

## Two Ampere Westinghouse Rectigon Battery Charger Form B

Renewal Bulb S#277681 Rating 2 Amperes.  
Renewal Fuse S#424465 Rating 1 Ampere.

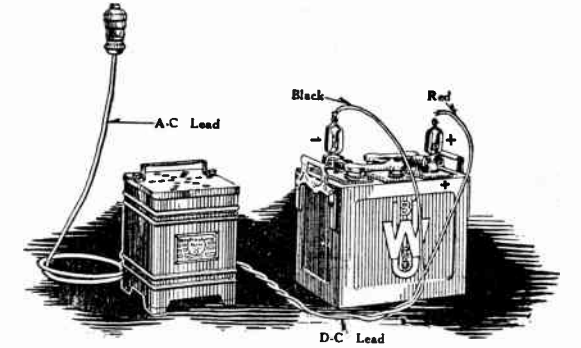


FIG. 1—METHOD OF CONNECTING RECTIGON FOR CHARGING AUTOMOBILE OF RADIO "A" BATTERIES

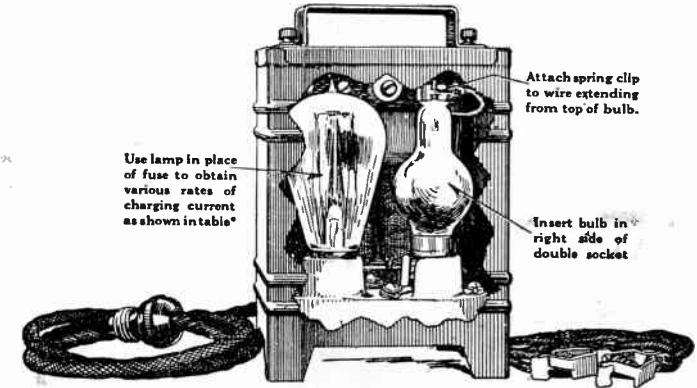


FIG. 2—FRONT VIEW SHOWING LOCATION OF RECTIGON BULB AND LAMP RESISTOR.  
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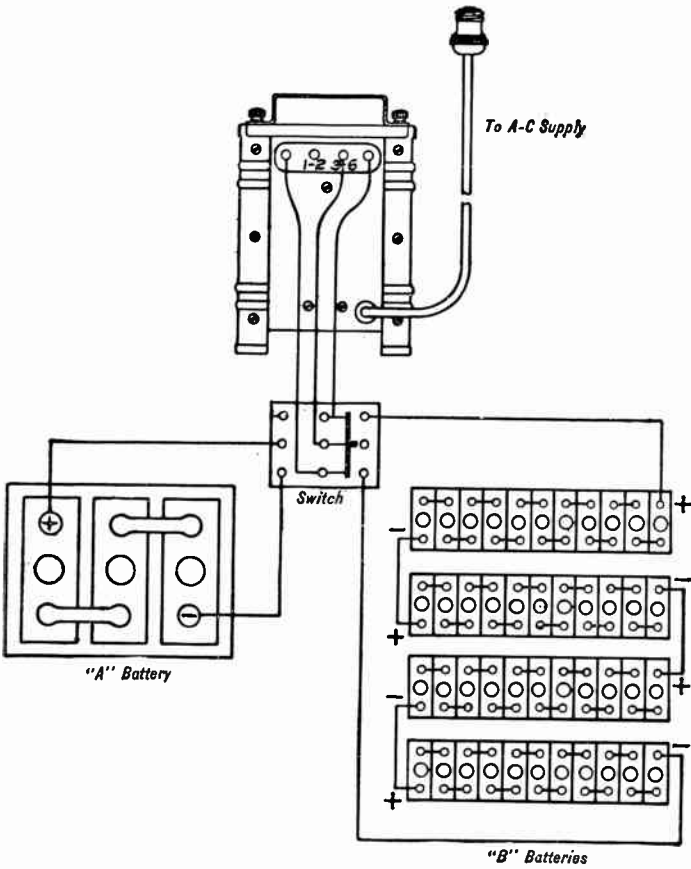


