Feb. 1, 1938. J. FUCHS 2,106,837

ELECTRIC SWITCH

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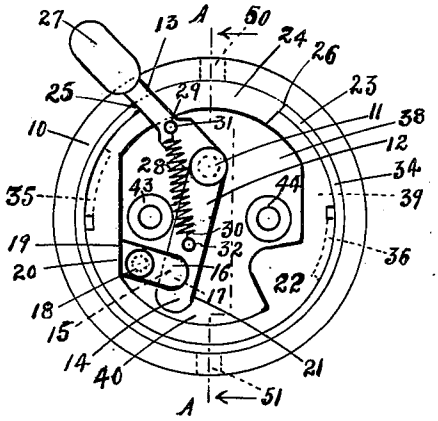


Fig. 1.

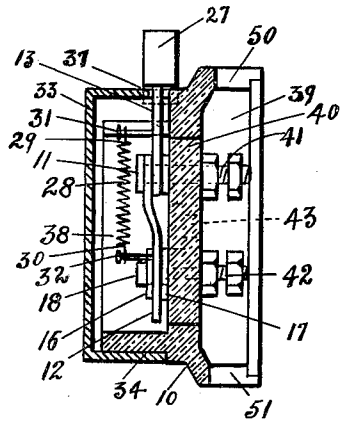


Fig. 2.

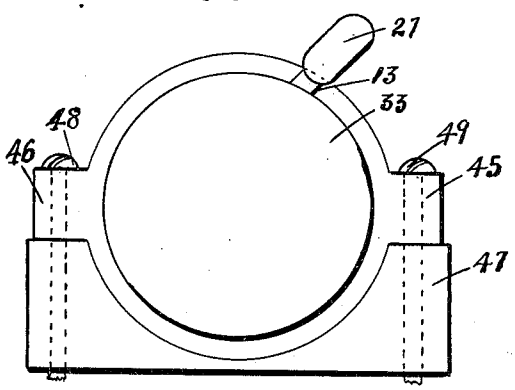


Fig. 3.

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ELECTRIC SWITCH

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3 Claims. (Cl. 200—67)

My invention relates in its broadest aspect to improvements in an electric switch, such that the opening and closing of the switch blade therein will be accomplished quickly and positively on movement of an operating handle.

Therefore the object of this invention is to provide a simple yet highly efficient electric switch.

Additional features of the present invention will be fully described in the course of this specification.

The invention and its aims and objects will be clearly understood from the following description, taken in connection with the accompanying drawing, which illustrates convenient constructional forms of this invention by way of example only, the true scope of the invention being more fully pointed out in the appended claims.

Figure 1 is a front view in elevation showing the interior of the switch, the cover being removed.

Figure 2 is a sectional view on line A—A in Figure 1.

Figure 3 is a front view in elevation of a modified form of the invention, showing the insulator block with diametrically aligned ears and a removably mounted saddle.

The same part is designated by the same reference character wherever it occurs throughout the several views.

In the practice of my invention I provide an insulating casing or block 10 of suitable configuration, having therein a pivoted terminal post or common fulcrum 11 on which is pivotally mounted a circuit interrupting blade 12 and an actuating member 13. The free end 14 of the circuit interrupting blade is provided with an inclined leading edge 15 which cooperates with the switch jaws 16 and 17 associated with a terminal post 18 that secures the jaws in place in the insulator block. The interrupting blade may be deformed to neutralize the lifting force of the tension of the helical spring on blade.

The edge 19 distanced from the entering throat of the switch jaws contacts with the wall 20 in the casing. This wall provides an abutment for the switch jaws proper and takes the thrust of the circuit interrupting blade. The edge 21 of the circuit interrupting blade, when in open position contacts the wall 22 in the casing, such contacting thereby preventing further travel of the blade.

The casing wall 23 has a segmental section 24 removed therefrom to provide limiting stops 25 and 26 which limit the travel of the actuating member. Positioned on the actuating member and solid therewith is an insulating means 27 for the purpose of insulating the handle.

The circuit interrupting blade is spring biased to open and closed position by the resilient means or helical spring 28 which is secured to the actuating means at its one end 29 and at its other end to the circuit interrupting means as at 30. It will be noted that the spring is held in position by means of the pins or studs 31 and 32.

A cover 33 is insulated in the manner usually employed in the art and fits upon the outwardly shouldered portion 34 of the casing. The shoulder is provided with lateral races 35 and 36 for reception of bayonet points in the cover, not shown but well understood in the art.

