

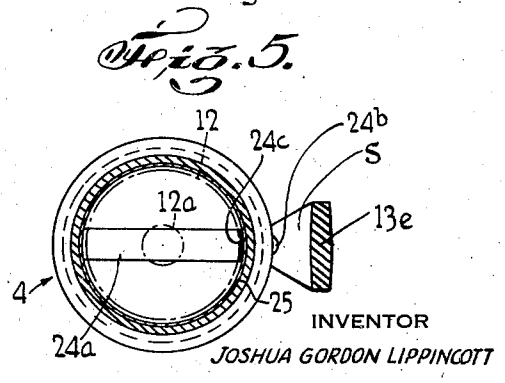
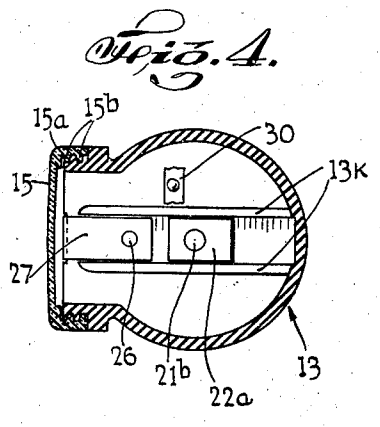
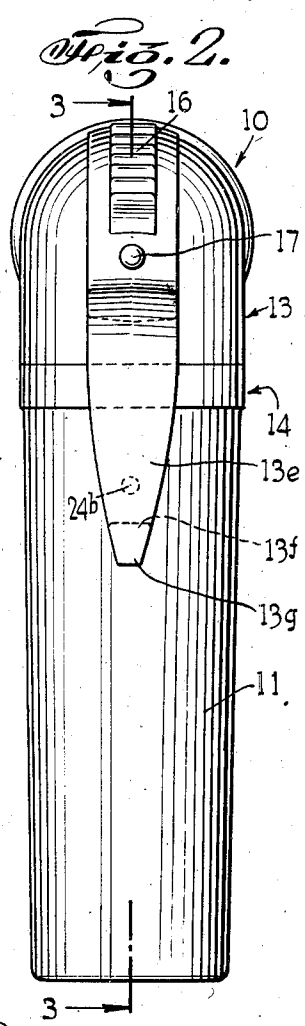
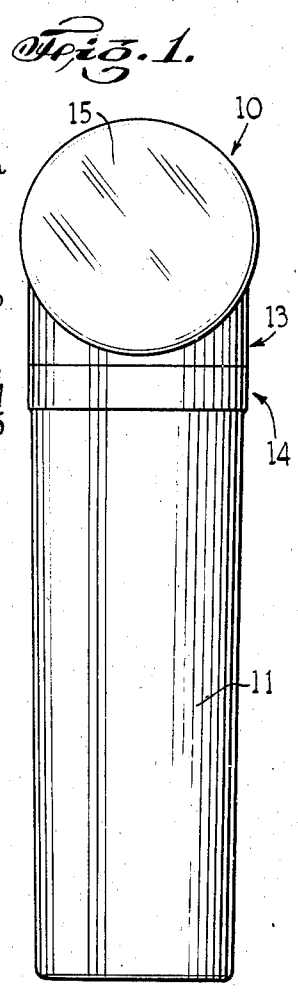
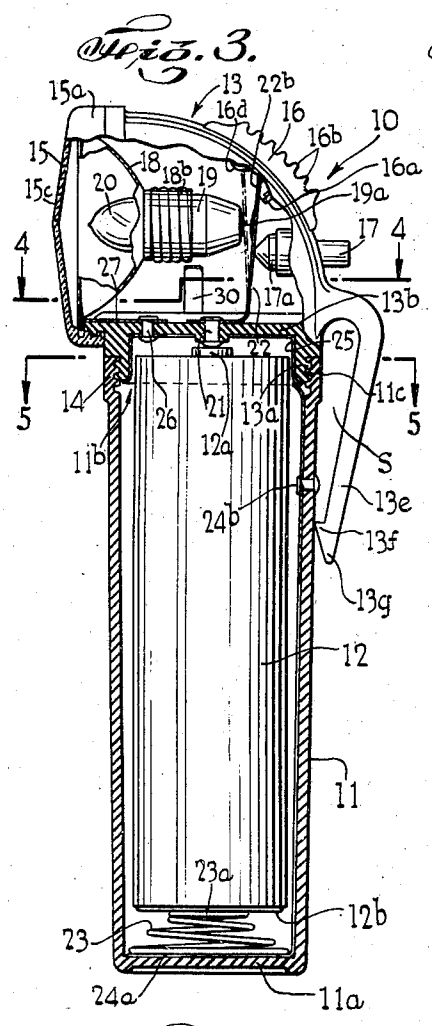
Jan. 2, 1945.

