(No Model.)

J. DES BRISAY.

ELECTRIC SWITCH.

No. 454,995. Patented June 30, 1891.

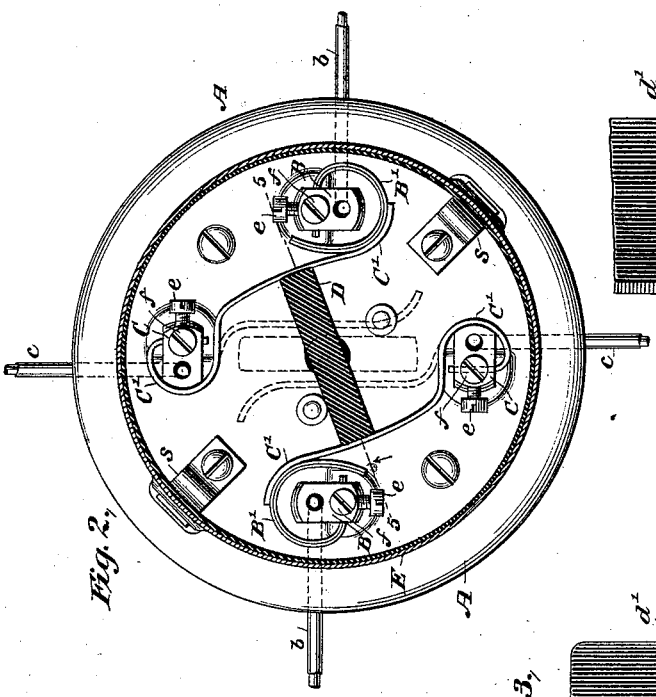

Fig. 2.

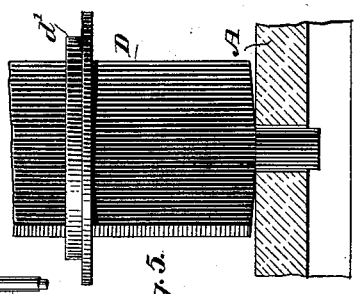

Fig. 5.

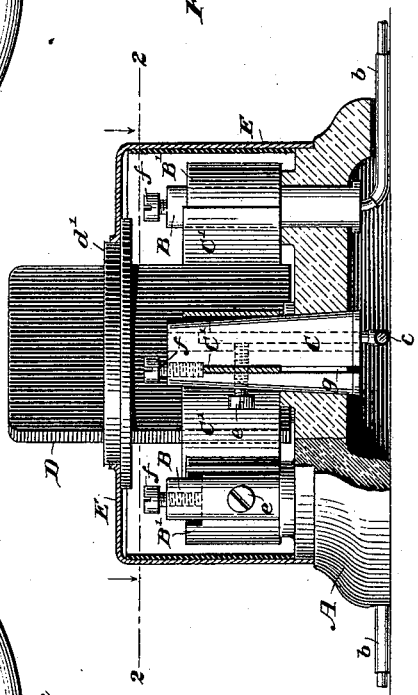

Fig. 3.

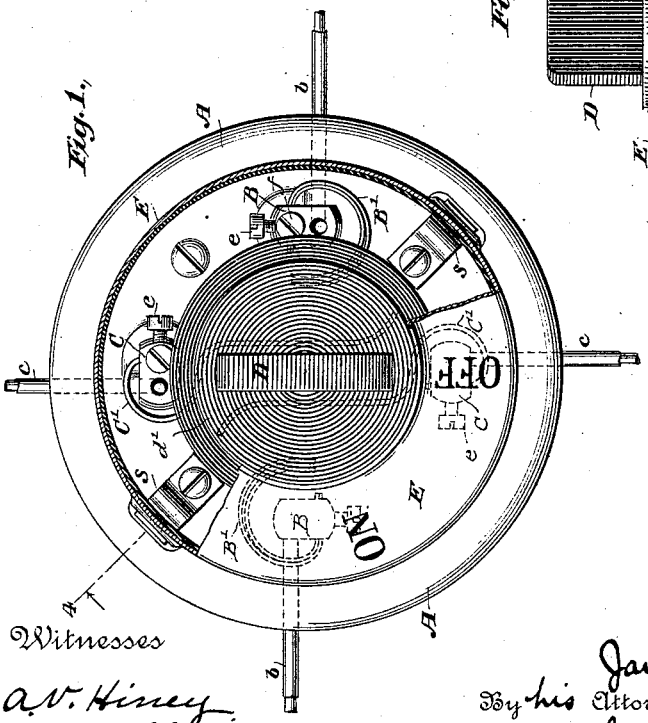

Fig. 1.

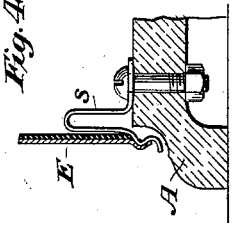

Fig. 4.

Witnesses

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JAMES DES BRISAY, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 454,995, dated June 30, 1891.

Application filed December 10, 1890. Serial No. 374,131. (No model.)

To all whom it may concern:

Be it known that I, JAMES DES BRISAY, a subject of the Queen of Great Britain, and a resident of New York city, county and State of New York, have made a new and useful invention in Electric Switches, of which the following is a specification.

My invention is directed to improvements in electric switches of the two-pole type for use in connection with systems of electric lighting or analogous systems of electrical distribution, and while it is directed particularly to a two-pole switch I desire it to be understood that many of the details of construction hereinafter described are particularly applicable to electric switches in general.

