Jan. 13, 1925.

1,522,746

R. PREW

FLASH LIGHT

Filed May 13, 1924

Fig. 1.

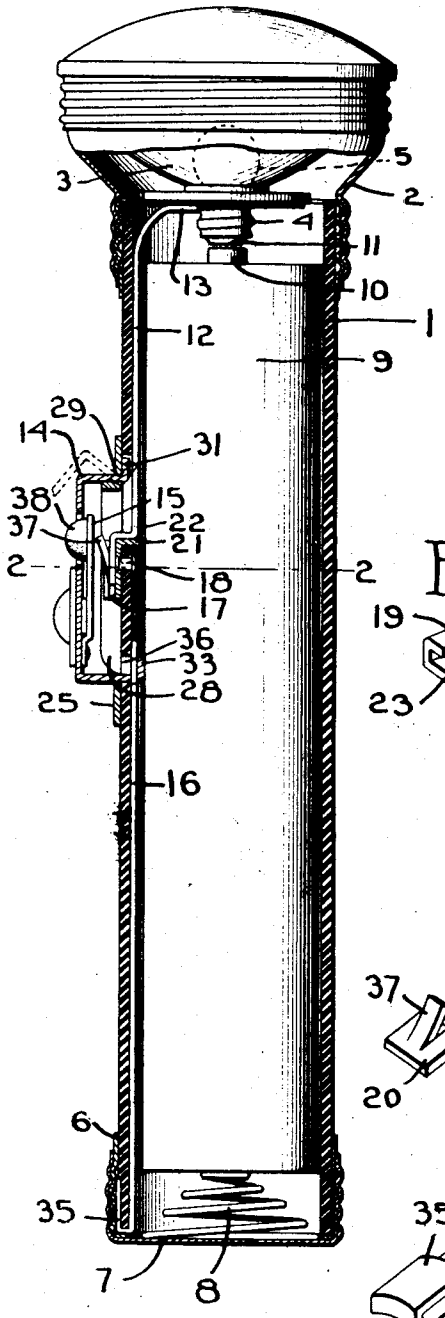


Fig. 2.

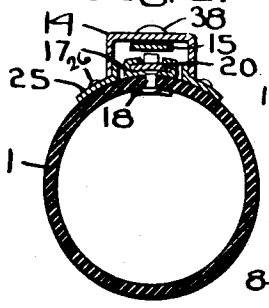


Fig. 8.

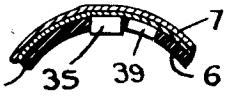


Fig. 9.

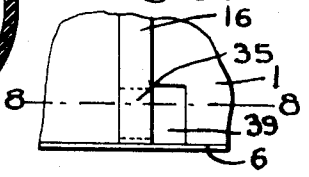


Fig. 7.

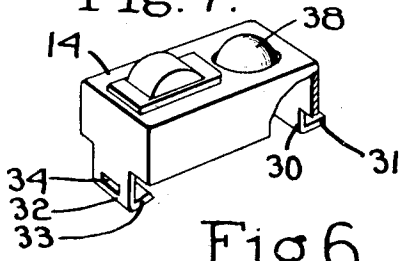


Fig. 4.

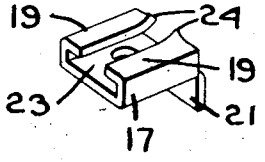


Fig. 6.

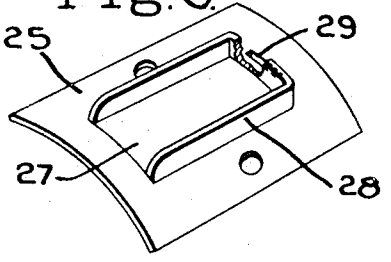


Fig. 3.