J. G. LIPPINCOTT
ELBOW HEAD FLASHLIGHT

2,366,202

Filed Nov. 29, 1943

2 Sheets-Sheet 1



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2 Sheets—Sheet 2

Fig. 6.

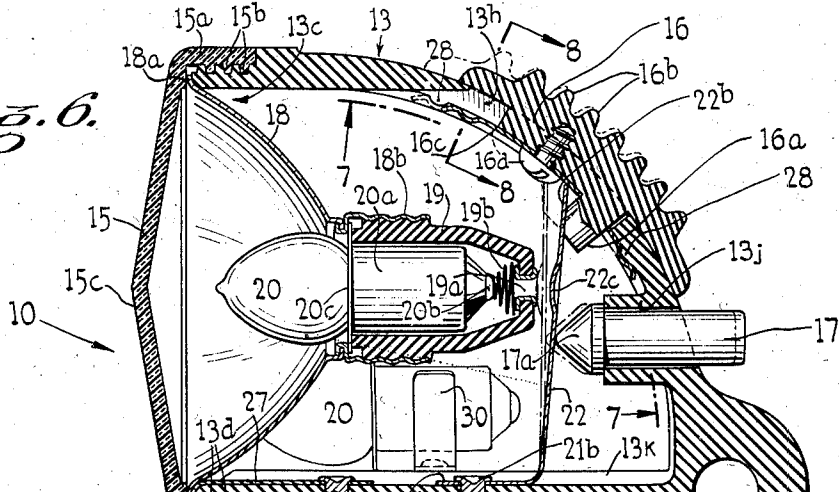


Fig. 7.

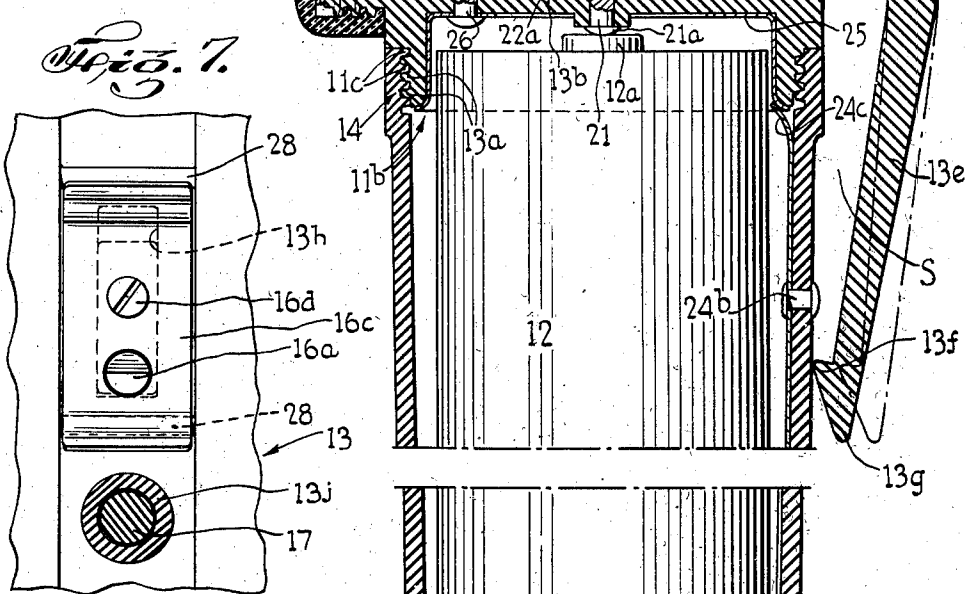
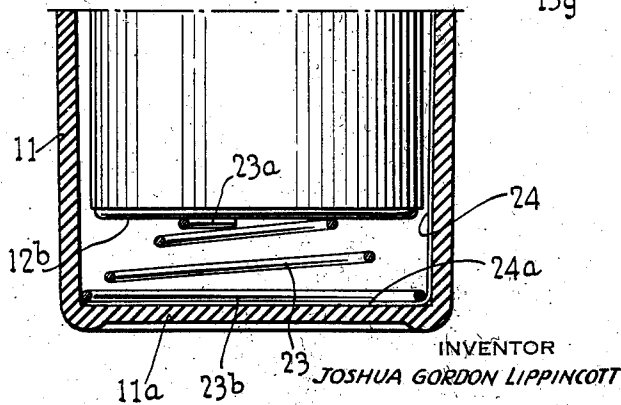
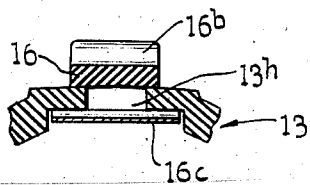


