

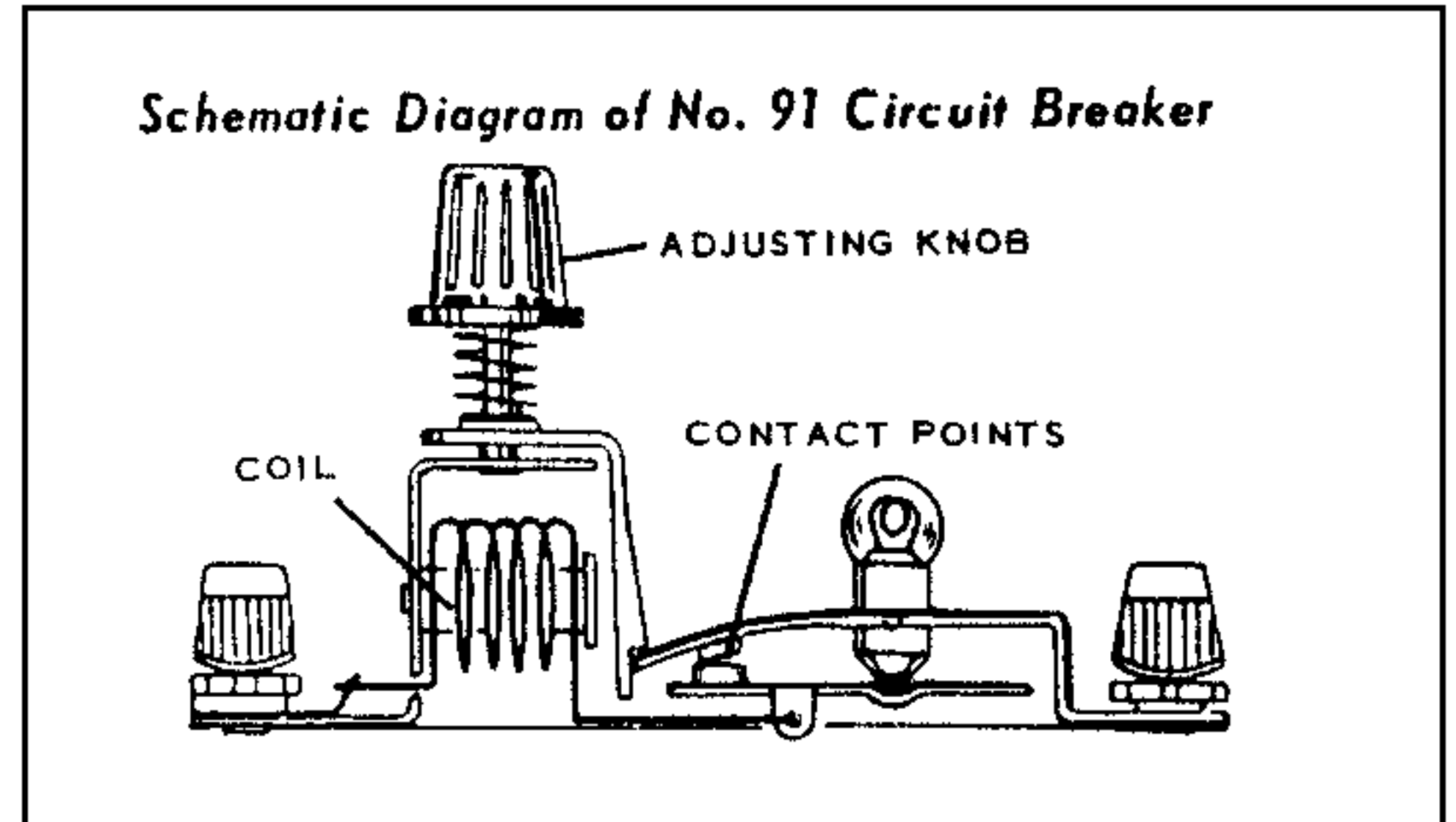
# LIONEL SERVICE MANUAL

## NO. 91 CIRCUIT BREAKER

No. 91 electro-magnetic circuit breakers, first produced in 1957, have two principal applications. They should be used to protect transformers which are not equipped with built-in circuit breakers and they are useful in multiple train operation to protect each train circuit separately, so that a short circuit or derailment of one train cuts off the power to that train along, without interfering with the operation of the entire railroad system.

No. 91 circuit breaker is placed in series with the power supply so that the current from the transformer to the track passes through the breaker coil. When that current exceeds a pre-set limit, the breaker armature is attracted to the coil, allowing the contact points to snap open. The circuit breaker does not re-close automatically but must be reset by pushing the reset button.

A No. 53-300 lamp placed in parallel with the breaker contacts is normally out, but goes on when the contacts are open, limiting the current to the track



to the .1 ampere used by the lamp.

The operating point of the circuit breaker is set by the tension of the control spring. Turning the control knob down (clockwise) increases the tension and and the current limit of the circuit breaker. The current at which the circuit breaker will open can be adjusted from approximately 1 to 6 amperes.

