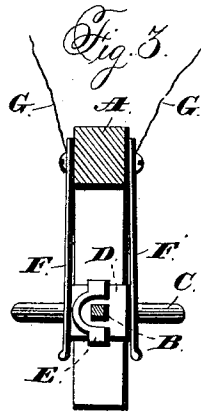
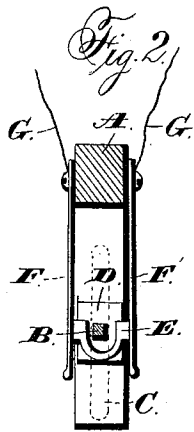
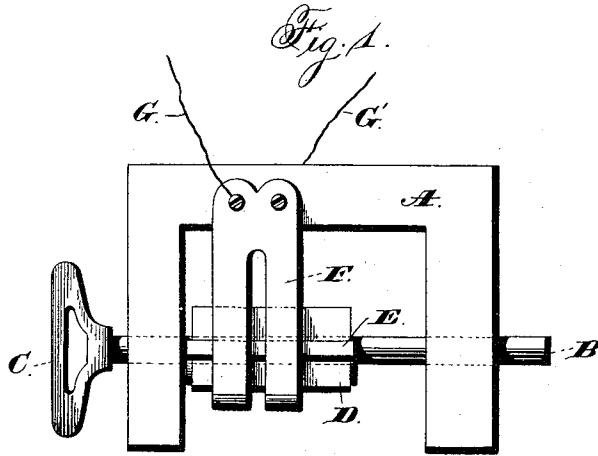


(No Model.)

C. F. BRUSH.
ELECTRICAL SWITCH.

No. 335,269.

Patented Feb. 2, 1886.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES F. BRUSH, OF CLEVELAND, OHIO.

ELECTRICAL SWITCH.

SPECIFICATION forming part of Letters Patent No. 335,269, dated February 2, 1886.

Application filed August 26, 1885. Serial No. 175,369. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BRUSH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electrical Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in electrical switches.

The object is to provide an electrical switch which shall operate to simultaneously open or close a circuit at two points, which shall be quick, positive, and partially self-acting in its operation, and which shall automatically preserve the integrity of the contacts when closed and prevent accidental displacement when open.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of one form of the switch complete; and Figs. 2 and 3 represent cross-sections of the same, showing it in a closed and open adjustment, respectively.

A is a frame of insulating material, in opposite sides or ends of which is journaled a shaft, B, having on one end the operating-handle C. Upon that portion of the shaft which crosses the interior space of the frame is rigidly attached a block of insulating material, D, having an approximately square cross-section, Figs. 2 and 3. Upon two opposite faces of D, parallel to the shaft, are attached contact-pieces of metal E, which are metallicity connected together by a strip passing across on end of D, and curved so as to avoid contact with the shaft. These contact-pieces and the connecting-strip are usually made in one piece and bent to shape, and are preferably fastened to the insulating material by being partially embedded, dovetail fashion, in its surface. They present a raised metallic surface above the face of the insulated block; but the metallic surface so formed should not be as wide as is the face of the block in the direction of its rotation.

Two flat contact-springs, F F', insulated

from each other, are attached at one end to opposite sides of the frame, their free ends resting with a spring-pressure upon opposite faces of the block D. To these springs are respectively connected the two ends G G', of the circuit to be controlled by the switch.

By turning the handle C to one position, Fig. 2, the contact-springs F F' will rest upon the contact-strip E, and the current can pass from one spring to the other by means of E, thus closing the circuit. By now turning the handle C to a position at right angles to the former one, (see Fig. 3,) the circuit will be broken, the springs then resting on the plain faces of D.

It will be seen that there are several advantages secured by this construction: First, when the switch is closed, the handle may be turned slightly either way without breaking contact. This secures a rubbing action on the contact-surfaces. Secondly, when a further turning of the handle causes the corners of the block to strike the contact-springs, the latter are raised suddenly and quickly out of contact, breaking the circuit at both sides of the block at once, thus distributing the sparking over two points. Thirdly, until the block is turned so far as to secure an ample separation of the contact-surfaces, the pressure of the springs acts to force it back and re-establish contact, thus preventing the chance of the switch being left in a position where a permanent arc could be formed between the contacts; also, when the switch is open, as shown in Fig. 3, the springs hold the block firmly in position and prevent accidental closing of the circuit.

It is evident that the switch here shown and described might be changed in form and arrangement of parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. In an electrical switch or current-breaker, an insulating-block made angular in cross-section, and an electric conductor projecting outwardly from the two opposite plane surfaces of the block, said conductor being of less width than said plane surfaces to insure

plane surfaces of insulating material adjacent to and on opposite sides of each end of the conductor, in combination with a pair of spring contact-arms arranged to press on opposite sides of the insulating block or conductor, whereby imperfect contacts are avoided and the switch positively retained in its open or closed position, substantially as set forth.

10 2. In an electric switch or circuit breaker, the combination, with a block of insulating material secured to a rotary shaft, and an elec-

tric conductor insulated from the shaft and projecting outwardly from opposite sides of the block, of a pair of spring-arms arranged to press on opposite sides of the block or conductor, substantially as set forth. 15

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES F. BRUSH.

Witnesses:

J. POTTER,
ALBERT E. LYNCH.