No. 750,993. PATENTED FEB. 2, 1904.

G. MONSON.

ELECTRIC SWITCH.

APPLICATION FILED JULY 25, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

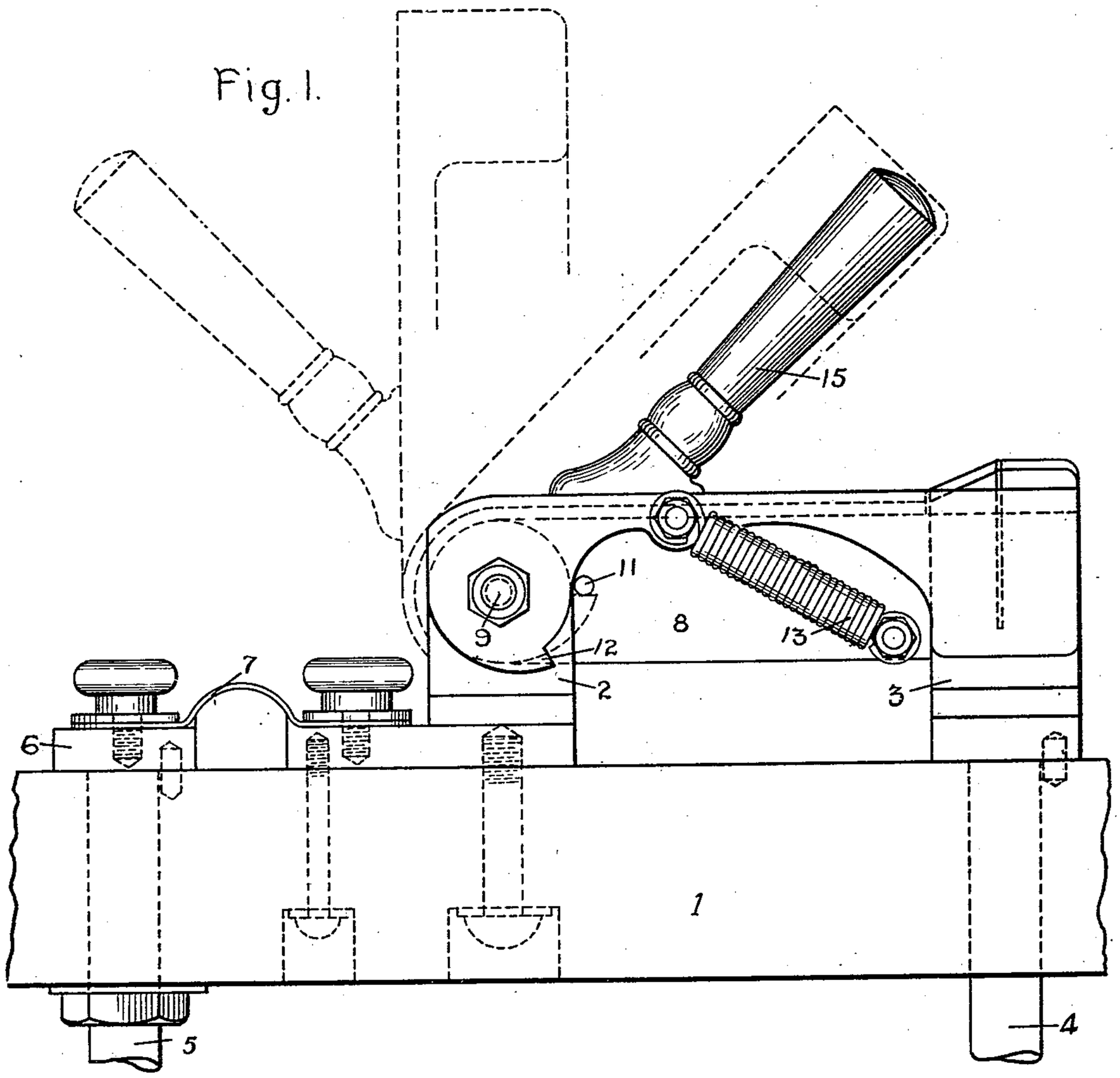
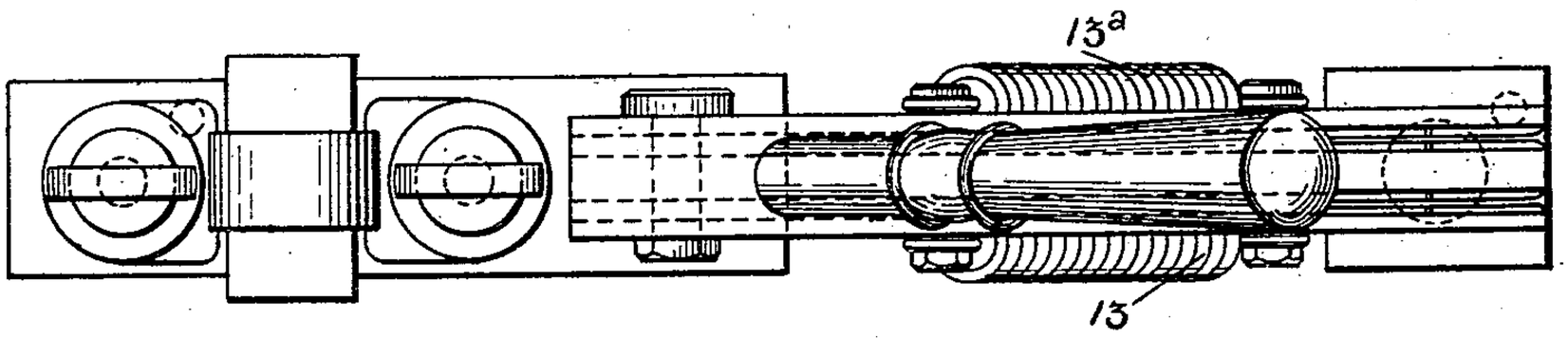


