

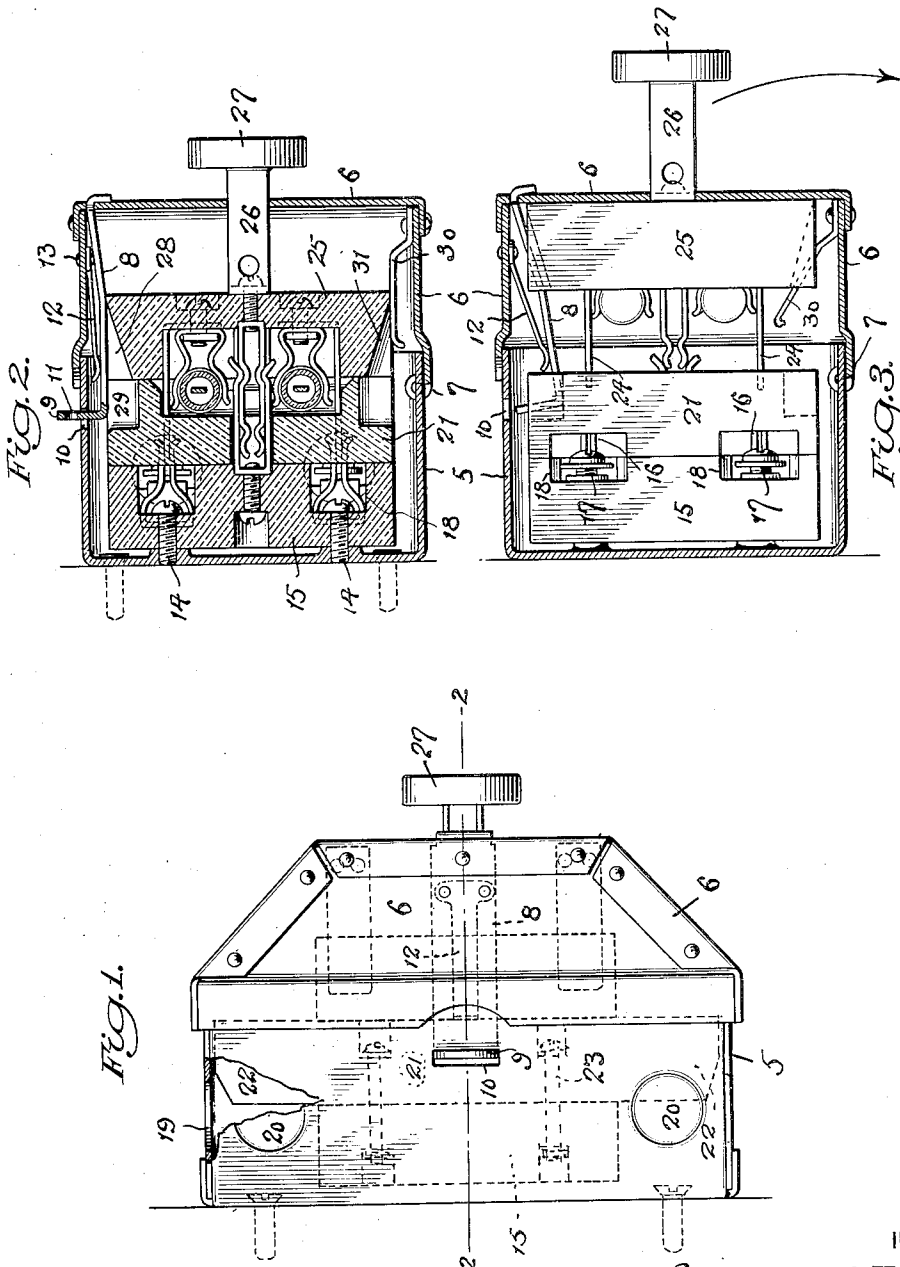
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C. A. BATES

ELECTRIC SWITCH

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UNITED STATES PATENT OFFICE.

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ELECTRIC SWITCH.

Application filed November 29, 1921. Serial No. 518,632.

To all whom it may concern:

Be it known that I, CLARENCE A. BATES, a citizen of the United States of America, residing at Fairfield, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

My invention relates to electric switches, and particularly to switches for controlling relatively heavy current. The particular object of my invention is to provide an entrance switch of the general type illustrated in the copending application of Ullrich filed May 12, 1921, Serial No. 468,909, having certain features of improvement thereover hereinafter described or shown in the accompanying drawings, in which—

Fig. 1 is a broken side elevation of a switch in which my invention is embodied in one form;

Fig. 2 is a section on the line 2—2, Fig. 1; and

Fig. 3 is a view on the same section, but showing the porcelain body elements of the switch in elevation.

The present construction consists of a metal housing or casing comprising a box-like frame and having a box body 5 of greater length than width, and preferably rectangular in shape, with which cooperates the cover 6 of corresponding contour, but of a truncated, pyramidal shape, hinged at 7 to one of the longer sides of the box body. On its opposite side the cover carries a spring tongue 8 projecting below the lower margin of the cover and having an offset lug 9 adapted to pass through a hole 10 in the front wall of the casing 5 to lock the cover shut. The lug 9 may be pierced at 11 to receive the shackle of a padlock or other means for sealing the casing in closed condition. Co-operating with the strap 8 is a spring plate 12 secured at 13 to the front wall of the cover and bearing at its free end against the lower portion of the strap 8, its effort being in a direction to force the lug 9 inward to disengage it from the hole 10 in the box body.