FIG. 3

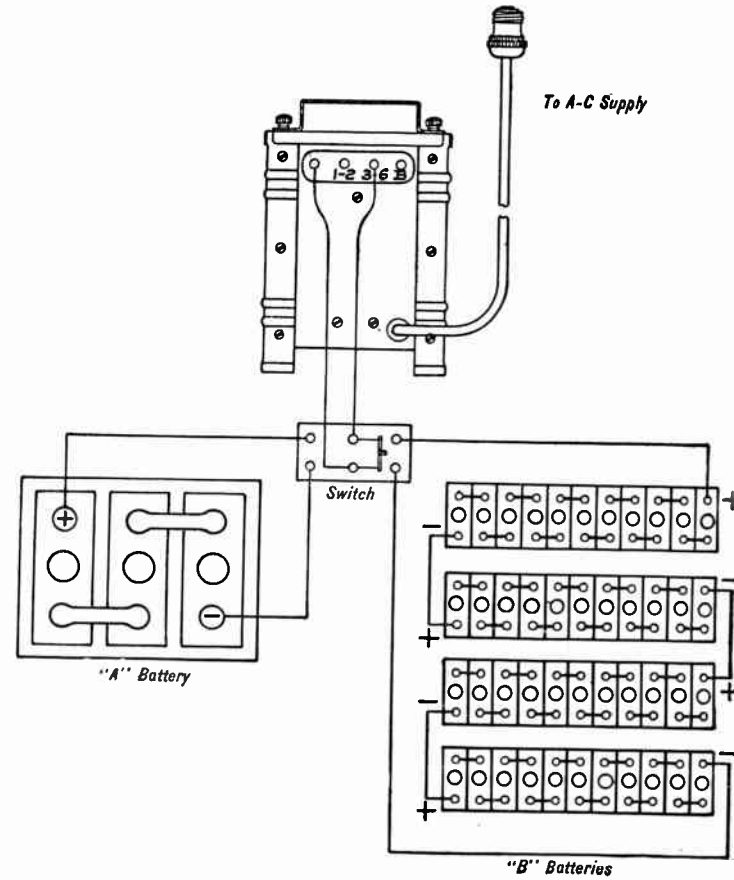


FIG. 4

(-) Negative (+) 1-2 Cells (+) 3-6 Cells (+) All "B" Batteries

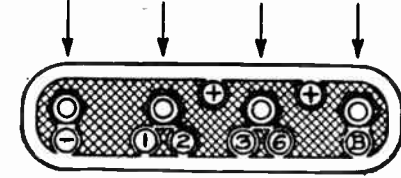


FIG. 5—TERMINAL BOARD

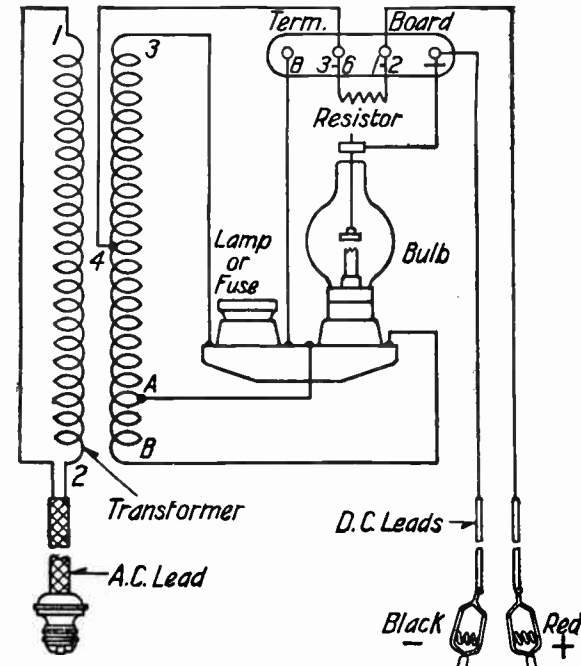


FIG. 6—DIAGRAM OF CONNECTIONS

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.  
George Cutter Works South Bend, Ind.