Fig. 8.



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ELBOW HEAD FLASHLIGHT

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6 Claims. (Cl. 240—10.67)

This invention relates to flashlight devices and more particularly is directed to portable flashlights formed with elbow or angular shaped head structure of improved construction.

Among the objects of the invention is to generally improve flashlights of the character described which shall comprise few and simple parts that are readily assembled to form a rugged yet neat appearing structure, which assembly shall have the parts conveniently proportioned for both signal lighting and general illumination purposes, which shall be inexpensive to manufacture, and which shall be practical and efficient to a high degree in use.

Other objects of the invention will in part be obvious and in part hereinafter pointed out. The invention accordingly consists of features of construction, combinations of elements, and arrangements of parts which will be exemplified in the construction hereinafter described and of which the scope of the application will be indicated in the following claims.

In the accompanying drawings in which is shown an illustrative embodiment of this invention.

Figs. 1 and 2 are front and rear views, respectively, of an improved elbow head portable flashlight constructed to embody the invention.

Fig. 3 is a side elevational view of the flashlight shown in Figs. 1 and 2, a greater portion of the housing being broken away to expose the interior construction.

Figs. 4 and 5 are cross sectional views taken on lines 4—4 and 5—5 in Fig. 3.

Fig. 6 is an enlarged cross section view similar to Fig. 3 showing a detail of the assembly construction, and

Figs. 7 and 8 are detail cross sectional views taken on lines 7—7 and 8—8 in Fig. 6.

Referring in detail to the drawings 10 denotes an improved elbow head portable flashlight constructed to embody the invention. As seen from Figs. 1, 2 and 3, the flashlight 10 has a tubular casing portion 11 formed with a closed bottom 11a and an open end 11b for housing one or more electric battery dry cells 12 of conventional construction, and has an elbow head 13 secured to the open end 11b of battery housing portion 11 by a suitable means such as screw joint 14. Said screw joint 14 may have interior threads 11c form on the inner surface of the housing open end 11b engaging with exterior threads 13a extending beyond a closed end 13b of elbow head 13. The other angularly disposed open end 13c of elbow head 13 opposite closed end 13b may also be provided with suitable exterior threads 13d onto which is screwed the flange 15a of a lens cap 15, all as shown in Figs. 3 and 6.

The elbow head 13 is also seen to include an

integrally formed gripper support 13e which extends down beyond the plane of the closed end 13b and has a hook end which may have a serrated or a tooth surface 13f facing a mid-portion of the exterior side of the battery housing 11 and a terminal outturned finger 13g.

