C. WACHTEL.

POCKET FLASH LIGHT.

APPLICATION FILED JUNE 19, 1916.

1,226,728. Patented May 22, 1917.

Fig. 1

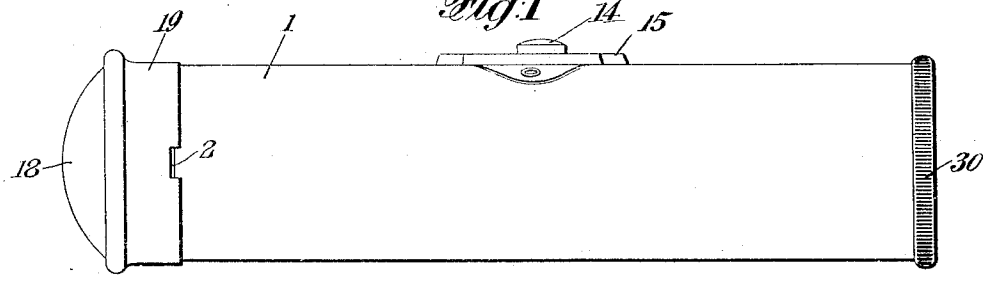


Fig. 2

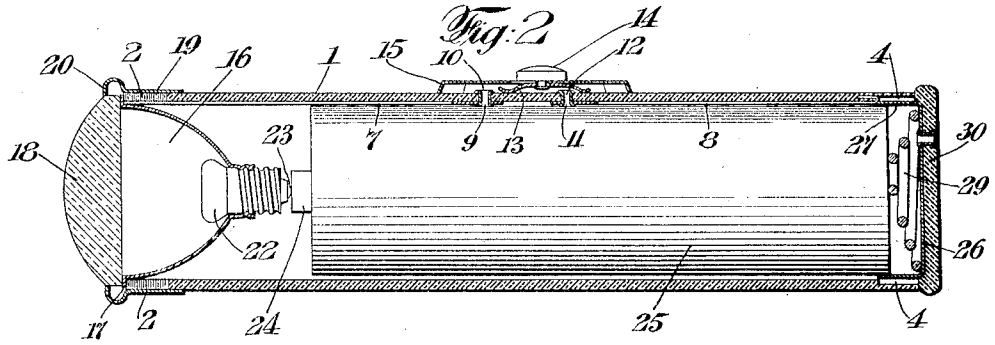


Fig. 3

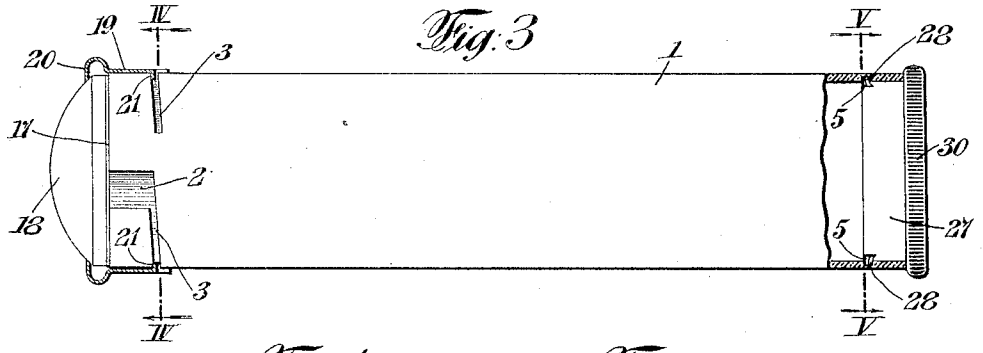


Fig. 4

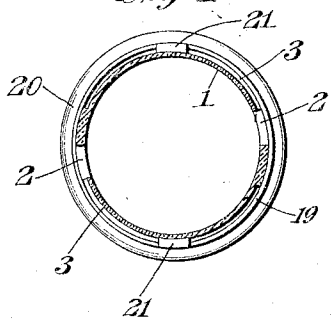
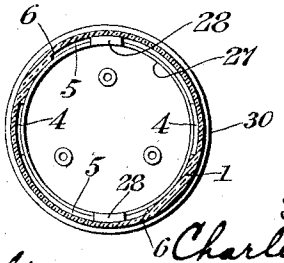


Fig. 5



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POCKET FLASH-LIGHT.

