Sept. 19, 1939. G. C. FULLMER 2,173,650

FLASHLIGHT

Filed April 1, 1938

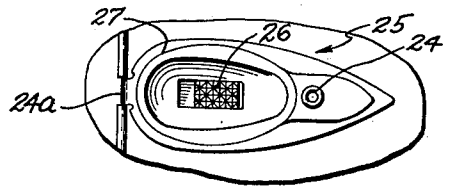


Fig. 3

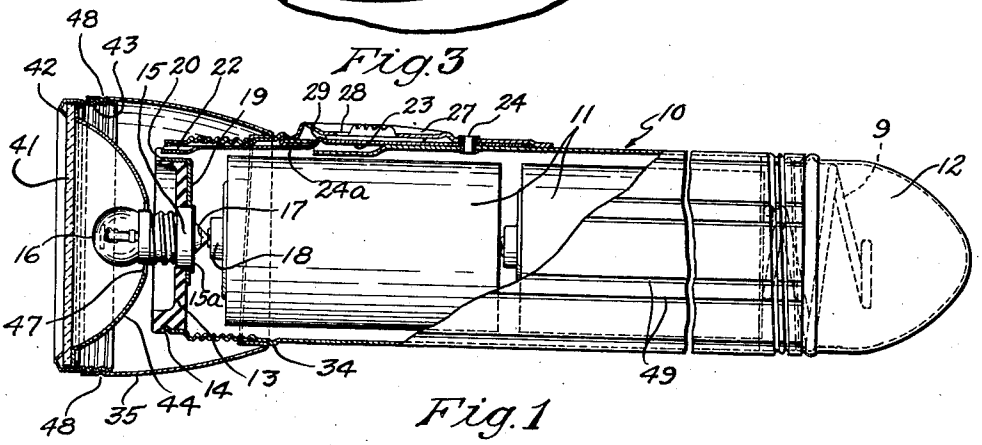


Fig. 1

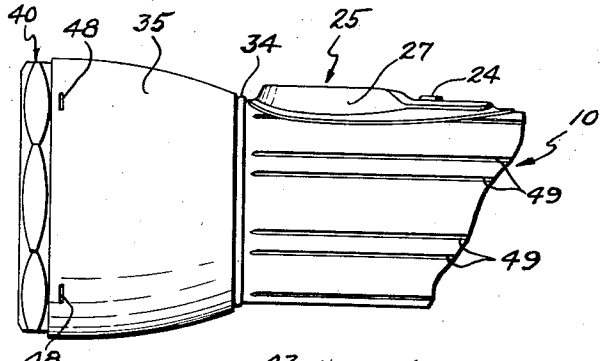


Fig. 2

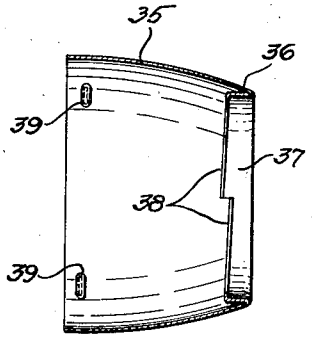


Fig. 4

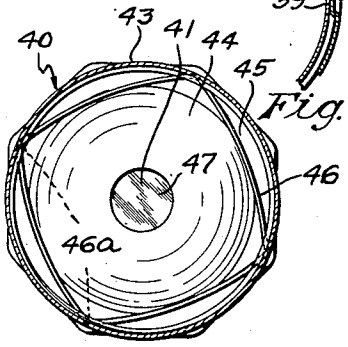


Fig. 5

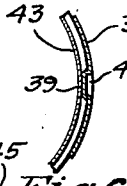


Fig. 6

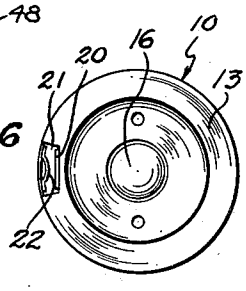


Fig. 7

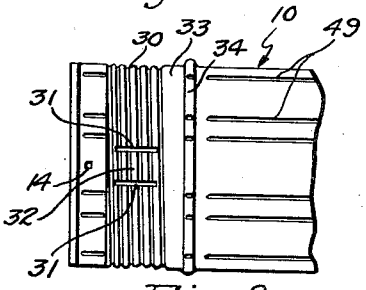


Fig. 8

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FLASHLIGHT

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Application April 1, 1938, Serial No. 199,415

3 Claims. (Cl. 240—10.66)

This invention relates to new and useful improvements in flashlights.

An object of the invention is to provide a neat and inexpensive construction of focusing flashlight.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the scope of the invention.

In the drawing:

Fig. 1 is a view partly in section and partly in side elevation showing the improved flashlight;

Fig. 2 is a side elevational view of the front or lens portion of the flashlight;

Fig. 3 is a detail plan view showing the switch mounting;

Fig. 4 is a sectional view of the hollow head cap of the flashlight;

Fig. 5 is a rear end view of the reflector, lens securing ring and lens assembly;

Fig. 6 is a detail sectional view showing the threaded connection between the head cap and the lens securing ring of the flashlight;

Fig. 7 is an end view of the flashlight the head cap and parts carried thereby being omitted; and

Fig. 8 is a side elevational view of the forward end portion of the flashlight casing the head cap and parts caried thereby being omitted.

Referring in detail to the drawing the flashlight includes a metal casing generally designated 10 and adapted for the reception of the batteries 11. A removable cap-like member 12 on the rear end of casing 10 provides for the insertion of the batteries into the casing and the removal of exhausted batteries therefrom, and mounted in this cap is a coiled spring 9 engaging the exposed end of the lower battery to ground it on the casing. Within the front end of casing 10 is a disc 13 of insulating material which may be held in place as by any suitable means such as small lugs 14 pressed inwardly from the casing.

