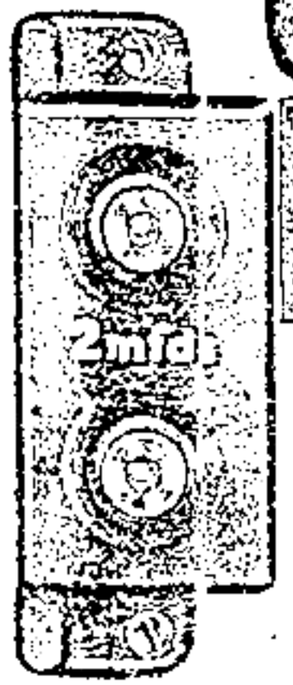
Coil Here



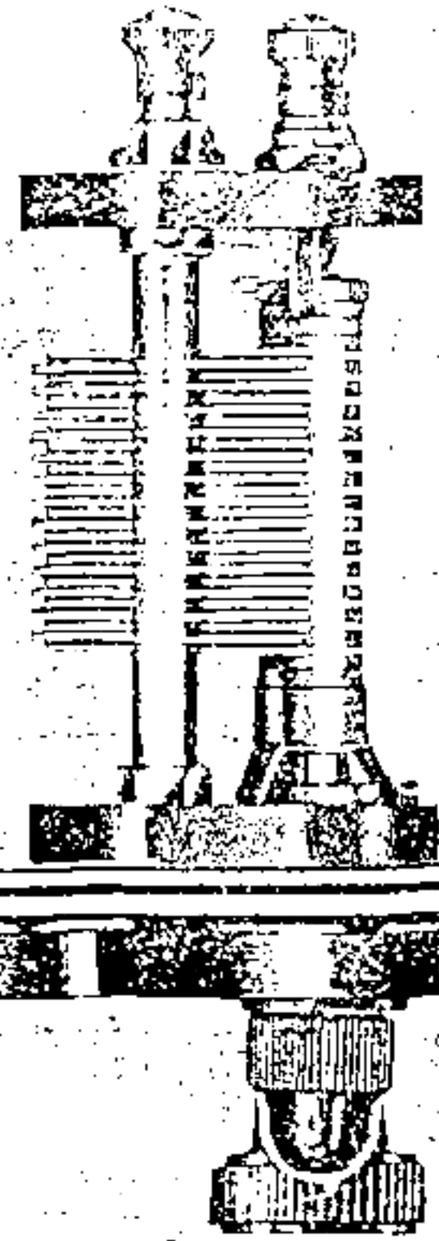


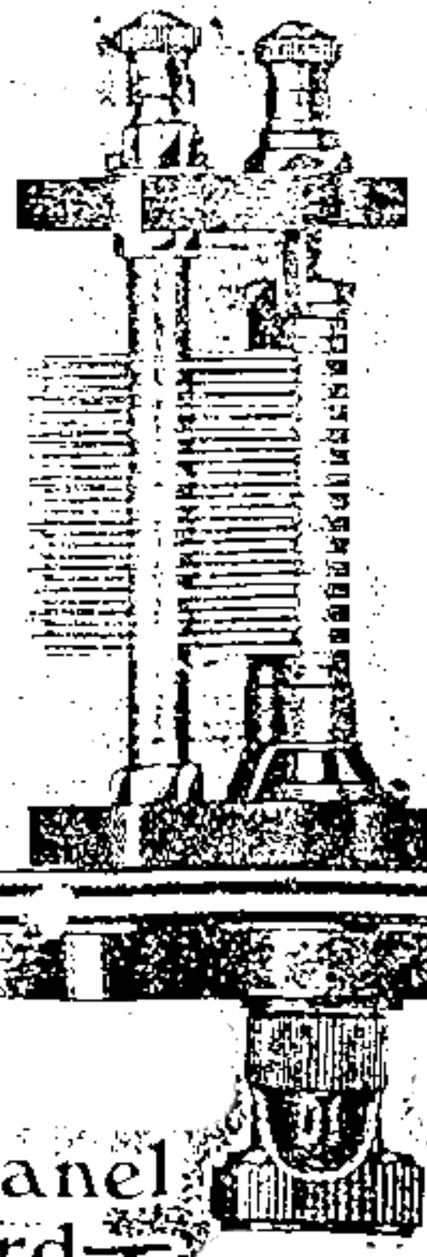
Cossor Power Valve

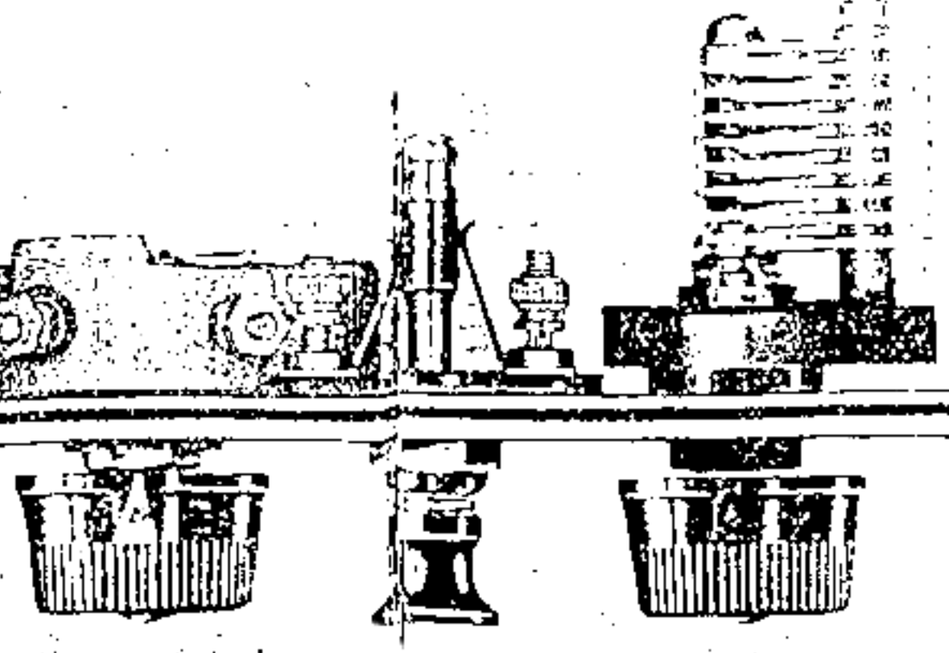




Grid Batt







Third Stage:

