Nov. 1, 1938. C. F. BURGESS 2,134,856

FLASHLIGHT

Filed Feb. 1, 1936

Fig. 1.

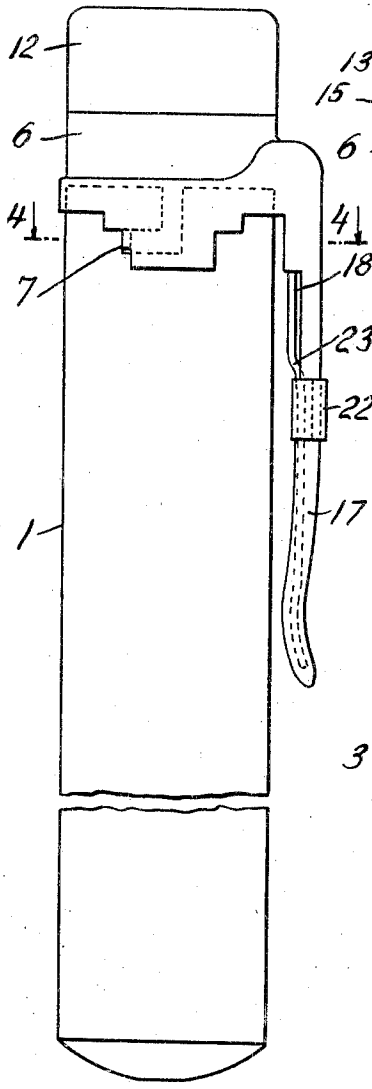


Fig. 2.

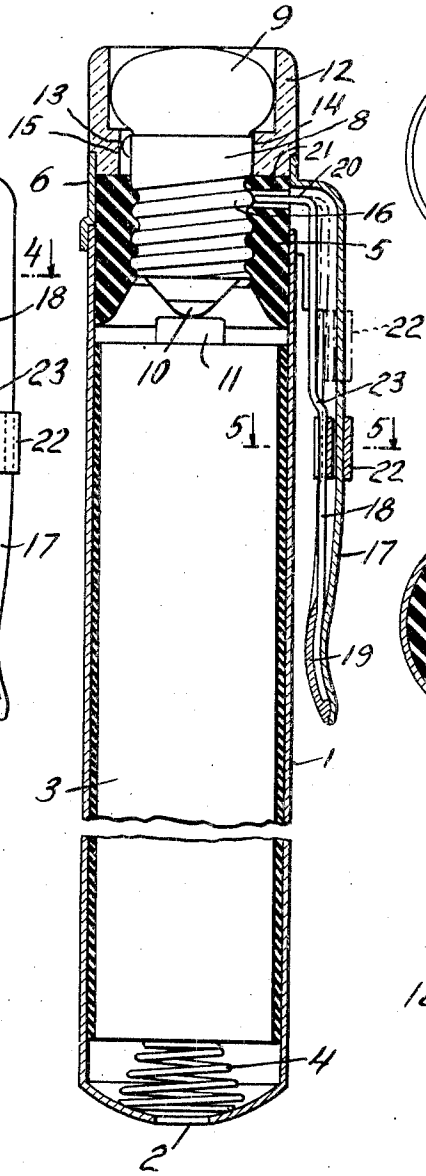


Fig. 3.

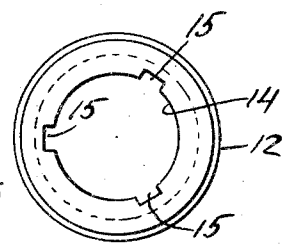


Fig. 4.

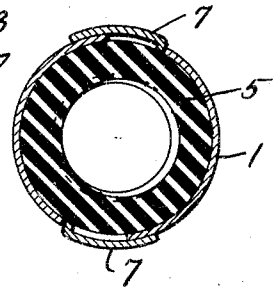
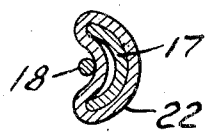


Fig. 5.



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FLASHLIGHT

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Application February 1, 1936, Serial No. 61,879

5 Claims. (Cl. 240—10.68)

This invention relates to hand lamps and more particularly to an improved incandescent lamp mounting and switch for a hand lamp.

