

T. M. SMITH.
ELECTRIC SNAP SWITCH.

APPLICATION FILED MAR. 17, 1909. RENEWED JAN. 13, 1912.

Patented Aug. 20, 1912

1,036,019.

Fig. 1.

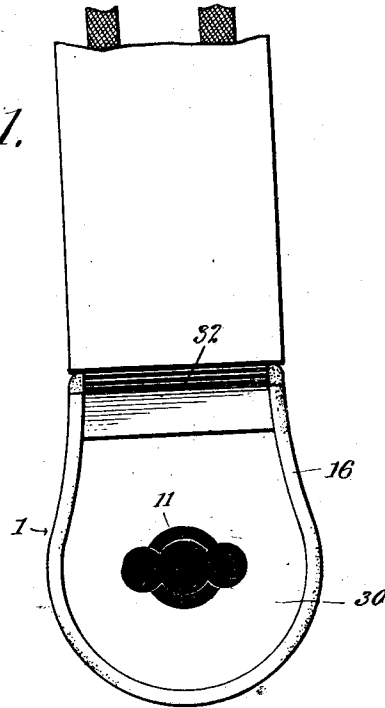


Fig. 2.

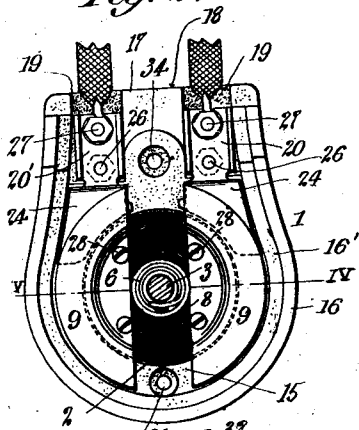


Fig. 6.



Fig. 3.

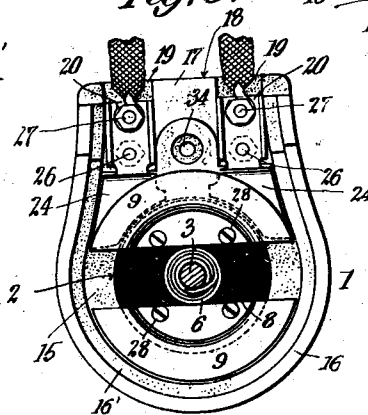


Fig. 4.

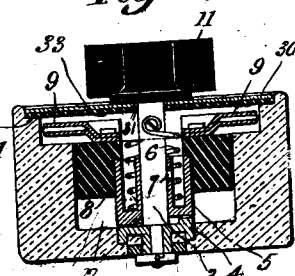


Fig. 5.

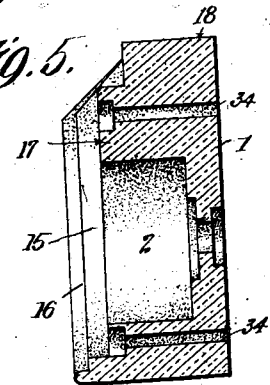
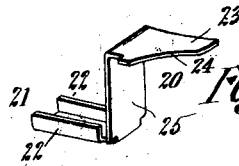


Fig. 7.



Witnesses:
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ELECTRIC SNAP-SWITCH.

1,036,019.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed March 17, 1909, Serial No. 484,008. Renewed January 13, 1912. Serial No. 671,101.

To all whom it may concern:

Be it known that I, THOMAS M. SMITH, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Electric Snap-Switches, of which the following is a full, clear, and exact description.

This invention relates to electric snap switches.

More particularly the invention relates to a switch for use with molding wiring where the circuit wires are carried on the outside surface of a wall or ceiling in wooden strips or moldings, especially designed for this purpose.

The ordinary molding has grooves for the circuit wires and is of standard construction and dimensions. So far as I am aware, switches for use with molding wiring have not been adapted to fit and cooperate with the outlines of the molding so as to produce a compact and ornamental arrangement in which all the circuit connections are made in the most direct manner possible.

In carrying out the present invention I provide a switch in which the circuit wires of the molding are extended to the switch connections without deviating either laterally or vertically from their paths in the molding grooves. Moreover the lines of the switch are so adapted to the molding as to form virtually an ornamental extension thereof, imparting in fact, an especially ornamental finish at the termination of the molding section, where a switch is most commonly required. These results are attained in a simple manner in the practice of my invention, the end of the molding strip being simply sawed off squarely, and the switch abutted thereagainst and screwed in place.

With the foregoing and other objects in view, my invention consists in the features of construction and combination as herein-after set forth and claimed.

In the drawings: Figure 1 is a plan view of a switch embodying the principles of my invention in its normal manner of use with a molding; Fig. 2 is a view of the same with the cover removed; Fig. 3 is a similar view showing the switch moved to its alternate or circuit closing position; Fig. 4 is a sectional view on the line IV—IV of Fig. 2; Fig. 5 is a vertical sectional view

of the porcelain base; Fig. 6 is a side elevation of the cover, and Fig. 7 is a perspective view of one of the metallic terminal clips, also constituting a contact plate for the switch element.

