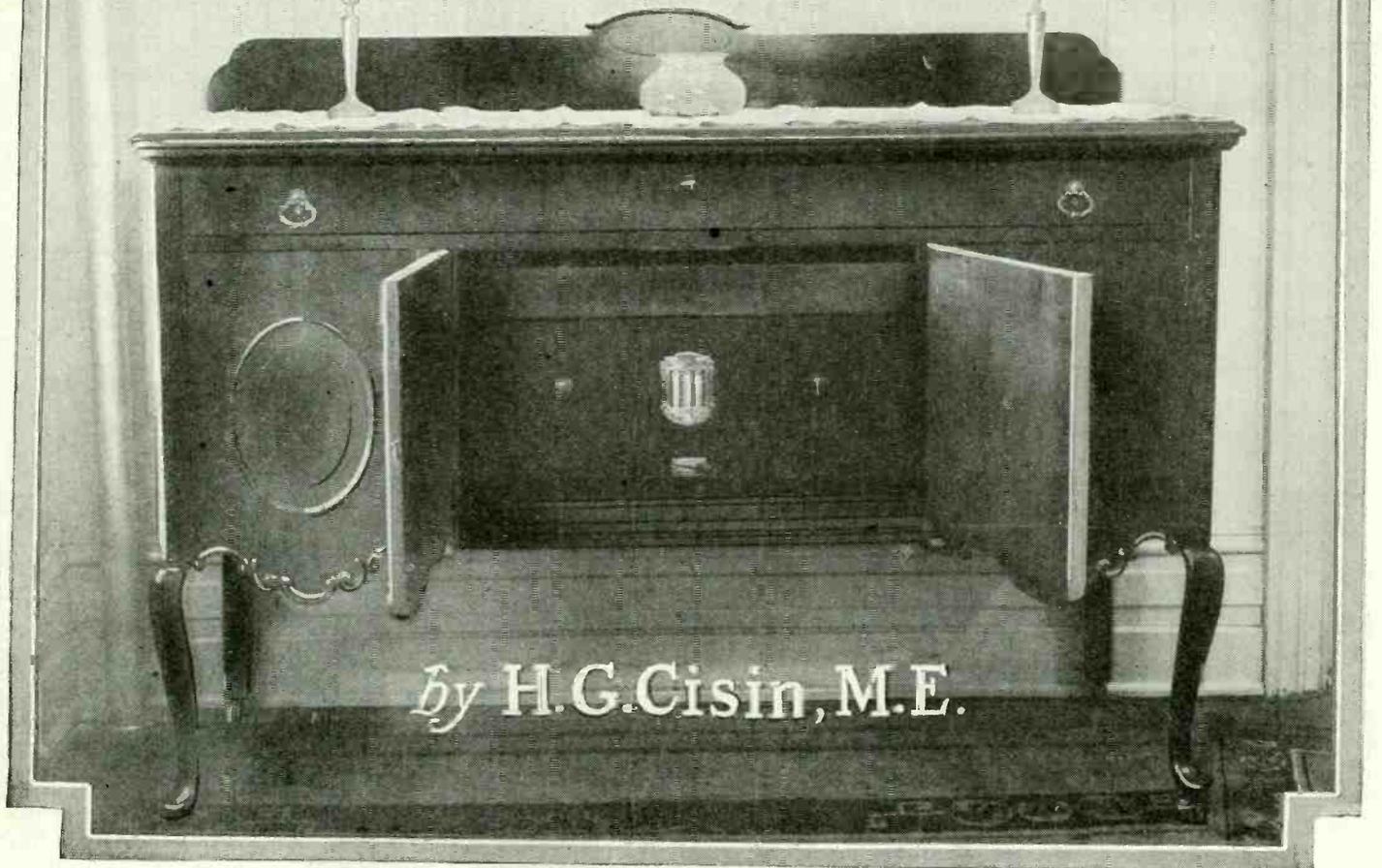


The R.L.G. Standard Six

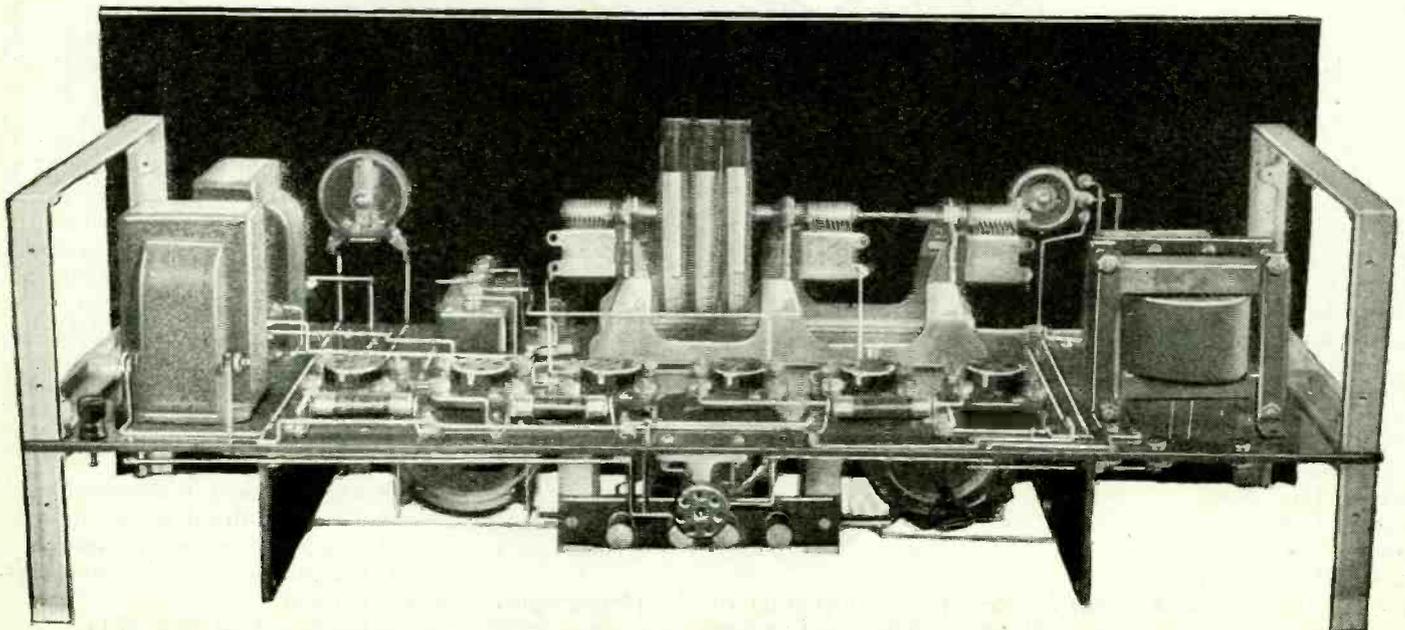


by H.G. Cisin, M.E.

THE R. L. G. (Radio Listeners' Guide) Standard Six might be described as a custom built set. In other words, this set was built to fit certain fixed specifications and the parts were chosen with the requirements in mind.