The battery housing and elbow head above described preferably is molded of suitable plastic material of any well known composition that can be colored as desired and finished without machining to exact size and shape as required. Said material is considered generally as forming rigid structures yet has a certain desired degree of resiliency to counteract shocks due to blows and rough handling. Thus the gripper support 13c in the form shown in Figs. 3 and 6 may be constructed and arranged that it is capable of being temporarily swung or flexed and held in the position shown in dot and dash lines in Fig. 6 while a belt or other support (not shown) can be inserted to pass the hook end thereof and be retained against removal from space S after said gripper support 13e is released and has returned to the full line position shown due to the resiliency of the gripper support 13e construction.

The elbow head 13 has in the rear curved side thereof a slotted opening 13h in which there is seated to ride a finger operated slide switch 16 below which is mounted to extend through the elbow head wall a push button 17.

The elbow head 13 when mounted in place by screw joint 14 preferably forms, through the provision of closed end 13b, a tight closure for said casing portion 11 in which the battery cells 12 are housed thereby excluding any fumes or vapors from leaving the battery compartment and entering into the elbow head.

Carried at the open end of the elbow head 13 and secured in place by the flange 15a of the lens cap 15 there extends the outturned flange 18a of a metallic reflector 18. The latter carries a centralized screw shell portion 18b which has removably mounted to extend therethrough an insulating thimble 19, which in turn has projecting therein a base 20a for incandescent lamp 20. A metallic eyelet contact 19a may be provided to extend through the closed end of the thimble 19 and a suitable metallic resilient spring 19b interposed in circuit between the inner end of the eyelet 19a and a center terminal contact 20b of lamp base 20a. The lamp base 20a has also an extending terminal collar contact 20c which is pressed against screw shell 18b of the reflector by the mounting of the thimble 19 therein, and if desired a washer may be provided between the bulb of lamp 20 and the reflector 18 as shown in Fig. 6 to retain the lamp 20 in a steadied position.

The lens cap 15 and its flange 15a preferably is

made of a single piece of transparent molded plastic with inner threads 15b thereof formed to fit the exterior threads 13d on the open end of the elbow head 13. The front wall portion 15c of said cap 15 may be arched outwardly to provide a stiffened bracing structure.

Centrally through the closed end 13b of elbow head 13 there is mounted to extend a suitable electric contact, such as metallic rivet 21, which has the under or exterior end 21a located to press against a top center terminal 12a of the dry cell battery 12. The other or interior end 21b of said rivet provides an anchor for one end 22a of a metallic spring blade 22 which is bent upwardly to pass the outer end of eyelet 19a carried by the thimble 19 and in the path of movement of the push button 17 and slide switch 16.

The slide switch 16 which is mounted for sliding movement in slot 13h along the curved wall portion of the elbow head 13 has an integral interior projecting lug 16a which abuts the free end 22b of the spring 22, said switch being located beyond, that is, above the thimble mounting of the lamp 20. Slide switch 16 may be formed with an insulating finger piece portion 16b projecting through said elbow head wall to ride on the exterior side thereof, a suitable plate 16c being secure on the interior side of said finger piece 16b by suitable means, such as, screw 16d to retain the parts in cooperative assembly.

The interior side of the elbow head wall adjacent the slot 13h and said plate 16b may be made with suitable spaced detent means, as shown at 28 in Fig. 6 for retaining the slide switch 16 movement actuating the spring blade 22 in either "off," that is, open circuit position when pushed down as shown in full lines, or, in "on," that is, closed circuit position when pushed up shown in dot and dash line.

The push button 17 is mounted to slide through a bearing 13j forming portion of the wall of elbow head 13, the inner end 17a of push button 17 being enlarged to limit the retracting movement thereof. Said end 17a may be located to engage and press the spring blade 22 below a contact boss 22c provided in a mid-portion of the blade 22 which aligns with and is adapted to contact the eyelet rivet 19a, as shown in Fig. 6.

From the above described parts and assembly, the portion of the flashlamp circuit from the center terminal 12a of the dry cell battery 12 to the center contact 20b of lamp base 20 has been described. The remaining portion of the flashlamp circuit may comprise of a metallic helical coil spring 23 seated within the closed casing bottom 11a, having an end 23a contacting with container terminal 12b of the dry cell battery 12, an end 24a of a metallic strip 24 being interposed between said bottom 11a and the spring end 23b to contact the latter. The strip 24 thus electrically connecting with battery terminal 12b may be secured to the casing by suitable means such as rivet 24b, for extending along the interior side thereof to terminate in an inwardly bent end 24c at the casing open end 11b just below threads 11c.

