How to Install and Operate the Stromberg-Carlson No. 638 A. C. Art Console Radio Receiver



STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY

Kansas City, Missouri

Rochester, New York

Chicago, Illinois

United States of America

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY OF CANADA, LTD.

Toronto, Ontario, Dominion of Canada

Stromberg-Carlson

No. 638-A and No. 638-B Radio Receivers

The Stromberg-Carlson No. 638 Receiver is a seven-tube model which employs one Station Selector control for tuning, all apparatus including the power equipment being mounted on a steel chassis and enclosed in a console type walnut cabinet. The upper compartment of this cabinet houses a Stromberg-Carlson dynamic speaker.

These receivers are available in two different types of power equipment, arranged to operate from three kinds of alternating current house lighting circuits, and are distinguished as follows:

Code No.	Voltage	Type House Current
638-A	105 to 125	60 Cycle A. C.
638-B	105 to 125	25 to 60 Cycle A. C.

The standard receiver equipment employed in these radio receivers comprises three tuned radio frequency circuits of the licensed Neutrodyne type, a tuned detector stage, and two high-quality stages of transformer coupled audio frequency amplification, with suitable output filters. The output stage employs two UX-171-A tubes. Since the antenna circuit is tuned these receivers are much more sensitive and more selective than other similar receivers tuned by one Station Selector control, which employ an untuned antenna circuit and a coupling tube. The four tuned circuits are electrically shielded.

The No. 638 Radio Receiver is designed to employ an antenna and ground. A single wire, outdoor antenna is the most efficient type of signal collector, although these receivers will give good results with an indoor antenna, provided it is not shielded by metal lath walls or metal frame work of the building. A good average length of antenna for use with these receivers is 85 feet and as high above the ground and other objects as possible. In some locations, where it is difficult to tune out nearby powerful stations, you may have to use a short antenna of 20 to 50 feet. A long antenna has the advantage that it is more quiet and gives more freedom from local "noise" pickup than a short antenna. However, a short antenna is more selective. Keep your antenna as far as possible away from trees, steel frames of buildings, metal roofs, metal gutter pipes, and metal lath or porous brick walls. The antenna does not have to touch these objects in order to lose radio energy to them. For more detailed instructions, consult the P-18128 Stromberg-Carlson Reference Book, which is furnished with each receiver.

This receiver should be grounded to a cold water pipe, the surface of which has been scraped clean of paint to insure positive contact to the ground clamp, or connected to metal buried in moist earth.

In many locations it may be found desirable to employ a counterpoise wire for reception rather than a ground. See the P-18128 Reference Book.

ADDITIONAL EQUIPMENT REQUIRED FOR AN INSTALLATION

To complete your radio installation you will require:

- (1) Materials for constructing an Antenna and making a Ground Connection.
- (2) A Stromberg-Carlson No. 2-B Magnetic Pickup. (Optional.)

The No. 2-B Magnetic Pickup will enable you to use the fine audio amplifiers of your radio receivers to convert an old phonograph into the latest type of instrument for the electrical reproduction of recorded music. The No. 2-B Magnetic Pickup may be used only with "lateral-cut" records, such as Victor, Columbia, Brunswick, etc. It will not operate with Edison records, which are of the "hill and dale" type.

All that you require of your old phonograph is a true-running motor, turntable, and "half-tone" needles.

HOW TO INSTALL YOUR STROMBERG-CARLSON NO. 638 RADIO RECEIVER

The cabinets of these receivers are mounted for shipment on a wooden cradle. After unpacking, remove this cradle. Save all packing material for future use, if for any reason receiver needs to be reshipped.

- 1. Remove back panel from receiver cabinet by first taking out the four fastening screws.
- 2. Insert correct vacuum tubes in receiver sockets as shown in the diagram located on inside of back panel, and shown in Fig. 1. Center each tube over its socket, with connecting pins of its base resting in circular groove on top of socket. Rotate tube until connecting pins enter their proper holes, when tube should seat easily, without much forcing, in the socket.

As you face the front of the cabinet, the socket for the large tube with four-pin base (Radiotron UX-280 or Cunningham CX-380) is the socket all by itself in rear right-hand corner. In its proper position in socket, the locating pin on the base of the tube points towards the right-hand end of cabinet. The two tubes with four-pin bases (Radiotron UX-171-A or Cunningham CX-371-A, marked "For Use in Last Audio Stage Only") are to be placed in the two sockets at the left-hand end of the cabinet (looking at the front).

