

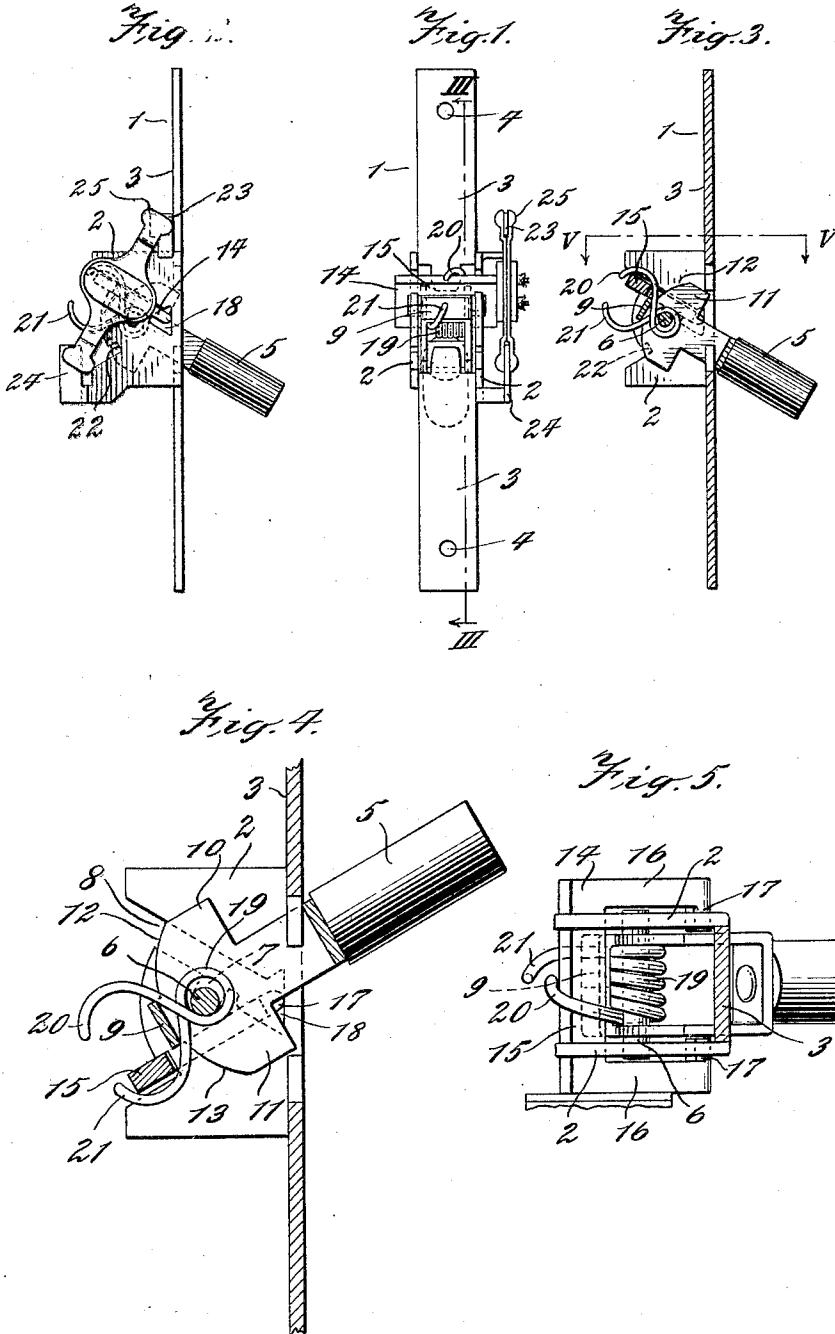
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ELECTRICAL SWITCH

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## UNITED STATES PATENT OFFICE.

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## ELECTRICAL SWITCH.

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My invention relates to electrical switches and particularly to so-called snap switches.

I have devised a snap switch which is simple in construction and reliable in operation and the same will be better understood by reading the following description taken in connection with the accompanying drawings forming a part thereof, and in which:

Fig. 1 is a top plan view of the switch;

Fig. 2 is a side view of the switch;

Fig. 3 is a sectional view on line III—III of Fig. 1;

Fig. 4 is an enlarged view similar to Fig. 3; and

Fig. 5 is an enlarged view on line V—V of Fig. 3.

The switch comprises a frame 1 having side members 2 and base member 3. The members 2 and 3 may be integral or the frame may be made up by suitably securing the side members to the base member. The base member is provided with openings 4 for purposes of attaching the switch to the wall or other suitable support. The side members 2 are parallel with each other and spaced apart a distance sufficient to accommodate the parts about to be described. An actuating member 5 is pivotally connected with the side members 2 by a pivot pin 6 which is securely fastened in the actuating member 5 and projects outwardly therefrom at each side into pivot openings 7 in the sides 2. Each opening 7 communicates with a slot 8 in a side member so that in assembling the switch the ends of the pivot pin 6 may be passed down the slots 8 and into the pivot openings 7. The actuating member 5 is provided with a cross piece 9 on the other side of pin 6 from the handle, and also with two wings 10 and 11 substantially at right angles to the axis of the actuating member. Cam surfaces 12 and 13 are provided on the wings 10 and 11, respectively, for a purpose which will soon appear.