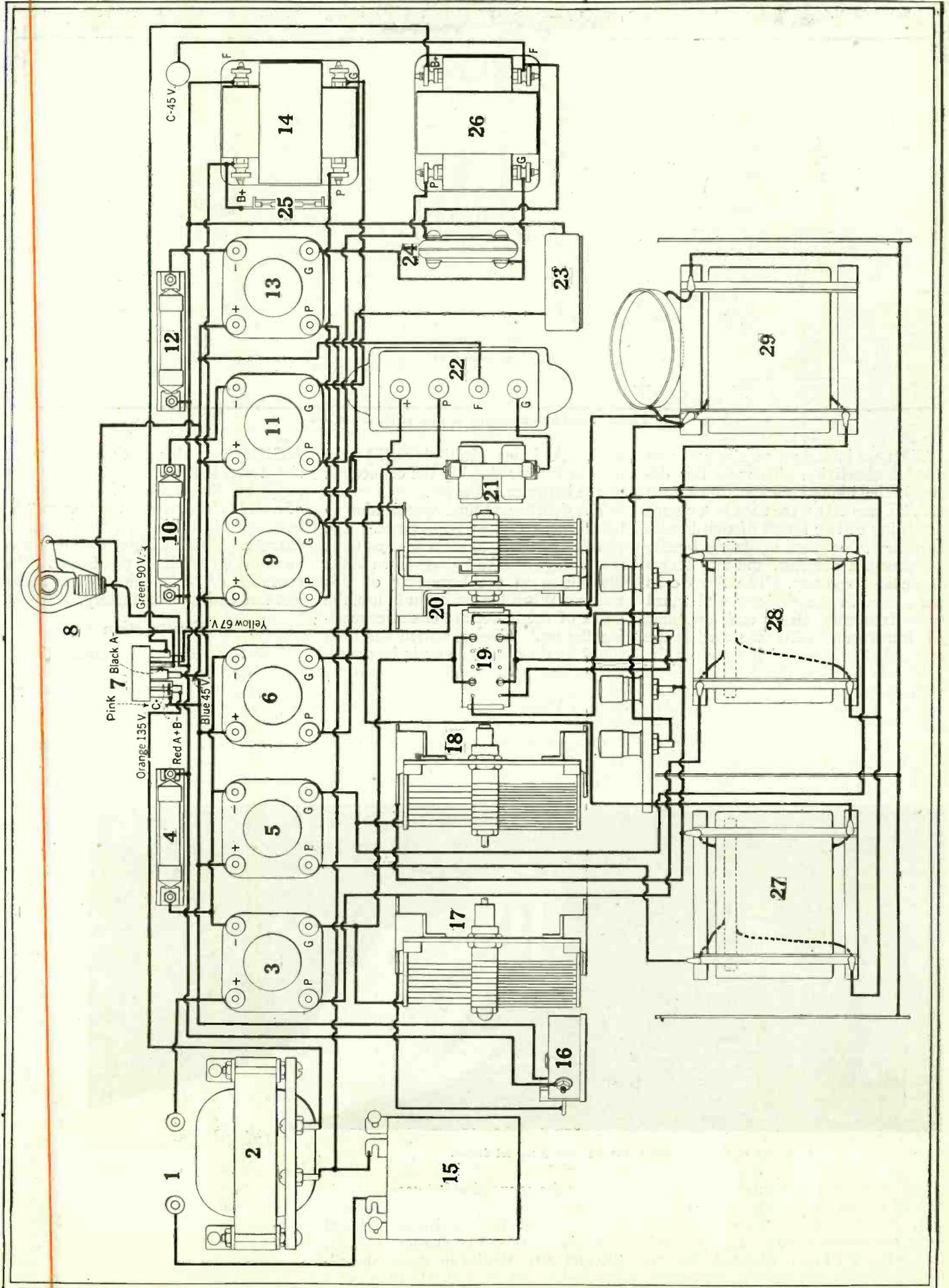
The first and most important requirement was that of beautiful, true and clear tone quality. This immediately necessitated the selection of a quality transformer for the audio amplification stages and the Rauland Lyrics (14 and

26) were finally decided upon. As further aids to obtaining the finest tone qualities possible, it was decided to use a new power tube in the last audio stage with the correct "C" battery for grid bias. The output filter consisting of a



A rear view of the Radio Listeners' Guide Standard Six. Note the sturdy construction.

Picture Wiring Diagram of the R. L. G. Standard Six



Jacobs choke (2) of 30 henries, known as the Molliformer, and a 4 mfd. Tobe condenser (15) completed the specifications insofar as tone quality was concerned.

A Carter 400 ohm potentiometer (16) was included as a volume control. The set was designed for loop or antenna operation, a simple Federal Anti-Capacity change-over switch (19) being

Fiat loop. A type UX-200-A CeCo tube was used as a detector tube, and one of the new type UX-171 CeCo power tubes was used in the last audio stage. The other tubes were type 201-

