F. D. BOULANGER.

FLASH LIGHT.

APPLICATION FILED OCT. 14, 1919.

1,342,322.

Patented June 1, 1920.

Fig. 1.

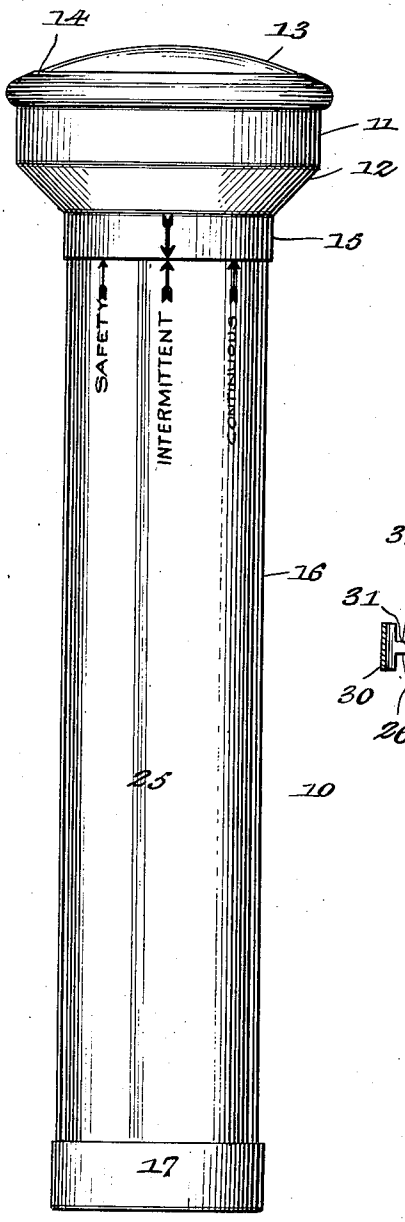
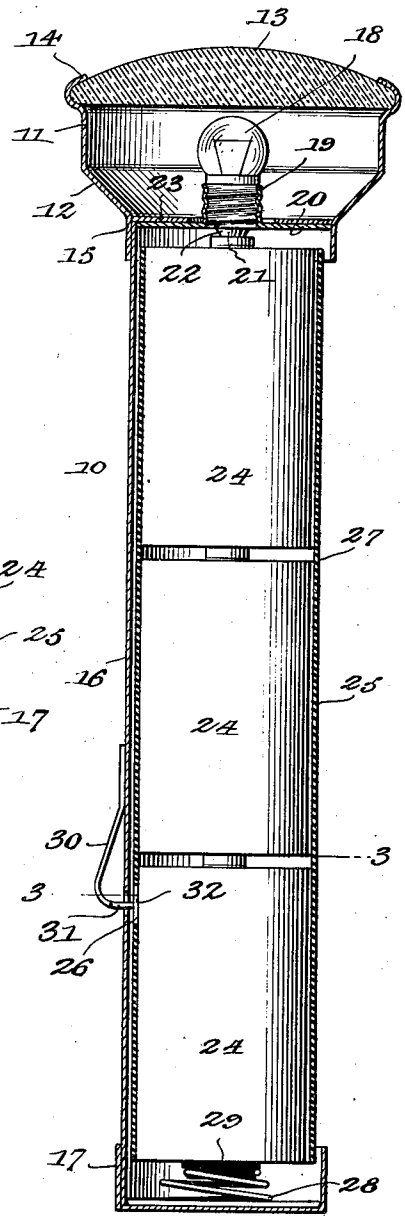


Fig. 2.



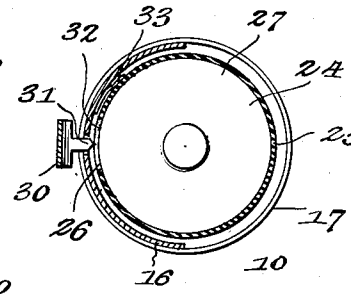


Fig. 3.

WITNESS:

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FLASH-LIGHT.

1,342,322. Specification of Letters Patent. Patented June 1, 1920.

