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E. J. McCABE

2,435,689

FLASHLIGHT

Filed April 1, 1947

Fig. 1.

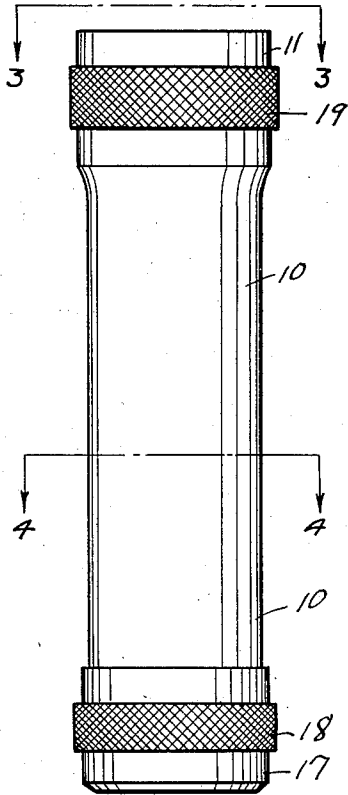


Fig. 2.

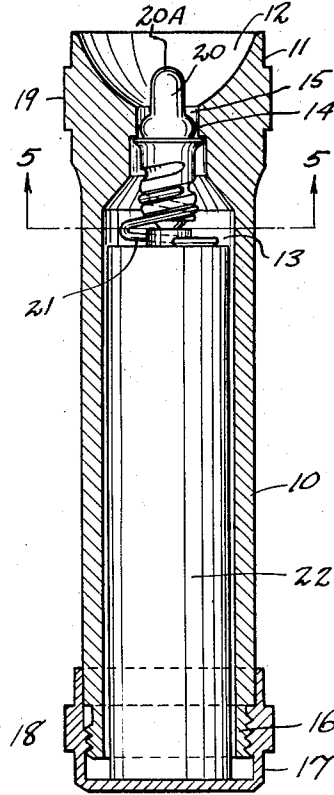


Fig. 3.

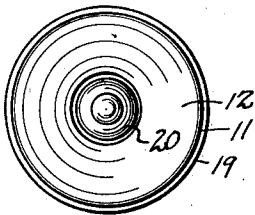


Fig. 4.

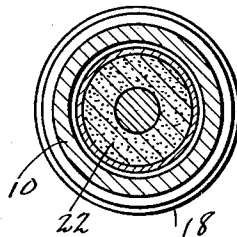
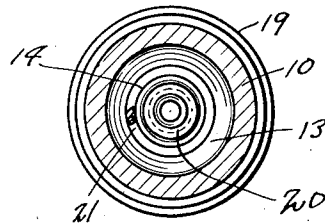


Fig. 5.



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FLASHLIGHT

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Application April 1, 1947, Serial No. 738,546

2 Claims. (Cl. 240—10.68)

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This invention relates to a flashlight.

This application is a continuation in part of the co-pending application of Edward J. McCabe for Flashlight, Serial No. 628,143 filed November 13, 1945 which is now abandoned.

The principal object of the invention is the provision of a novelty flashlight of a size making it conveniently portable so that it can be carried in a pocket or in a purse.

A further object of the invention is the provision of a flashlight incorporating a two-piece construction forming a battery enclosing section, a reflector bulb enclosing section, and a switch mechanism.

A still further object of the invention is the provision of a flashlight which may be machined on an automatic screw machine and thereby turned out in large numbers at low cost.

A still further object of the invention is the provision of a flashlight incorporating novel means for securing electrical contact between the flashlight case and a bulb positioned therein.

The flashlight shown and described herein has been designed to form a simple and efficient portable lighting device of a size and weight making it an attractive pocket article and enabling it to be carried in a lady's purse. The flashlight has been designed so that it can be produced on an automatic screw machine and it is entirely formed of two parts, one of which combines the battery enclosing space and the bulb and reflector portions, and the other part comprises a cap for the opposite end to complete the battery case enclosure. The cap is threadably affixed to enable it to be turned to form a switch mechanism. The switch mechanism acts by reason of the movement imparted by the cap to the battery which moves it into or out of contact with the bulb.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a side elevation of the flashlight.

Figure 2 is a vertical cross section of the flashlight shown in Figure 1.

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Figure 3 is a top plan view taken on line 3—3 of Figure 1.

Figure 4 is a horizontal cross section taken on line 4—4 of Figure 1.

5 Figure 5 is a horizontal cross section taken on line 5—5 of Figure 2.

By referring to the drawings and Figures 1 and 2 in particular, it will be observed that a pocket flashlight has been disclosed in enlarged detail.

10 The flashlight as commercially produced is of an over-all length of about three inches, the widest diameter being about three-quarters of an inch and is adapted to employ as a current source a battery of conventional commercial size which
15 is two inches in over-all length and one-half inch in diameter.

In Figures 1 and 2 of the drawings the flashlight body is indicated by the numeral 10 and the forward or light carrying end thereof is indicated by the numeral 11. A concave reflector-shaped end section 12 is formed in the end 11

20 of the body 10 and is separated from a cylindrical chamber 13 within the body member 10 by a shoulder 14 and a bulb enclosing chamber 15.

