CHARGING SYSTEM CIRCUITS AND REGULATOR SERVICING

DELCO-REMY

PASSENGER CAR TYPE REGULATORS

CLEANING CONTACT POINTS

If points are oxidized or dirty but not badly burned or pitted they should be cleaned. To clean regulator points properly, it will usually be necessary to tilt to one side or completely remove the upper point support.

The large flat contact used on current regulators and on single contact voltage regulators should be cleaned with a spoon or riffler file. It is not necessary to have a flat surface on this contact point. However all oxides should be removed so that pure metal is exposed.

The small soft contact points on single contact voltage regulators, current regulators, double contact voltage regulators and the contacts of cutout relays should be cleaned with crocus cloth or flexible abrasive material.

After contacts have been cleaned, they should be washed with clear carbon tetrachloride to remove any foreign material.

NOTE: - NEVER USE EMERY CLOTH OR SANDPAPER TO CLEAN CONTACT POINTS.

Regulator Parts Replacement: Voltage or Current Regulator upper contact support brackets can be replaced. The replacement of armatures usually requires that holes be drilled. To perform this operation it is imperative that the manufacturers service instructions be very carefully followed.

CUTOUT RELAY ADJUSTMENTS

Air gap: Place fingers on armature directly above core and move armature down until points just close. Then measure air gap between armature and center of core. Make sure that all points close simultaneously. If they do not, bend spring fingers so they do. To adjust air gap, loosen two screws at back of relay and raise or lower the armature as required.

Point opening: Check point opening and adjust by bending upper armature stop.

Closing voltage adjustment: Adjust closing voltage by turning adjusting screw. Turn screw clockwise to increase closing voltage and counter-clockwise to decrease voltage setting.

CURRENT REGULATOR ADJUSTMENTS

Air gap: Push armature down until contact points are just touching. Measure air gap between armature and winding core. Adjust by: loosening two contact bracket mounting screws on front of unit and with proper size thickness gauge inserted between armature and winding core, raise or lower bracket as required. Check point alignment.

Current setting adjustment: To adjust current setting, turn adjusting screw on back of unit to increase or decrease spring tension on the armature. Turn clockwise to increase current setting and counter-clockwise to decrease setting. Final setting should be approached by increasing spring tension.

VOLTAGE REGULATOR ADJUSTMENTS

SINGLE CONTACT TYPE

Air gap: To check air gap, push armature down (do not apply pressure to contact strip) until the contact points are just touching, and then measure the air gap between the arrnature and the center of the core. Adjust by loosening the contact mounting screws and raising or lowering the contact bracket as required. Be sure the points are properly aligned when tightening screws.

Voltage setting adjustment: To adjust voltage setting, turn adjusting screw. Turn screw clockwise to increase voltage setting and counter-clockwise to decrease voltage setting. CAUTION: If adjusting screw is turned down (clockwise) beyond the normal adjustment range, spring support may fail to return when pressure is relieved. In such case, turn screw counter-clockwise until sufficient clearance develops between the screw head and spring support, then bend spring support upward carefully with a small pliers until contact is made with screw head. Final setting of the unit should always be approached by increasing the spring tension, never by reducing it. If setting is too high, adjust until below required value,and then raise to exact setting by increasing spring tension.

