No. 680,336. Patented Aug. 13, 1901.

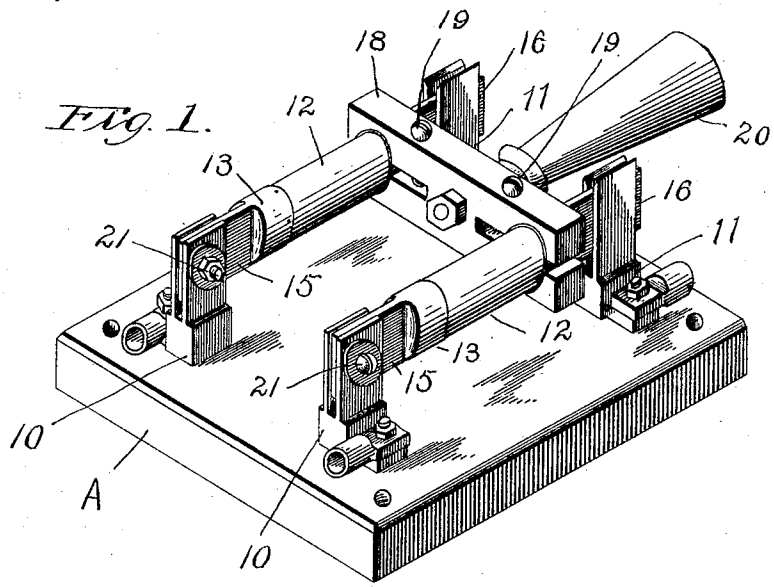
G. E. LINTON.

ELECTRIC SWITCH.

(Application filed Sept. 14, 1900.)

(No Model.)

Fig. 1.



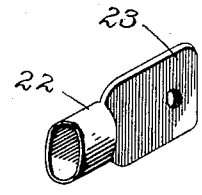


Fig. 4.

Fig. 2.

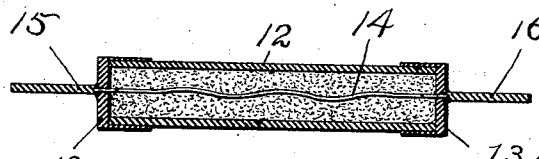


Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE E. LINTON, OF WORCESTER, MASSACHUSETTS.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 680,336, dated August 13, 1901.

Application filed September 14, 1900. Serial No. 30,005. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. LINTON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Electric Switch, of which the following is a specification.

This invention relates to that class of electric switches which are provided with pivoted or turning switch-knives for opening and closing electric circuits; and the object of this invention is to provide a novel form of switch-blade for use in electric switches of this class whereby the switch-blades themselves may be made to act as safety devices or fuses for preventing the overloading of the electric circuits in which the same are arranged.

To these ends this invention consists of the electric switch and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a perspective view of an electric switch constructed according to this invention, the parts being shown in their normal or closed condition. Fig. 2 is a similar view showing the switch opened and illustrating the manner in which a switch-blade can be removed or replaced. Fig. 3 is a sectional plan view of one of the switch-blades, and Fig. 4 is a perspective view illustrating the form of contact-section preferably employed for the smaller-sized switch-blades constructed according to this invention.

Each electric circuit as now ordinarily installed employs a switch for opening and closing the circuit and one or more fuses or safety devices for preventing the circuit from being overloaded.

The safety devices and the switch for an electric circuit have heretofore ordinarily been independently connected into each circuit, so that two sets of connections have been necessarily used to properly connect the safety devices and switch into each circuit where the same are to be used.

The especial object of the present invention is to provide an electric switch in which each switch-knife acts as a safety device or fuse and in which the parts are so combined that a knife or fuse may be drawn out of place longitudinally without dismantling the entire switch. That is to say, an electric switch constructed according to this invention comprises a base-plate having two sets of terminals secured thereon. The switch-blades are pivotally mounted in one set of terminals and are connected together at their opposite ends by a cross-piece of insulating material, having grooved and split ends clamped onto the switch-knives by screws, so that by loosening one of the clamping-screws and releasing the end of a switch-knife from the terminal in which the same is pivoted said switch-knife may then be drawn out of place without otherwise dismantling the switch or removing the other switch-knife from its hinged joint.

