

Oct. 24, 1944.

M. J. ZIMMER

2,361,359

FLASHLIGHT SWITCH

Filed Aug. 1, 1941

Fig. 1.

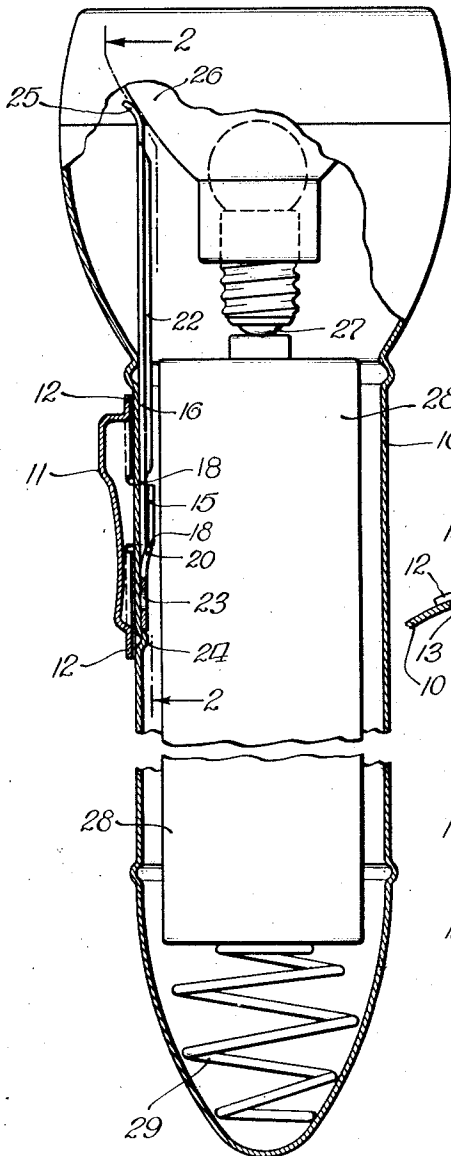


Fig. 2.

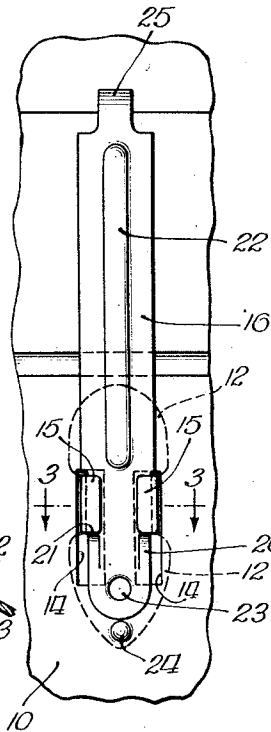


Fig. 3.

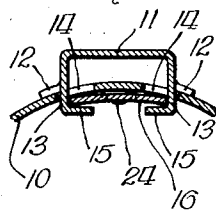


Fig. 4.

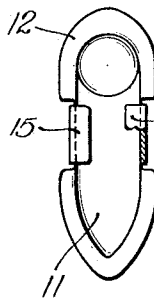


Fig. 5.

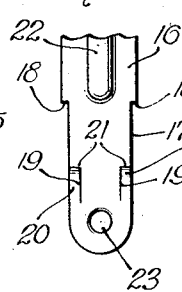
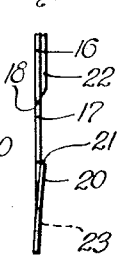


Fig. 6.



MYRON J. ZIMMER  
INVENTOR.

BY

Stanley H. [Signature]  
Att'y.

## UNITED STATES PATENT OFFICE

2,361,359

## FLASHLIGHT SWITCH

Myron J. Zimmer, Wood Dale, Ill., assignor to  
The Edward Katzinger Company, Chicago, Ill.,  
a corporation of Illinois

Application August 1, 1941, Serial No. 405,025

4 Claims. (Cl. 200-60)

This invention relates to a flashlight switch and more particularly to a fastening such as used to attach a slide on the exterior of a flashlight case and a conducting circuit closing member or strip within the case and connected with said slide for movement in unison therewith.

