

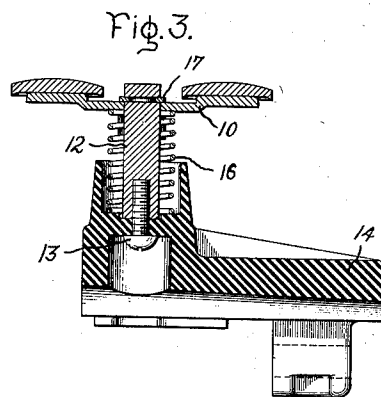
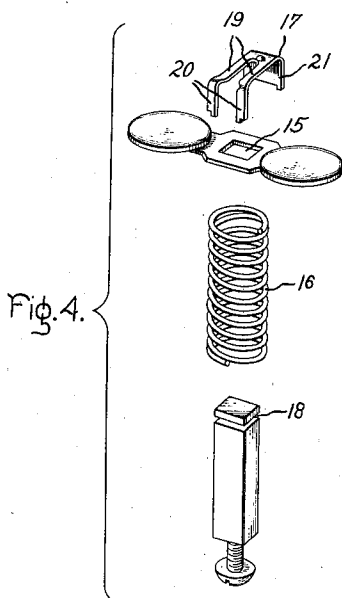
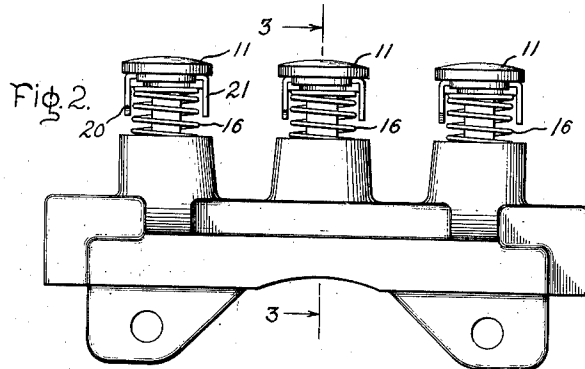
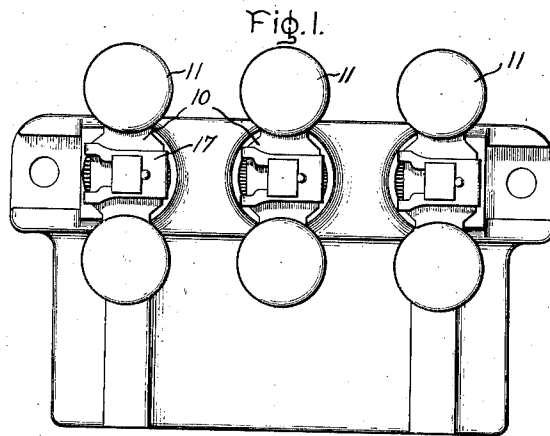
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R. H. SCHMITT

2,139,519

ELECTRIC SWITCH

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UNITED STATES PATENT OFFICE

2,139,519

ELECTRIC SWITCH

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Application July 23, 1937, Serial No. 155,275

3 Claims. (Cl. 200-166)

My invention relates to electric switches, more particularly to switches provided with one or more bridging contact members, and has for its object a simple and reliable, quickly detachable means for securing the bridging member on a support.

My invention is especially useful in the construction of switches of the bridging type of comparatively low amperage capacity such, for example, as may be used in the controlling of small motors, or in interlock contacts carried by a large switch or contactor. Heretofore, such bridging contacts have been mounted on a bar or post support extending through a central opening in the bridging member, the bridging member being biased toward the outer end of the post by means of a helical spring surrounding the post. My invention relates more specifically to means for securing the bridging member on the end of the post, which means is arranged so that it may be readily grasped for insertion or removal.

For more complete understanding of my invention reference should be had to the drawing, Fig. 1 of which is a plan view of a switch contact assembly embodying my invention; Fig. 2 is a side elevation view of the device shown in Fig. 1; Fig. 3 is a sectional view taken along the line 3-3 of Fig. 2 looking in the direction of the arrows, while Fig. 4 is an exploded view of the bridging contact and its supporting parts.