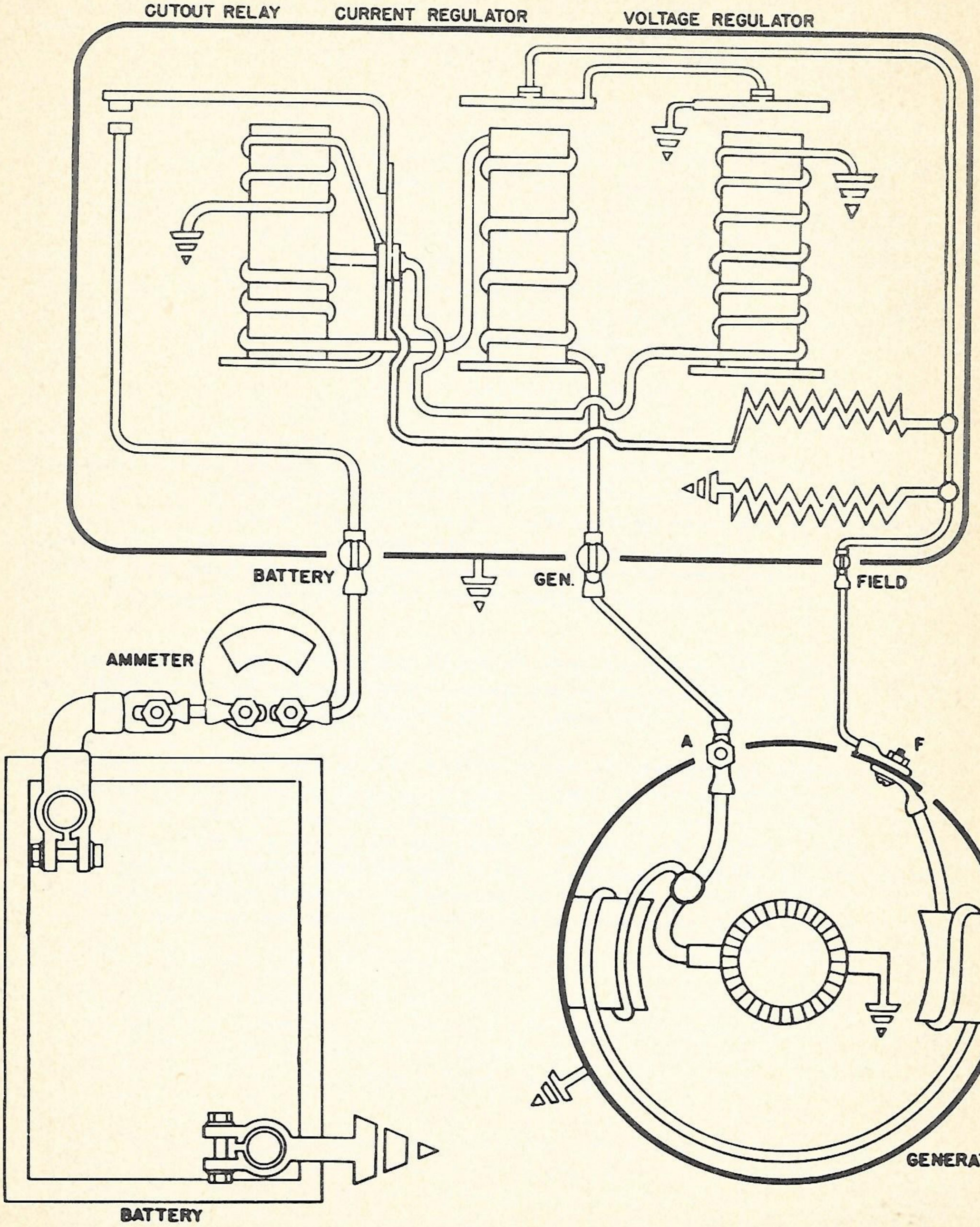
DOUBLE CONTACT TYPE

Air gap: Turn air gap adjusting screw on top of armature all the way (in clockwise direction)before checking air gap. To check air gap placefingers on armature above winding core (not on bi-metal strip) and push armature down until upper contact points are just touching, then measure air gap between armature and center of core. Adjust by placing proper size thickness gauge between armature and winding core, press armature down for firm contact, and bend upper contact support to a "point touching" position. Check for proper point alignment.

