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A. I. BARASH ET AL

2,229,486

FLASHLIGHT

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Fig. 1.

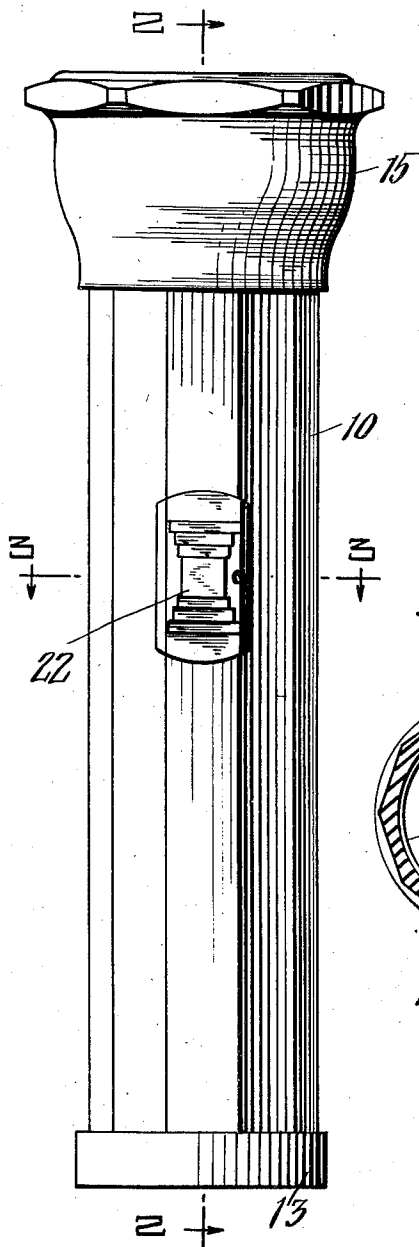


Fig. 2.

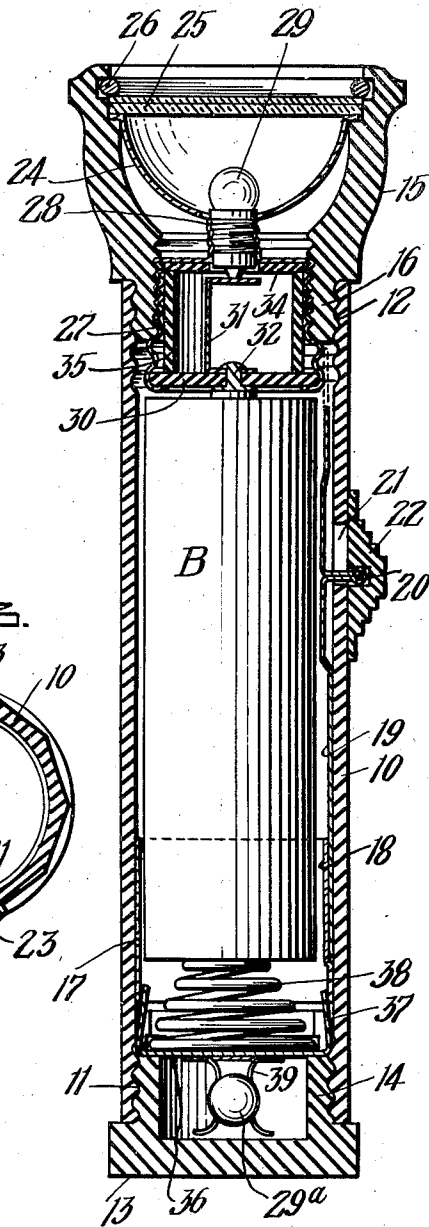
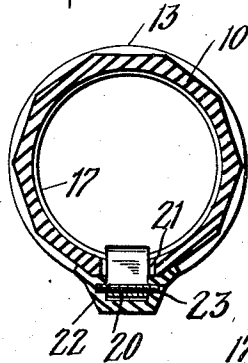


Fig. 3.



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## UNITED STATES PATENT OFFICE

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## FLASHLIGHT

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Application March 31, 1938, Serial No. 199,104

3 Claims. (Cl. 240—10.66)

This invention relates to flashlights and more especially to an improved flashlight for industrial uses where a flashlight is subjected to rough usage.

5 An object of this invention is a flashlight which is substantially indestructible, has no exposed metal parts and may easily be disassembled for cleaning purposes.

10 In a flashlight embodying the invention, the casing consists of a tubular member composed of laminated Bakelite with an interposed strip of linen or other suitable fabric. This member is internally threaded at its ends to receive the exteriorly threaded boss of a cap of molded Bakelite and the exteriorly threaded boss of a head composed of the same material. In the head, a bulb is supported by shock-absorbing means and there is also provided the usual reflector and a lens of shatter-proof glass. All the metallic members constituting the circuit connections between the battery and bulb are contained within the casing and a switch button of Bakelite slidably mounted on the casing is connected to the switch by which the lamp circuit is controlled. By reason of the fact that no metal parts are exposed, the flashlight may be used around any sort of electrical equipment without damage of short-circuiting or grounding such equipment and the casing, together with the head and cap will withstand the hardest usage without appreciable wear and further will withstand the application of heavy loads without yielding.

25 In addition, the flashlight may be dropped from a considerable height without damage thereto or injury to the bulb.

Other objects, novel features and advantages of this invention will become apparent from the following specification and accompanying drawing, wherein:

40 Fig. 1 is a plan view of a flashlight embodying the invention;

Fig. 2 is a section on the line 2—2 of Fig. 1, and Fig. 3 is a section on the line 3—3 of Fig. 1.