This invention consists of a novel connection between the slide and the circuit closing member without the use of separate fastening means, and of such design and construction as to absorb looseness without the use of separate devices.

With the above and other objects in view, as will be apparent, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawing, wherein:

Fig. 1 is a fragmentary longitudinal sectional view of a flashlight embodying a switch construction according to the present invention.

Fig. 2 is a similar view but taken axially at right angles on the line 2-2 of Fig. 1.

Fig. 3 is a transverse section taken on line 3-3 of Fig. 2.

Fig. 4 is an inner face view of the switch operating member contemplated by this invention.

Fig. 5 is a fragmentary elevational view of a portion of the conductive circuit closing member cooperating with the operating member shown in Fig. 4.

Fig. 6 is a view of the member shown in Fig. 5 but turned through an angle of 90 degrees relative to the position thereof as shown in Fig. 5.

Reference being had more particularly to the drawing, 10 represents a tubular flashlight casing of conductive material, such as metal. The switch contemplated by the present invention comprises an operating member 11 in the form of a finger piece having a peripheral flange 12, part of which at each side of the finger piece is slit and bent angularly to provide a pair of opposed guiding arms 13 which extend through suitable apertures 14 in the wall of the case. The arms 13 have intumed ends adapted to be passed through said apertures and occupy a position at some distance inwardly from the inner surface of the case 10 when the arms 13 are fully projected through said apertures.

Coacting with said operating member 11 to provide a member for opening and closing the lamp circuit is a contact member or strip 16 of brass or similar material, having an extension or shank portion 17 adapted to be interposed between the arms 13. The shank 17, as shown in Fig. 3, is of a thickness corresponding to the

clearance provided between the ends 15 of the arms 13 and the inner surface of the case 10 opposite thereto while the width of the shank is such that the inner surfaces of the arms 13 slidably guide the longitudinal edges of the shank to permit entrance of the shank therebetween by movement in a path lengthwise thereof. Such movement of the shank 17 from an entering position to an advanced position is limited by the abutment of aligned stops or shoulders 18 at the inner end of the shank 17 with the edges of the arms 13. Owing to the length of the extension or shank 17, a portion thereof will project beyond the outlet end of the arms 13 and the ends 15 when said shoulder 18 is in such engagement with the arms 13. The portion of the shank thus projecting beyond the arms 13 and ends 15 is slit longitudinally as at 19 to provide a pair of aligned tongues 20 normally sprung outwardly from the surface of the shank 17 facing the ends 15 and presenting transverse edges 21 which engage the edges of the ends 15 at the outlet side thereof to prevent withdrawal of the extension or shank 17 when the shoulder 18 is in engagement with the edges of the arms 13 at the inlet or entrance side thereof. The resiliency of the tongues 20 permits them to be pressed inwardly toward the plane of the shank during their passage through the space defined by the arms 13, ends 15 and inner surface of the case 10 whereupon the tongues 20, on reaching a position clear of the outlet edge of the ends 15 will spring outwardly and snap into engagement with the edge of the ends 15 to lock the shank 17 against withdrawal from the arms 13.

The foregoing construction is such that the parts of the switch can be readily assembled where access to the case is limited to the front end thereof as the shank 17 can be readily pushed into the space between the arms 13 and the ends 15 and the inner surface of the case 10, from the mouth of the case. Furthermore, the limited clearance between the ends 15 and the inner surface of the case provides a pair of opposed surfaces coacting with the faces of the shank 17 to exert a strong binding influence thereagainst which obviates the necessity for using separate holding or binding devices.

If desired a longitudinal reinforcing rib 22 may be provided in the member 16.

In the example shown, the contact member 16 is adapted to engage at the forward end 25 thereof with a reflector 26 disposed adjacent to the front end of the case and surrounding an electric lamp 27, the circuit through said lamp be-

ing closed when the member 16 is in engagement with the reflector. The source of electric current for the lamp is available, for instance, from one or more dry battery cells 28 adapted to make contact at one end thereof with the rear tip of the lamp under the action of a helical spring 29 interposed between the closed or capped end of the case 10 and the other end of the battery. With such an arrangement the circuit can take place by way of the rear tip of the lamp 27, the battery terminal, the spring 16, the case 10, the operating member 2, the strip 16, the reflector 26 and thence to the side terminal of the lamp 27.