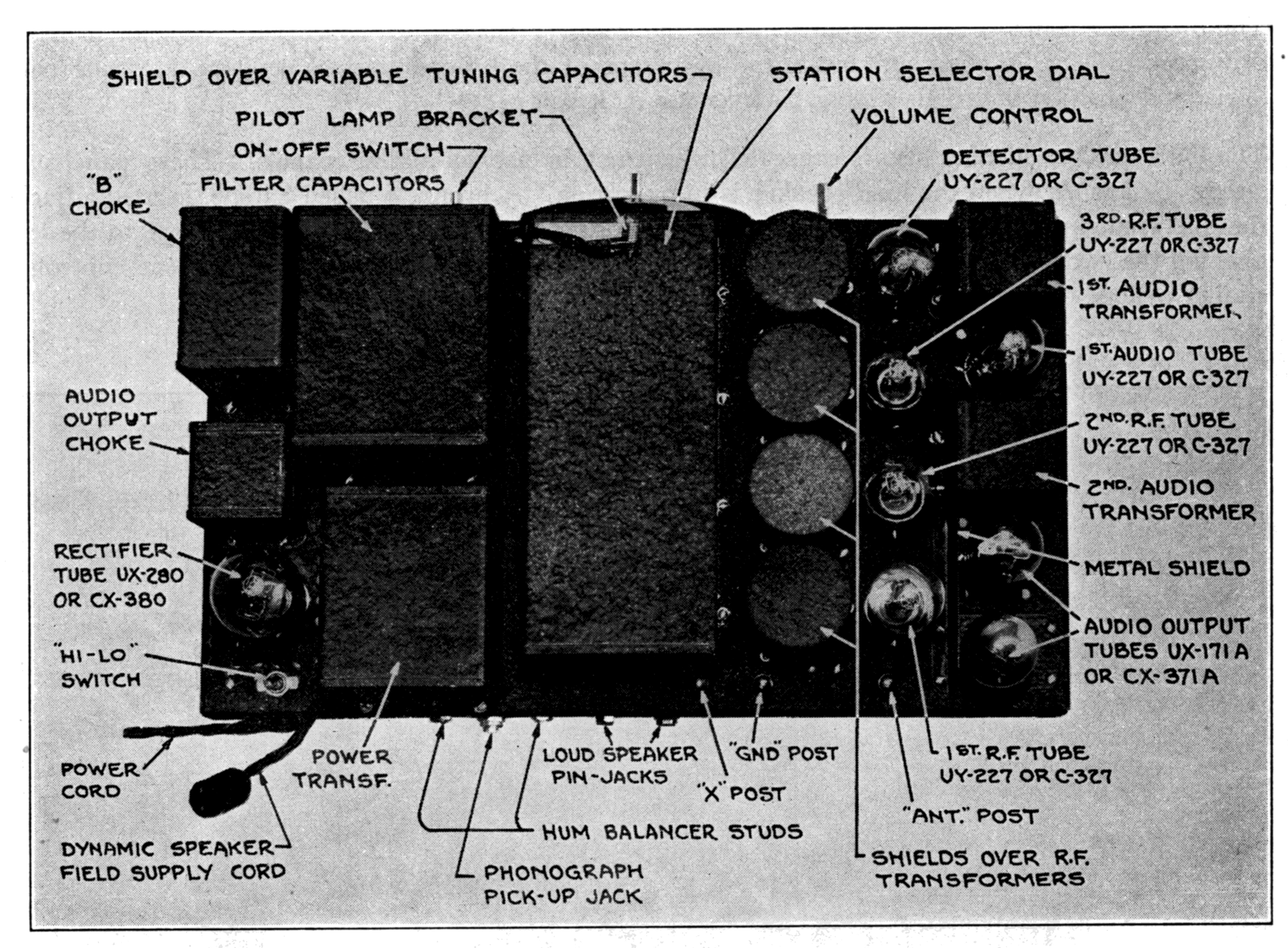


Fig. 1. Location of Vacuum Tubes.

The remaining five tubes (Radiotron UY-227 or Cunningham C-327 type, with five-pin bases) are to be placed in the five remaining sockets.