The switch which I have herein illustrated comprises a plate A, of slate or other insulating material, extending up from which are hinged contact-pieces 10, in line with which are the ordinary split-socket or contact pieces 11. Removably pivoted in the hinged contact-pieces 10 are the turning or pivoted switch-blades. The construction of these switch-blades is most clearly illustrated in Fig. 3. As shown in this figure, each switch-blade or pivoted section preferably comprises a tubular body portion 12, of fiber or similar insulating material. Secured on the ends of the tubular body portion are ferrules 13. The ferrules 13 are connected together by a fusible section or alloy wire which will melt or fuse when the current passing therethrough rises above a certain strength. The space between the fusible wire 14 and tubular body portion 12 may form a dead-air space, although in practice this space is preferably packed with asbestos or similar non-inflammable material. Brazed to or formed integrally with one of the ferrules 13 is a contact-section 15, which is provided with a curved slot or socket 17, as illustrated most clearly in Fig. 2, for detachably hinging the switch-blade in its hinged piece 10, and at the opposite end of the switch-blade the other ferrule 13 is provided with a contact-section 16 for engaging the split contact-piece 11. Fitting onto the free ends of the switch-knife is a cross-piece 18, of hard rubber or similar insulating material, which has grooved or split ends and

which may be clamped onto the switch-knives by means of screws 19. Extending out from the cross-piece 18 is an operating-handle 20. By means of this construction the switch may be opened and closed in the same manner as the ordinary knife-switch, and whenever it is desired to replace a burned-out or fused switch-blade with a new or fresh switch-blade it is simply necessary to loosen one of the clamping-screws 19 and one of the pivot-screws, as illustrated in Fig. 2, in order to permit the switch-blade to be lifted up from engagement with its hinged piece and then drawn out through the cross-piece 18, as shown.

In some cases instead of brazing or soldering the contact-pieces to the ferrules of the switch-knife the contact-sections may be formed integrally with each ferrule or tip—that is to say, if it is desired, a tip or ferrule 22, as illustrated in Fig. 4, may simply have its ends flattened out, as at 23, to form the contact-section, and the flattened portion 23 may have a hole bored therein for pivoting the same in place rather than by being provided with a notch or groove, and I preferably employ this form of contact-piece for the smaller sizes of switch-knives in applying my invention to the smaller sizes of switches.

I am aware that other changes may be made in practicing my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claims. I do not wish, therefore, to be limited to the construction I have herein shown and described; but

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

1. In an electric switch, the combination of a base-plate, two sets of terminals secured thereon, two switch-blades pivotally mounted in one set of terminals, each switch-blade comprising a tubular body portion of non-conducting material having contact-sections at its ends connected by an inclosed fusible wire, and a cross-piece of insulating material having grooved and split ends clamped onto said switch-blades by two clamping-screws, said parts being combined so that by loosening a clamping-screw and releasing a switch-blade from the terminal in which it is pivoted, said switch-blade may be then drawn out longitudinally without otherwise dismantling the switch, substantially as described.

2. In an electric switch, the combination of a base-plate A, two sets of terminals 10 and 11 secured thereon, switch-blades pivotally mounted in the terminals 10, each switch-blade comprising a tubular body portion of non-conducting material with a contact-section at each end, said contact-sections being connected by fusible wires 14, and the hinged contact-section being provided with an open-mouth curved slot for receiving its hinge-screw, and a cross-piece 18 having grooved and split ends which may be clamped onto the switch-blades by screws 19, said parts being combined so that by loosening a clamping-screw 19 and a corresponding pivot-screw a switch-blade may be drawn out longitudinally without otherwise dismantling the switch, substantially as described.

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

G. E. LINTON.

Witnesses:
M. E. REGAN,
L. W. SOUTHGATE.