Referring to the drawing, I have shown my invention in one form as applied to a multi-pole switch provided with a plurality of bridging contact members 10 such as may be used, for example, in electro-magnetic switches of small amperage capacity. A switch of this type is shown as described and claimed, for example, in my Patent No. 2,064,632, issued December 15, 1936. Each bridging member is provided on each end with an electric circuit making and breaking contact 11 made of a suitable material such as silver.

Each bridging member is supported on a bar or post 12 which in turn is suitably secured as by a screw 13 to a supporting member 14 made of a suitable electrically insulating material, preferably a molded insulating material. The post 12 is formed to have a cross-section which is non-circular; as shown it is square, to prevent turning of the bridging member 10 thereon. The bridging member is provided with a central aperture 15 having the same shape as the cross-section of the post 12 and slightly larger so that the bridging member fits loosely on the post. It is biased outwardly toward the end of the post against a

stop 17 by means of a helical spring 16 surrounding the post.

In accordance with my invention, this stop 17 constitutes a clip member, suitably stamped from sheet metal material, which cooperates with a peripheral groove 18 in the end of the post. As shown most clearly in Fig. 4, the clip comprises a central portion provided with two prongs 19 which are spaced apart sufficiently to lie in oppositely disposed portions of the peripheral groove 18, as shown in Fig. 3. The clip further consists of end portions 20 and 21 which are bent at substantially right angles with the central portion so as to form a substantially inverted U as seen in Fig. 4. The end portion 20 consists of two prongs which are, however, spaced apart a distance slightly greater than the over-all cross-sectional dimension of the post 12, i. e. somewhat greater than its width. When the clip is inserted in place these end prongs 20 pass on each side of the post. The opposite end 21 of the clip is simply a continuation of the base part to which the two prongs 19 are attached.

The bridging contact is assembled on the post first by placing the spring on the post and then the bridging member put in place and pressed downward for distance below the peripheral groove 18 somewhat greater than the lengths of the end portions 20 and 21. The clip 17 can then easily be slipped in place after which the bridging member is released and forced by the spring outward against the central portion of the clip and between the end portions 20 and 21.

In putting the clip in place it is held by grasping the end 21 which is large enough to be held firmly so that the clip can be handled with certainty and precision although obvious difficulties would result if the central portion 19 only were used.

As thus secured the bridging member itself holds the clip 19 in place by engagement with the prongs 20 although the bridging member has a considerable freedom of movement lengthwise of the post, i. e. a distance somewhat less than the lengths of the end projections 20 and 21.

While I have shown a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made, and I therefore contemplate by the appended claims to cover any such modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. In an electric switch, a bridging contact member provided with an aperture, a supporting post for said contact member loosely fitting in said aperture, said post being provided with oppositely disposed grooves at one end, spring means biasing said contact member toward the end of said post, and a forked member fitting in said grooves and forming a stop for said contact member, said forked member being provided with laterally extending portions embracing said contact member.
2. In an electric switch, a contact member provided with an aperture, a supporting post for said contact member loosely fitting in said aperture, said post being provided with oppositely disposed grooves in one end, spring means biasing said contact member toward said end of said post, and a forked member fitting in said grooves and forming a stop for said contact member, said forked member being provided with a laterally extending portion at each end, one of said end portions comprising two prongs spaced apart a

distance slightly greater than the cross-sectional dimension of said post.

3. In an electric switch, a bridging contact member provided with a central non-circular aperture, a supporting post for said bridging member loosely fitting in said aperture so as to secure said bridging member in a definite angle or position thereon, said post being provided with a peripheral groove in one end, a helical spring surrounding said post and biasing said bridging member toward said end of said post, and a forked clip fitting in oppositely disposed portions of said groove and forming a stop for said bridging member, said clip being provided with laterally extending portions at its ends embracing said post and said spring whereby said clip may be readily grasped for insertion and removal, one of said end portions comprising two prongs spaced apart a distance slightly greater than the cross-sectional dimension of said post.

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