Referring to the drawings in which like parts are designated by the same reference sign, 1 denotes a porcelain or insulating block or base, constituting the main supporting frame of the switch. This base has a central generally cylindrical cavity 2 within which there is axially disposed a spindle 3 which supports the switch blades or elements. This spindle 3 is journaled at its lower end in the base 1 and at its upper end in a cover plate later described. Upon the spindle 3 there is mounted a mechanism by which the switch blades or elements snap abruptly through 90° movements whenever the spindle 3 is angularly turned in the proper direction. The particular mechanism for this purpose does not constitute a part of the present invention, being made the subject of my companion case No. 481,604, filed March 6th, 1909.

For the purposes of the present invention any mechanism securing the functions above referred to may be employed.

Briefly described I prefer to make use of a stationary plate 4 with four projections and a sleeve 5 loose on the spindle and spring-pressed downwardly by a spring 6. This sleeve has bottom projections engaging those of the plate 4. The sleeve 5 has an inner wall with an inclined slot adapted to receive a pin 7 on the spindle 3. The sleeve 5 also has a block 8 fixed thereon which carries the switch elements 9 on its upper face. The spring 6 is fixed to the spindle 3 and to the sleeve 5. When the spindle is turned by means of the button 11 at its upper end, the sleeve 5 is first cammed upward by the pin 7 until it is disengaged from the toothed plate 4, after which it rotates abruptly under the influence of said spring 6, through a quarter turn movement, limited by its reengagement with the toothed plate 4.

The base 6 of the switch has its cylindrical cavity 2 enlarged or expanded at the top into a large, shallow depression 15, surrounded by a circumferential rim 16. The rim 16 does not completely encircle the base, but is interrupted on one side, at which side the depression 15 is also exposed and extended so as to form a flat ledge or surface

17. The outline of the base 1 is also extended on this side so as to terminate in a flat, vertical wall 18, having substantially the same vertical and lateral dimensions as the molding strip for which it is designed to be used. The vertical height of this wall 18 is ordinarily less than the height of the switch base, and the width is less than the width of the switch base. The latter is therefore beveled and rounded away from the wall 18 so as to produce a pleasing and harmonious outline.

The base 1 has incut recesses 19 in the wall 18, of a size and position adapted to register with the usual grooves of the molding with which it is designed to be used. Within these grooves there are received metallic clips 20, 20', which have a reversely bent form as shown in Fig. 7. One extremity 21 forms a terminal clip with a pair of ears 22 to facilitate clamping the circuit wire. The other end 23 is flat with one side 24 cut to segmental shape. Connecting these ends 21 and 23 is an interposed vertical portion 25 which serves to join or unite the parts both electrically and mechanically. The respective clips 20 and 20' are formed right and left handedly in the matter of the segments 24, and are each assembled with this segment coaxial to the spindle 3, as clearly shown in Fig. 3. In this relation the clips are clamped by fastening screws 26. 27 denotes the terminal screws, nuts or fastenings.

The switch elements 9 are adapted to cooperate with the segments 24. Each switch element is of segmental outline, and I prefer to form each switch element of two spring segment plates fastened one above the other on the block 8 by screws 28. In this case these plates embrace the segments 24 of the stationary contacts, making a good electrical connection.

The angular extent of the switch blades 9 is sufficient to lap over two of the stationary contacts or segments 24 when the switch is in circuit closing position, shown in Fig. 3. This arrangement leaves a gap between the switch elements 9 about equal to the separation of the stationary contact clips 20. When the switch is moved through a quarter turn, the connection between the clips 20 is accordingly interrupted and an ample insulating spark gap distance insured. It will further be observed that the clips 20 are effectively separated by an insulating barrier formed by an intervening portion of the base 1.

30 denotes a switch cover formed to fit within the rim 16 and rest on the ledge 16'

which immediately surrounds the depression 60 15, already described. In this relation the cover forms a journal for the spindle 3, the latter extending through a hole 31 in the cover provided for this purpose. One end of the cover, as shown in Fig. 6, is inclined inwardly, corresponding to the beveled upper portion of the base 1, and has a terminal end 32 which is adapted to coincide in direction and position with the top surface of the molding. Within the cover 30 there should, of course, be interposed an insulating layer 33 of fiber or any other insulating sheet material. The cover is secured in position and the base also fastened in place by ordinary wood screws passed downwardly there-through and through the holes 34 of the base.

What I claim is:—

1. A snap switch comprising an insulating base having a depression in one face with a central circular cavity, said depression being extended in one direction to form a ledge, metallic clips secured to said base so as to overlie said ledge, and a switch element adapted to bridge said clips.

2. A snap switch comprising a centrally recessed insulating base having a wall of dimensions corresponding to a section of standard molding strip, said wall having recesses extending inward therefrom and opening into the central recess of said base, clips positioned in said recesses, binding posts secured thereto at the outer ends thereof, whereby the introduction of lead wires into the base is substantially obviated, said clips being extended inward from said posts and provided at their inner ends with contact portions, and a bridging switch element secured to the bottom of the central recess of said base.

3. A snap switch comprising an insulating base having a depression in one face with a central circular cavity, said depression being extended in one direction to form a ledge, metallic clips secured to said base so as to overlie said ledge, a switch element adapted to bridge said clips, said clips and switch element being located wholly below the plane of the upper edge of said base, and being wholly supported by said base as a frame.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

THOMAS M. SMITH.

Witnesses:

WALDO M. CHAPIN,
JAMES D'ANTONIO.