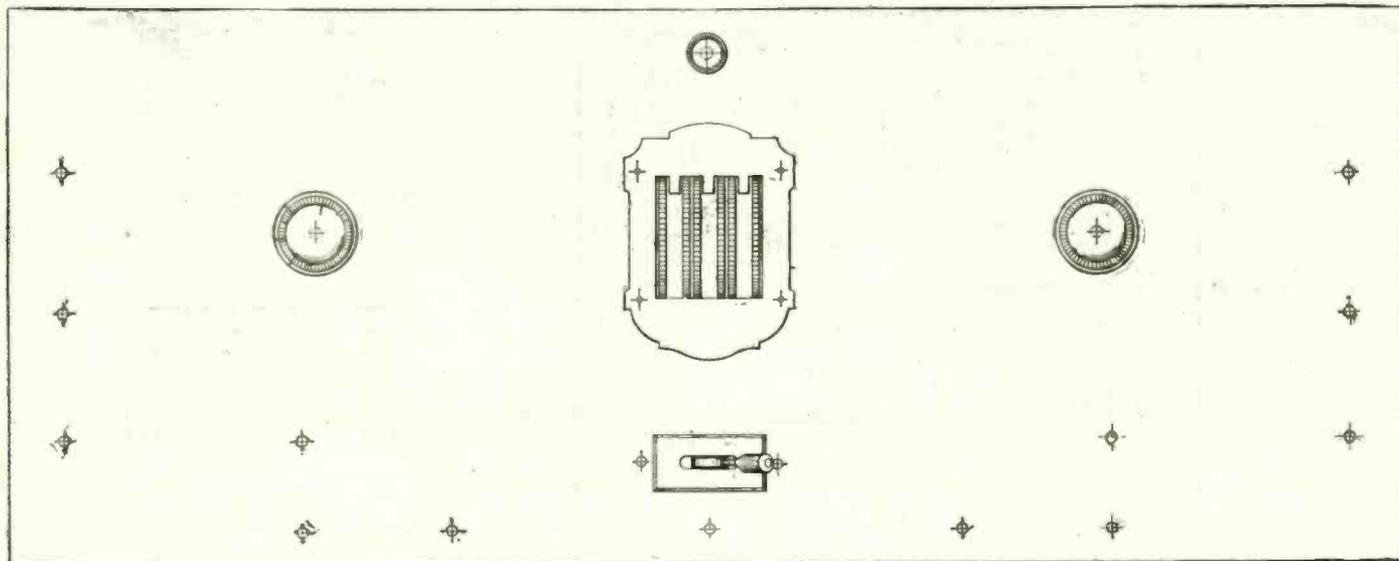


Fig. 1. Panel layout showing location of all center holes.

The next important requirement was that of selectivity. To meet this demand, the highly efficient Aero coils (27, 28, and 29) were used in a circuit consisting of two stages of tuned radio frequency, one stage of untuned radio frequency, a detector, and two stages of audio frequency. The Aero coils were used in the detector and tuned radio frequency stages and an Acme r.f. transformer (23) was used in the untuned stage, this being shown in the schematic diagram, Fig. 3. To add still further to the selectivity, shielding consisting of copper sheets was used between the coils.

A third specification was that of simplified control. This was attained by the use of the Alden three gang

used. A Jones Multi-plug (7) was used to further simplify the connection of the batteries to the set.