The casing 10 which as previously pointed out is composed of dielectric material constitutes a tube provided with interior threads 11 and 12 at its ends, the exterior periphery preferably being of polygonal contour. A cap 13 has an exteriorly threaded boss 14 which is screwed into the threads 11 while a head 15 has an exteriorly threaded boss 16 which is screwed into the threads 12. Both the cap 13 and the head 15 are composed of dielectric material such, for example, as molded Bakelite. A metal sleeve 17 is arranged near the cap end of the tube 10 but has its outer edge

spaced a substantial distance from the end of the tube. The sleeve is provided with an offset portion 18 in which is snugly but slidably received the end of a metal strip 19, extending nearly to the opposite end of the tube 10. The metal strip 19 is provided with an offset loop 20 which extends through a slot 21 in the tube 10 and into a button 22 composed of dielectric material, such as molded Bakelite. A screw 23 is mounted in the button 22 and extends through the loop 20 to attach the button to the strip 19, the screw 23 being completely contained within the button 22.

The head 15 is provided with a recess in which is arranged the reflector 24 having a central aperture large enough to permit the passage of the bulb later to be referred to, and a lens 25 preferably of shatter-proof glass. The reflector 24 is provided with a flange which lies above a shoulder formed in the head 15 and the lens 25 rests upon the edge of the reflector and is held in place by a snap ring 26 having a sheath of insulating material. The boss 16 of the head 15 is interiorly threaded to receive an exteriorly threaded metal casing 27 which has a small diameter threaded extension 28 in which is screwed the bulb 29 which extends through the aperture in the reflector 24. The casing 27 is closed by an insulating disk 30, to the inner face of which is riveted a metal resilient member 31 having a portion adapted to be engaged by the center contact of the lamp 29. The rivet 32 also constitutes a contact for engagement with the center terminal of the battery. Opposite the insulating disk 30 is another insulating disk 34 which engages the inner surface of the casing 27 and has an aperture through which the center contact of the lamp 29 projects. Between the disks 30 and 34 is arranged a tube 35 of insulating material. In assembling this unit, the disk 34 is first placed in the casing 27, after which the tube 35 is introduced and finally the disk 30 with the member 31 attached is inserted and brought into contact with the tube 35, after which the edge of the casing 27 is spun over the disk 30 to lock the various elements in assembled relation. The boss 14 of the cap 13 is recessed to receive a metal disk 36 having arms 37 extending longitudinally of the casing and being arranged in recesses cut out of the boss. This plate is held in position by a spiral spring 38, the bottom coil of which snaps into a groove in the boss and acts as a lock ring. The inner ends of the arms 37 engage the outer edge of the sleeve 17 when the cap is screwed into the tube 10. To the bottom

face of the plate 36 is attached a clip 39 which supports an extra bulb 29a.

Fig. 2 shows the switch in open circuit position. In order to light the bulb 29, the button 22 is moved to bring the upper end of the metal strip 19 into engagement with the casing 27 as is indicated in dotted lines in Fig. 2. A circuit is then closed from the upper terminals of the battery B through rivet 32, metal member 31, inner terminal of bulb 29, filament of bulb 29, outer terminal of bulb 29, casing 27, strip 19, sleeve 17, arms 37, plate 36 and spring 38 to the cup of the battery B.

Should it become desirable to clean the interior of the tube 10, the switch strip 19 may be removed from the casing by taking out the screw 20, thus disconnecting the switch button 22 and making it possible to bend in the strip 19 sufficiently to withdraw it through the open end of the casing.

In preparing the flashlight for use, the bulb 29 is screwed into the extension 28 with the casing 27 removed from the head 15. The casing 27 is then threaded into the boss 16, thus passing the bulb 29 through the aperture in the reflector and into the focus of the reflector. Replacement of a burned out bulb is effected by similar procedure.

This flashlight may be used around electrical equipment without fear of producing short circuits because of the fact that there are no exposed metal parts. Furthermore, by reason of the use of shatter-proof glass and the supporting structure for the bulb, the flashlight may be subjected to very rough handling even without incapacitating it. Furthermore, the application of severe strains or stresses to the casing will not injure it or cause any distortion because of the great inherent strength of the material of which the flashlight casing is composed.

We claim:

1. A flashlight comprising a tubular casing of dielectric material, a cap of dielectric material having a boss threaded into one end of said casing, a head of dielectric material having a boss threaded into the other end of said casing, a metal sleeve in said casing adjacent the cap end thereof and having an inwardly offset portion, a metal strip having one end projecting into said offset portion and having an offset portion projecting through a slot in the casing, a button of dielectric material surrounding and attached to said portion, a metal casing threaded into said head boss and being engageable by said metal strip in one position thereof, said casing being closed at one end by an insulating disk and at its other end having a portion of reduced diameter constituting a bulb socket, a contact member carried by said disk in position to be engaged by a bulb in said socket and having a portion projecting through said disk, a metal disk mounted in said cap and having portions engageable with said sleeve, and a spring associated with said metal disk for engagement with one end of a battery in said casing.

2. A flashlight according to claim 1 in which said head contains a reflector, a lens of shatter-proof glass engaging the edge of said reflector and a dielectric coated snap ring locking said lens and reflector in said head.

3. A flashlight according to claim 1 in which said contact member is U-shaped with one leg engaging said disk and the other leg underlying the inner portion of said bulb socket.

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