The cover is removed by breaking the bayonet point joint. The cover and the block when in assembled position constitute a substantially closed chamber. The cover has a portion 37 removed therefrom so that when it is mounted in assembled relation on the insulator, it coincides with the segmental opening in the insulator block and permits the handle to travel back and forth therein. The insulator block is divided into two compartments, an upper compartment 38 and a lower 39 having a floor 40 interposed therebetween. The pivoted mounting or common fulcrum 11 passes from the upper chamber through the floor and projects into the lower chamber where it provides a binding screw 41 for a circuit wire. The terminal post 18 also extends from the upper into the lower chamber where it provides a binding screw 42 for a circuit wire.

The insulating block is provided with laterally spaced openings 43 and 44 for the reception of screw or other suitable means to secure the block to place.

The block may be provided with lateral diametrically opposite ears or lugs 45 and 46 for the purpose of supporting the block in a receptacle as is common in construction work.

A removably mounted saddle 47 may be used with the block having the aligned ears to provide a compact foundation for the block to prevent displacement thereof when mounted on edge, and to further position the block so that the actuating lever may be operated without interference on its fulcrum.

The saddle may be permanently united with the block by means of screws or nails 48 and 49.

In the lower chamber of the block there is provided two openings 50 and 51 for the purpose of allowing conducting wires, not shown but well understood in the art, to be carried to the common fulcrum 11 and the terminal post 18. Ob-

viously the openings **50** and **51** may be positioned in any suitable position in the lower chamber.

Since the operation of the switch and the means by which the various objects have been given and described, in connection with the description of the mechanism constituting the switch, it is believed that a résumé of the switch is unnecessary.

While I have herein shown and described a preferred arrangement, it will be readily understood that changes and modifications therein may be found desirable or essential in meeting the various exigencies of use, and I desire to be understood as reserving the right to make any and all such changes or modifications as may be found desirable or essential, in so far as the same may fall within the scope of the invention as expressed in the accompanying claims when broadly construed.

Having thus described my invention, what I claim is:—

1. In a switch, an insulating chambered block containing an upper and lower chamber, a floor intermediate the aforesaid chambers, a common fulcrum extending from the upper chamber, into the lower chamber through the floor, two levers mounted at one end on the common fulcrum in the upper chamber, a pair of parallel cheeks forming jaws located at an angle relative to the fulcrum, the jaws adapted to receive and guide one of the levers mounted on the common fulcrum, a securing bolt passing through the jaws and projecting into the lower chamber, an upstanding pin centrally located in the lever adjacent the end remote from the fulcrum, an upstanding pin in the other lever adjacent the common fulcrum a helical spring mounted on the upstanding pins and adapted to exert controlling action upon the lever entering the jaws on actuation of the other lever, the last mentioned lever having an insulated end portion, the projecting portion of the fulcrum and the projecting portion of the bolt securing the jaws, providing connecting means for electric-current distributing wires in the lower chamber, and a shell cover in detachable connection with the upper chamber.

2. In a switch, an insulating chamber block containing an upper and lower chamber, integral symmetrically disposed lugs one on each side of the insulating block, each lug having a bore therein, the lugs adapted to support and provide anchorage for the block when placed on edge in a receptacle, a floor intermediate the aforesaid chambers, a common fulcrum extending from the upper chamber, into the lower chamber through the floor, two levers mounted at one end on the common fulcrum in the upper chamber, a pair of parallel cheeks forming jaws located at an angle relative to the fulcrum, the jaws adapted to receive and guide one of the levers mounted on the common fulcrum, a securing bolt passing through the jaws and projecting into the lower chamber, an upstanding pin centrally located in the lever adjacent the end remote from the fulcrum, an upstanding pin in the other lever adjacent the common fulcrum, a helical spring mounted on the upstanding pins and adapted to exert controlling action upon the lever entering the jaws on actuation of the other lever, the last mentioned lever having an insulated end portion, the projecting portion of the fulcrum and the projecting portion of the bolt securing the jaws, providing connection means for electric-current distributing wires in the lower chamber, and a shell cover in detachable connection with the upper chamber.

3. The combination of claim 2 further characterized in that the insulated chambered block is provided with a removably mounted saddle cooperating with the symmetrically disposed lugs to provide a compact foundation having a plane surface for the block that will accurately place the block when mounted on edge in a narrow space so as to preclude interference with the proper actuation of the actuating lever of the switch, the saddle having bores coinciding with the bores in the lugs to receive fastening members to hold the block and saddle in place when permanently mounted.

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