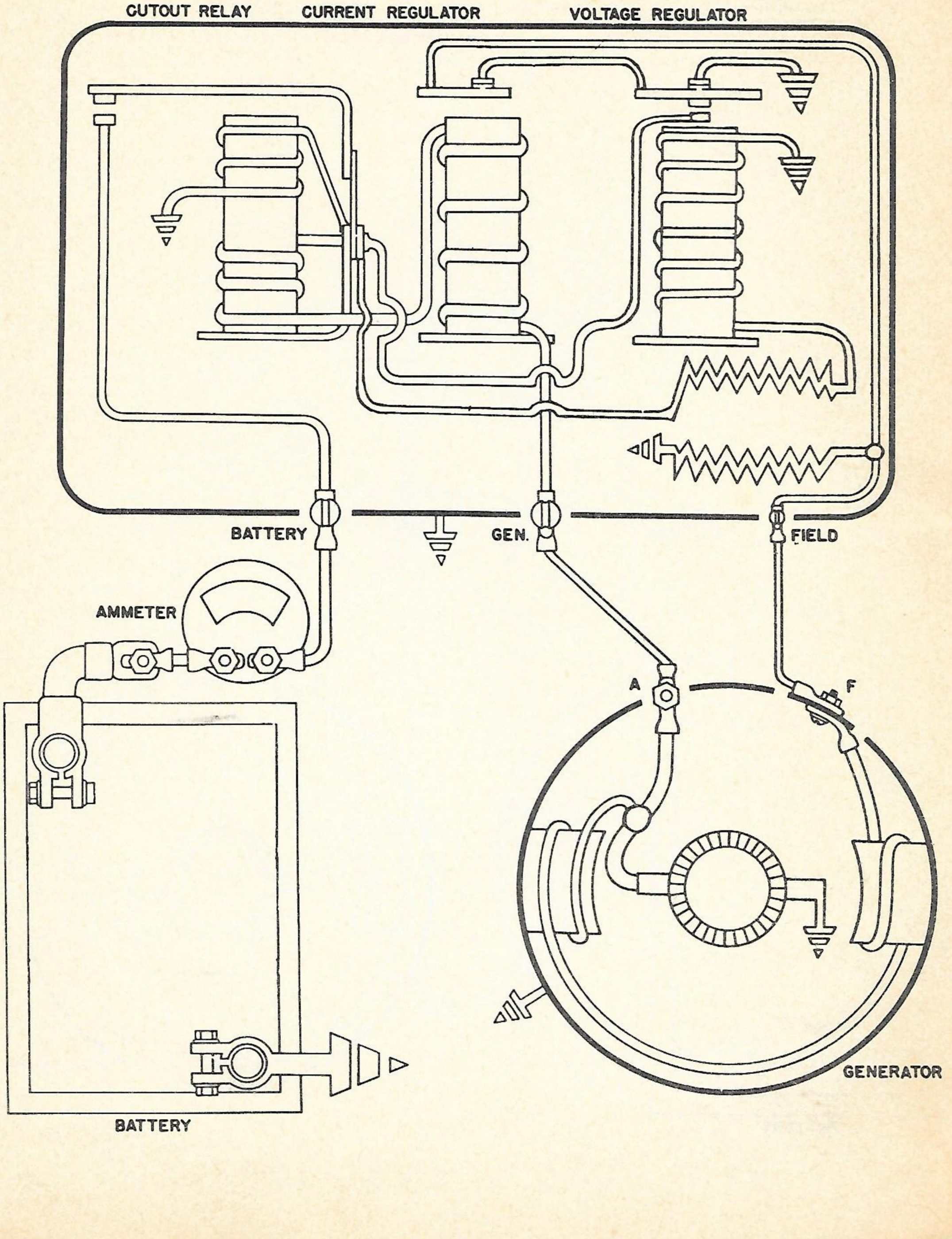
Point opening: Push armature down (avoid bi-metal strip) until LOWER set of contact points are just touching and measure point opening between UPPER set of contacts. Adjust to proper clearance by bending LOWER contact support.

Voltage setting adjustment: To adjust voltage setting (lower contact operation) turn double slotted screw on back of unit to increase or decrease spring tension on the armature. Clockwise for higher voltage setting, counter-clockwise for lower voltage setting. Differential voltage may be (upper contacts) adjusted by turning air gap adjusting screw, on top of armature clockwise to increase differential voltage, counter-clockwise to decrease differential voltage. This screw should not be moved more than 3/4 turn counter-clockwise from the maximum clockwise position.

DELCO-REMY
800 SERIES TYPE



DELCO-REMY
900 SERIES DOUBLE CONTACT TYPE



AUTO-LITE

THREE UNIT REGULATORS

CLEANING CONTACT POINTS

If the contacts are burned or dirty, or if they are not smooth, file the contacts with a #6 American Swiss Cut Equaling File. Move the file parallel and lengthwise to the armature as crosswise filing may form grooves which would tend to cause sticking and erratic operation. File just enough so that the contacts present a smooth surface toward each other. It is not necessary to remove every trace of burning. After contacts have been cleaned, they should be washed with clean carbon tetrachloride to remove any foreign material.

