

FIG. 3,054.—Elementary relay showing magnet, insulated armature contacts, insulated stop, armature spring, main and auxiliary circuit connections. *The office of a relay is to open or close an auxiliary current under predetermined electrical conditions in the main circuit, so that a comparatively weak current may bring into operation a much stronger current to effect a saving in battery capacity.* Note the delicate armature construction as compared with sounder, thus requiring very little energy to operate. A relay is virtually a very delicate sounder with a contact maker at the end of the armature lever.

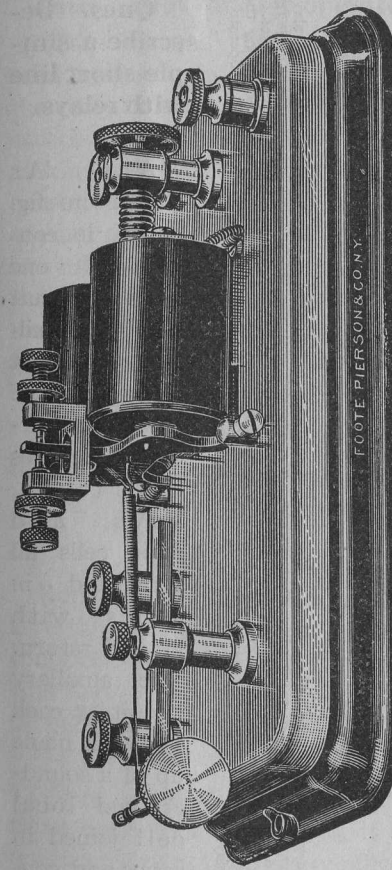


FIG. 3,055.—Foote, Pierson main line relay. In this instrument the magnets are regularly wound from 150 to 300 ohms.

Ques. How is this done?

Ans. When relays are used, a very weak current will suffice for the main line, since the moving parts of these instruments are very light they require very little energy for operation. The relay controls a comparatively strong local current to operate the sounder.

Ques. Of what does a relay consist?

Ans. Its essential parts, as shown in fig. 3,055 are: 1, an electromagnet, energized by the main circuit current; 2, an insulated armature of very light construction and pivoted so as to vibrate between a contact and an insulated stop as shown; 3, an adjustable spring to hold armature against stop when not attracted by the

magnet; 4, leads connecting the magnet winding to the main circuit, and 5, leads connecting the insulated armature and contact post with the auxiliary circuit.

The insulated stop and contact maker at the end of armature lever is very clearly shown on the elementary diagram fig. 3,054.