

March 21, 1933.

J. L. SHANNON
ELECTRIC FLASH LIGHT
Filed Sept. 30, 1930

1,902,590

Fig. 1.

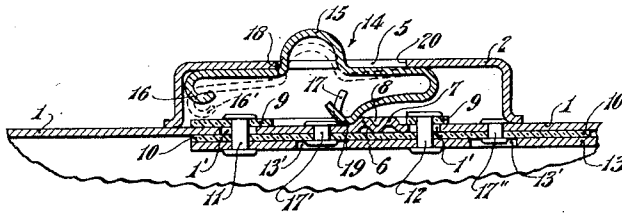


Fig. 2.

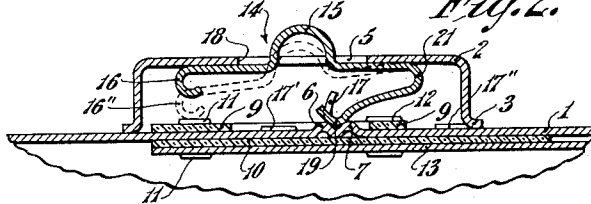


Fig. 3.

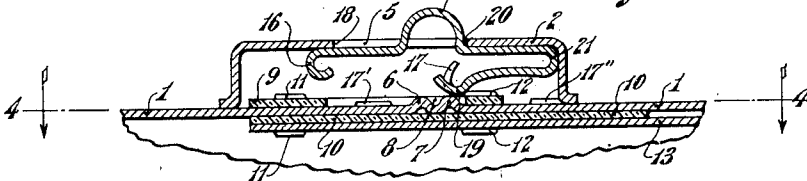


Fig. 4.

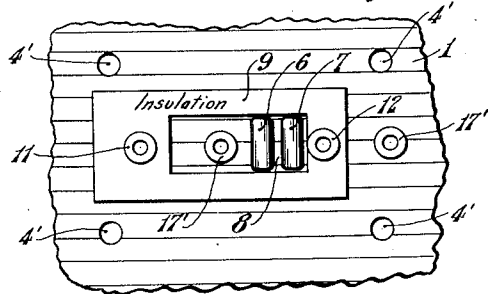


Fig. 5.

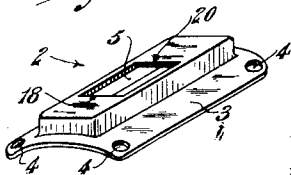
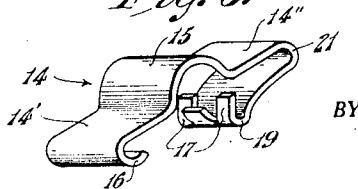


Fig. 6.



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ELECTRIC FLASH-LIGHT

Application filed September 30, 1930. Serial No. 485,421.

This invention relates to an improvement in electric flashlights, and more particularly to the construction of the switch for opening and closing the electric circuit to the bulb.

An object of the invention is to provide a switch that permits the electric circuit to the bulb to be positively retained in an open circuit, to prevent accidental closing, or, to be momentarily closed by the user, or, to be permanently closed for continuous lighting of the bulb.

Broadly, my invention comprises a casing member which is formed with an opening to receive a slidable switch member that is operated by the thumb or finger of the person. The casing member is formed with flanges having openings for securing it to the metallic battery enclosing casing. Located within the switch enclosing casing is a strip of insulating material which is secured to the metal casing. Also located on the inner surface of the metallic tubular battery enclosing casing is a second strip of insulating material. These two insulating strips and a metallic circuit conducting strip, within the casing, are secured to the casing by means of hollow rivets. The slidable switch member is formed from a single piece of spring material, as tempered brass, both of its ends serving to close the circuit at different times. Its center portion is formed with a struck-up curved portion which projects thru the opening of the switch enclosing casing to provide a convenient thumb piece, as will be described. Means is provided for limiting the downward movement of the switch, when the thumb piece is pressed downward. The metallic tubular casing is formed with struck-up notches for receiving and retaining one end of the switch in place.

Referring to the drawing:

Fig. 1 is a longitudinal sectional detail view of the switch retained in its open position.

Fig. 2 shows the switch moved into the first notch of the casing for retaining it in place, while the switch is to be momentarily opened or closed.

Fig. 3 shows the switch retained in its closed position.

Fig. 4 is a top plan sectional view on the line 4-4 of Fig. 3 showing the casing and switch removed, and illustrating the struck-up portion of the casing.

Fig. 5 is a perspective view of the switch enclosing casing, and

Fig. 6 is a perspective detail view of the slidable switch.