Parts replacement: Armatures, contact points and most other parts of Auto-Lite regulators are replaceable items. Parts are stocked by Auto-Lite distributors.

CUTOUT RELAY

Air gap: Insert the gauge between the armature and the core as near to the hinge end as possible. Adjust the gap by bending the armature stop, making sure that the stop does not interfere with the armature movement. On the regulators having a second set of contacts on the cutout relay, used to operate a telltale light, the air gap is adjusted by bending the stationary auxiliary contact bracket. Be careful to keep the contacts aligned.

Point gap: With spring tension on the armature and with the armature against the stop, measure the gap between the contacts. This gap should not be less than the specified minimum, but may be larger after completing the adjustment of the cutout relay for opening voltage or discharge current.

Closing voltage: Change the armature spring tension by bending the hanger at the lower end of the spring on the smaller types or by turning the adjusting nut on the larger type relays. Increase spring tension to raise closing voltage or decrease spring tension to lower the voltage.

Opening voltage or amperage: To adjust, raise or lower the stationary contacts, keeping the contacts perfectly aligned. Increasing contact gap lowers the opening voltage and raises discharge current. Change the contact gap by expanding or contracting the stationary contact bracket, keeping the contacts aligned. Do not adjust the gap between the contacts to less than the specified minimum.

VOLTAGE REGULATOR

Air gap: Place the air gap gauge between the armature and the core on the contact side and next to the brass armature stop pin. Hold the armature down against the gauge with the fingers, being careful not to touch the contact strip. The contact points should just touch when the armature is held down against the gauge. Adjust by raising or lowering the stationary contact bracket.

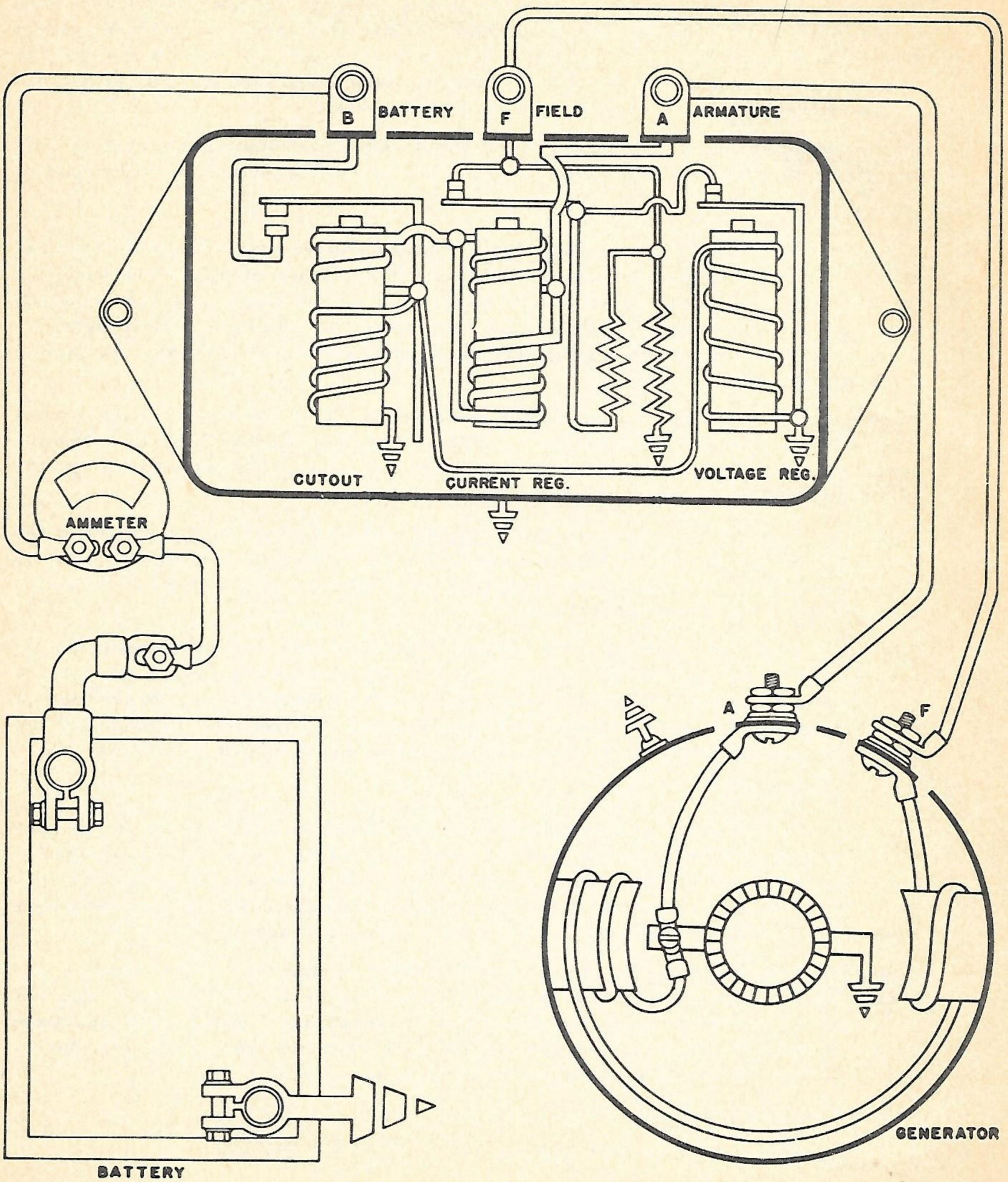
Voltage setting adjustment: Change the armature spring tension by bending the hanger at the lower end of the armature spring or by turning the adjusting nut on larger units. Increase spring tension to increase the setting, and decrease spring tension to decrease the setting. Be sure that the springs are properly seated in the spring hangers after completing adjustment.

