Feb. 27, 1923. 1,447,104.

F. J. SKODA.

ELECTRIC SWITCH.

FILED AUG. 1, 1922.

Fig. 1.

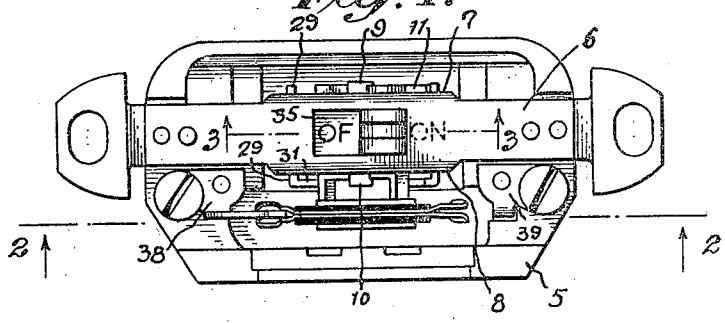


Fig. 2.

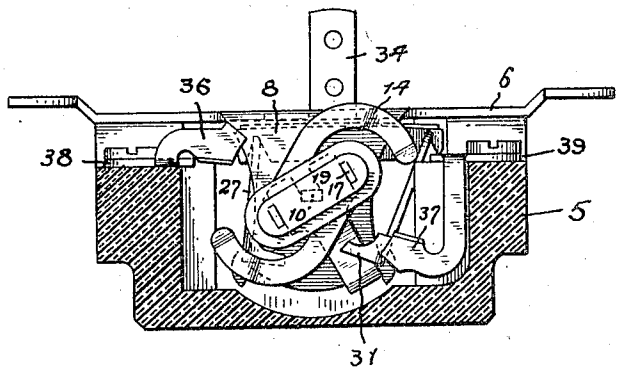


Fig. 3.

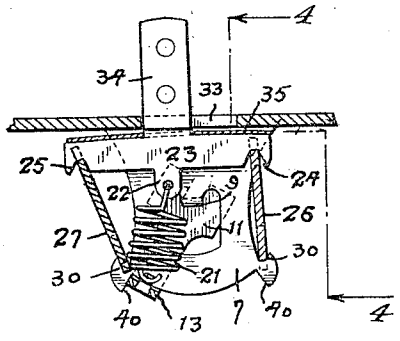
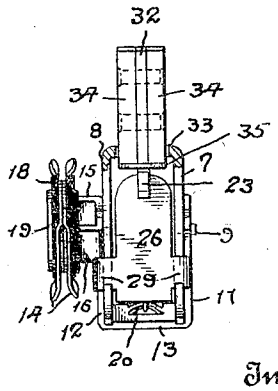


Fig. 4.



Inventor

FRANK J. SKODA

By his Attorneys

Howson and Howson

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UNITED STATES PATENT OFFICE.

FRANK J. SKODA, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRYANT ELECTRIC COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC SWITCH.

Application filed August 1, 1922. Serial No. 578,869.

To all whom it may concern:

Be it known that I, FRANK J. SKODA, a citizen of the United States of America, residing in Bridgeport, 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 electric switches of the toggle mechanism type, the object of my invention being to provide a simple and efficient switch construction which may be readily manufactured and assembled, and has the advantage of extreme compactness, while at the same time affording wide break between the movable switch blades and the stationary contacts, as well as insuring the positive initiation of the throw of the oscillating switch bar.

In the accompanying drawings—

Fig. 1 is a plan view of a switch in which my invention is embodied in one form;

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

Fig. 3 is a section on the line 3—3, Fig. 1; and

Fig. 4 is a section on the line 4—4, Fig. 3.

The invention is here shown in a single pole flush switch, but the mechanism to which the invention relates is of course applicable to switches of other types, and is shown in this particular form merely by way of example. The mechanism is mounted in a shallow cup-shaped insulating body 5, the open top of which is spanned by a supporting yoke 6 having offset side plates 7 and 8 which constitute the switch frame. Outwardly projecting lugs 9 and 10 struck from the side plates afford bearing abutments against which are seated the open fork bearings of the legs 11 and 12 of the yoke 13 which carries the switch blade 14, preferably insulated therefrom. The use of independent rivets for securing the switch blade to the yoke is obviated by offsetting shouldered lugs 15 and 16 from the leg 12 of the yoke, the reduced ends 17 of the lugs passing through suitable insulating washers 18 and guard plates 19, and being upset against the outer plate 19.

