(No Model.)

C. J. HAMILTON.

ELECTRIC SNAP SWITCH.

No. 425,507. Patented Apr. 15, 1890.

FIG. 1.

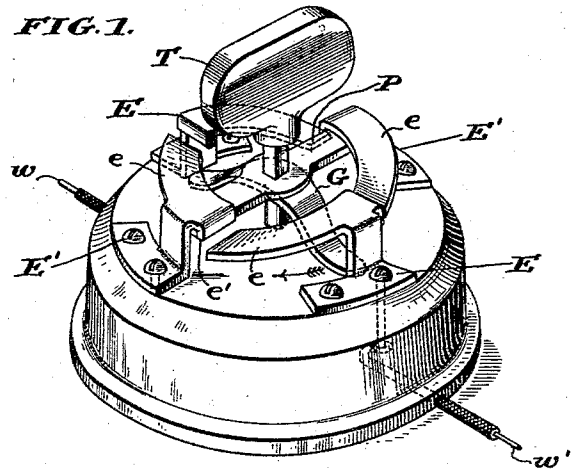


FIG. 2.

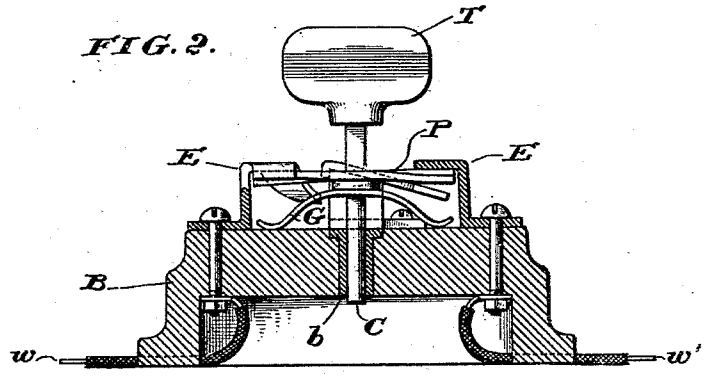
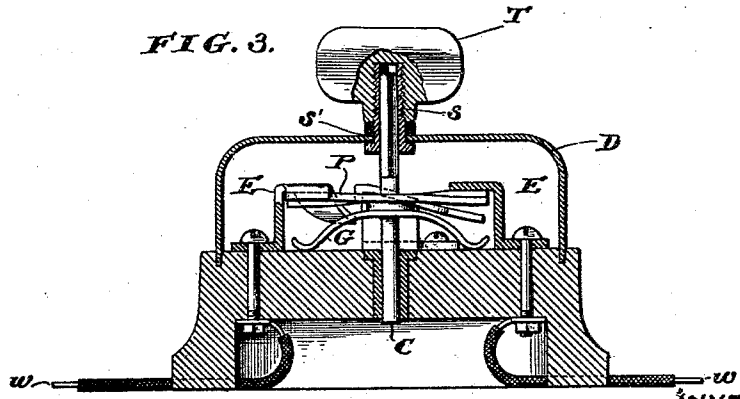


FIG. 3.



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UNITED STATES PATENT OFFICE.

CORNELIUS J. HAMILTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE NOVELTY ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC SNAP-SWITCH.

SPECIFICATION forming part of Letters Patent No. 425,507, dated April 15, 1890.

Application filed January 20, 1890. Serial No. 337,409. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS J. HAMILTON, of the city of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Snap-Switches for Electric Incandescent Lighting; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

My invention has relation to switches for connecting and breaking electric circuits; and it consists in an electric switch device constructed as hereinafter particularly described.

The object of my invention is to provide a simple, effective snap-switch composed of but few parts, and which can be produced at a small cost.

In the accompanying drawings similar letters of reference refer to similar parts throughout.

Figure 1 is a perspective view of my improved snap-switch. Fig. 2 is a cross-sectional view, showing the construction in detail. Fig. 3 is a cross-sectional view of the device with the covering applied.

B represents the base, into which is set about its center a vertical shank or spindle C movable vertically and rotatively in the collar or bearing provided in the base B.

E E′ are metal plates set in a series upon the base B, preferably circularly, around the shank or spindle C, and provided with the faces *e*, each having their under surface inclined in the same direction.