Application filed October 14, 1919. Serial No. 330,578.

To all whom it may concern:

Be it known that I, FRANK D. BOULANGER, a citizen of the United States, residing at West Hoboken, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Flash-Lights, of which the following is a specification.

This invention relates to flash lights.

It is known that efforts hitherto made to produce a simpler and cheaper flash light than those already on the market have all been along the same line, namely, to employ a metal casing which consists of a tubular body having a head fitting which carries the reflector and lens fitted to one end thereof and a cap fitted to the other end thereof to inclose the battery within the hollow tubular body. One of the serious disadvantages of the use of a flash light having such tubular casing is the inability in many instances to remove the battery due to chemical action which swells the battery against the walls of the casing. Furthermore, those flash lights as now made are equipped with switching mechanism requiring the use of a multiplicity of insulators, bushings, rivets and other parts.

Some of the objects of this invention are:—to overcome all of the above mentioned disadvantages and to produce a flash light which is simple and materially less expensive of manufacture; to produce a container or casing for the battery which is provided with an opening at the side to permit the ready introduction of the battery into said container and its removal therefrom—the battery being practically entirely exposed and in the event of swelling of the battery the same cannot jam or become lodged in the casing; to provide a novel form of battery which is particularly applicable and consequential to the use of the particularly constructed casing; to produce a flash light which is effectual for preventing the accidental lighting of the lamp and consequent use of the current, simple and positive means being provided to prevent such accidental closing of the circuit; to provide the flash light with indicia which indicates the relative position of the battery with respect to the casing so that the flash light may be used discriminately for intermittent lighting, constant or continuous lighting and to be put in a condition to prevent accidental lighting by rotation of the battery. With these and other objects in view the invention resides in the particular provision, construction and operation of parts more fully described in the specification and illustrated in the accompanying drawing, in which:—

Figure 1 is a side elevation.

Fig. 2 is a central vertical sectional view.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2.

Referring now to the drawing, it will be seen and it is to be understood that the casing or container 10 consists of a head fitting 11 having an inclined wall 12 to provide a reflector and a lens 13 is permanently secured in the open enlarged end of the head fitting as at 14. The head fitting is provided with a reduced portion 15 and permanently secured thereto is a curved plate 16 which has secured at its free end a cup shaped fitting 17, in the nature of an end fitting. The reduced portion 15 of the head fitting, the curved plate 16 and the end fitting 17 constitute a container for the battery and these parts are permanently fastened together. The construction and arrangement of the mentioned parts provides a large opening in the side of the container so that the battery may be readily placed into or removed from the container. A lamp 18 is carried by the socket member 19 which embodies a circular contact plate 20, preferably made of copper which seats itself against a transverse partition 23 having a central opening therein through which the lamp 18 is extended in assembling the same in the head fitting, the socket 19 with the lamp 18 being insertible through the opening formed in the battery container.

A novel form of battery is employed and consists preferably of a plurality of cells 24 which are arranged in series in a cylindrical shell 25 of insulating material. The said shell 25 is provided with an opening 26 which exposes a portion of one pole of one of said cells. While I have shown herein the use of a plurality of battery cells, it is to be understood that it may be found desirable to use but one battery cell and such right is therefore reserved. The battery which is designated 27 is snugly accommodated by the curved plate 16, the ends of said battery being supported by the reduced portion 15 and the end fitting 17. A spring 28 is arranged in the end fitting 17 and one of its convolutions supports an insulator 29. The spring serves to hold one pole 21

of the uppermost battery cell 24 constantly in contact with the electrode 22 of the lamp 18. A finger piece 30 made of metal, preferably copper, has one end thereof attached in any suitable manner to the plate 16. The free end thereof is provided with a contact point 31 movable through an opening in the plate 16 and is engageable with the exposed portion 32 of one pole of a particular battery cell 24 through the opening 26 in the shell 25 in one position of the battery 27. A flexible metallic element 33 in the nature of a contact point is arranged transversely of the plate 16 on the inner side thereof and is in the same horizontal plane with the opening 26 so that upon rotation of the battery 27 to a predetermined degree, the element 33 will engage the exposed portion 32 to close the circuit for the continuous lighting of the lamp as will be understood, since the head fitting 11, the plate 16 and the end fitting 17 are electrically connected together.