- 3. Insert the small dial light in its socket, which is located on an adjustable arm behind the dial, and above the central chassis shield.
- 4. Connect the Antenna to the "ANT" binding post. Do not connect it to the "GND" post or to the third binding post marked "X".

Note: Bring the Antenna and Ground wires into the console cabinet, and the Power Cord out of the cabinet, through openings provided in the bottom.

- 5. Connect the ground wire or counterpoise to the "GND" binding post. For ground use a cold water pipe. Never use a gas pipe.
- 6. Set the voltage switch lever, located behind the socket for the large (UX-280 or CX-380 type) tube, to "LO" if the house current voltage is below 115 volts at all times. If the house current voltage is unknown, or is above 115 volts, or is likely to rise above this voltage at certain hours of the day, set the switch lever at the "HI" position.

Note: This switch lever must be set by the installer while the rear panel is removed from the cabinet. It is not accessible after the rear panel is replaced.

- 7. The dynamic speaker should be correctly connected when the No. 638 is received. However, if the cords become disconnected proceed as follows: The two cord tips on the speaker cord should be inserted into the "red" colored pin jacks in rear of the chassis (Fig. 2). The field supply cord attachment plug is connected to the short cord and plug coming through the base at the left end of chassis (looking at the chassis from rear). After receiver is in operation reverse first one and then the other (cord tips and attachment plug) to find which position gives the least amount of "hum" in the dynamic speaker.
- 8. The operating controls on the front panel of the receiver chassis are concealed when not in use by a drop type panel. To open, pull out at top by means of the bronze finished pendent, lowering panel to horizontal position and then sliding back as far as it will go.

The loud speaker opening also is concealed when not in use by sliding panels. These panels should always be opened when the loud speaker is in operation. A bronze finished handle, located adjacent to the dial escutcheon, is provided for opening and closing these panels. Move this handle to the left for opening the two panels and move to the right for closing these panels. One movement controls both sliding panels. (Shown on Fig. 4.)