A tongue 20 struck from the head of the yoke 13 affords an engagement for one end of the switch operating pull spring 21, the other end of which is connected to the downwardly extending lug 22 on the bodily displaceable rocker plate 23. The latter, which may be struck from sheet metal, and works in a plane substantially parallel to those of the plates 7 and 8, comprises a pair of laterally extending arms, the lower edges of which are notched at 24 and 25 to receive and freely engage the correspondingly notched upper ends of the pivoted strut plates 26 and 27 upon which it is supported. At their lower ends the struts 26 and 27 are provided with laterally extending bearing lugs 29 adapted to rest in notches 30 formed at the lower ends of the frame plates 7 and 8. A positive "kickoff" or initiation of the throw of the contacts is secured by dogs 31 offset at right angles to the bearing lugs 29 and engaging the lower edges of the lugs 15 and 16 of the switch bar yoke. The arrangement of the parts is such that in closed circuit position the lug 16 of the switch bar yoke lies in the path of the dogs 31 as the latter is swung upward when the strut 26 rocks on its pivot 30 as the rocker 23 is shifted to throw the switch to open-circuit position. Thus, the frictional engagement between the blades and the fixed contacts of the switch is positively broken should the tension of the spring be insufficient to accomplish this result.

To actuate the rocker plate 23, it is provided with an upwardly extending fin 32 passing through a slot 33 in the yoke 6. Any suitable handle means may be provided, such for instance as plates of insulation 34 arranged on opposite sides of the fin 30 and riveted thereto. Preferably, the insulating plates 34 extend into the slot 33 and their engagement with the sides of the latter prevent lateral displacement of the rock lever. The slot opening 33 may be utilized for the display of "on" and "off" legends on an indicator plate 35 resting on the upper edge of the rocker plate 33 and held in position by the insulation 34 riveted to the fin 32.

The stationary contacts 36 and 37 of the switch may be of any suitable type, and are here shown integral with the binding screw plates 38 and 39, from which they are offset.

The switch frame and all of the moving parts of the switch may be struck from sheet metal, and are readily assembled. The mechanism is efficient and its operation is readily understood. Upon the movement of the rocker plate 33 in one direction, the lug 22 to which the upper end of the switch

spring 21 is attached, is shifted from one side to the other of the axis of oscillation 9—10 of the switch yoke 13. At the same time the tension of the spring is increased and as the lug 22 crosses the axis of oscillation the switch bar is snapped from one position to the other with a quick throw. Its arc of travel is limited by the stop faces 40 formed in the lower margins of the side plates 7 and 8 of the frame, while the throw of the rocker 23 is limited by the extent of the slot 33 in the yoke 6.

Various modifications in details of construction and operation will readily occur to those skilled in the art, without departing from what I claim as my invention.

I claim—

1. In an electric switch, a pivoted switch bar, a bodily displaceable rocker, a pair of rocking struts on which said rocker is pivotally supported, a switch spring operatively engaged between the rocker and switch bar, and means for shifting the rocker bar to shift the end of the switch spring engaged therewith across the axis of oscillation of the switch bar.

2. In an electric switch, a pivoted switch bar, a bodily displaceable rocker, a pair of rocking struts on which said rocker is pivotally supported, a switch spring operatively engaged between the rocker and switch bar, and means for shifting the rocker bar to shift the end of the switch spring engaged therewith across the axis of oscillation of the switch bar, in combination with means associated with at least one of the rocking struts for positively engaging the switch bar to initiate its throw in one direction.

3. In an electric switch mechanism, a pivoted switch bar, a bodily displaceable rocker, a pair of rocking struts on which the rocker is pivotally supported, and means for shifting said rocker bodily in a direction substantially at right angles to the axis of oscillation of the switch bar.

4. In an electric switch mechanism, a pivoted switch bar, a bodily displaceable rocker, a pair of rocking struts arranged on opposite sides of the axis of oscillation of the switch bar and on which the rocker is pivotally supported, and means for shifting said rocker bodily in a direction substantially at right angles to the axis of oscillation of the switch bar.

5. In an electric switch mechanism, a pivoted switch bar, a bodily displaceable rocker, a pair of rocking struts on which the rocker is pivotally supported, and means for shifting said rocker bodily in a direction substantially at right angles to the axis of oscillation of the switch bar, in combination with a pull spring operatively engaged between said rocker and switch bar.

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

FRANK J. SKODA.