In carrying out my invention, a lamp projecting from an insulating socket in the top of a battery case is surrounded by a ferrule of translucent, transparent or opaque material. This member is shaped to receive the body portion of the lamp and has an extension which receives a portion of the stem. Incandescent lamps for hand lamps as manufactured have a drop of solder on the upper edge of the metal base and in the portion of the ferrule which surrounds the stem, I provide a groove to receive the drop of solder and thus lock the ferrule and lamp against relative rotation.

The ferrule arranged surrounding the body portion of the lamp is ornamental and attractive, and at the same time it permits some sidewise diffusion of light while throwing the main beam forward. The provision of a groove for the reception of the drop of solder which is present on all lamps locks the ferrule to the lamp and therefore aids in screwing the lamp in place in the insulating socket. It also serves to retain the lamp in place without rattling.

The improved switch forming a part of the present invention comprises a clip similar to those used on fountain pens, pencils and the like with a curved wire or strip arranged on the inside of the clip and having its end bent to extend through an opening in the socket in proximity to the threaded stem of the lamp. A band encircles the clip and engages the wire. The wire is so shaped that when the band is moved downwardly, the upper end of the wire is moved inwardly into engagement with the threaded stem of the lamp to complete the circuit. An important feature of the switch construction is that when the device is used on a pen type of flashlight, engagement of the clip with the clothing of the wearer retains the band in its upper position and thus prevents accidental closure of the circuit.

In the accompanying drawing I have shown one embodiment of the invention. In the showing,

Figure 1 is a side elevation;

Figure 2 is a vertical, sectional view;

Figure 3 is a bottom plan view of the ferrule in which the lamp is mounted;

Figure 4 is a horizontal, sectional view on line 4—4 of Fig. 1; and

Figure 5 is a detailed, sectional view of the switch on line 5—5 of Figure 2.

Referring to the drawing, the reference numeral 1 designates a flashlight casing formed of metal or other conducting material. The casing may be made of a size convenient for carrying in the pocket to produce what is generally known as a pen type of flashlight. The bottom of the casing is preferably integral with the main portion and may be provided with an opening 2 for the insertion of an instrument to remove a cell that becomes stuck in the casing. A flashlight battery 3 is arranged in the casing and a suitable spring 4 is arranged between the bottom of the casing and the bottom cell of the flashlight battery. This spring serves the dual function of completing a circuit from the zinc electrode of the bottom cell of the battery to the casing and also serves to force the battery upwardly in the casing to maintain the upper central electrode of the battery in engagement with the base terminal of the lamp bulb. An insulating socket 5 of "Bakelite", hard rubber or other suitable material, is cemented or riveted to a metal ferrule 6. This ferrule is connected to the top of the casing by a bayonet type of connection shown at 7. The socket is internally threaded and is adapted to receive the threaded stem 8 of a lamp 9. As shown, the base terminal 10 of the lamp, when the lamp is mounted in the socket, is adapted to contact with the central electrode 11 of the top cell of the battery 3.

In lieu of the usual head construction employed on hand lamps, I provide a ferrule 12 which may be formed of transparent, translucent or opaque insulating material, and which as shown in Fig. 2, is shaped to receive the body portion of the lamp. This ferrule may be formed of "Bakelite", celluloid or other resinous compositions and may be made in various colors. As constructed it permits some sidewise diffusion of the light while throwing the main beam forward. It produces an attractive appearance and also serves a mechanical function in securing the lamp in position and retaining it against rattling. As is well known, incandescent lamps of the type used in hand lamps are provided with a drop of solder 13 on the metal base adjacent the body portion of the lamp. This drop of solder which is ordinarily useless, and in some instances might be objectionable, is made to serve a useful purpose in that it is employed to retain the lamp and ferrule against relative movement. As shown in Fig. 2 the ferrule beneath the glass portion of the lamp is provided with a central bore 14 of substantially the same diameter as the metal portion of the lamp and is

adapted to receive the metal portion of the lamp. This bore is provided with a plurality of grooves 15 and when the lamp and ferrule are assembled, the drop of solder 13 is arranged in one of these grooves as shown. The ferrule is of such size that the bore 14 surrounds the upper portion of the metal base of the lamp above the threads and the threaded portion 16 is adapted to engage the internally threaded opening of the insulating socket 5 to retain the lamp in position. The enlarged glass portion of the lamp provides a bearing surface which prevents longitudinal movement of ferrule 12.