Referring to the drawing in detail:

1 designates the metallic tubular casing in which is placed the dry battery cells. 2 is a switch enclosing casing member formed with the side flanges 3 with the rivet receiving openings 4 for attaching this casing to the metallic tubular member 1, using the holes 4' in the tubular casing 1. This casing is formed with a central opening 5. 6 and 7 designate curved struck-up portions of the metallic casing 1 to provide a space 8 therebetween. 9 and 10 are strips of insulation that are placed on the outer and inner surface, respectively, of the tubular member 1. These pieces are secured together and to the casing by means of the hollow rivets 11 and 12. These rivets also secure the metallic strip 13, located within the tube, which serves to conduct the electric current to the bulb, (not shown) when the circuit is closed. 14 designates, as a whole, the slidable switch member, shown in detail in Fig. 6. This member is formed with a struck-up thumb portion 15, at substantially one-half of its length. An inwardly curved contact portion 16 is formed at one end and a curved end portion having the upwardly extending projections 17 is formed at its other end. The rivets 17' and 17'' also serve to secure the strip of insulation 10 to the casing 1. The heads of these rivets at their inner ends are located in the enlarged openings 13' of the metallic strip 13 in order to prevent any possibility of a short circuit with the dry cells. Large openings 1' in the battery casing 1 prevent a short circuit through rivets 11 and 12.

Referring to the positions of the parts shown in Fig. 1:

The slidable switch member 14 is in its

normally open circuit position. The struck-up thumb part 15 is shown located in the opening 5 at the extreme left-hand end of its travel with the part 15 in engagement with the edge 18 of the opening 5.

The curved end portion 19, (see Fig. 6) is in engagement with the struck-up rib 6 which permanently retains the switch member 15 in its open position. Should the part 15 be accidentally, or otherwise, moved downward into the dotted line position 16', the curved end 16 would engage the strip of insulation 9 and the circuit would not be closed.

Referring to Fig. 2, in which the thumb piece 15 is shown moved substantially into the center of the opening 5, the curved end 19 is now located in the space 8 between the two struck-up portions 6 and 7. Should the switch 14 be pressed downward into the dotted line position 16'', the curved end 16 would engage the metallic rivet 11 and close the circuit thru the casing 1 and the metallic strip 13 to the bulb of the flashlight, not shown.

Referring to the position of the parts shown in Fig. 3, in which the thumb portion 15 is in engagement with the rear edge 20 of the opening 5. The circuit to the battery is now permanently closed, since the end 19 is in contact with the struck-up part 7, metallic casing 1 and rivet 12. The end 19 is, therefore, retained in this position against movement. When in this position, as well as the other two positions, the projections 17 will be engaged by the portion 14'', when it is forced downward by pressure on the part 15. These projections serve the purpose of preventing bending of the switch beyond its elastic limit, as it cannot be forced downward sufficiently to bend or break the switch at the point 21.

It should be stated that when the slidable switch 14 is placed in its enclosing casing 2, its upper surface portions 14' and 14'' are always in contact with the inner surface of the casing, as shown, except when the part 15 is pressed downward.

It will be seen from this description that I have provided a flashlight that is simple in construction, inexpensive to produce, one that is free from breakage, one that permits the switch to be retained in its normally open position or to be retained in temporarily closed position or in its permanently closed position.

What I claim is:

1. In a flashlight construction, a metallic battery enclosing casing formed with spaced struck-up portions, a metallic switch enclosing casing formed with an opening and secured to said battery enclosing casing, a strip of conducting material, two rivets for securing the strip of conducting material to the inner surface of said casing, means for insulating said strip and said rivets from the

said metallic casing, a slidable switch in the switch enclosing casing formed with a part projecting through the opening in the said switch enclosing casing, contact loops or bends formed at each end of the slidable switch, one of said contact loops being in engagement with said struck-up portions on said casing for the purpose of retaining the switch in position for momentary contact between the opposite end of said loops and one of said rivets, or for effecting a continuous contact between the loop engaged by said struck-up portions and the other one of said rivets.

2. In a flashlight construction having a battery enclosing casing and a switch enclosing casing, a contact strip insulated from and secured to the inner surface of the battery enclosing casing, said securing means comprising two rivets whose heads project within said switch enclosing casing, a slidable switch in said switch enclosing casing which is formed with a contact loop portion at each end, means for retaining said switch in an open circuit position, means for retaining said switch in a position for making a momentary contact between one of said contact loops and one of said rivets, means for retaining said switch in continuous contact between the opposite end of said contact loops and the other one of said rivets, and means for moving said switch from any one of said positions to any other.

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