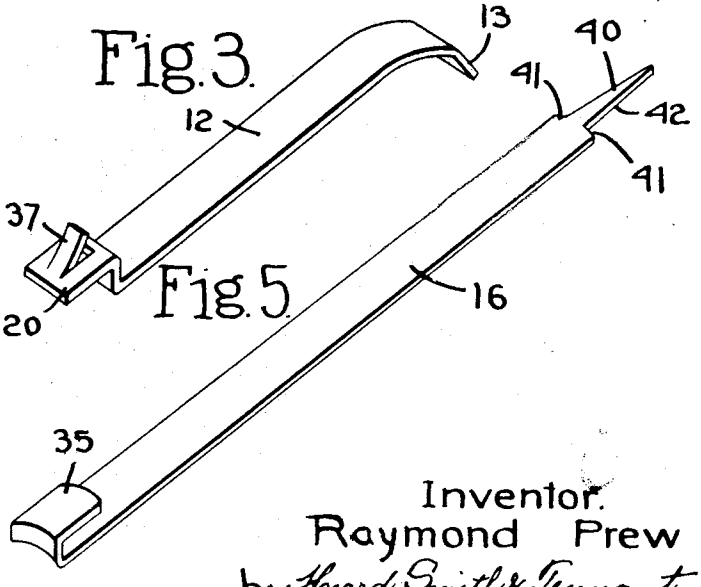


Fig. 5.

Inventor.
Raymond Prew
by Heard Smith & Tennant.
Attys

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UNITED STATES PATENT OFFICE.

RAYMOND PREW, OF BOSTON, MASSACHUSETTS.

FLASHLIGHT.

Application filed May 13, 1924. Serial No. 712,943.

To all whom it may concern:

Be it known that I, RAYMOND PREW, a citizen of the United States, and resident of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Flashlights, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to flashlights and has for its general object to provide an improved flashlight wherein the contact and circuit elements by which the circuit is closed are removably secured to the shell so that they can be readily removed thereby to facilitate cleaning, repair or any desired adjustment.

In flashlights which are now in common use the circuit-closing elements and the strips forming the circuit are permanently secured to the casing or shell and are located inside of the latter, where they are not accessible. During the use of the flashlight it frequently happens that because of some improper adjustment the contacts of the circuit-closing element do not close properly and when this condition arises the flashlight is, of course, useless. Where these elements are permanently secured to the casing or shell on the interior thereof it is extremely difficult if not impossible, for the ordinary person to remedy any such maladjustment. So also if any one of the parts of the circuit-closing device becomes broken or damaged it is not possible where the parts are permanently secured to the shell to remove the damaged part or replace it by another.

As stated above it is one of the objects of my invention to provide a flashlight in which the parts of the circuit-closing device are removably sustained by the casing so that in case of any improper adjustment or of any defect they may be removed and readjusted or repaired and then reinserted in the casing. Furthermore with my invention if any part becomes broken it is possible to replace it readily by a new part.

With these and other objects in view my invention comprises a flashlight having the novel features hereinafter described and set forth in the claims.

In the drawings wherein I have illustrated a selected embodiment of my invention, Fig. 1 is a longitudinal sectional view through a flashlight embodying my invention;

Fig. 2 is a section on the line 2—2, Fig. 1;

Figs. 3 is a perspective view of the contact strip;

Fig. 4 is a perspective view of the anchoring member;

Fig. 5 is a perspective view of the circuit strip;

Fig. 6 is a perspective view of the positioning plate;

Fig. 7 is a perspective view of the housing carrying the push button;

Fig. 8 is a section on the line 8—8, Fig. 9;

Fig. 9 is an under side view of Fig. 8.

In the drawings 1 indicates the shell or casing of the flashlight which is preferably made of fibre or some other insulating material and which has rigid therewith at one end the hood 2 in which the usual reflector 3 is received, the latter having the socket portion 4 to receive the bulb 5 all as usual in flashlights. At the opposite end the shell 1 is provided with the metal ferrule 6 to which the cap 7 is screw-threaded, the latter having the usual spring 8 secured thereto which engages the battery 9 and yieldingly holds the terminal 10 thereof against the terminal 11 of the bulb 5.

The parts thus far described are or may be all as usual in flashlights of this type and form no part of my present invention.