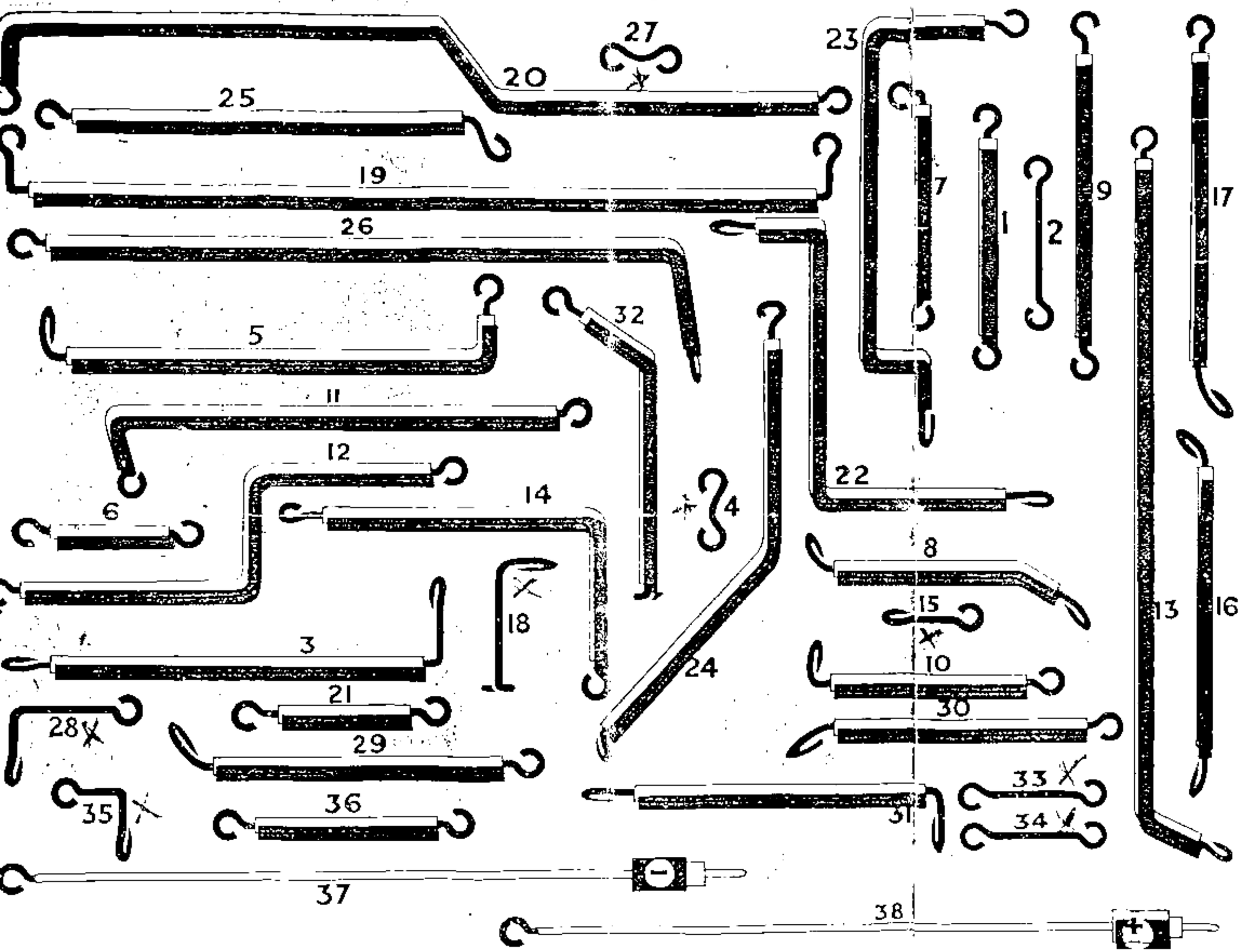
Securing Panel to Baseboard—

Time required 5 minutes

Fourth Stage:

Cutting and bending the connecting wires

Time required
30 minutes



Note: The wires shown in Red are to be covered with the insulated sleeving supplied

Wires Nos. 37 & 38

THESE wires are of rubber-covered flex and should be fitted at one end with the wander plugs supplied for connecting to the Grid Bias Battery.

Wire No. 13

This wire is supplied in the carton.

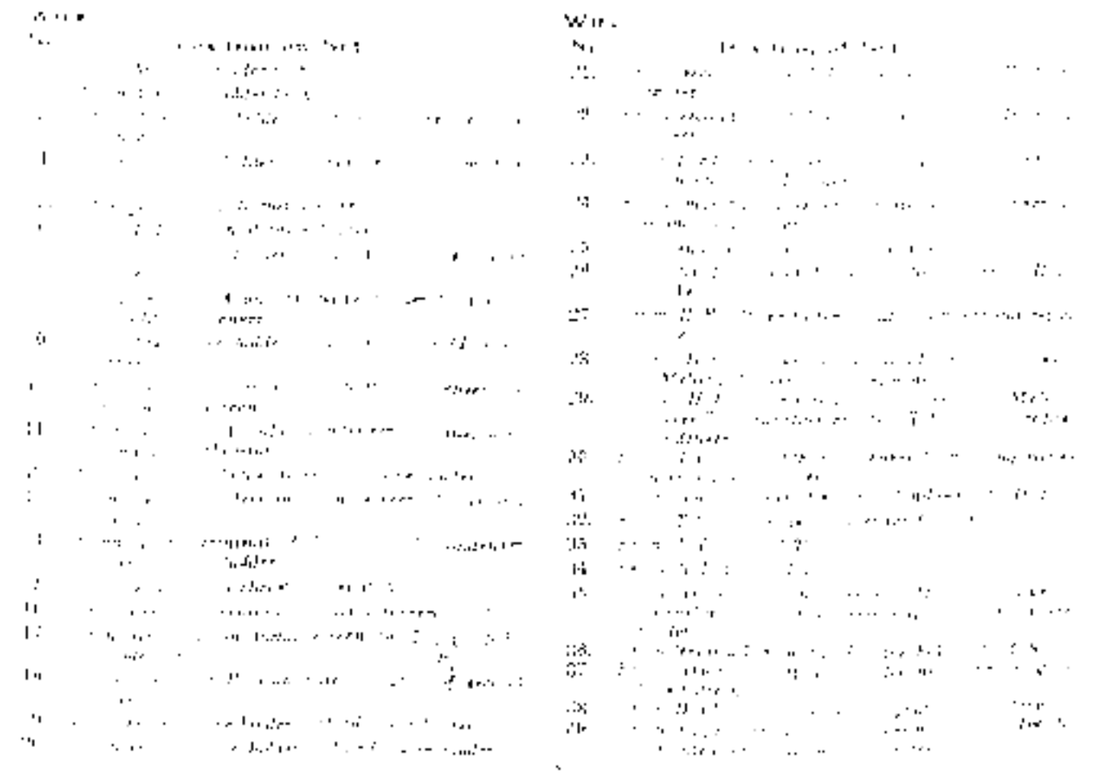
OWING to the fact that all the short wires are uncovered, cutting and bending is a very simple and speedy operation. In order to avoid the possibility of error it is advisable to cut and bend each wire to shape separately and to lay them, one by one, upon this full size diagram. If you do not possess a pair of round-nosed pliers, it is a simple matter to make neat loops with the end of a large nail. Hold the end of the wire in contact with the nail and wind it once round its circumference. Withdraw the nail and a neat circular loop should result.