This outfit has been designed to operate satisfactorily on an alternating current (A-C.) circuit of the same voltage ( $\pm 10\%$ ) and frequency as marked on the nameplate. It will charge from 1 to 6 cells of Automobile or Radio "A" battery or from 11 to 48 cells of Radio "B" battery at the current rates given in the following paragraphs.

**Inspecting and Setting Up the Rectigon.**

The Rectigon is shipped in two separate cartons one containing the outfit and the other containing the bulb.

After unpacking examine carefully for broken parts and loose connections caused by shipping. Screw the bulb carefully but firmly into the right side of the double socket. (Fig. 2). Next squeeze the clip which is attached to the end of the flexible cable and slip it over the wire extending from the top of the bulb. Replace the cover and secure both it and the handle with the two thumb screws.

The D-C. leads are provided with snap terminals which fit over the studs extending from the back of the outfit (fig 3). Connect the lead with the black insulation to the negative stud only. The positive selector lead with red insulation should be connected to the stud whose marking corresponds to the number of cells to be charged.

**To Charge Automobile Batteries**

**FIRST** Connect the D-C. leads to the battery as shown in figure 1. Make sure that the positive selector lead is attached to the stud corresponding to the number of cells to be charged.

It is absolutely necessary that the D-C. leads be connected to the battery with the correct polarity. Should they be reversed the battery will discharge through the Rectigon and may injure or destroy the bulb. If there is any doubt as to the identification of the battery terminals have the polarity determined by a battery service station. Mark the terminals for future convenience.

**SECOND** Screw the separable attachment plug into a convenient lamp socket, then insert the part to which the lead is attached. If there is a switch in the circuit it can be used to control the Rectigon.

The bulb should light as soon as the A-C. connection is made. When the outfit is correctly charging there will be a perceptible hum.

The Rectigon will charge any size or make of 3 or 6 cell storage battery at the approximate current rates of 2 amperes to a 3 cell battery and  $1\frac{1}{2}$  amperes to a 6 cell battery. Intermediate values

of current will be delivered to intermediate numbers of cells. Batteries having more than 6 cells can be charged in sections.

If the A-C. supply is interrupted the Rectigon will stop charging but no harm will result as the battery cannot discharge through the outfit. When line voltage is again restored it will immediately restart and continue the charge. Keep naked flames away from the battery during the charging period and for some time thereafter.

The battery need not be removed from the car, or the battery leads disconnected. Be sure that all the lights and the ignition are turned off.

**TO STOP** Disconnect the A-C. Circuit, then remove the clips from the battery terminals.

**How to Obtain Maximum Battery Life.**

1. Carefully follow the instructions given in the battery manufacturer's instruction book.
2. Always keep the plates covered from  $\frac{3}{8}$ " to  $\frac{1}{2}$ " with chemically pure distilled water.
3. Take frequent hydrometer readings to determine the condition of the battery.
4. Never allow the battery to remain discharged for any length of time. Charge as often as necessary but do not overcharge. Keep the specific gravity between 1.250 and 1.300 as much of the time as possible.
5. Do not add acid to bring up the specific gravity of the electrolyte except when following the battery manufacturer's specific instructions.
6. Do not allow the battery to freeze.

**When to Charge**

A normal battery is fully charged when all the cells are bubbling (gassing) freely and the specific gravity, as indicated by the hydrometer reading, remains constant from 3 to 5 hours at a value from 1.275 to 1.300. When this condition is reached discontinue charging. As the battery discharges the specific gravity of the electrolyte decreases and the hydrometer readings will be as follows:

Hydrometer Reading	Battery Condition	What to Do
1.275 to 1.300	Fully Charged	Do Not Charge. If charging, discontinue.
1.215	Half Charged	Charge as soon as possible
1.150 or less	Discharged	Start to charge at once or battery may be ruined.