Fig. 2.



Witnesses;

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No. 750,993. PATENTED FEB. 2, 1904.

G. MONSON.

ELECTRIC SWITCH.

APPLICATION FILED JULY 25, 1901.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

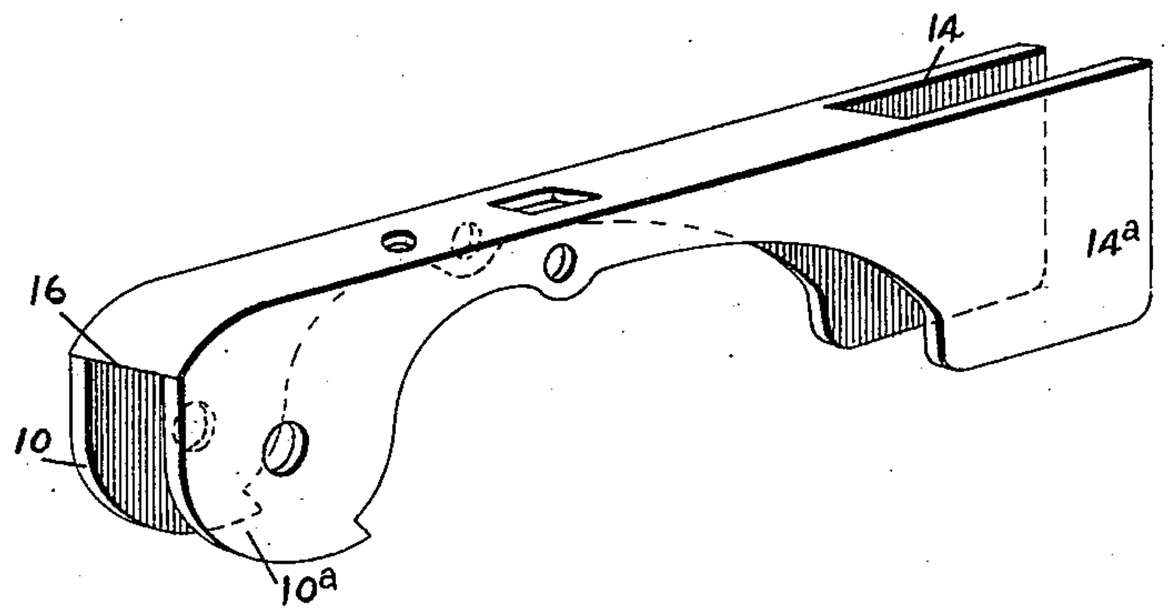


Fig. 4.

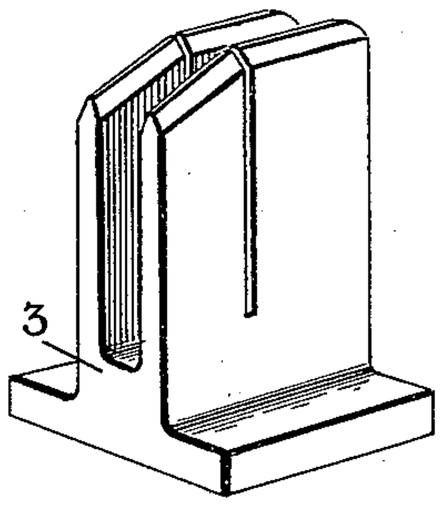
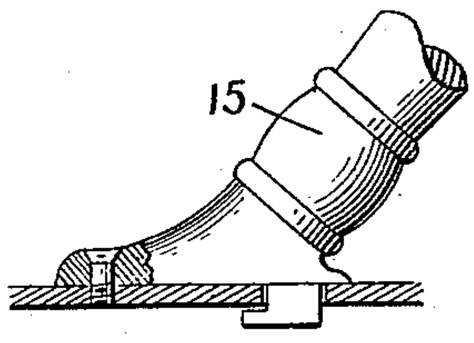


Fig. 5.



Witnesses:
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George Monson,
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No. 750,993. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

GEORGE MONSON, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 750,993, dated February 2, 1904.