The invention will be fully understood by referring to the accompanying drawings, taken in connection with the following description.

Figure 1 is a plan view of my switch, showing a portion of the top broken away in order to better illustrate the interior mechanism thereof. Fig. 2 is a transverse sectional view taken on line 2 2, Fig. 3, and as seen looking down upon Fig. 1. Fig. 3 is a vertical sectional view showing a part of the interior construction broken away. Fig. 4 is a detail view showing the means of attaching the switch-cover to the base thereof. Fig. 5 is a detail view showing the switch-handle and its operative connection with the base.

A is the base of the switch-box, made preferably of porcelain, vegetable fiber, or any analogous non-conducting non-combustible material.

B C B C are binding-posts for connecting the incoming circuits *b c* to the switch proper. These binding-posts are of wedge shape or construction, and are provided each with a longitudinal slot *g*, into which project the ends of the switch-springs B′ B′ C′ C′, each made, preferably, of a piece of elastic metal bent from its middle back upon itself and provided at its inner end with a slot, through which the binding-screw *e* may pass freely, so as to firmly bind the incoming conductor *b′ c′* when its free end is inserted in the vertical hole, which extends throughout the length of the binding-posts, as clearly shown in Figs. 2 and 3. These binding-posts are put in place by inserting their smaller ends through the beveled retaining-holes in the base of the switch-board. The doubled ends of the switch-springs B′ C′ are then inserted in the vertical grooves *g*, and the set-screws *f* are driven firmly home against the ends of said springs, forcing them firmly against the base A and causing the binding-posts to be securely wedged in position, care being taken to have the inner ends of the springs so located that the vertical slots will permit of the entrance of the binding-screws *e*. It will thus be seen that the set-screws *f* and the binding-screws *e* unite in firmly securing the ends of the switch-springs B′ C′, while the former cause the binding-posts to be securely wedged in position in the base. After the binding-posts are thus fixed in place with the two sets of contacting-springs located as shown in dotted lines in Fig. 1, a non-conducting non-combustible switch-handle D is inserted between the two movable contact-springs C′ C′, so that the upper portion of the handle is located in alignment with the word "Off" on the top of the switch-box. The cap or cover of the switch-box is then slipped over the switch, so that its lower edge, which is grooved, shall be held firmly in position by the curved retaining-springs *s*, secured to the base by bolts, as clearly shown in the detail figure in Fig. 4. This cap E is provided with an opening at its top which fits snugly around the shoulder *d′* of the switch-handle, and its interior portion is lined with a non-conducting non-combustible material, as clearly shown.

Two limiting-stops are screwed into the base on either side of the switch-handle, as shown in Fig. 2, and their location is such that when the switch-handle stands in the position indicated in Fig. 2 in full lines the handle will be stopped from further rotation in the direction of the arrow, and the switch-springs C′ C′ will have formed a firm sliding and rolling contact with the fixed contact-springs B′ B′, and when the handle D is turned in the position indicated in dotted lines it will come into contact with the other limiting-stop, and the switch-springs C′ C′ will suddenly separate by a snap action, thereby preventing an arc and assuming the position shown in dotted lines in Fig. 1.

It will be noted that by virtue of the rolling and sliding action of the two sets of switch-

springs C′ and B′, I am enabled to furnish an absolute conducting-contact at each pole of the switch, and at the same time cause these two sets of switch-springs to keep always free from dirt, oxides, or any analogous non-conducting substances, thereby always furnishing a sure and absolute path at each pole for the current. I also place especial stress upon the advantage which accrues from my improved form of non-conducting non-combustible switch-handle D, which is provided with an extended shoulder *d′* of sufficient breadth to prevent any contact with any metallic portion of the switch-box during the time that an attendant is manipulating the switch. This feature, taken in connection with the insulated non-combustible base and the insulated non-combustible lining of the switch-box, makes the apparatus especially secure against shocks to an attendant or danger from fire by reason of short circuits or fusing of the conducting parts within the box.

The entire apparatus also possesses an especial advantage in the simplicity of its construction and the ease with which it may be taken apart, the individual portions thereof restored or replaced, and the entire mechanism repaired.

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

1. A switch having a base provided with beveled holes and two or more beveled binding-posts, each having a longitudinal slot, in combination with switch-electrodes adapted to fit in said slots and having lateral bearing upon the inner face of the switch-base, each binding-post being provided with an adjusting-screw adapted to securely bind it to the base, substantially as described.

2. A binding-post of beveled or wedged shape adapted to fit in a base-plate having a hole of similar shape, said binding-post having a vertical slot into which is fitted a contact-spring, said contact-spring having lateral bearing against the upper face of the base at its lower edge and against an adjustment-screw at its upper edge, substantially as described.

3. A binding-post for use in electrical switches and analogous devices of wedge shape adapted to fit in a hole of similar shape in a base-plate, said binding-post having a longitudinal slit into which is fitted a piece of metal or similar material having lateral bearing on the upper face of the base at its lower edge and against an adjustment-screw at its upper edge, substantially as described.

4. In an electric switch, a base provided with a cover and fastening devices for the cover secured to the base, in combination with a switch-handle removably journaled in the base and held in position against the base by said cover, whereby said cover and switch-handle may be easily removed, substantially as described.

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