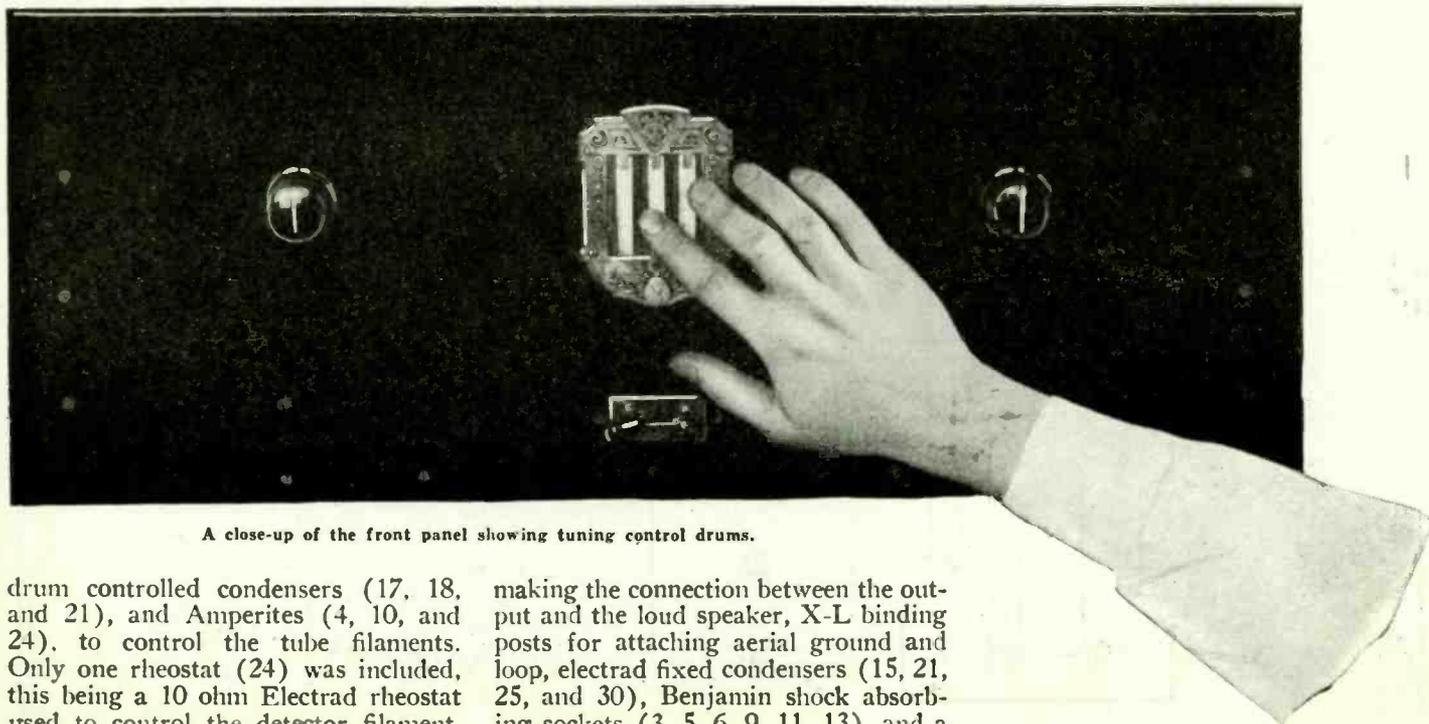
The fourth and final specification to be met was that of appearance. The panel was measured and cut so as to fit in a dining room buffet, as shown in the illustration at the beginning of this article. When the set is not in use, the doors of the buffet are closed concealing the set. After a station has been tuned in, the doors can again be closed, so that the set, although its front panel presents an appearance of unobtrusiveness and quiet simplicity, still may be entirely out of view if desired.

Other parts selected for use with this set included a Bruno filament switch (8), Yaxley phone tip jacks (1) for

A CeCo tubes. The energy supply consisted of a Balkite "BX" eliminator for supplying the various "B" voltages, a 45-volt "C" battery and a storage "A" battery hooked up with a Balkite trickle charger. The trickle charger was switched off when set was in use. The operation of "B" eliminator was noiseless and entirely satisfactory.

Construction

The first step in the construction is to fit the brackets to the panel and sub-base. While aluminum brackets have been used as shown, any good strong bracket may be used instead. The next step is to cut the holes in the panel for the Alden unit (17, 18, and 20) using the metal plate as



A close-up of the front panel showing tuning control drums.

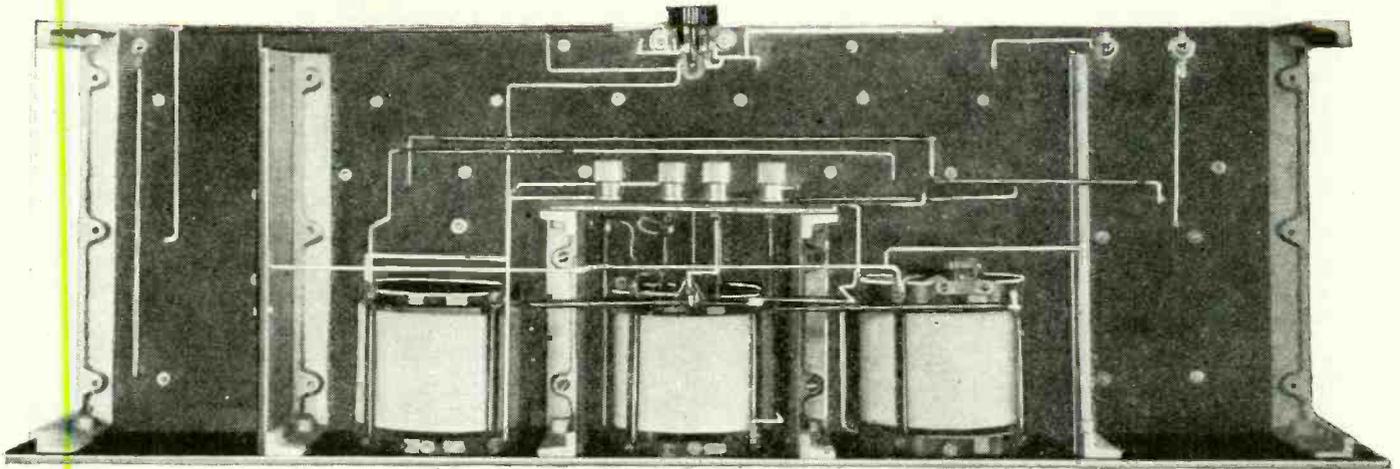
drum controlled condensers (17, 18, and 21), and Amperites (4, 10, and 24), to control the tube filaments. Only one rheostat (24) was included, this being a 10 ohm Electrad rheostat used to control the detector filament.