An annular flanged jumper 25 may be firmly mounted to the outer surface of the elbow head closed end 13b to extend down in the casing open end 11b for electrically connecting with said strip bent end 24c by a scraping contact as shown in Fig. 6, the circuit being carried through said closed end 13b by suitable means, such as metallic rivet 26. The latter also secures in place a short metallic strip 27 carried on the interior

side of said closed end 13b wherethrough the circuit is electrically connected with reflector flange 18a and hence through the flange of the lamp base contact 20c. Said interior side of the closed end 13b may be formed with trough 13k for aligning the strip 27 and blade end 22a as shown in Fig. 4.

With the parts made and assembled as described above and shown in the drawings, the practical utility of the invention becomes at once apparent. The flashlight 10 may be carried in the hand when used or suspended on a belt by means of the gripper support 13e. To flash signal lights the push button 17 is simply pressed and released as required whereby the spring blade 22 is deflected to close and open the circuit at the eyelet rivet 19a, the spring blade 22 being made to have sufficient resiliency to normally be retained in open circuit position when the pressure of push button 17 is released. To retain the circuit closed for constant illumination, the slide switch 16 is moved into the dot and dash line position shown in Fig. 6, whereby the spring blade 22 is deflected into the closed circuit position. There the detent means 28 retains the slide switch 16 against the action of the deflected spring blade 22.

If desired a suitable clip mounting or holder 30 may be provided within the elbow head 13 rearwardly of the reflector 18 for storing a spare lamp 20, as shown in Fig. 6.

It should be noted that the slide switch 16 and push button switch 17 are located in a convenient position for actuation by the thumb of the user's hand when the tubular casing 11 is gripped, pressure on push button switch 17, exerting a force on the spring blade 22 below that where pressure is applied by the actuation of slide switch 16 so that flash signals are most effectively produced.

It should also be noted, as shown in Fig. 6, that the head of screw 16d of the slide switch may be so located and arranged that said slide switch 16 when retained in retracted or in "off" circuit position with the detent means 28 pushed down, engages the extreme edge of the spring blade free end 22b. On pressing the push button 17 there is thus provided a secondary end support for the spring blade 22. The action by push button switch 17 is thereby made more effective and the spring blade 22 may be actually bowed for giving a snap movement on making and breaking of the circuit. In fact an audible click may be produced when said blade free end 22b snaps by the head of screw 16d on pressing and releasing the push button 17.

It is thus therefore seen that there is provided an improved flashlight in which the objects of the invention are achieved and which are well adapted to meet all conditions of practical use.

As various possible embodiments may be made in the invention for use for different purposes and as various changes might be made in the embodiment above set forth, it is to be understood that all the above matters here set forth or shown in the accompanying drawings, are to be interpreted as illustrative and not in a limiting sense.

Thus having described my invention, I claim as new and desire to secure by Letters Patent:

1. An elbow head assembly for a portable flashlight comprising an insulating molded angle tubular structure having a closed bottom end with a battery connecting contact member extending therethrough, said bottom end adapted

to form a closure for a battery compartment portion of said flashlight, a lens cap secured to cover an open end of said structure, a metallic reflector secured to extend into said structure open end being retained in place by said lens cap, a lamp socket means carried by the reflector to project centrally into said structure, an incandescent lamp fitted into the reflector and mounted in said lamp socket means, a deflectable spring blade secured by said contact member to extend within said structure for electrically connecting with said lamp socket means, a slide switch extending through a curved wall portion of said structure, and a push button switch spaced from said slide switch to extend through a wall portion of said structure mounted for movement independent of said slide switch and having a head bearing against the spring blade, said switch head limiting the outward movement of the push button switch, said spring blade extending in the path of movement of said slide switch and push button switch head for selectively controlling the making and breaking of a circuit through said connection of the spring blade with the lamp socket means.