My improved circuit-closing device comprises a contact strip 12 which is detachably carried by the casing and is situated within the latter and one end 13 of which is adapted to engage the reflector, a housing member 14 which also is detachably secured to the shell and which carries a contact member 15 adapted to make contact with the contact strip 12 and a circuit strip 16 electrically connecting the housing 14 with the cap 7, which strip is also detachably secured to the casing.

The contact strip 12 is detachably retained in place by means of an anchoring member 17. This anchoring member is permanently secured to the shell by means of a rivet 18 and is formed with the two wings or lips 19 beneath which the end 20 of the contact strip 12 may be inserted. This anchoring mem-

ber is also shown as having the flange portion 21 which projects through an aperture 22 formed in the side of the casing 1.

The anchoring member is secured to the outside of the casing while the contact strip 12 is on the inside of the casing and, therefore, I propose to so form said strip that the end 20 which engages the lips 19 will be offset by an amount equal to the thickness of the wall of the casing. The opening 22 in the casing is large enough to permit the contact strip 12 to be placed in position by introducing the strip through the front end of the casing and then moving the end 20 of the strip through the opening 22 and into alignment with the space 23 between the lips 19 and the body of the anchoring member 17, after which said end 20 may be entered beneath the lips by a longitudinal movement of the strip 12. The ends 24 of the lips are turned upwardly or flared slightly so as to facilitate the placing of the strip 12 in position.

The housing 14 which carries the movable part 15 is retained in place partly by an anchoring plate 25 and partly by the circuit strip 16. The anchoring plate 25 is permanently secured to the shell by means of suitable rivets 26 and it has a central opening 27 to receive the anchoring member 17, said opening being partially surrounded by an upright curb 28. This anchoring plate is also provided with a slot 29.

The housing 14 is formed at one end with a leg 30 which extends through the slot 29 and with a laterally-extending toe portion 31 that underlies the anchoring plate 25. At the other end the housing is provided with a leg portion 32 adapted to pass through the opening 27 of the anchoring plate and through an opening 36 formed in the wall of the casing, said leg having a forwardly-extending flange or toe portion 33 and also having an opening 34 therethrough.

The contact strip 16 lies on the inside of the shell 1 and one end thereof passes through the opening 34 while the other end thereof embraces the edge of the shell at the rear end as shown at 35. The contact strip 12 is provided with a contact finger 37 with which the movable contact 15 is adapted to engage, the latter having a projection or push button 38 which extends through an opening in the housing. The contact strip 16 is in electrical contact with the cap 7 through the ferrule 6 and, therefore, when the push button 38 is depressed the movable contact 15 is brought into engagement with the contact finger 37 thereby closing the circuit to the lamp.

I have referred above to the fact that the contact strip 12 was removably secured to the casing. This is also true of the housing 14 and the circuit strip 16. To permit the circuit strip 16 to be removed and replaced I have formed the shell 1 with an opening 39 at its end through which the portion 35 of the circuit strip 16 may be inserted or withdrawn. This opening 39 is situated adjacent the normal position of the circuit strip as shown in Fig. 9 and with this construction the end 35 of the circuit strip may be moved laterally to bring it in alignment with the slot 39 after which it may be withdrawn through the slot (it being assumed that the cap 7 has been removed) and then removed from the shell by withdrawing it longitudinally. When the circuit strip has thus been withdrawn then the left hand end of the housing 14 is released and the latter may be swung into the dotted line position thereby permitting the toe 31 to be removed from the slot 29.

The contact strip 12 may be removed by first removing the reflector 3, and then pulling the strip forwardly sufficiently to release the end 20 from the anchoring member 17.

To assemble the parts it is simply necessary to first reinsert the contact strip 12 in the anchoring member as above described, then to place the toe 31 of the housing into the slot 29 as shown by the dotted line Fig. 1 and then to swing the housing into its operative position thereby carrying the foot 32 through the opening in the anchoring plate and through the opening 36 in the shell, after which the circuit strip 16 may be placed in the shell with the end 40 thereof inserted through the opening 34. The end 35 of the circuit strip is then introduced through the slot or opening 39 of the shell and said end is moved laterally in its operative position. If desired, the ferrule 6 may have a dent or protuberance past which the end of the circuit strip 16 is moved as it is carried into operative position, said dent or protuberance serving to frictionally retain the circuit strip in place. With this arrangement the housing is locked in place by the circuit strip.