making the connection between the output and the loud speaker, X-L binding posts for attaching aerial ground and loop, electrad fixed condensers (15, 21, 25, and 30), Benjamin shock absorbing sockets (3, 5, 6, 9, 11, 13), and a

a template, scribing this inside. The other center holes are cut next including the centers for potentiometer (16), rheostat (23) and the Anti-Capacity

tached and the wiring completed. Be sure to carefully check and recheck the wiring throughout before making any tests with the current on.

The first test is for the purpose of determining that there is no short-circuit between the filament and the high potential lines. Place a tube in one of

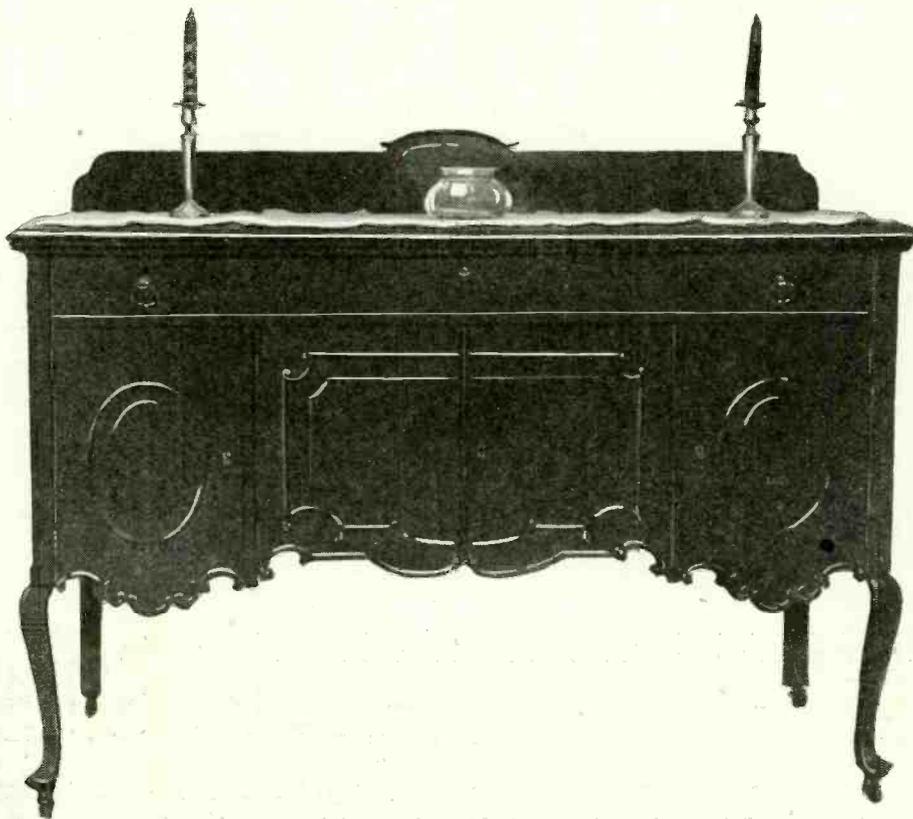


Bottom view of R. L. G. Standard Six. Shielding can be seen between the coils.

switch (17). The various parts are then mounted on top of the sub-base. The shielding coils should then be put on the bottom. The sheet copper is reinforced with Bakelite. Finally, the Aero coils (27, 28 and 29) are mounted on the bottom of the sub-panel.

