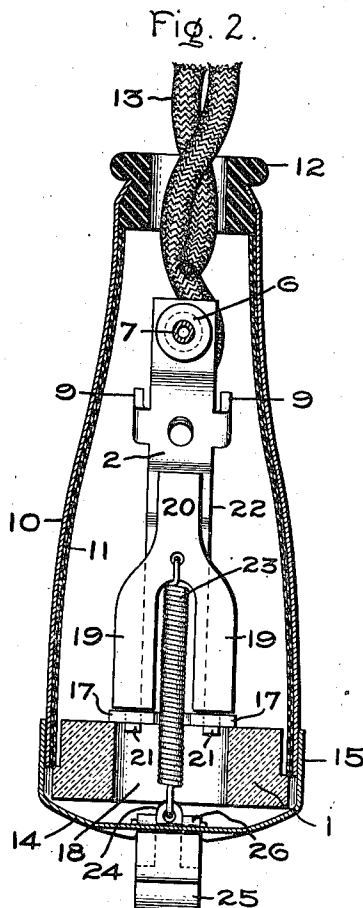
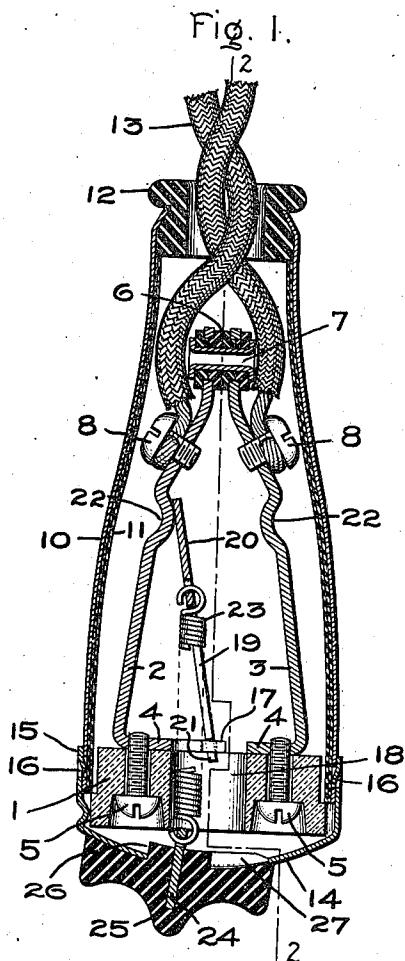


G. E. STEVENS.
 OSCILLATING ELECTRIC SWITCH.
 APPLICATION FILED AUG. 20, 1909.

996,373.

Patented June 27, 1911.



Witnesses:

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 Att'y.

UNITED STATES PATENT OFFICE.

GEORGE E. STEVENS, OF LYNN, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

OSCILLATING ELECTRIC SWITCH.

996,373.

Specification of Letters Patent. Patented June 27, 1911.

Application filed August 20, 1909. Serial No. 513,767.

To all whom it may concern:

Be it known that I, GEORGE E. STEVENS, a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Oscillating Electric Switches, of which the following is a specification.

This invention relates to cutouts for electric circuits, and its object is to afford a compact and simple switch of the quick-break oscillating type, which can be used as a pendent switch at the end of a flexible double conductor.

The invention consists of a pair of insulated contact strips attached respectively to the two conductors and having between them an oscillating blade, hinged to one strip and making or breaking contact with the other. A spring is attached at one end to the blade and at the other end to a laterally sliding button, by means of which said spring can be carried past the dead center of the hinge and thus cause the blade to swing over suddenly from one contact to the other.

In the accompanying drawing, Figure 1 is a longitudinal section of my improved switch; and Fig. 2 is a similar section on the line 2—2 and perpendicular to Fig. 1. The drawing is made on an exaggerated scale, as the actual device is, about two and a half inches in length.

The base 1 is of insulating material, such as molded porcelain. Standing on said base are two contact strips 2 3 punched from sheet metal and having feet 4 which are fastened to the base by the screws 5 passed up through holes therein. The conveying upper ends of the contact strips are provided with perforations in which are inserted flanged washers 6 of insulating material such as fiber. A rivet 7 unites all the washers and holds the contact strips rigidly in position but insulated from each other.