2. An elbow head assembly for a portable flashlight as defined in claim 1 in which an annular flanged jumper is mounted to an outer surface of said closed bottom end, said jumper being extended to a rim edge of said outer surface closed bottom end to provide another electric contact member spaced from the first mentioned contact member and adapted to scrape a battery connecting means when mounting said elbow head on the battery compartment portion.

3. An elbow head assembly for a portable flashlight comprising an insulating molded angle tubular structure having a closed bottom end with a battery connecting contact member extending therethrough, said bottom end adapted to form a closure for a battery compartment portion of said flashlight, a lens cap secured to cover an open end of said structure, a metallic reflector secured to extend into said structure open end being retained in place by said lens cap, a lamp socket means carried by the reflector to project centrally into said structure, an incandescent lamp fitted into the reflector and mounted in said lamp socket means, a slide switch extending through a curved wall portion of said structure, a push button switch extending through a wall portion of said structure below said slide switch, and a deflectable spring blade secured by said contact member to extend within said structure for electrically connecting with said lamp socket means, said spring blade extending in the path of movement of each of said switches for independently controlling the making and breaking of a circuit through said connection of the spring blade with the lamp socket means, said molded structure includes an integrally formed gripper support which extends down beyond the plane of said closed bottom end, said gripper support being constructed and arranged to be flexed out of a normal position facing the battery compartment to provide for engaging a suspension means for flashlight.

4. An elbow head assembly for a portable flashlight comprising an insulating molded angle tubular structure having a closed bottom end with a battery connecting contact member extending therethrough, said bottom end adapted to form a closure for a battery compartment portion of said flashlight, a lens cap secured to cover an open end of said structure, a metallic reflector

secured to extend into said structure open end being retained in place by said lens cap, a lamp socket means carried by the reflector to project centrally into said structure, an incandescent lamp fitted into the reflector and mounted in said lamp socket means, a slide switch extending through a curved wall portion of said structure, a push button switch extending through a wall portion of said structure below said slide switch, and a deflectable spring blade secured by said contact member to extend within said structure for electrically connecting with said lamp socket means, said spring blade extending in the path of movement of each of said switches for independently controlling the making and breaking of a circuit through said connection of the spring blade with the lamp socket means, said slide switch includes a plate and a screw fastening for retaining the slide switch in an assembled position with respect to the spring blade, an extreme free end of said blade being constructed and arranged to engage with said screw fastening when the slide switch is in open circuit position and the push button switch is actuated.

5. A flashlight of the character described comprising a single molded plastic angle tubular structure of an elbow assembly having a closed bottom end formed with an extending attachment portion and including an integral elongated gripper support which extends beyond the plane of said bottom end and said attachment portion. a lens cap secured to cover an open end of said structure, a metallic reflector secured to extend into said structure open end being retained in place by said cap, a lamp socket means carried by the reflector to project centrally into said structure, an incandescent lamp fitted into the reflector and mounted in said lamp socket means, a slide switch extending through a curved wall portion of said structure, a push button switch extending through a wall portion of switch adjacent said slide switch, a deflectable spring blade mounted to extend within said structure in the path of movement of each of said switches for independently controlling the making and breaking of an electric circuit from the blade to said lamp socket means, a contact member extending centrally through said bottom end to an outer surface thereof for securing said spring blade in mounted position, an annular flanged jumper mounted to the outer surface of said bottom end to provide another contact member spaced from said first mentioned contact member, a metallic strip mounted on an inner surface of said bottom end electrically connecting with the reflector, metallic fastening means extending through said closed bottom end connecting the annular jumper with said strip, a casing coupled to said attachment portion with said closed bottom end forming a closure therefor, a battery retained in said casing with a terminal thereof connected with said first mentioned contact member, a metallic strip mounted in the casing and connected with the other terminal of the battery, said casing strip being extended to said attachment portion and making a scraping connection with the annular flanged jumper.

6. A flashlight as defined in claim 5 in which said slide switch includes a fastening screw having a head in the path of movement of an extreme free end of said spring blade to provide a temporary support during the operation of said push button switch.