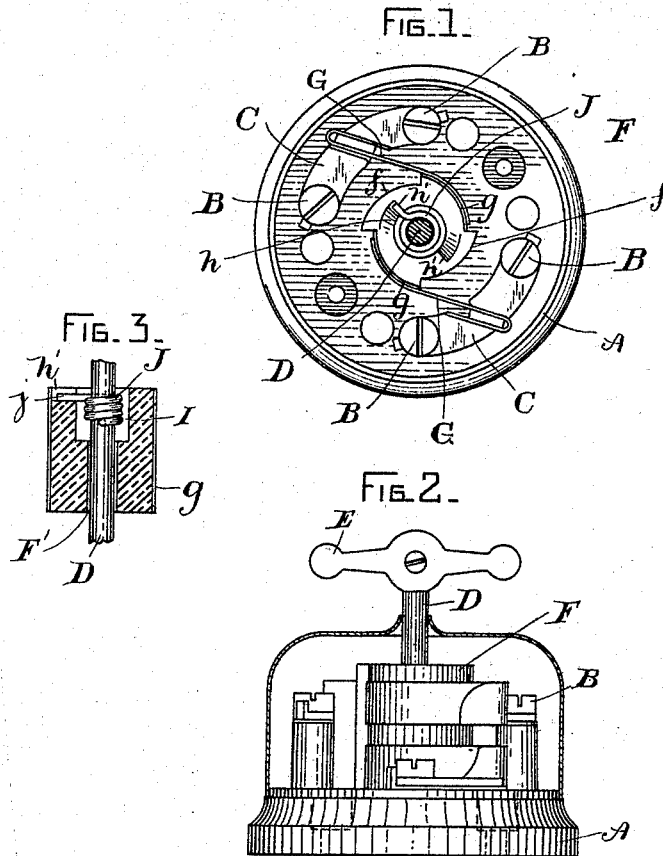


(No Model.)

A. METZGER.
ELECTRIC SNAP SWITCH.

No. 526,725.

Patented Oct. 2, 1894.



WITNESSES.

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UNITED STATES PATENT OFFICE.

AMANDUS METZGER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE
GENERAL ELECTRIC COMPANY, OF NEW YORK.

ELECTRIC SNAP-SWITCH.

SPECIFICATION forming part of Letters Patent No. 526,725, dated October 2, 1894.

Application filed May 11, 1894. Serial No. 510,895. (No model.)

To all whom it may concern:

Be it known that I, AMANDUS METZGER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented a new and useful Improvement in Electric Snap-Switches, of which the following is a specification.

This invention relates to snap switches for electric circuits, and has for its object to provide a snap switch which, in case of the handle being accidentally or otherwise attempted to be turned backward, will not be injured.

Referring to the accompanying drawings, Figure 1 is a plan view of a snap switch constructed in accordance with this invention, showing the casing and handle removed. Fig. 2 is an elevation of the invention with casing in vertical section, and Fig. 3 is a detail, partly in section, of a portion of the switch.

To illustrate the manner of carrying out the invention, the switch is constructed as follows:

A indicates a base of insulating material, provided with the two pairs of binding posts B, each pair being connected together by the metallic plates C.

D indicates a shaft which has its lower end pivoted in the base A and is provided with the handle E. Upon the shaft D is loosely mounted the ratchet plug F of insulating material and preferably of porcelain, having the central hole F' through which passes shaft D and its sides formed with the inclines *f*, alternately covered with the contact plates *g*, over which the spring contacts G, mounted on plates C, slip as the plug F is turned. The plug F is molded in one piece with a longitudinal ratchet face on its side and a ratchet face at one end.

In order that the switch may not be injured by an attempt to turn the handle backward, the construction shown in Figs. 1 and 3 is employed, by means of which the handle E and shaft D can be turned backward without breaking or injuring the switch. The top of plug F is formed with inclines *h* each of which is provided with a shoulder *h'*. Within a recess I in the top of plug F is located the spring J, coiled about the shaft D and having one end secured to the shaft and the other end *j* projecting across one of the

inclines *h* adjacent to its shoulder *h'* and serving as a stop to limit the rotation of the plug F in one direction. It will be seen that by means of this construction and arrangement, if the shaft D be rotated by means of the handle E in a direction to cause the end *j* of spring J to press against a shoulder *h'*, the plug F will be rotated so as to permit the switch to operate; but if the handle E be turned in the opposite direction or backward, the shaft D rotating in the opposite direction, will carry with it the end *j* of spring J away from the shoulder *h'*, and as the rotation continues, cause the end *j* to slip over the inclines and shoulders *h'* without engaging therewith. By this means the shaft D may be continuously rotated backward without operating the switch or injuring it, the plug F remaining at rest.

By having a number of inclines *h* with shoulders *h'*, not only will the end *j* of spring J be raised up as it is carried around from its starting point so as to be brought on a plane above the shoulders *h'*, but also where the handle is accidentally turned backward and it is necessary to operate the switch quickly, the turn of the handle is shortened in bringing it back to operative position, as the end *j* of spring J will not have to travel back the whole distance to its starting point, but only to the first shoulder *h'* it arrives at.

What I claim is—

1. In an electric snap switch, the combination with a handle and pivoted shaft, and a stop for the plug, secured to and vertically movable on the shaft, of a ratchet plug, loosely mounted to turn on the shaft, and spring contacts, said stop engaging the plug to operate the switch when the shaft is turned in one direction and permitting the shaft to be turned freely in the opposite direction without engaging the plug and not operating the switch.

2. An electric snap switch comprising a handle and shaft pivoted to the base, spring contacts, a plug having ratchet sides with alternate metallic plates and insulating faces with which the brushes engage, the plug being loosely mounted to turn on the shaft, and a spring mounted on and secured to the shaft and engaging the plug to rotate it in one di-

rection and to move out of engagement therewith in the opposite rotation of the shaft.

3. An electric snap switch consisting of a handle and its shaft pivoted to the base, a ratchet loosely mounted to turn on the shaft, spring contacts in engagement with the ratchet, and a coiled spring mounted on the shaft and secured thereto with a free end engaging the ratchet to operate it in one direction of rotation of the shaft and out of engagement therewith in the opposite direction of rotation of the shaft, whereby the handle and shaft may be turned backward without affecting the switch.

4. As a new article of manufacture, a ratchet plug for electric snap switches, formed of a cylinder of porcelain or other insulating material molded in one piece with a longitudinal ratchet face on its side, ratchet faces at one end, and a central longitudinal passageway for the handle shaft, with a recess at one end of the passageway and in the end of the plug surrounding said passageway.

5. An electric snap switch, consisting of a handle and pivoted shaft, a spring stop made

in one piece and secured to the shaft, a ratchet plug loosely mounted to turn on the shaft, and spring contacts, said spring stop engaging the plug to operate the switch when the shaft is turned in one direction and permitting the shaft to be turned freely in the opposite direction without engaging the plug or operating the switch.

6. An electric snap switch consisting of a handle and pivoted shaft, a ratchet plug loosely mounted to turn on the shaft, spring contacts; and a spring stop secured to the shaft, movable endwise thereof, and engaging the plug to operate the switch when the shaft is turned in one direction and permitting the shaft to be turned freely in the opposite direction without engaging the plug or operating the switch.

In witness whereof I have hereunto set my hand this 7th day of May, 1894.

AMANDUS METZGER.

Witnesses:

B. B. HULL,

A. F. MACDONALD.