Most of the wires are to be covered with insulated sleeving. Cut the sleeving with a pair of scissors or a sharp knife to the correct length, and, after having made one loop on the wire, thread on the sleeving. After all the wires have been carefully bent to exact shapes shown, the wiring up of the Receiver should be undertaken. Be sure to see that each terminal is securely fastened to obtain a good electrical contact, a pair of pliers should be used.

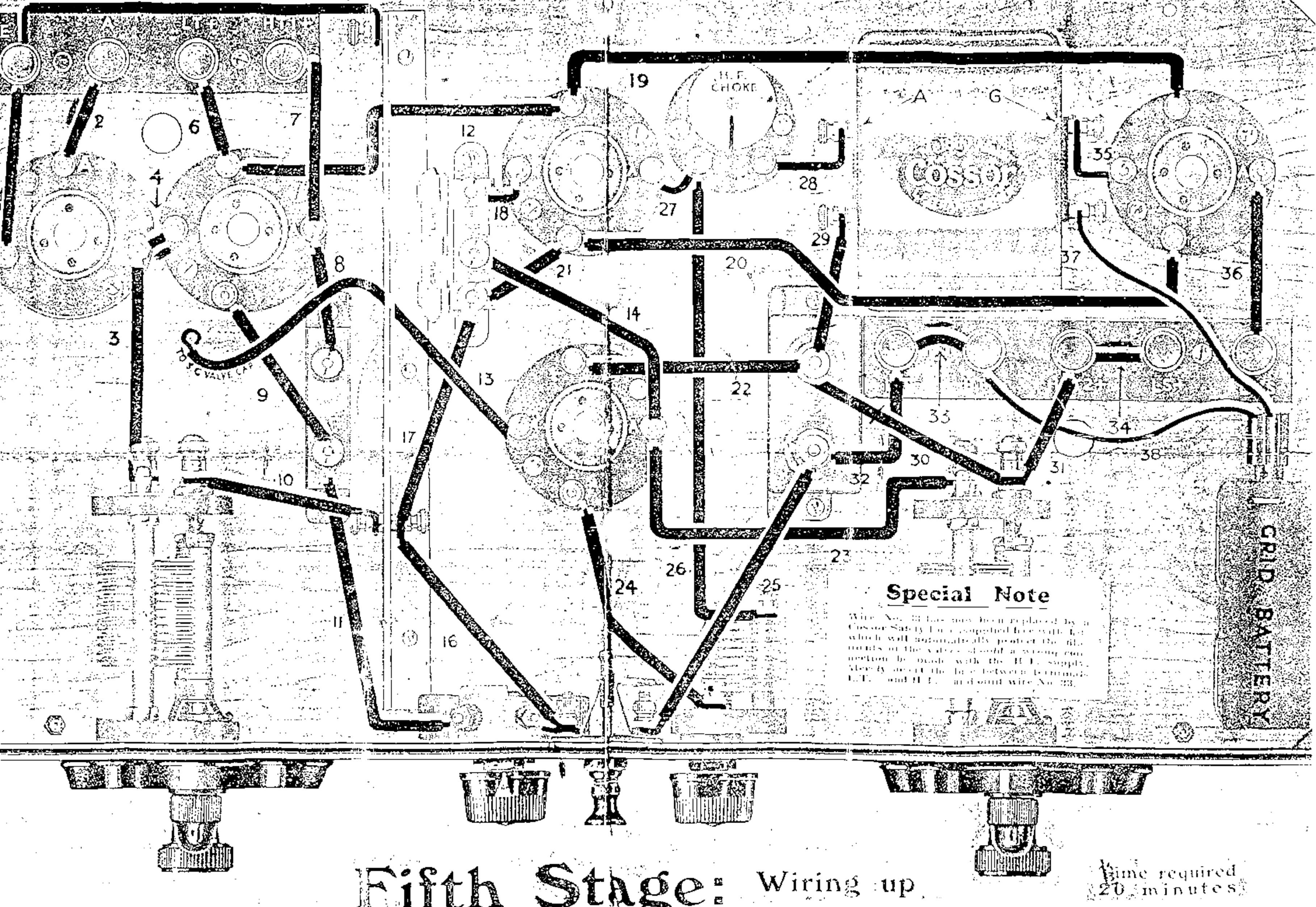
How to make loops

THE little sketch shown here indicates how easily a loop can be made with a pair of round-nosed pliers.

Point-to-point Wiring



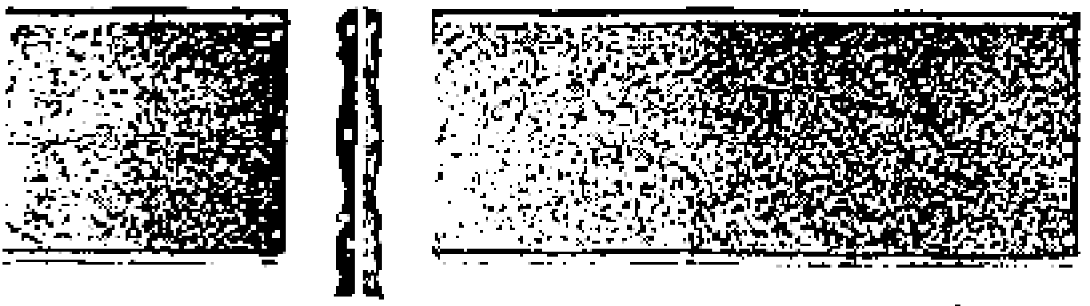
Mark off each one with a tick after completion