The wiring should be started before the panel is attached to the sub-panel. The filament circuits are wired first, then the plate and grid circuits, doing as much of the wiring as possible before attaching the panel and the shields.

The parts going on the panel are now mounted and the panel is at-



When the doors of the buffet are closed the set is no longer visible.

the sockets and connect one side of the "A" battery to each of the plus "B" terminals. Have the filament switch turned on and connect the other side of the "A" battery to each of the plus "B" connections, one at a time. If the tube lights up, this shows that there is a short between the "A" and the "B" circuits. This fault should be located immediately before going any further. Next connect the A battery to the A minus and B minus terminals of the Multi-plug (7) connector and the tube should light up. Now connect all other connections and place all other tubes in their sockets.

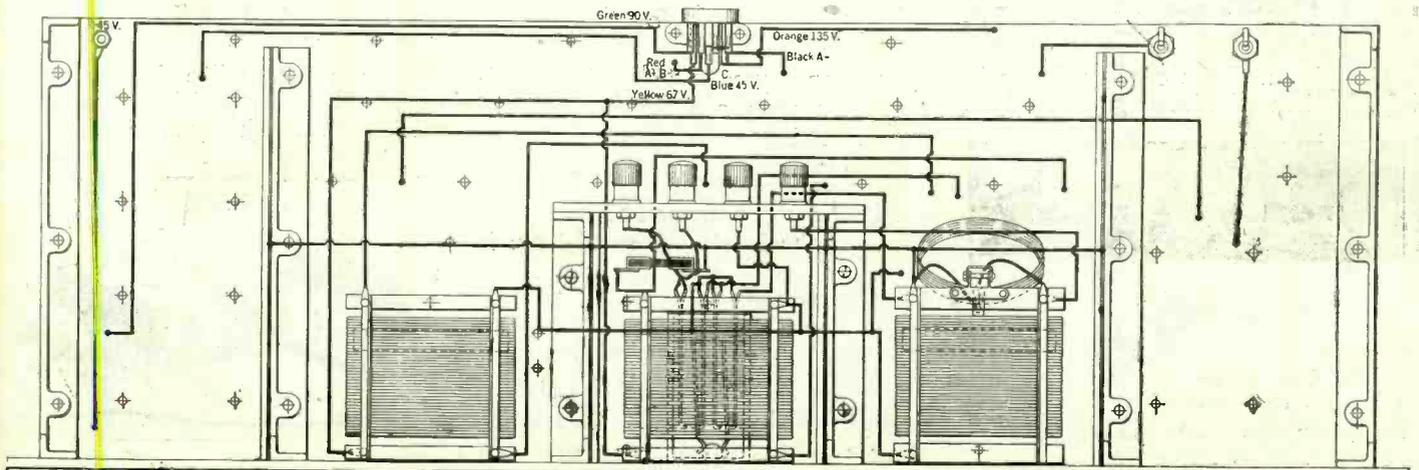


Fig. 2. Bottom view of set showing location of center holes in sub-base.

Operating the Set

A home constructed Engineers' Service 3 ft. loud speaker was used. It

and tuned in, the voice of an announcer was the first thing to be heard. The reproduction of the voice was so natural, that the writer received a shock, al-

ing the performance of a jazz band. The tone quality was little short of perfection. Everything came through with remarkable fidelity from the moan of the saxophone to the boom of the kettle drums. The sound range seemed to include at least an octave more on the lower range than that of the ordinary set. With regard to selectivity, the set was equally as efficient, in fact many might find this extreme selectivity objectionable since even powerful nearby stations could be tuned out on a hairs-breadth turn of the tuning controls. The set had one objectionable feature which was a tendency to go into oscillation on the lower wavelengths. The 400 ohm potentiometer (16) controlled this however, and the writer expects to experiment further along these lines using resistances in the grid leads.