A snap member 14 is pivotally connected with the frame and in the specific instance shown this connection is secured by making the member 14 out of a stamping having a top cross piece 15, side pieces 16 and pivot members 17, as best shown in Fig. 5. The member 14 may be placed in position by passing the pivot members 17 down the slots 8 into the openings 18 provided for them in the frame 1. The openings 18 in the side members 2 are preferably triangular in shape, as shown in Fig. 2, and are somewhat

larger than the pivot members 17 so that the member 14 is free to move toward and away from its pivotal connection with the frame. A coil spring 19 is placed around the pivot pin 6 and the ends 20 and 21 of the spring are left open and are so arranged that they alternately engage the cross piece 15 of the snap member 14. The side members 2 are each provided with an additional slot 22 in which cross member 15 of the snap member 14 rests when in one of its extreme positions. When in the other extreme position this member rests in the slots 8. In each case the end 20 or 21 of the spring 19 (depending upon the one which is in engagement therewith at the time) tends to hold the member 14 in the slot.

The operation of the device is as follows: When the parts are as shown in Fig. 4 the member 15 is in the slots 22 and the end 21 of the spring tends to hold the member in the slots. Upon moving the actuating member 5 in the direction of the arrow, the cross piece 9 thereof engages the end 20 of the spring and moves the spring in a clockwise direction, thereby putting the spring under tension. The member 15 remains in the slots until the cam surface 13 on the actuating member engages the under side of the member 15 and forces the same outwardly from its pivotal connection and out of the slots, whereupon the end 21 of the spring causes the member 14 to snap in a clockwise direction against the upstanding portions of the sides 2 and into the slots 8. In moving the actuating member 5 in the opposite direction exactly the reverse operation takes place and the member 14 is snapped back again to the position shown in Fig. 4.

Circuit contacts 23 and 24 are placed on the side members 2 and a metal contact member 25 is mounted on the circuit-closing member 14 so that when the member 14 is in the position shown in Fig. 2 the member 25 closes the contacts and the circuit is closed. When it is moved to the other position the contacts are opened and the circuit is of course broken. It will be obvious that terminals, posts or other electrical connections join to each of the contact points 24 and 25 and that these are insulated from one another. Any suitable type of contacts may be used and any desired arrangement made as to their closing and opening without departing from the spirit of my invention.

The frame 1 may be made entirely of in-

5 sulating material or of metal, or it may be made partly of metal and partly of insulating material, and the other parts of the switch may be made of any suitable materials without departing from my invention.

I claim:

1. In an electrical switch, the combination of a frame, a circuit-closing member having pivotal engagement with said frame, an actuating member for said circuit-closing member also pivotally engaging said frame, a spring for snapping said circuit-closing member around its pivot and retaining said circuit-closing member in position, means for detaining said circuit-closing member in its extreme positions and means for releasing said circuit closing member from said detaining means to permit said circuit-closing member to snap from one position to another.

2. In an electrical switch, the combination of a frame, a circuit-closing member having pivotal engagement with said frame, an actuating member for said circuit-closing member also pivotally engaging said frame, an open ended coil spring around the pivot of the actuating means and acting to snap said circuit-closing member from one position to another, and to retain the circuit closing member in position, means for detaining said circuit-closing member in its extreme positions and means operated by the actuating means for releasing said circuit closing member from the detaining means.

3. In an electrical switch, the combination of a frame, a circuit-closing member having pivotal engagement with said frame, an actuating member for said circuit-closing member also pivotally engaging said frame, said frame having slots in which the circuit-closing member rests in its extreme positions, a spring for snapping the circuit-closing member from one extreme position to the other and means on the actuating member for releasing the circuit-closing member from said slots.

4. In an electrical switch, the combination of a frame, a circuit-closing member having pivotal engagement with said frame, an actuating member for said circuit-closing member also pivotally engaging said frame, an open ended coiled spring around

the pivot of the actuating member and having its ends adapted to engage the circuit-closing member, means for detaining the circuit-closing member in its extreme positions, means on the actuating member for moving one end of the spring while the other engages the circuit-closing member whereby the spring is put under tension and means operated by the actuating member for releasing the circuit-closing member after the spring is under tension whereby the circuit-closing member is snapped from one position to another.

5. In an electrical switch, the combination of a frame, a snap member pivotally connected with the frame, an actuating member pivotally connected with the frame, a coiled spring having one end retaining the snap member and the other end engaging the actuating member, means for detaining the snap member in its extreme positions until the spring is under tension and means for then releasing the snap member whereby said spring snaps said member to another position.

6. In an electrical switch, the combination of a frame, a snap member pivotally connected with the frame and free to move toward and away from its point of pivotal connection, said frame having slots into which the snap member moves in its extreme positions, a spring for snapping the snap member from one position to another, actuating means for the snap member and means operated by the actuating means for moving the circuit-closing member out of said slots whereupon said spring snaps said member from one position to another.

7. In an electrical switch, the combination of a frame, a snap member pivotally connected with the frame and free to move toward and away from its point of pivotal connection, said frame having slots into which the snap member moves in its extreme positions, a spring for snapping the snap member from one position to another, actuating means for the snap member and cam means operated by the actuating member for moving the snap member out of said slots whereupon said spring snaps said member from one position to another.

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