Another feature of the invention is the provision of a simple switch which is in the form of a clip and therefore serves the dual function of a switch for the lamp and means for retaining it in the pocket of the user. As shown a clip 17, similar to the clips used on pens and pencils, is secured to the metal ferrule 6 and a contact member in the form of a wire or strip 18 is arranged on the inside of the clip. The lower end of the contact member is soldered or riveted to the clip as at 19 and the upper end 20 is extended substantially at right angles through an opening 21 in the insulating socket into proximity with the threaded stem of the lamp. A band 22 is arranged on the clip and the wire or strip 18 is provided with an offset portion 23 adjacent this band. The clip is shaped to limit the movement of the band between the full line and dotted line positions shown in Fig. 2 of the drawing. When the band is in the lower full line position, it is beneath the portion of the wire or strip 18 which normally lies in contact with the clip and this causes the upper end 20 of the wire or strip to be moved inwardly into contact with the stem of the lamp and thus close the circuit. When the clip is moved upwardly to the dotted line position shown in Fig. 2 of the drawing, it is beyond the offset portion 23 of the wire or strip and therefore does not exert inward pressure on the wire or strip. In this position the resiliency of the wire or strip causes it to move outwardly toward the clip and this breaks the circuit.

It will be noted that the switch is particularly adapted for use on hand lamps of the pen or pocket type. When the device is placed on the pocket, the engagement with the garment will move the band 22 to its upper position and while it is in the pocket the band will be retained in the upper position, thus preventing accidental closure of the circuit.

The lamp holder disclosed herein is, however, capable of use in any type of hand lamp and the arrangement of the ferrule and lamp permits the use of the ferrule as a wrench to screw the lamp firmly into the socket 5. It also serves to retain the lamp in position without rattling and is attractive in appearance.

While I have disclosed a flashlight and a switch for a flashlight in this application, the claims of this application are directed to the flashlight and the claims on the switch construction are the subject matter of an additional application, Serial No. 114,298, filed December 5, 1936.

I claim:

1. In a hand lamp, a casing, an insulating socket in the casing, a lamp having an enlarged glass bulb and a stem arranged in said socket, and a unitary ferrule member encircling said glass bulb and abutting said socket and provided with a central opening in one end thereof adapted to snugly receive a portion of the stem of said lamp, the diameter of said central opening being less than the inside diameter of the portion of said ferrule encircling said glass bulb to provide an annular bearing shoulder adapted to cooperate with said enlarged glass bulb whereby to retain said ferrule in abutting relation with said socket when the lamp is operatively arranged therein.

2. The construction of claim 1 and including means for locking said lamp and ferrule member against relative rotation while permitting relative axial movement comprising a protuberance on the stem of said lamp and an axial slot in the wall defining said central opening adapted to receive said protuberance when said lamp and said ferrule member are in assembled relation to each other.

3. In a hand lamp, a casing, an insulating socket in the casing, a lamp arranged in said socket, and a member surrounding the glass portion of said lamp and provided with a central opening to receive a portion of the stem of the lamp whereby said member is retained in position, the opening in said member being provided with a groove to receive the drop of solder normally present on the stem of the lamp and lock said lamp and said member against relative movement.

4. In a hand lamp, a casing, an insulating socket in the casing, a lamp arranged in said socket, a member of substantially the same diameter as the casing forming an extension of the casing, said member being recessed to receive the glass portion of the lamp, the inner end of the member having a central opening of substantially the same diameter as the metal end of the lamp and being provided with a groove to receive the drop of solder normally present on the metal portion of the lamp to lock said lamp and said member against relative movement.

5. In a device of the character described, a socket, a lamp having an enlarged glass bulb and a generally cylindrical stem, cooperating means in said socket and on said stem for securing said lamp in said socket, a cup-shaped member abutting said socket and adapted to receive said glass bulb and having an opening in the bottom thereof adapted to snugly receive said lamp stem, the inside depth of the side walls of said cup-like member being less than the length of said lamp stem and not substantially greater than the axial dimension of said glass bulb whereby to permit ready insertion of said lamp into said cup-like member and ready mounting of said lamp in said socket, a portion of the bottom of said cup-like member being positively secured between said glass bulb and said socket when said lamp is mounted in said socket.

CHARLES F. BURGESS.