**To Charge Radio "A" Batteries.**

Radio "A" batteries are charged in the same manner as automobile batteries and the same general instructions apply. For one or two cells the positive selector lead should be attached to the stud marked 1-2, for three cells to the stud marked 3-6.

The Rectigon will deliver approximately 2 amperes to a three cell battery but as storage batteries designed for operating dry cell tubes are usually of small ampere-hour capacity the charging rate is limited by a small resistor to approximately  $1\frac{1}{2}$  amperes to either 1 or 2 cells.

In general the specific gravity of the electrolyte is lower in batteries designed especially for radio service than in those for automobile use. The values given in the preceding paragraph will not hold for these batteries, therefore the user should ascertain the maximum electrolyte density for his particular battery and charge accordingly.

**To Charge Radio "B" Batteries**

Always attach the positive selector lead to the stud marked "B" regardless of the number of batteries to be charged. The battery and A-C. connections are made in the same manner as described for automobile batteries.

**When discontinuing the charge it is best to open the battery circuit, either by removing one of the clips from the battery terminal or by disconnecting the snap terminal before the A-C. supply is interrupted.**

From one to four 11 or 12 cell lead storage "B" batteries connected in series may be charged at one time at any desired current rate up to .3 amperes. Variations of charging current can be secured by using different sizes of incandescent lamps as resistors. The lamp should be inserted in the left side of the double socket in place of the fuse. Fig. 2 Table 1 gives the size of lamp and the values of charging current for various numbers of batteries. It will be noted that four 11 or 12 cell batteries, connected in series, may be charged at a current rate of approximately  $\frac{1}{4}$  ampere without using a lamp in the charging circuit, i. e., with the one ampere fuse bridging the socket contacts. Usually a lower charging rate is found most desirable as gassing, with the resulting acid fumes and spray, is reduced. For this reason the use of a 75 Watt or smaller lamp is recommended.

Where the Rectigon is used to charge both the "A" and the "B" battery the most satisfaction can be obtained by permanently connecting both batteries and the Rectigon to either a double or triple pole, double throw knife switch as shown in figures 3 and 4.

This eliminates the necessity of removing and replacing the battery clips with each change from "A" to "B" and vice versa. When using the double pole switch it is also necessary to shift the positive selector lead to the stud corresponding to the number of cells. An extra lead with a Rajah snap terminal is required when using the three pole switch. This terminal can be purchased from the local radio dealers or direct from the Rajah Auto Supply Co., Bloomfield, N. J.

**At the termination of the charge open the switch before interrupting the A-C. supply.**

The Rectigon is adapted for charging only one combination of cells at a time. Do not attempt to charge both A and B batteries simultaneously.

**Trouble**

Should the Rectigon become inoperative for any reason do not return it to the dealer until every effort has been made to locate the trouble.

Possible trouble may be divided into two general cases as follows:

(1) Bulb Does Not Light.

Test the supply circuit by removing the attachment plug from the socket and inserting an incandescent lamp in its place.

Examine the attachment plug and the A-C. lead for an open circuit.

See that the bulb is screwed firmly into the socket.

Try a new bulb.

Usually a new bulb will remedy the trouble but occasionally the A-C. circuit is found to be open at some point.

(2) Bulb Lights But Battery Does Not Charge.

Make sure that the points on the connecting clips cut through the scale and make good contact with the battery terminals.

Try a new bulb

If charging "B" batteries check to see if the fuse is blown. This is a one ampere fuse and is in the "B" battery circuit only.

**TABLE 1**

Rating of Lamp.	Approximate Charging Current in D-C. Amperes to Various numbers of 11 or 12 cell lead storage or equivalent alkaline batteries, connected in series.			
Watts	1 Battery	2 Batteries	3 Batteries	4 Batteries
25	.110	.100	.075	.060
40	.175	.150	.110	.100
60	.250	.200	.150	.125
75	.300	.250	.200	.175
Fuse				.250