Fifth Stage: Wiring up

Time required 20 minutes

Sixth Stage: Time required 7 minutes



Assembling the Cabinet

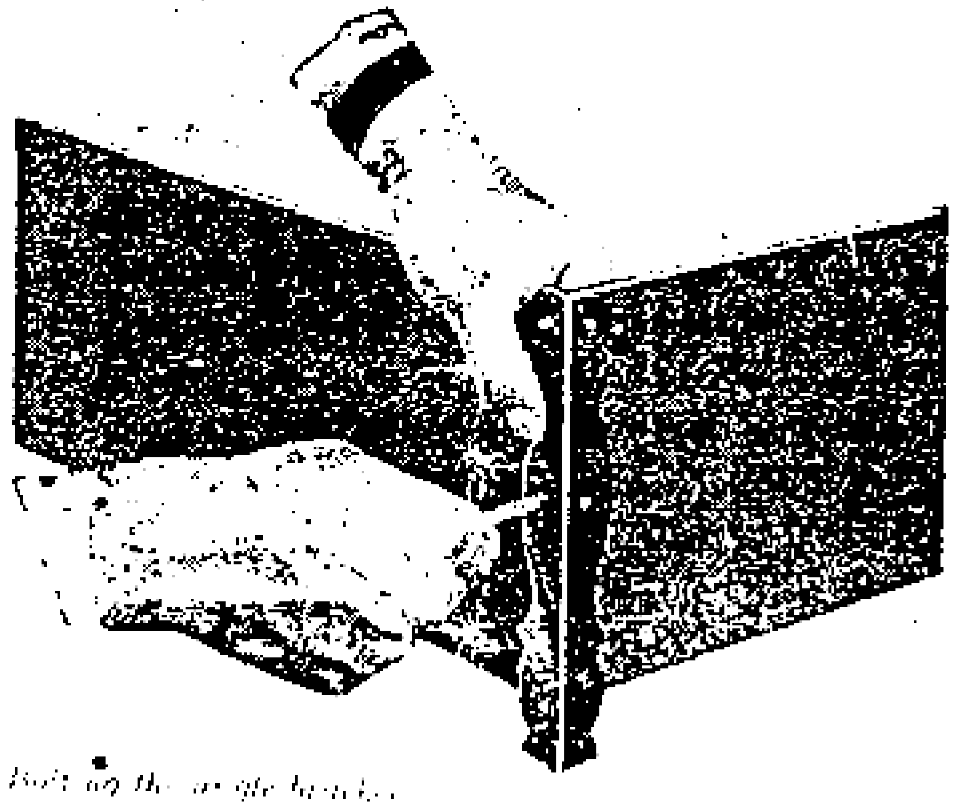
Left: Showing the ... of ... to back

THE new Cossor "Melody Maker" case is made from sheet steel. It is in four pieces, clamped rigidly at each corner means of ornamental angle brackets.

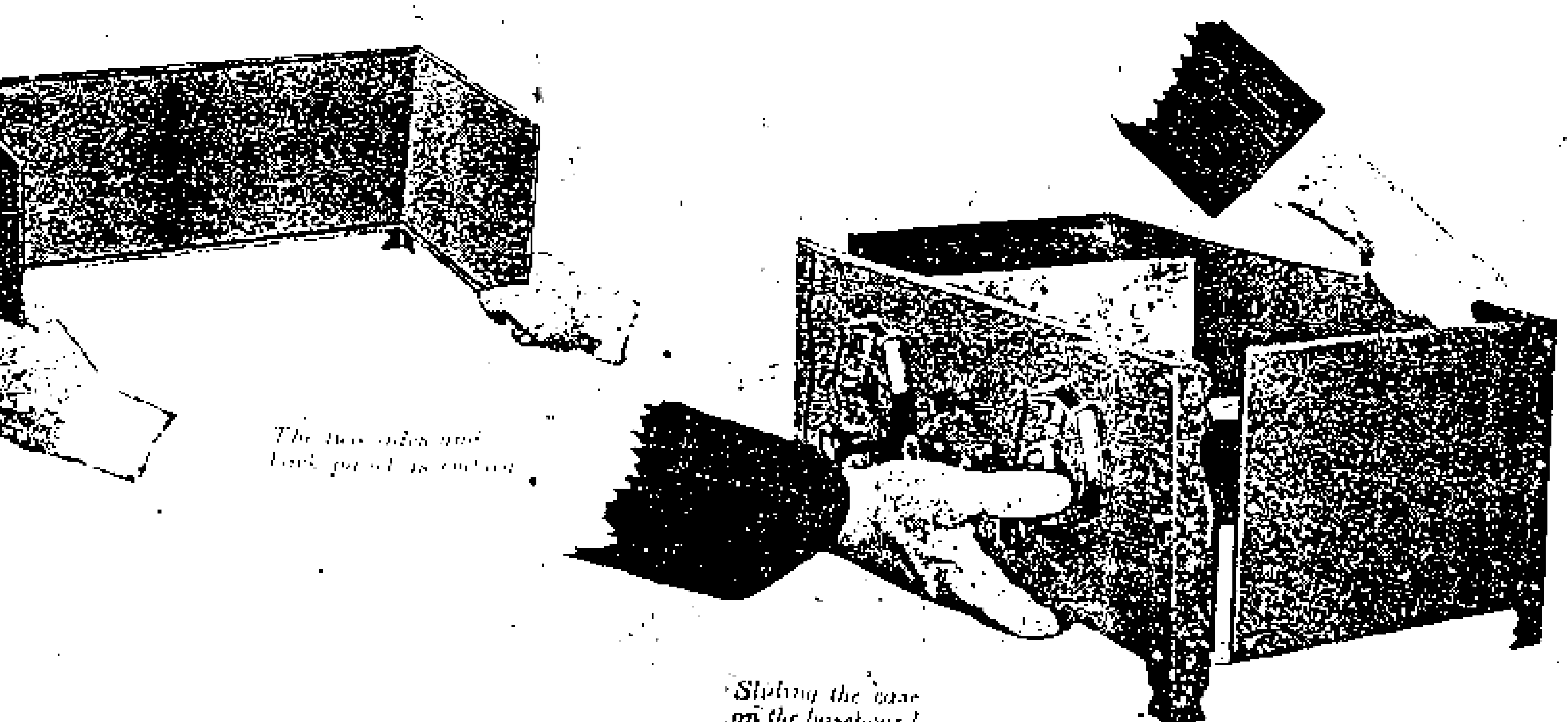
complete the assembly of the cabinet, pro-
d as shown here. Attach the two sides
the back by means of the angle brackets.
e heads of the bolts should be on the out-
e of the case. Then attach the two angle
ckets to the front panel and bolt in
ition. Next, slide the case from the back
ards the panel with the baseboard rest-
on the upturned flange.