Disc 13 supports a socket 15 for the reception of a light bulb 16 electrically connected with the socket and having its center contact 17 disposed at the inner side of the socket for engagement with the battery terminal 18. A strap 19 of conducting material is secured to the inner side of the disc 13 and has an end portion 20 located within a notch 21 in an edge of the disc. This strap has an opening through which the socket 15 extends and a flange 15a on the socket seats against the strap and holds it on the insulating disc 13. Also extending into the notch 21 but normally spaced from the end or lug 20 is an end 22 of a movable contact member 23 secured to the casing 10 as by a rivet 24 and a lug 24a at its opposite end extending through a slot in the casing and folded over against the inner side thereof. When the end 22 of member 23 is brought into engagement with end 20 of strap 19 a circuit is closed through the bulb 16 and the casing.

Member 23 comprises part of a switch generally designated 25 and including in addition to said member a finger piece or button 26 by means of which the member may be manipulated to close the circuit as described. Button 26 is mounted in a housing 27 secured to the casing 10, and such button may be simply pressed inwardly when it is desired to flash the light and may be slid forwardly to have its portion 28 ride onto the ridge 29 of member 23 to maintain the latter depressed when it is desired that the light continue to burn.

The front end portion of the casing 10 is provided with a band of screw threads 30, which band at one or more points is provided with spaced parallel slots 31 defining areas 32 pressed outwardly with respect to the remainder of the casing. To the rear of the threads 30 is a smooth space 33 beyond which is a bead or limiting stop 34 the purpose of which will appear.

Threaded onto the front end of the casing is a hollow sheet metal head cap 35 the walls of which flare or diverge from its rear end 36. Such cap at its rear end includes an integral flange 37 turned into the cap to project forwardly therein. The forwardmost edge of the flange is cut and offset or bent to provide an inturned edge 38 in the form of a spiral thread to cooperate with the threads 30 on the casing whereby the flange and thus the head cap may be adjusted along the casing 10.

Toward its forward end the cap 35 has a series of small lugs 39 pressed to extend at the inner side thereof and these lugs are arranged in such relation as to form a spiral and are in effect portions of a screw thread. At the outer end of the cap is a ring 40 securing the lens 41 in place and comprising a lens engaging bezel flange 42 and a threaded portion 43 extending into the cap 35 and having its screw threads cooperating with the lugs 39 whereby the ring

is threaded to the cap. The lugs are inclined to correspond with the inclination of the thread. With this construction there are no threads visible on the outer surface of the cap.

At the inner side of the lens **41** is a reflector **44** including a flange **45** held against the inner side of the lens as by a wire **46** bent to have portions extending into the angular or corner portions **46***a* of the ring **40**. With the wire **46** in place the ring **40**, lens **41** and reflector **44** are clamped to one another and may be handled as a unit when applying the lens to the head cap **35** after placing the bulb **16** in the socket **15**.

Ring **40** being secured to the head cap **35** in the manner described it will be clear that the ring, the lens and the reflector will move with the cap. The reflector has a central opening **47** through which the bulb **16** passes or extends whereby the reflector may have movement relative to the bulb.

With the described construction it will be clear that the head cap **35** because of the threaded engagement of the edge **38** of its flange **37** with the screw threads **30**, may be adjusted along the casing **10**. Thus the reflector **44** being in a unit with the head cap and the lens **16** it will be apparent that as the head cap is adjusted along the casing the focus of the flashlight will be adjusted.

The screw thread or edge **38** of the head cap is inwardly of the rear edge of the latter and thus as the cap is adjusted forwardly the threads **30** will remain concealed. As the cap is adjusted forwardly the plane portion **33** of the casing will be exposed but the threads **30** will be enclosed by the rear end portion **36** of the head cap, and for ordinary adjustments the casing threads will not be visible. Because of the outwardly pressed portion or portions **32** there will be extra frictional engagement whereby to maintain the head cap in any adjusted position relative to the casing.

In addition to the screw threads **30** being concealed at all times it is noted that the outer surface of the head cap is not broken by any formation of screw threads. The only interruption of such surface results from the pressing inwardly of the lugs **39** and constitutes small depressions **48** in such surface. Thus it will be understood that from the outer side the flashlight of the invention has a neat and finished appearance. It is of inexpensive construction as the attaching flange **37** of the head cap is an integral piece, and it is also noted that such flange will always be centrally disposed to center the head cap on the casing. When desired the outer surface of the casing may be ornamented as by the grooves **49** or otherwise as may appeal to various tastes.

Having thus set forth the nature of my invention, what I claim is:

1. In a flashlight including a casing having a threaded end portion, a hollow head cap on the front end of the casing and flaring forwardly from its rear end portion, an integral flange on the rear end of said head cap and projecting forwardly within the same, and an inturned spiral edge on the forward end of said flange and engaging said threaded portion of the casing whereby the cap is adjustable along said casing to vary the focus of the flashlight.

2. In a flashlight, a casing including a screw threaded front end portion, a hollow head cap on said front end portion, an inturned integral substantially cylindrical flange on the rear end of said head cap and projecting forwardly therein, and an inturned spiral edge on the forward end of said flange engaging with and adjustable along said threaded portion of the casing to vary the focus of the flashlight.

3. In a flashlight, a casing including a screw threaded front end portion, a hollow head cap on said front end portion and flaring forwardly from its own rear end, an inturned integral flange on the rear end of said head cap and projecting forwardly therein, an inturned edge on the forward end of said flange directed inwardly toward the axis of the cap and shaped to engage with and adjustable along said threaded portion of the casing to vary the focus of the flashlight, and stop means on said casing and spaced inwardly of the innermost of said screw threads and serving to limit adjustment of said flange relative to the casing.

GILES C. FULLMER.