It should be kept in mind that this set is not recommended for the first-time set builder, but rather for the ex-

PARTS FOR R. L. G. STANDARD SIX

- | | |
|--|---|
| 2 Yaxley Phone Tip Jacks; 1 | 1 Alden localized control Condenser, .00035 mfd.; 18 |
| 1 Jacobs 30 Henry Molliformer; 2 | 1 Federal Anti-Capacity Switch; 19 |
| 1 Benjamin Socket; 3 | 1 Alden Condenser .00035 mfd.; 20 |
| 1 Amperite, 3/4 amp.; 4 | 1 Electrad Grid Condenser, .00025 mfd., and 1 Electrad Grid Leak 3 meg.; 21 |
| 1 Benjamin Socket; 5 | 1 Acme R. F. Transformer; 22 |
| 1 Benjamin Socket; 6 | 1 Electrad Detector Filament Rheostat, 10 ohm; 23 |
| 1 Jones Multiplug; 7 | 1 Electrad .0001 mfd. By-pass Condenser; 24 |
| 1 Bruno Pilot Light Filament Switch; 8 | 1 Electrad, .002 mfd. Fixed Condenser; 25 |
| 1 Benjamin Detector Socket; 9 | 1 Rauland Lyric Audio Transformer; 26 |
| 1 Amperite, 1/4 amp.; 10 | 1 Aero R. F. Coil; 27 |
| 1 Benjamin Socket; 11 | 1 Aero R. F. Coil; 28 |
| 1 Amperite, 1/4 amp.; 12 | 1 Aero Coil Antenna Coupler; 29 |
| 1 Benjamin Socket; 13 | |
| 1 Rauland Lyric Audio Transformer; 14 | |
| 1 Tobe Fixed Condenser, 4 mfd.; 15 | |
| 1 Carter 400 Ohm Potentiometer; 16 | |
| 1 Alden Condenser, .00035 mfd.; 17 | |

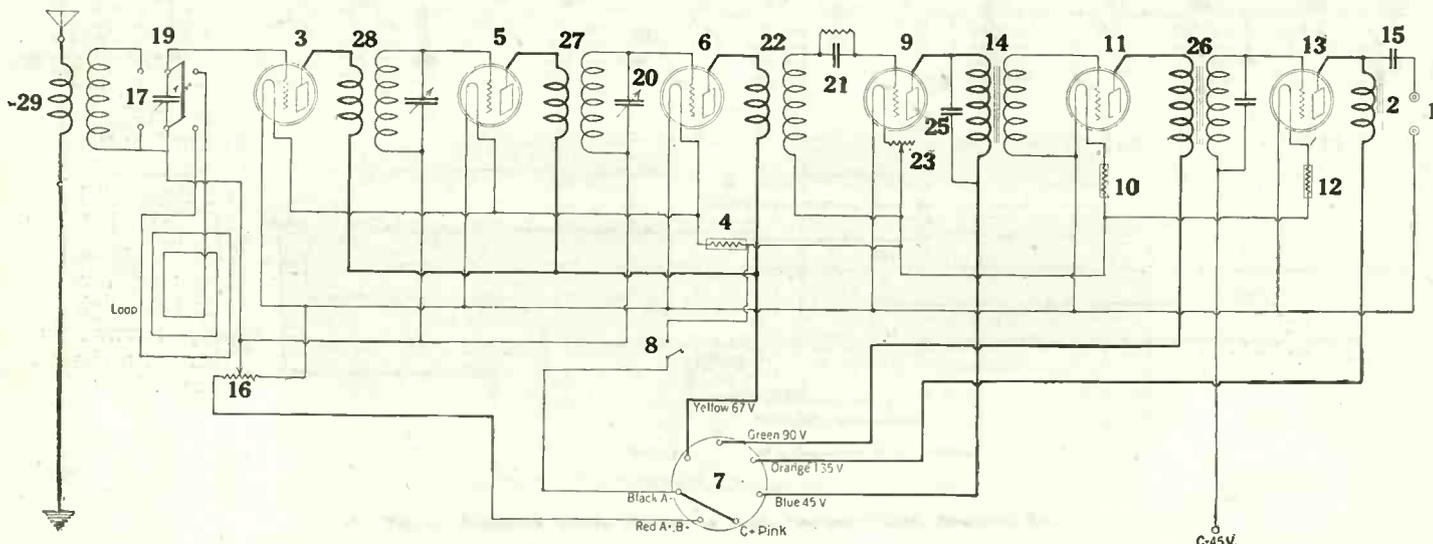


Fig. 3. Schematic wiring diagram of Radio Listeners' Guide Standard Six.

was found that the impedance of this speaker closely matched that of the set. When the set was first connected up

though he has been listening to radio sets for the last five years. The next station to be tuned in was broadcast-

perienced radio fan who will be able to get the most out of the fine tuning required.