I propose to make both toes 31, 33 so that they will normally incline upwardly slightly and with this construction they will have a firm bearing on the interior of the anchoring plate and against the circuit strip which will hold the housing firmly in position and prevent any looseness of the parts.

I also propose to make the end 40 of the circuit strip somewhat pointed and with the shoulders 41 which engage the foot 32 when the contact strip is in place. With this construction the edges 42 will have a wedge action against the edge of the foot 33 as the strip is inserted which will serve to clamp the housing firmly against the anchoring plate 25.

It will thus be observed that with this construction all the parts of the circuit-closing devices are removably secured to the shell and can be easily removed or replaced.

If, therefore, any of the parts need any adjustment or any repair such parts can be readily removed from the casing and after the desired adjustment or repairs are made they can be as readily replaced in position.

While I have illustrated herein a selected embodiment of my invention I do not wish to be limited to the constructional features shown.

I claim:

1. In a flashlight, the combination with a shell having a cap removably secured thereto at one end and a bulb-supporting reflector at the other end, of a contact strip removably supported by the shell and having one end engaging the reflector, a movable contact member also removably carried by the shell and adapted to engage the contact strip to close the circuit, said contact member being electrically connected with the cap.

2. In a flashlight, the combination with a shell having a cap at one end and a reflector at the other, of an anchoring member secured to the shell, a contact strip removably supported by the anchoring member and having one end engaging said reflector, and a movable contact member also removably carried by the shell and adapted to engage the contact strip.

3. In a flashlight, the combination with a shell having a reflector at one end, of a contact strip removably carried by the shell, and engaging said reflector, a housing removably carried by the shell, and a movable contact member carried by the housing and adapted to engage the contact strip.

4. In a flashlight, the combination with a shell having a removable cap at one end and a reflector at the other, of a contact strip removably carried by the shell and engaging said reflector, a housing also removably carried by the shell, a movable cantact member carried by the housing and adapted to engage the contact strip, and a circuit strip electrically connecting the housing with the cap.

5. In a flashlight, the combination with a shell having a removable cap at one end and a reflector at the other, of a contact strip removably carried by the shell and engaging said reflector, a housing also removably carried by the shell, a movable contact member carried by the housing and adapted to engage the contact strip, and a circuit strip electrically connecting the housing with the cap, and locking the housing in position.

6. In a flashlight, the combination with a shell having a removable cap at one end and a reflector at the other, of a contact strip removably carried by the shell and engaging said reflector, a housing also removably carried by the shell, a movable contact member carried by the housing and adapted to engage the contact strip, and a circuit strip electrically connecting the housing with the cap and locking the housing in position, said circuit strip beng removable from the shell.

7. In a flashlight, the combination with a shell having a cap removably secured thereto at one end and a reflector at the other end, an anchoring member permanently secured to the shell, an anchoring plate also secured to the shell, a contact strip removably carried by the anchoring member and adapted to engage the reflector, a housing detachably carried by the anchoring plate, and a movable contact carried by the housing and adapted to engage the contact strip.

8. In a flashlight, the combination with a shell having a reflector at one end adapted to support a bulb, an anchoring plate secured to the shell, a contact strip removably secured to the shell and engaging said reflector, a housing removably secured to the anchoring plate, and a movable contact member carried by the housing and adapted to engage the contact strip.

9. In a flashlight, the combination with a shell having a cap removably secured to one end and a reflector to the other, of a contact strip removably secured to the shell and engaging said reflector, an anchoring plate permanently secured thereto and provided with an opening, a housing detachably connected to the anchoring plate and having a leg extending through said opening and through an opening in the shell, a movable contact carried by the housing and adapted to engage the contact strip, and a circuit strip having interlocking engagement with said leg of the housing and connecting the latter electrically with the removable cap.

In testimony whereof, I have signed my name to this specification.

RAYMOND PREW.