Mounted within the box body by means of screws 14, is the insulating base block 15 of the switch, carrying the fixed contacts 16 and the associated wire terminals 17 arranged at the ends of the block in suitable channels 18. The ends of the block 15 are preferably spaced a sufficient distance from

the ends of the box body 5, not only to accommodate the usual entrance bushings (not shown), but also to permit ready manipulation of the wires entering either through the end apertures 19 or the side apertures 20 in the box body. Overlying the base 15 is an insulating shield in the form of a block 21, which is of substantially the same length as the interior of box body, so that when it is adjusted in position after the wiring connections have been made, its overhanging end wings 22 render it impossible for the workman to insert his fingers or to unintentionally come in contact with the current-carrying connections when the switch becomes opened. The shield 21 may be secured in position on the base 15 in any suitable way, as by means of screw bolts 23.

The switch blades 24 which cooperate with the contacts 16 are carried by a vertically movable insulating block 25, to which is secured the operating handle 26 passing through the cover 6 and provided with an external knob 27 for manipulation. At a point registering with the spring strap 8, the block 26 is provided with a beveled channel 28, in which the strap is accommodated as illustrated in Fig. 3 when the switch is opened by the raising of the block 25. When the switch block 25 is thus lifted, the combined action of the spring strap 8 and its associated spring 12 retracts the lug 9 at the lower end of the strap from its engagement in the hole 10 in the side of the casing 5, thus permitting the cover to be opened after the circuit is broken. A clearance recess 29 in the shield 21 accommodates the lower end of the strap on its inward movement. When the switch block 25 is thus lifted to open the switch, it is maintained in its lifted position not only by the engagement of the strap in the beveled recess 28, but also by a cooperating spring strap 30, on the opposite side of the cover, which enters a beveled recess 31 in the block 25. It will be obvious that after the cover has been closed, the downward movement of the switch block 25 forces the strap 8 outward and causes the lug 9 to again pass through the aperture 10 in the side wall of the box, thus again locking the switch casing against access to the conductors therein until the switch has been again opened by the lifting of the block 25. If the switch block be moved down toward circuit-closing

position before the cover is closed, the lug 9 is displaced outward into such position that it forms a stop which bears upon the upper edge of the side wall of the box body and prevents the blades 24 from coming into engagement with the contacts 16. In short, the strap 8 and its lug 9 serve the double function of preventing the switch from being closed unless the cover 6 is fully closed in the open-circuit position of the block 25, and secondly, of locking the cover 6 against opening movement so long as the switch is in circuit-closing position. This is an added feature of safety of marked value, which renders the switch installation fool-proof—a highly desirable characteristic, since the switch is ordinarily installed in house wiring and systems where it is likely to be operated by those unfamiliar with the danger of tampering with current-carrying appliances.

The construction is simple and efficient in the form shown, which may be variously modified, however, without departing from what I claim as my invention.

I claim—

1. An electric switch comprising a metallic casing, having a fixed body member and an openable cover, an insulating switch base mounted within the casing, a movable switch block arranged within the casing cover, in combination with a lock element carried by the cover and automatically operated by the actuation of said movable switch block and serving to lock the casing cover in closed position when said movable block is in circuit-closing position.

2. An electric switch comprising a metallic casing, having a fixed body member and an openable cover, an insulating switch base mounted within the casing, a movable switch block arranged within the casing cover, in combination with a lock element carried by the cover and automatically operated by the actuation of said movable switch block and serving to lock the casing cover in closed position when said movable

block is in circuit-closing position, together with spring means automatically releasing said casing lock when said movable switch block is shifted to open-circuit position.

3. In an electric switch, a metallic casing, an insulating switch base secured within said casing, an openable cover for said casing, a movable switch block having its blades cooperating with the contacts on the switch base, and movable into and out of circuit-closing position while the cover is closed, together with a spring casing lock engaged and automatically operated by said movable switch block on the displacement of the latter, substantially as described.

4. In an electric switch, a metallic casing, an insulating switch base secured within said casing, an openable cover for said casing, a movable switch block having its blades cooperating with the contacts on the switch base, and movable into and out of circuit-closing position while the cover is closed, together with a spring casing lock automatically operated by the displacement of said movable switch block, said switch block being maintained in open-circuit position by its engagement with said spring casing lock.

5. In an electric switch, a metallic casing, an insulating switch base secured within said casing, an openable cover for said casing, a movable switch block having its blades cooperating with the contacts on the switch base, and movable into and out of circuit-closing position while the cover is closed, together with a spring casing lock automatically operated by the displacement of said movable switch block, said switch block being maintained in open-circuit position by its engagement with said spring casing lock, together with an associated spring member cooperating with another portion of said movable switch block to hold the latter in open-circuit position.

In testimony whereof I have signed my name to this specification.

CLARENCE A. BATES.