P is a cross contact-plate secured about its center to the adjustable vertical shank C and adapted to be adjusted rotatively and vertically, according as the shank C is moved. This plate P connects the two opposite poles of the circuit or breaks the circuit, according to its position. The ends of the contact-plate P are twisted to conform with the incline of the under side of the fixed plates E E′, and thereby secure a complete contact until the sudden break occurs. A spring G is provided beneath the arm P, pressing up the arm P against the inclined surface of the under side of the plates E E′ and keeping it in constant contact therewith. A thumb-key T is provided on the upper end of the shank C for rotating it and the contact-plate P secured thereto. When the fixed plates E′ E′ are connected, as shown in Fig. 1, by the contact-plate P, the circuit is broken; but when rotated in the direction of the arrow to the position shown in Fig. 2 the fixed plates E E, attached to the circuit-line, are connected by the contact-arm P, and the circuit thus closed. The metal plates E E′ are secured to the insulated base B by screws or otherwise, which is constructed of porcelain or other non-combustible material. The two fixed plates E′ E′ are dead or entirely insulated plates, while the other two E E are connected by means of the wires *w w′* with the electrical current. Each of the fixed plates E E′ is disconnected entirely one from another. As the contact-plate P leaves the depressed extremity of the under surface of a pair of plates, it is forced by the spring G up against the most elevated portion of the under surface of the next pair of plates. A stop or lug *e′* is provided at the end of the elevated portion of the inclined under side of each of the plates E E′, which prevents the contact-plate P from being rotated in the reverse direction. A covering D is preferably provided over the base B and secured thereto to protect the parts.

In order to prevent the thumb-key T from moving up and down with the shaft C, which it turns, I provide a hollow sleeve *s*, secured to the thumb-key T, having a square vertical hole for the accommodation of the squared shank C. On the lower end of the sleeve *s* is provided a groove *s′*, into which the cover D fits, and thus forms for the thumb-key T a fixed bearing in its rotation. As the shank C moves up and down by the action of the spring G, in connection with the contact-plate P, it plays within the thumb-key T, which will remain in a fixed position.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An electric switch, in combination with the base of insulated material, a vertical shank journaled in the said base, a series of independent alternately insulated and conducting plates, each having an inclined under surface secured to the said base, inclined sub-

stantially in the same direction to allow of a continuous rotation of the connecting-plate in one direction, alternate plates being connected with electric circuits, a contact-plate fixedly secured to said vertical shank, said contact-plate arranged underneath said independent fixed plates and retained against the under side of said plates and in connection therewith by a spring, substantially as hereinbefore set forth and described.

2. The combination, with a fixed base, of a series of independent alternately-insulated and conducting plates secured to said base, the alternate plates being connected with electric circuits and said fixed plates provided with inclined under surfaces, against which the rotating connecting-plate is adapted to bear, the said under surfaces being inclined in substantially the same direction to allow the rotating connecting-arm to rotate in a circle, a vertical spindle journaled to the said base at about the center of a circle described by the insulated plates, a contact-plate fixedly secured to said spindle, adapted to connect two opposite fixed plates, and arranged against the angular under surface of the said plates and spring for forcing and maintaining in position the connecting-plate, substantially as hereinbefore set forth and described.

3. In an electric switch, in combination with a base B, a series of alternately-insulated and conducting plates E E′, one or more opposite sets being in electric connection with electric circuit or circuits, the under side of each of the plates E E′ being inclined, and at substantially the same angle in the same direction, the vertical shank C, the connecting-plate P, connected to said vertical shank C, arranged underneath the plates E E′, adapted to rotate thereunder in a circle, and the thumb-key T, substantially as hereinbefore set forth and described.

4. The combination, with a fixed base of insulated material, of a series of independent alternately-insulated and conducting plates secured to said base, the alternate plates being connected with one or more electric circuits, said fixed plates each provided with an inclined under-contact surface, each inclined at substantially the same angle and in the same direction, a vertical shank journaled in the said base, a contact-plate fixedly secured to the said shank, said contact-plate adapted to operate in a circle arranged underneath said independent fixed plates and retained against the under side of the said plates and in connection therewith by a spring, and stops or lugs provided in the said fixed plates to prevent the rotation of the contact-arm in the reverse direction, substantially as hereinbefore set forth and described.

5. In combination with the base B, a series of alternately-insulated and conducting plates E E′, secured to said base, one or more opposite sets being in electrical connection with one or more circuits, the vertical shank C, journaled in said base, contact-plate P, fixed to said vertical shank arranged underneath the fixed plates E E′, spring G, covering-shell D, fixed to the base B, thumb-key T, sleeve *s*, forming a journal for the spindle, substantially as hereinbefore set forth and described.

In witness whereof I have set my hand this 18th day of January, A. D. 1890.

CORNELIUS J. HAMILTON.

Witnesses:
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HORACE PETTIT.