1,226,728. Specification of Letters Patent. Patented May 22, 1917.

Application filed June 19, 1916. Serial No. 104,355.

To all whom it may concern:

Be it known that I, CHARLES WACHTEL, a citizen of the United States, residing at Jamaica, county of Queens, and State of New York, have invented certain new and useful Improvements in Pocket Flash-Lights, of which the following is a specification.

One of the main objects of the invention is to provide simplified and improved means for securing the reflector and lens in one end of the lamp body, and similar means for closing the rear end of the battery chamber.

Another object of the invention is to provide a cylindrical lamp body formed of hard fiber or similar material, and metal end caps or rings, said caps being provided with lugs adapted to fit and interlock in grooves in the fiber body part, said lugs and grooves forming means for locking the end caps or rings to said body part, and one of said end caps clamping the lens and reflector in place, the other closing the rear end of the battery chamber.

Another object of the invention is to provide an insulating means for closing the rear end of the battery chamber, whereby all liability of short-circuiting the battery will be avoided.

There are other important objects and advantages of the invention which will appear hereinafter.

In the drawing, Figure 1 is an elevation of the flashlight complete;

Fig. 2 a longitudinal central sectional view thereof, the battery cell being shown in elevation;

Fig. 3 a view similar to Fig. 1, the ends being shown in sectional view;

Fig. 4 a transverse sectional view on the line IV—IV of Fig. 3, and

Fig. 5 a transverse sectional view on the line V—V of Fig. 3.

Referring to the various parts by numerals, 1 designates the cylindrical body part of the lamp, which is preferably formed of hard fiber or similar non-conducting material. At the forward end of this body part, and at diametrically opposite points, are formed two inwardly extending slots 2. At the inner end of each of these slots, and extending around the exterior of the lamp body, are obliquely arranged or inclined grooves 3. At the rear end of the body part of the lamp, on the inner side thereof, and at diametrically opposite points, are formed two inwardly extending recesses 4. Near the inner end of each of these recesses is formed a groove 5, said grooves extending partly around the interior of the lamp body and terminating in sharp shoulders 6. Secured within the body part of the lamp are two conducting strips 7 and 8. The conducting strip 7 is secured in place by means of a rivet 9 which passes through the body part of the lamp and forms a contact point 10 on the outer side thereof approximately midway between the ends of the lamp body. The forward end of this conducting strip 7 is adapted to contact with the reflector body at the forward end of the lamp, as will be more fully hereinafter described. The conductor strip 8 is secured in position by means of a rivet 11 which also passes through the body of the lamp and forms a contact 12 on the outer surface thereof. The rear end of the conductor strip 8 is arranged to be engaged by the rear closure cap, as will be hereinafter described. Mounted to slide on the exterior of the lamp body is a spring contact piece 13, said piece being carried by a button 14 slidable on a housing 15 which covers the contact points and the contact strip. It is obvious that by manipulating the sliding button the lamp circuit may be completed or broken as desired, as is usual in devices of this kind.

The reflector 16 fits within the lamp body and is formed with an outwardly extending radial flange 17 adapted to rest upon the end of the lamp body, as clearly shown in Fig. 2 of the drawing. The lens 18 rests against the flange 17, and said lens and the reflector are secured in position by means of an end cap or ring 19. This ring 19 is formed with an inwardly turned flange 20 which engages the edge of the lens. Said ring is also formed at its rear edge with inwardly turned lugs 21, said lugs being at diametrically opposite points. These lugs are adapted to be passed inwardly along the slots 2 until they register with the grooves 3. The ring may then be turned to cause the said lugs to engage said cam or spiral grooves, so that the said lugs will bind in said grooves and securely clamp the ring in position, thereby locking the lens and reflector to the lamp body. The metal lugs of the clamping ring 19 will become tightly bound against the wall of the in-

clined grooves so that the end ring will be locked in position against accidental displacement. The inner or rear edge of the ring extends beyond the lugs so that the ring completely covers the grooves 3, except where the said grooves are engaged by the lugs. As shown, the lugs are formed by bending inwardly a portion of the clamping ring at the rear or inner edge thereof. It is obvious that these lugs may be formed in any other suitable manner. The lamp bulb 22 is carried by the reflector in the usual manner, one of its terminals, 23, being at its inner end and adapted to be engaged by the battery terminal 24 of the battery 25, which is contained within the battery chamber formed by the lamp body.