Application filed July 25, 1901. Serial No. 69,660. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MONSON, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to electric switches of that type in which a rapid opening of the circuit is effected by putting under tension a spring between the operating-handle and the switch-blade during a preliminary movement of the handle, by which the blade is swiftly shifted out of contact with the clips, thereby reducing the damage from arcing by effecting a quick long break.

My improvements relate to the mechanical construction of the switch by which its action is rendered better and a greater current-carrying capacity is afforded.

One of the important features of a switch of this kind is the quality of contact between the switch-blade and the clip at the closing-point of the circuit. Commonly the switch-blade is forced between the jaws of a spring-clip, and repeated use of the switch strains the jaws of the clip so that it does not firmly hug the blade at all points of contact-surface, thereby producing a higher current-density at some points than at others and interfering with the perfection of contact.

One feature of my switch involves a cure for this difficulty, which I effect by providing an auxiliary blade carrying contact-pieces which embrace the outer surfaces of the clip-jaws, the main switch-blade engaging the inner surfaces. By this means I greatly increase the carrying capacity of the switch.

Another feature of my invention relates to the means for knocking loose the switch-blade from engagement with the clips after the spring has been put under tension. This I effect by providing the auxiliary blade, to which one end of the spring is connected and which is solidly connected with the operating-handle, with a lug or projection which after a determinate range of movement comes into contact with a stud, pin, or lug fastened to the main switch-blade and positively forces said blade from engagement with the clip.

My invention involves also a further detail by which the auxiliary blade is provided with a wall which engages the pivot-post of the switch when the latter is wide open and thus forms a positive stop for the switch in its open position.

The novel features of the invention will be more definitely indicated in the claims appended to the specification.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of a switch embodying my improvements, showing in dotted lines the different positions of the switch-blades. Fig. 2 is a top plan view. Fig. 3 is a detail perspective view of the auxiliary switch-blade. Fig. 4 is a detail perspective view of the terminal clip, and Fig. 5 is a detail view showing the mounting for the operating-handle.

1 represents a base of any suitable insulating material, preferably slate or marble or similar fireproof material, upon which is mounted a metal pivot-post 2, lagged fast by bolts or screws extending through the supporting-board, and 3 represents a terminal clip fixed on the supporting-board a suitable distance from the pivot-post and connected with one of the circuit-terminals, 4. The other circuit-terminal, 5, may be connected directly with the pivot-post or with an auxiliary metal plate 6, provided with means for connecting a fuse-clip 7 in circuit with the switch. The jaws of the clip are beveled at the edge, as indicated in Fig. 4, to facilitate entrance of the switch-blade. The blades are journaled on a pin or stud 9, fastened to the pivot-post. The auxiliary blade is in the form of a shell, as indicated in Fig. 3, provided at the pivot end with two ears 10 10^a, which overlap and engage with the lateral faces of the main blade 8, the ears being perforated to receive the stud 9, the combined blade being held in place by a nut, as indicated in Fig. 1.

A pin 11 is fastened in a hole drilled in the main blade in position to be struck by shoulders 12, one on each ear, after the auxiliary

blade has made a sufficient movement to put opening-springs 13 13ª under the required tension. One of these springs is mounted on each side of the switch-blade, one end being connected to the main blade and the other to the auxiliary blade. The free end of the auxiliary blade is provided with two contact-plates 14 14ª, (see Fig. 3,) adapted to overlap the outside faces of the clip 3. The main blade 8 passes between the two jaws of the clip. At a point intermediate between the pivoted end and the free end of the auxiliary blade is secured an operating-handle 15 in any suitable manner—as, for example, that shown in Fig. 5. A shoulder 16 on the pivoted end of the auxiliary blade acts as a stop to limit the opening movement of the switch by being shifted into engagement with the edge of the pivot-post, as indicated in Fig. 1.

In opening the switch the handle 15 is raised, first putting the springs 13 13ª under tension, then bringing the shoulders 12 against the pin 11 and positively forcing the main blade out of the switch-jaws. The reaction of the springs then quickly draws the main blade away from the clip, and thus reduces the sparking. In closing the switch the main blade enters between the jaws of the clip and the auxiliary blade passes over the outer faces thereof, thus tending to maintain the jaws in a state of parallelism and affording an excellent contact over widely-distributed areas, relieving any given portion of the contact-surface of high-current density.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An electric switch, having two blades both pivoted on the same stud, one blade having overlapping integral ears at the stud and clip ends, a two-jawed stud and clip snugly embraced on the internal and external faces respectively by the two blades, a spring connection between the blades intermediate the ends, and an operating-handle on the upper blade.

2. An electric switch having two blades both pivoted on the same stud, one blade having overlapping, integral ears at the stud and clip ends, a two-jawed stud and clip snugly embraced on the internal and external faces respectively by the two blades, a spring connection between the blades, a projection on one blade to limit the tension of the spring and an operating-handle on the upper blade.

In witness whereof I have hereunto set my hand this 23d day of July, 1901.

GEORGE MONSON.

Witnesses:
BENJAMIN B. HULL,
FRED RUSS.