If desired, the shank 17 may be provided with a recess or hole 23 engageable with a dimple or projection 24 formed in the case 10 to yieldably lock the member 16 in retracted position relative to the reflector 26.

While certain features of the present invention are more or less specifically illustrated, it is to be understood that various changes in form and proportion may be resorted to within the scope of the appended claims; similarly, that the materials of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

What is claimed is:

1. A switch assembly for a flashlight comprising a flashlight case having a wall portion provided with guide slots, a bearing surface on the inner side of said wall portion intermediate said slots, an operating member mounted externally of the case and overlapping a portion of the outer side of said wall portion adjacent said slots, a pair of spaced arms carried by said operating member receivable in said slots for projection inwardly beyond said bearing surface and slidable lengthwise of said slots, means interposed between said arms providing a second bearing surface opposite to and spaced from said bearing surface on the inner side of the wall portion intermediate said slots, a contact member comprising a strip having an end portion of a dimension corresponding to the clearance between said bearing surfaces and movable in the direction of its length between said arms from an entering position to an advanced position wherein the leading part of said end portion overhangs the transverse limits of said second bearing surface, said leading part of said end portion having a resilient member carried thereby which normally projects outwardly from the surface of the strip and yields inwardly by engagement with one of said bearing surfaces to accommodate movement of said end portion from an entering position to an advanced position as aforesaid, and means on one of said arms coacting with said resilient member for preventing movement of said end portion away from advanced position.

2. A switch assembly for a flashlight as claimed in claim 1 wherein the width of the end portion is such that the inner surfaces of the arms are slidably engaged by the longitudinal edges of the end portion incident to movement thereof toward its advanced position.

3. A switch assembly for a flashlight comprising a flashlight case having a wall portion provided with guide slots, a bearing surface on the inner side of said wall portion intermediate said slots, an operating member mounted externally of the case and overlapping a portion of the outer side of said wall portion adjacent said slots, a pair of spaced arms carried by said bearing member receivable in said slots for projection inwardly beyond said bearing surface and slidable lengthwise of said slots, means formed integrally with the projecting ends of said arms providing a second bearing surface between said arms opposite to and spaced from said bearing surface on the inner side of the wall portion intermediate said slots, a contact member comprising a strip having an end portion of a dimension corresponding to the clearance between said bearing surfaces and movable in the direction of its length between said arms from an entering position to an advanced position wherein the leading part of said end portion overhangs the transverse limits of said second bearing surface, said leading part of said end portion having a resilient member carried thereby which normally projects outwardly from the surface of the strip and yields inwardly by engagement with one of said bearing surfaces to accommodate movement of said end portion from an entering position to an advanced position as aforesaid, and means on one of said arms coacting with said resilient member for preventing movement of said end portion away from advanced position.

4. A switch assembly for a flashlight comprising a flashlight case having a wall portion provided with guide slots, a bearing surface on the inner side of said wall portion intermediate said slots, an operating member mounted externally of the case and overlapping a portion of the outer side of said wall portion adjacent said slots, a pair of spaced arms carried by said operating member receivable in said slots for projection inwardly beyond said bearing surface and slidable lengthwise of said slots, means interposed between said arms providing a second bearing surface opposite to and spaced from said bearing surface on the inner side of the wall portion intermediate said slots, a contact member comprising a strip having an end portion of a dimension corresponding to the clearance between said bearing surfaces and movable in the direction of its length between said arms, stop means on said member for engagement with said arms to position the end portion aforesaid in predetermined overhanging relation to the end of said second bearing surface, said overhanging end portion of the contact member being sheared to provide a tongue normally projecting outwardly from the surface of the member for engagement with the adjacent end of said second bearing surface, whereby said member is secured against movement away from said position.

MYRON J. ZIMMER.