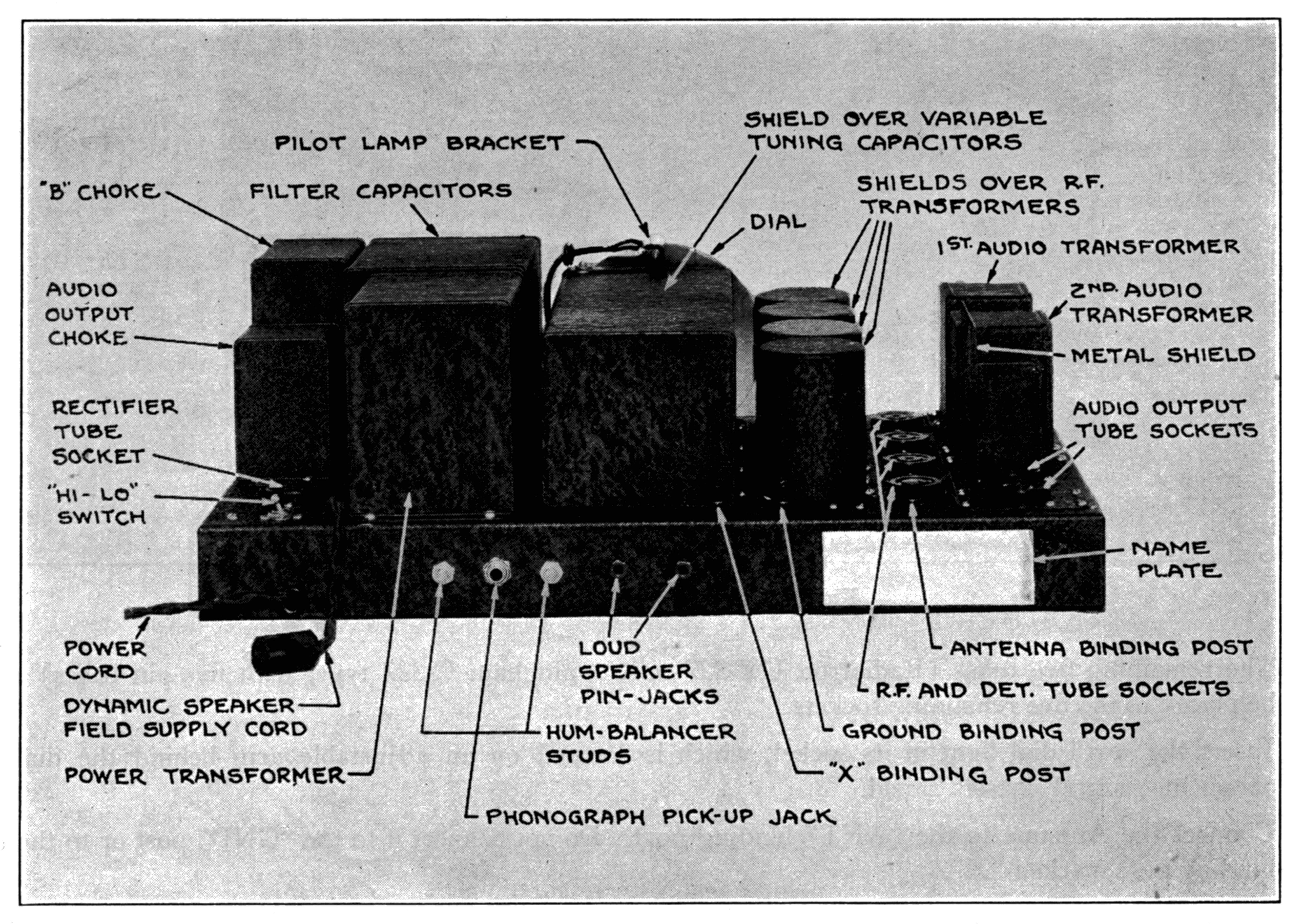


Fig. 2. Rear View of Chassis.

9. Insert the ATTACHMENT PLUG into a house lighting socket, or a base receptacle of the house current supply.

Connect the No. 638-A Receiver only to a 105 to 125 volt, 60 Cycle A. C. Circuit. Connect the No. 638-B Receiver only to a 105 to 125 volt, 25 to 60 Cycle A. C. Circuit.

WARNING: DO NOT CONNECT THESE RECEIVERS TO A DIRECT CURRENT HOUSE LIGHTING CIRCUIT.

- 10. Turn the ON-OFF switch knob on the receiver control panel to the right (clockwise) to its ON position for starting the set. Allow about ½ minute for the tubes to heat up.
- 11. Set the adjustable lamp bracket of dial light for correct position to allow full illumination of that portion of dial showing through dial window.

Turn, one at a time, the two small slotted studs of HUM BALANCERS (Fig. 3) in back of chassis to adjust for position of minimum "hum" in loud speaker. The Volume Control Knob should be turned down to minimum position when setting Hum Balancers.