Certain indicia at one end of the battery on the outer face thereof which consists of the words "Safety" "Intermittent" and "Continuous" have their positions changed with respect to an indicating mark on the reduced portion 15 so that the flash light may be put into a condition of safety, that is to say to prevent the accidental lighting thereof and consequent waste of current; the intermittent lighting of the flash light or for its continuous lighting, the latter use being particularly convenient and desirable when the user desires to have the use of both hands.

From the foregoing, it will be manifest that the particular provision and construction of parts results in the production of a flash light which is more serviceable, the cost of production is materially decreased and that the flash light is actually simplified in construction.

What is claimed as new is:—

1. A flash light which includes in its construction, a head fitting, a plate bent to provide an uncovered battery introduction opening, and an end fitting permanently fastened together.

2. A flash light including a battery, a head fitting having a reduced annular portion, an end fitting, a curved plate having one end permanently secured to said reduced portion and the other end thereof permanently secured to the end fitting, said reduced portion, the curved plate and the end fitting constituting a battery container open at its side to permit said battery to be introduced into and removed from the container.

3. A flash light including in combination, an electric lamp, a lamp socket carrying said lamp, a battery having a plurality of poles, a battery container having an uncovered battery introduction opening at its side, means for holding one pole of the battery normally in engagement with one electrode of said lamp and means on said container operable to close the circuit by engaging the other pole of said battery.

4. A flash light including in combination, an open sided battery container, a head fitting secured to said container, said head fitting having a reflector and a lens, an electric lamp, a lamp socket carrying said lamp and embodying a contact, which contact is electrically connected to said container; a battery having an outer shell of insulating material and a plurality of poles, said shell having an opening therein to expose a portion of one pole of said battery; means for holding one pole of the battery normally in engagement with one electrode of said lamp and means on said container operable to close the circuit by engaging the other pole of said battery.

5. A flash light including in combination, an open sided battery container, a head fitting secured to said container, said head fitting having a reflector and a lens, an electric lamp, a lamp socket carrying said lamp and embodying a contact, which contact is electrically connected to said container; a battery comprising a shell of insulating material, a plurality of cells each having a plurality of poles arranged in series in said shell, said shell having an opening therein to expose a portion of one pole of one of said cells, means for holding one pole of the battery normally in engagement with one electrode of said lamp and means on said container operable to close the circuit by engaging the other pole of said battery.

6. A flash light including in combination, a container open at the side, a battery including a shell of insulating material having an opening therein to expose a portion of one pole of said battery, a flexible contact secured to said container on the inner side thereof so arranged as to engage the exposed portion of said battery pole upon rotation of said battery to maintain a constantly closed circuit.

7. A flash light, including in combination, a container open at the side, a battery including a shell of insulating material having an opening therein to expose a portion of one pole of said battery, a flexible contact secured to said container on the inner side thereof so arranged as to engage the exposed portion of said battery pole upon rotation of said battery to maintain a constantly closed circuit, indicia on the container and on the battery to indicate the different positions of the exposed portion of the battery pole permitting the discriminate use of the flash light.

8. A flashlight including in combination, a container open at its side, an electric lamp supported by said container, a battery in-

cluding a shell of insulating material having an opening therein to expose a portion of one pole of said battery, means operable to close the circuit by engagement with said pole for the intermittent lighting of said lamp and means on said container to close the circuit by engagement with said pole for the continuous lighting of said lamp.

9. A flash light which includes in its construction, a head fitting, a lens, an end fitting and a plate bent to provide an uncovered battery introduction opening connecting the head fitting with said end fitting; the head fitting, the lens, the plate and the end fitting being permanently fastened together.

In testimony whereof I have affixed my signature.

FRANK D. BOULANGER.