In each strip is a tapped hole to receive a binding screw 8 and lugs 9 are preferably formed on each side of each strip adjacent to said screws. A metallic shell 10 incloses the base and the strips, and is provided with an insulating lining 11. At its upper end the shell is provided with a nozzle bushing 12 through which pass the two insulated conductors 13 whose terminals are clamped to the respective strips 2 3 by the binding

screws 8. The lower end of the shell is closed by a cap 14 whose flange 15 is fastened to said shell in any suitable manner, as for instance by means of the spring catches 16, engaging holes or depressions in the shell.

The foot of the contact strip 2 is bifurcated, forming two toes 17 which project over a slot 18 extending through the middle of the base 1. In each toe is a bearing for the lower end of one leg 19 of the bifurcated switch blade 20. Each leg is preferably formed with a downwardly-projecting lug 21 which is stepped in a hole in a toe 17. The upper end of said blade rests against one or the other of the contact strips, which are preferably made with inwardly projecting bends 22 to afford a good contact surface for the blade. A tension spring 23 is hooked at its upper end into a hole in the blade, and depends between the legs 19 of the blade and through the slot 18. Its lower end is attached to a stem 24 embedded in a button 25 of insulating material such as gutta percha. The button is located on the outside of the cap 14 and has a shank 26 guided in a slot 27 in said cap, so that said button can slide from side to side. The outer surface of the cap is curved on an arc struck from a point on the axis of the shell at or near the upper end of the spring, and the surface of the button in contact with the cap fits this curve, so that the button moves in the arc of a circle.

The operation is as follows: The lugs 21 fit loosely in the holes in which they are stepped forming a hinge joint for the blade so that it can flop easily from one contact strip to the other. With the parts as shown in Fig. 1, the line of pull of the spring is to the left of this hinge, so that the blade is held firmly against the strip 2, the circuit being open. If, however, the button be slid to the right, it puts a further tension on the spring until, when the button has almost reached the end of its travel, the spring swings past the dead center of said hinge and exerts its pull on the right-hand side thereof, causing the blade to snap suddenly over into contact with the strip 3 and thereby closing the circuit. The movement of the blade is instantaneous, and its play is ample to break any arc that follows when the button is pushed back to the left to open the circuit.

In accordance with the patent statutes, I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In an electric switch, the combination with a bifurcated hinged switch blade, of a spring attached to said blade and extending between its legs past the hinge, and an inclosing shell having a slotted opening, a laterally sliding button mounted in said shell opening and attached to said spring for moving it back and forth over the dead center.

2. In an electric switch, the combination with a base having a slot, of a bifurcated switch blade having its legs stepped in bearings on said base, a spring attached to said blade and extending down between said legs and through the slot in said base, an inclosing shell having a slotted opening beneath said base, and a laterally-movable button mounted in said shell opening and attached to the lower end of said spring.

3. In an electric switch, the combination with a base having a slot, of two contact strips standing on said base, a switch blade hinged to one of said strips, a spring attached to said blade and passing down through said slot, a curved surface disposed beneath said base, and a button mounted on said curved surface for moving the lower end of said spring past the dead center of said hinge.

4. In an electric switch, the combination with a base having a slot, of two contact

strips standing on said base, one having two toes adjacent to said slot, a bifurcated switch blade located between said strips and having its legs stepped in bearings in said toes, a spring attached to said blade and passing down through said slot, and a laterally movable button attached to the lower end of said spring.

5. In an electric switch, the combination with an insulating base having a slot, of two strips having feet secured to said base, and provided with bends 22, insulating washers at the upper ends of said strips, a fastening device uniting said washers, binding screws on said strips, a switch blade playing between said bends, and having legs provided with lugs stepped in holes in the foot of one of said strips, a spring attached to said blade and depending through said slot, a shell and a cap inclosing all of said parts, and a laterally-movable button outside the cap and connected with the lower end of said spring.

6. In an electric switch, the combination with a base, of two contact strips extending upwardly therefrom and provided with binding posts, a switch-blade located between said strips and adapted to connect them electrically, an actuating spring connected to said switch-blade, a shell inclosing said switch having at one end a curved surface provided with a slot, and a button mounted on the outside of said curved surface and connected to said spring.

In witness whereof, I have hereunto set my hand this 18th day of August, 1909.

GEORGE E. STEVENS.

Witnesses:

JOHN A. McMANUS, Jr.,
HENRY O. WESTENDARP.