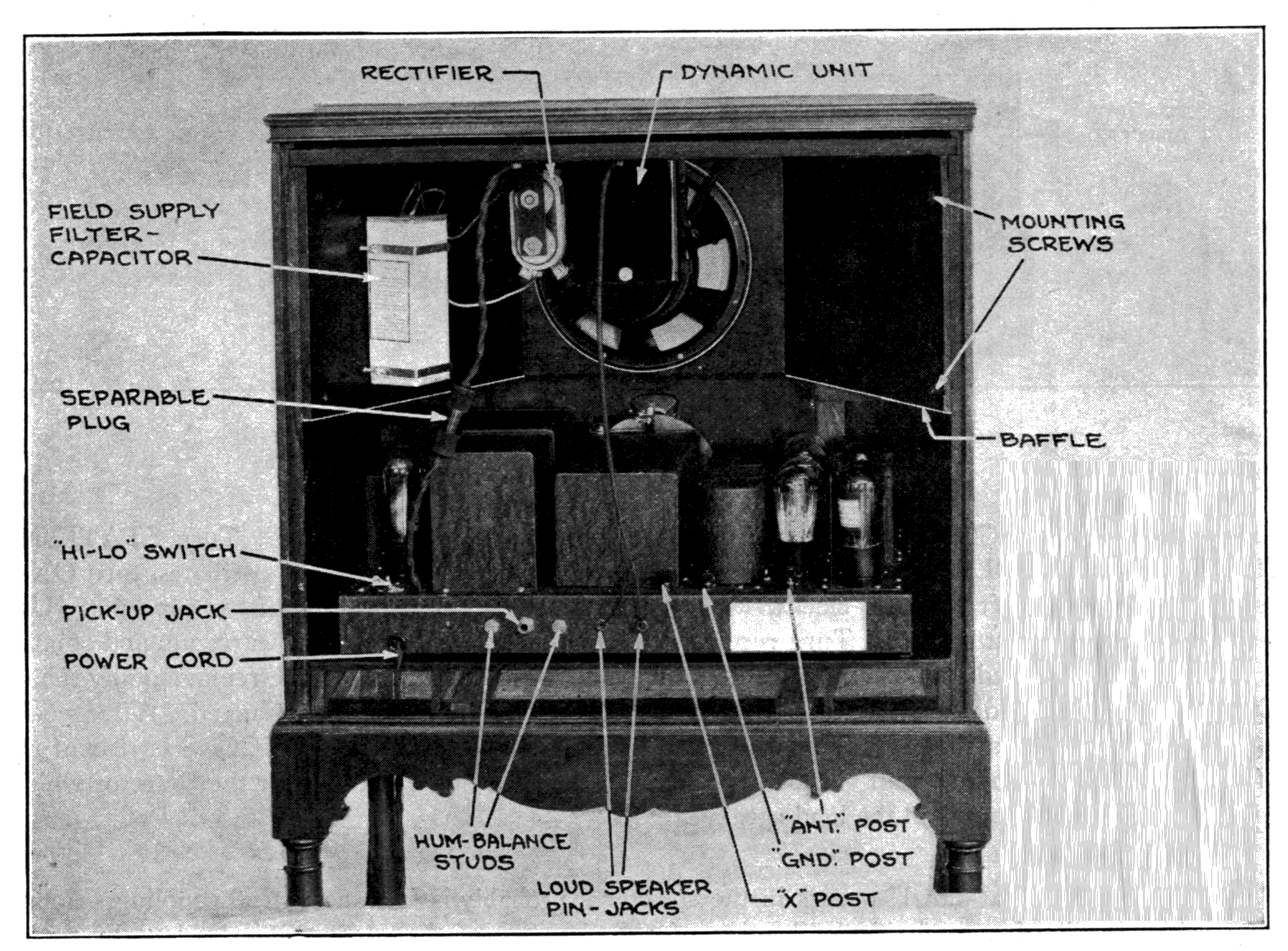


Fig. 3. Rear View of Cabinet.

- 12. Reverse position of ATTACHMENT PLUG in house current supply receptacle. After trying it with plug inserted both ways, select most quiet connection.
- 13. In case the local house current supply is "noisy" so that disturbing radio frequency currents are conducted into the receiver by way of the power supply wires, connect the binding post marked "X" to a cold water pipe or other good ground. This may change the volume slightly on local stations, which condition is normal. Of course it is not necessary to install an additional ground connection if the "GND" binding post of the receiver is already grounded, but simply connect the binding post marked "X" to the "GND" binding post with a short piece of bare copper wire. If, however, a counterpoise wire is connected to the "GND" binding post, do not connect the "X" binding post to the "GND" binding post but connect it to a good ground. Never make a ground connection to a gas pipe.