ally, bolt the sides to the angle brackets
either end of the front panel. In order to
this conveniently, it will be advisable
emove temporarily the grid bias battery
the clip holding it in position.

n the case is complete, the baseboard
uld be bolted down on the three re-
ning sides. Insert the bolts from below.



Bolt on the angle brackets in position



The two sides and back panel is ...

Sliding the case on the baseboard

Metal looks better—wears better—does not warp
—that's why we use a metal cabinet for
the new Cossor Melody Maker

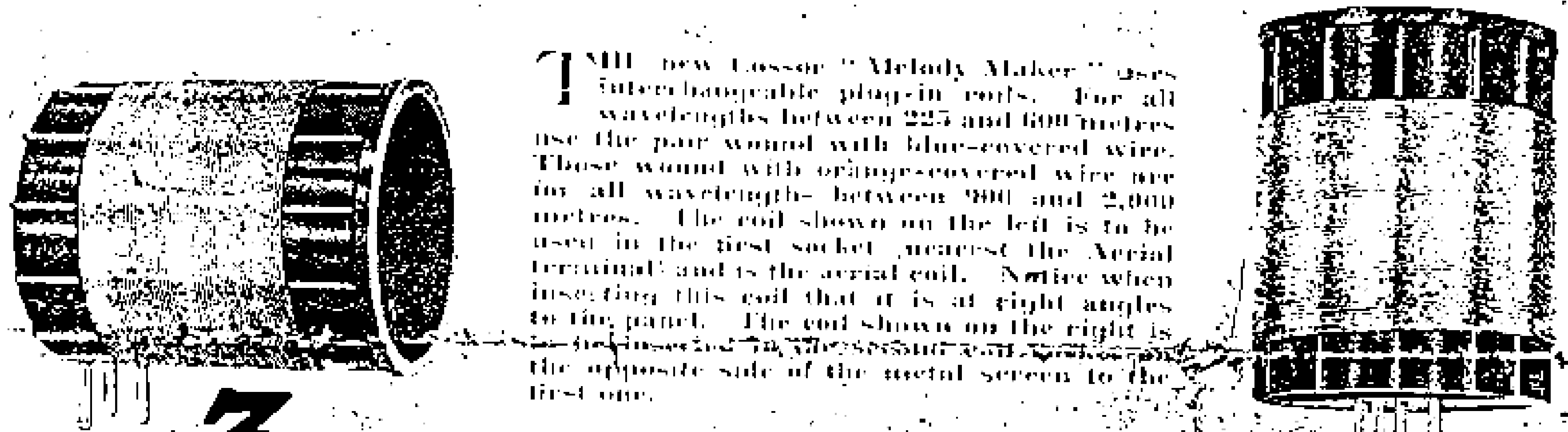
Finally—

1. Connect to Aerial and Earth Attach battery connections Connect to Loud Speaker

THE various leads are brought into the Receiver through the two holes in the baseboard. The Aerial and Earth should be attached to the terminals marked A and E respectively. If, however, you prefer to use the frame aerial described on page 24 of the 32-page new "Melody Maker" Booklet, these two terminals will not be used.

