

J. D. JOHNSON.
ELECTRIC SWITCH.
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Patented Dec. 10, 1912.

1,046,796.

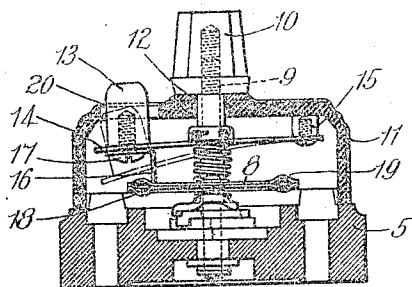


Fig. 2.

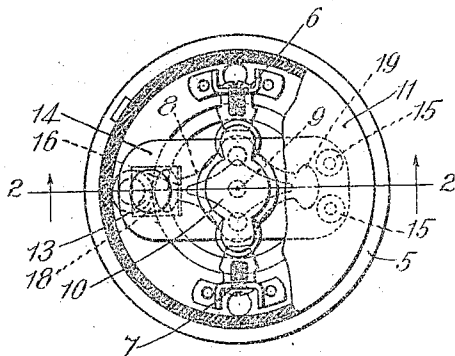


Fig. 1.

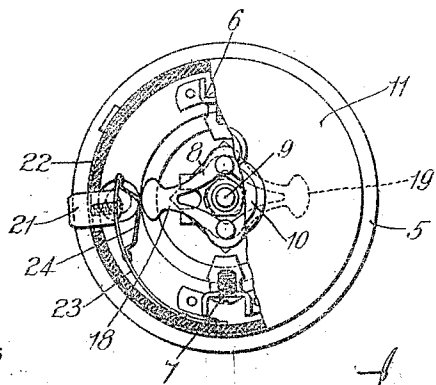


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH D. JOHNSON, OF BOSTON, MASSACHUSETTS.

ELECTRIC SWITCH.

1,046,796.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH D. JOHNSON, a citizen of the United States, residing at Dorchester, Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to improvements in electric switches and particularly to that class known as snap switches.

The object of the invention is to provide a cheap and efficient indicator to be used in connection with an electric switch and which shall be capable of clearly indicating the condition of the circuit controlled by said switch, as to whether the same is opened or closed, and in a manner which shall be determinable by the sense of touch when it is impossible to determine the same by observation as would be the case when the circuit or light controlled thereby is in some obscure location relatively to the standpoint of the person operating said switch.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawing: Figure 1 is a plan view of a well known form of snap switch embodying my invention a portion of the casing thereof being broken away and shown in section in order to more clearly illustrate the invention. Fig. 2 is a section partly in elevation taken on line 2—2 of Fig. 1. Fig. 3 is a plan view similar to Fig. 1 illustrating a modified form of my invention.

Like numerals refer to like parts throughout the several views of the drawing.

In the drawing, 5 is the base having electric circuit terminals 6 and 7 secured thereto. A rotatory switch member 8 is mounted upon a spindle 9 and adapted to be intermittently rotated by a handle 10 having screw-threaded engagement with the spindle 9. The terminals 6 and 7 are located at opposite sides of the spindle 9 and are adapted to be connected and disconnected by the switch member 8. The rotation of said switch member may be controlled by any of the devices common to snap switches and which will check the rotation of said switch member 8 at the point of contact between said terminals and said rotatory switch member and also at a point in its rotation intermedi-

ate of said connecting point whereby said terminals will be disconnected.

A casing 11 is provided to inclose said rotatory switch member and said terminals and has a hole 12 through which the spindle 9 projects to engage the handle 10.

Referring now to Figs. 1 and 2, 13 is an indicator preferably formed of insulating material and secured to a flat spring 14 which in turn is mounted upon the casing 11 at 15 preferably at the opposite side of said casing from said indicator. The spring 14, upon which the indicator 13 is secured, is adapted to normally retain said indicator within the casing 11 in the position illustrated in dotted lines of Fig. 2 and during the time when the terminals 6 and 7 are connected by the switch member 8, but upon the rotation of said switch member from said connecting position to the disconnecting position thereof, said spring 14 is adapted to be moved upwardly against the action thereof preferably by a cam 16 secured at the free end of said spring by the screw 17 which also connects the indicator 13 with said spring; the continued movement of said spring forcing said indicator through a hole 20 in the casing 11 and into a position to protrude from said hole as illustrated in Fig. 2. This position is retained during the period when said terminals are disconnected, thus leaving said indicator in a position to be felt by the person operating said switch. Upon a further rotation of the handle 10 from the position just stated, the arms 18 and 19 of said switch 8 will be rotated another step which is usually a quarter turn of the member 8, whereupon the terminals 6 and 7 are connected and the electric circuit controlled thereby completed; upon this movement the cam 16 is released and the spring 14 allowed to return to its normal position withdrawing the indicator 13 within said casing 11, said position being indicated in dotted lines, in which it will remain until the lights are again turned off when the arm 19 of the switch member 8 will engage said cam 16 and again move said indicator to its protruding position.

Referring to Fig. 3 I have shown a modified form of an indicator connected with a switch similar to that shown in Figs. 1 and 2, but showing an indicator 21 adapted to protrude through the side 22 of the casing 11. The indicator 21 being preferably secured at the free end of a spring 23 which is

attached to the side of said casing 11. A cam 24 is also secured to the free end of the spring 23 and is adapted to be normally held within the path of the arms 18 and 19 of the rotatory switch member 8 and to be forced outwardly by the engagement therewith during the rotation of said member 8. Thus the indicator will be moved alternately from a position within to a position to protrude from said casing by the continued rotation of said switch and indicate by said positions the condition of the current controlled by said switch, said condition being determined in the dark by simply running the fingers about the casing and noting the position of said indicator relatively thereto.

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

1. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member, and an indicator mounted within said casing and adapted to be moved laterally through said casing by the rotation of said switch member from a position within into a position to protrude from said casing, whereby the position of said switch member may be indicated.

2. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member, an indicator, and a spring supported by said casing, carrying said indicator and normally retaining the same within said casing, said spring also being adapted to be actuated by the rotation of said switch member, to move said indicator into a position to protrude from said casing.

3. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member, an indicator adapted to be moved from a position within, into a position to protrude from said casing, a spring supported by said casing for carrying said indicator and adapted to normally hold said indicator in one of said positions and means actuated by the rotation of said switch mem-

ber for moving said indicator against the action of said spring, into the other of said positions.

4. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member, an indicator adapted to be moved from a position within, into a position to protrude from said casing, a spring supported by said casing, carrying said indicator and adapted to normally hold said indicator in one of said positions and a cam adapted to be actuated by the rotation of said switch member for moving said indicator into the other of said positions.

5. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member and having a hole extending therethrough, and an indicator mounted in said casing adapted to be moved laterally through said hole by the terminal disconnecting movement of said switch member, from a position within, into a position to protrude from said hole and means adapted to hold said indicator in said protruding position while said terminals are disconnected.

6. An electric switch having, in combination, electric circuit terminals, a rotatory switch member, means adapted to rotate said switch member to alternately connect and disconnect said terminals, a casing for inclosing said terminals and said rotatory switch member, having a hole extending therethrough, an indicator adapted to be moved from a position within, into a position to protrude from said hole, a spring supported by said casing, carrying said indicator and adapted to normally hold said indicator in one of said positions, and a cam secured to said spring adapted to be acted upon by said rotatory switch member to move said indicator into the other of said positions.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH D. JOHNSON.

Witnesses:

CHARLES S. GOODING,
SYDNEY E. TAFT.