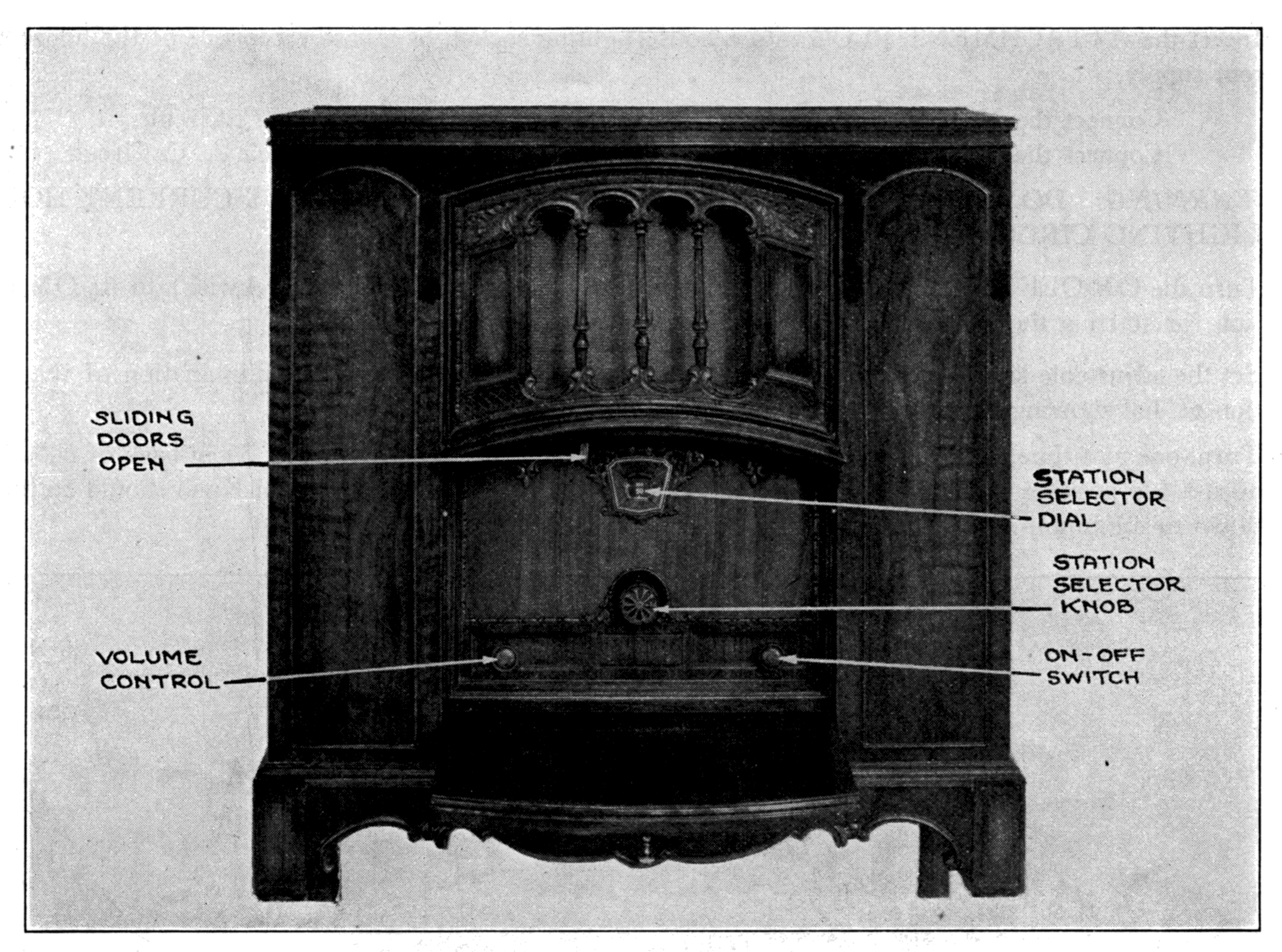


Fig. 4. Location of Controls.

14. Turn up VOLUME CONTROL knob (Fig. 4) (clockwise) for full volume. Turn STATION SE-LECTOR CONTROL knob slowly through full dial movement. If receiver oscillates, turn ON-OFF switch knob to the left (counter-clockwise) to turn set OFF, change position of five-pin tubes (UY-227 or C-237) to different sockets. Turn receiver ON again, allow ½ minute to warm up, and rotate dial. Continue until you find stable arrangement. Always turn receiver OFF before removing any tube from its socket. Disregard hum while testing receiver with five-pin tubes interchanged. After you have selected most stable arrangement, readjust two small studs of HUM BALANCERS in rear of chassis for position of minimum "hum" in loud speaker. A tube should be selected for the Detector which will give a minimum of "hum" in the loud speaker.

IMPORTANT: If a "howl" occurs in the speaker it probably is from acoustical coupling. Acoustical coupling is the result of a mechanical vibration of the elements of the vacuum tubes set up by the sound from the diaphragm of the loud speaker. A non-microphonic detector tube should be selected. In turn, try all tubes in the detector socket. By tapping the side of the tube very lightly and noting the result in the loud speaker a non-microphonic tube may be selected. The tube that gives the least response in the loud speaker is the tube that should be used in the detector socket.

15. Obtain from your Dealer a "Warranty Card" (See Reference Book) countersigned with Dealer's name and store address, with "Registry Card" attached. Fill out "Registry Card" before replacing back panel on receiver cabinet, reporting your name and address, Dealer's name and address, Serial Number (but not Piece Number) of receiver chassis as found on nameplate on rear of chassis, and type (Code Number) of Receiver as found on instruction card on inside of back panel of cabinet. Be sure to mail "Registry Card," as this is the factory's record of your ownership of a Stromberg-Carlson Receiver.