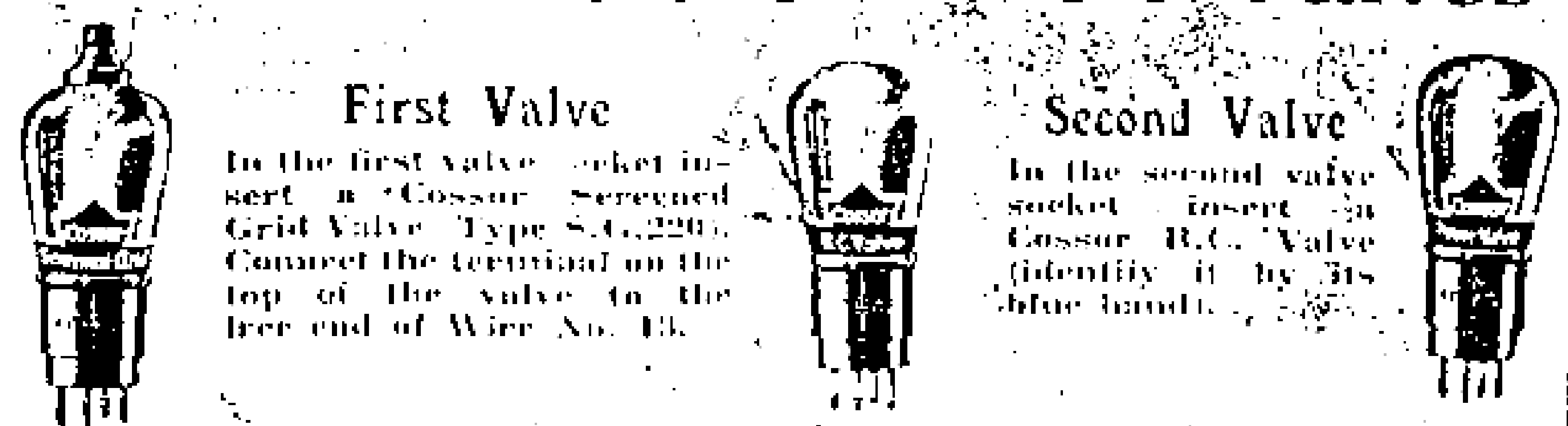
The five terminals to which the leads to the Accumulator and the H.T. Battery are connected are marked L.T.–, L.T.+, H.T.–, H.T.1+ and H.T.2+. For the moment, however, leave the opposite ends of these leads disconnected. (See No. 4 below). The two remaining terminals are to be connected to your Loud Speaker.

2. Insert Coils



THE new Cossor "Melody Maker" uses interchangeable plug-in coils. For all wavelengths between 225 and 600 metres use the pair wound with blue-covered wire. Those wound with orange-covered wire are for all wavelengths between 900 and 2,000 metres. The coil shown on the left is to be used in the first socket nearest the Aerial terminal and is the aerial coil. Notice when inserting this coil that it is at right angles to the panel. The coil shown on the right is to be inserted in the second coil socket on the opposite side of the metal screen to the first one.

3. Insert the 2-Volt Valves



First Valve

In the first valve socket insert a Cossor Screened Grid Valve Type S.G.220. Connect the terminal on the top of the valve to the free end of Wire No. 13.

Second Valve

In the second valve socket insert a Cossor R.C. Valve (identify it by its blue band).

Third Valve

Into the last socket insert a Cossor Stentor Power Valve (220P green band).

IMPORTANT!

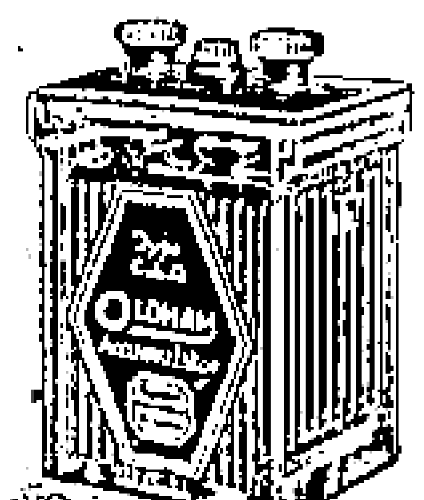
This Receiver uses a 2-VOLT Accumulator.

If you use a 4-volt accumulator connect its cells in parallel. This will give you a 2-volt supply and treble the accumulator's capacity.

4. Connect Accumulator Connect H.T. Supply

[illegible] Red Terminal

L.T.+
L.T.–



YOU are now ready to connect up the Batteries. Connect the end of the lead going to the terminal marked L.T.+ to the Red terminal of the 2-volt Accumulator. The other L.T. lead must be connected to the black terminal of the Accumulator. See that the switch on the front of the panel is pushed in, thus breaking the circuit.

If you intend using H.T. Dry Batteries, obtain two good quality 60-volt Batteries. Connect them in series as shown here. Now connect the three leads as indicated. If your house is wired for electric light you will probably prefer to use a Cossor H.T. Mains Unit, which will give ample high tension current without the necessity of using batteries. Your Wireless Dealer will tell you about it. [illegible]