25 The opposite end of the body member 10 is formed with a threaded extension 16 of a diameter slightly smaller than the outer diameter of the section 10 and is adapted to receive an internally threaded cap 17. The cap 17 has an exterior knurled band 18 thereon which is of a slightly larger diameter than the cap.

30 By referring again to the end 11 of the flashlight, it will be seen that a similar knurled band 19 is formed about the end section 11 of the body member 10 and that the end section 11 of the body member 10 is of larger diameter than the body member 10, thereby matching the formation of the cap 17 and presenting an attractive exterior pattern.

35 In order that the flashlight may be used as a source of light, an incandescent bulb of conventional pre-focused pattern such as is indicated in the drawings by the numeral 20, is mounted in one end of a coil spring 21 and placed partially within the bulb enclosing portion 15 of

40 the tubular chamber 13 within the body member 10. The shape of the pre-focused bulb 20 is such that the focusing lens thereof, indicated by the numeral 20A, is correctly positioned within the area of the reflector 12 by reason of the metal base of the bulb engaging the shoulder 14 which comprises a portion of the flashlight

45 structure so as to establish electrical connection with the body 10 of the flashlight. The incandescent, pre-focused bulb 20 is therefore

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automatically positioned in operative relation to the reflector 12. A battery 22 is then positioned within the tubular chamber 13 in the flashlight and the cap 17 threadably engaged upon the threaded extension 16 of the body member 10. When the cap 17 is turned inwardly upon the body member 10, it will move the battery 22 into engagement with the end terminal of the incandescent bulb 20 and thereby cause the bulb to be illuminated as the circuit is completed between the metal base portion of the bulb 20 directly with the body of the flashlight.

It will thus be seen that the formation of the shoulder 14 of a predetermined size is important in that it provides the means for establishing an electrical circuit with the incandescent bulb 20 by means of the flanged metal base thereof in which the glass portion of the bulb 20 is located. The spring 21 serves simply to space the battery 22 with respect to the insulated terminal of the metal base of the incandescent bulb 20 as the electrical circuit is completed through the body member 10 of the flashlight, the battery 22, the adjacent normally spaced terminal of the battery and the bulb and the metal base of the bulb engaging the correctly sized and positioned shoulder 14 of the body member 10 of the flashlight. This construction insures satisfactory electrical connection between the bulb and the flashlight case and eliminates unsatisfactory electrical connection structures heretofore used for such purposes, as for example depending upon the spring to engage some portion of the wall of the chamber 13 for establishing the necessary circuit.

It will also be seen that the cap 17 is both the means of retaining the battery 22 and the bulb 20 in its spring mounting 21 within operative relation in the flashlight and is the switch means by which the light may be turned on and off.

In Figure 3 of the drawings a top plan view of the flashlight is shown and the appropriate positioning of the incandescent bulb 20 with respect to the reflector 12 may be seen.

In Figure 4 of the drawings a cross section taken on line 4—4 is shown, illustrating the relative positioning of the battery 22 in the body member 10 of the flashlight.

In Figure 5 of the drawings a cross sectional view of the chamber 13 of the flashlight may be seen and the relative positioning of the metal base of the incandescent bulb 20 with respect to its contacting the shoulder 14 is illustrated in detail.

It will thus be seen that a simple and efficient

flashlight has been disclosed which may be formed on automatic screw machines thereby enabling it to be mass produced at low unit cost and hence widely distributed.

Having thus described my invention, what I claim is:

1. A flashlight comprising a hollow metal tubular body, a reflector formed directly in one end thereof, an opening formed at the apex of the reflector and communicating with the hollow interior of the tubular body, a pre-focused bulb of the threaded metal base type having a shoulder on the base thereof engaging the periphery of said opening for positioning said bulb in operative relation to said reflector, a battery within the body, a coil spring engaging said threaded metal base and normally spacing said battery and said bulb, and a cap rotatably mounted on the opposite end of the tubular body retaining said battery and bulb in the body, and operative to make and break the circuit through the bulb, battery and metal body.

2. A flashlight including a hollow tubular body, a reflector formed directly in one end thereof, a stepped axially arranged opening formed at the apex of the reflector longitudinally of the body and communicating with the hollow interior of the body, the inner portion of the stepped opening being of larger diameter than the outer portion of the opening and forming therewith a shoulder, a pre-focused bulb of the threaded metal base type, said shoulder acting to position said bulb in operative relation to said reflector and engaging with the metal base of the bulb, a battery within the body, a coil spring engaging said threaded metal base and normally spacing said battery and said bulb, and a cap rotatably mounted on the opposite end of the tubular body retaining said battery and bulb in the body, and operative to make and break the circuit through the bulb, battery and metal body.

EDWARD J. McCABE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,595,146	Ford	Aug. 10, 1926
1,895,913	Buchholz	Jan. 31, 1933
2,150,644	Batcheller	Mar. 14, 1939
2,274,178	Wood	Feb. 24, 1942