CURRENT REGULATOR

Air gap: Same as for voltage regulator.

Current setting adjustment: Same as for voltage regulator.

AUTO-LITE
TYPICAL 3 UNIT TYPE



FORD

THREE UNIT REGULATORS

Point cleaning: Ford does not recommend a point cleaning procedure. Instructions in Ford manuals are to replace the points if oxidized or otherwise unsatisfactory. Replacement parts are available. Installation of these parts usually require the removal of rivets.

CUTOUT RELAY

Air gap: Place an air gap gauge of specified diameter between the cutout relay armature and the center of the core. Press the armature down against the gap gauge. The contact points should just close. Air gap is adjusted by raising or lowering the lower contact points. On the older models, the lower contact can be raised or lowered by loosening two screws. On newer model regulators, the lower contact is bent up or down as desired.

Point gap: Cutout relay point gap is measured by first placing the air gap gauge between the armature and the core, pressing the armature down against the air gap gauge, and then with a second gauge of specified thickness, measure the gap between the top of the armature and the upper armature stop. On older model regulators this adjustment is made simultaneously with the air gap adjustment. With newer style regulators, the adjustment is made by bending the armature stop up or down.

Closing voltage adjustment: On earlier model Ford regulators, cutout relay armature spring tension is controlled by a spring support on the back of the relay frame. Spring tension should be increased to increase the closing voltage by bending the spring support inward, or decreased by bending the spring support outward. On later model regulators, the relay armature spring rests on a support post or arm. On the later model regulator, the closing voltage of the relay is increased by bending the adjusting arm upward, or decreased by bending the arm downward.

VOLTAGE REGULATOR

Air gap: Place the air gap gauge between the armature and the core, press the armature down, holding it against the gauge. The contact points should just touch. CAUTION: Some armatures are provided with a brass rivet to prevent contact with the core. Be sure the gauge is not placed under the brass rivet when setting or testing air gap. To adjust air gap, place the air gap gauge between the armature and core, hold the armature down and adjust the upper points until the contact points just touch. On earlier model regulators, the upper contact is threaded, and may be adjusted with a screw driver. On later model regulators the upper contact is riveted, and must be adjusted by bending the contact arm. Be sure to maintain perfect point alignment.

Voltage setting adjustment: To increase the voltage regulator setting, bend the spring support arm upward to increase spring tension. To decrease the setting, bend the support arm downward to decrease spring tension.

CURRENT REGULATOR

Air gap: The air gap adjustment for the current regulator is the same as outlined for the voltage regulator.

Current setting adjustment: Adjustment of the current regulator setting is made by bending the spring support arm in the same manner as described for the voltage regulator.

FORD
TYPICAL 3 UNIT TYPE