The rear end of the lamp is closed by a cap 26. This end cap is formed with an annular flange 27 adapted to fit within the lamp body; and said flange at its inner edge is formed with outwardly extending lugs 28, said lugs being at diametrically opposite points. The lugs 28 are adapted to enter the recesses 4 and to register with the grooves 5. Secured to the inner side of the closure cap is a spring 29 which is adapted to bear against the end of the battery cell. The spring exerts a considerable outward pressure on the end cap and holds the lugs 28 in strong frictional engagement with the walls of the grooves 5, so that the accidental turning and displacement of the cap is prevented. This spring also serves as a means for forcing the battery terminal against the lamp terminal to insure a good contact between said terminals.

Secured to the end cap 26 is an insulating disk 30, said disk completely covering and protecting the metal end cap and preventing the battery being short-circuited through said cap.

The inner edge of the inwardly extending flange 27 of the end cap engages the rear end of the conducting strip 8 to complete the battery circuit when the two contacts 10 and 11 are connected by the contact strip 13. The spring 29, electrically connects the cap 26 with one terminal of the battery.

What I claim is:

1. A pocket flashlight comprising a cylindrical body part formed of hard fibrous non-conducting material, a lens and reflector at one end thereof, means for securing said lens and reflector to the lamp body, a closure cap for the rear end of the lamp body formed with an annular flange adapted to fit within said body, outwardly extending locking lugs carried by said flange at diametrically opposite points and adapted to be passed into longitudinally extending recesses in the lamp body and to engage annular grooves formed in said body to lock the cap in position, a spring carried by said cap, a battery cell within the lamp body and adapted to be engaged by said spring, and an insulating disk carried by said end cap and adapted to engage the end of the body part of the lamp whereby said end cap will be entirely inclosed by insulating material.

2. A flashlight comprising a tubular body part of non-conducting material and formed with slots at one end and obliquely arranged grooves extending from the inner ends of said slots, an end ring formed with lugs adapted to be passed into said slots and turned in the inclined grooves, a reflector having an annular flange engaging one end of the body part and clamped thereagainst by said end ring, a lamp supported in said reflector, a battery cell in the body part having one terminal engaging one terminal of said lamp, the rear end of said body being formed with longitudinally extending recesses in its inner surface and annular grooves connected with said recesses, a closure cap for the rear end of said body part formed with an annular flange fitting within the body and outwardly extending locking lugs adapted to engage said interior grooves, a spring carried by said cap for electrically connecting the cap with the remaining terminal of said cell and maintaining the forward terminal of the cell in contact with its associated lamp terminal, a conductor within the body connecting the flange of the closure cap with the reflector flange, a switch interposed between the ends of said conductor, and an insulating cover secured to the exterior of said cap and engaging the adjacent end of the body part.

3. A flashlight comprising a tubular body part of non-conducting material and formed with slots at one end and obliquely arranged grooves extending from the inner ends of said slots, an end ring formed with lugs adapted to be passed into said slots and turned in the inclined grooves, a reflector having an annular flange engaging one end of the body part and clamped thereagainst by said end ring, a lamp supported in said reflector, a battery cell in the body part having one terminal engaging one terminal of said lamp, the rear end of said body being formed with longitudinally extending recesses in its inner surface and annular grooves connected with said recesses, a conductor within the body and extending longitudinally thereof against the forward end of which the reflector flange is clamped by said end ring, the rear end of said conductor terminating within the body part, a closure cap for the rear end of said body part formed with an annular flange fitting within the body and outwardly extending locking lugs formed on said closure cap flange and adapted to engage said interior grooves to force the edge of said flange against the rear end of said conductor, a spring carried by said cap for electrically connecting the cap with the re-

maining terminal of said cell and maintaining the forward terminal of the cell in contact with its associated lamp terminal, and a switch interposed between the ends of said conductor.

4. A flashlight comprising a tubular body part of non-conducting material, an electric lamp mounted at one end of said body, a battery cell within the body having its forward terminal contacting with one terminal of the lamp, an electrical conductor secured within the body contacting at its forward end with the remaining terminal of said lamp and having its rear end terminating within the body, the rear end of said body being formed with longitudinally extending recesses in its inner wall and annular grooves connected with the inner ends of said recesses, a closure cap of conducting material for the rear end of the body formed with an annular flange adapted to fit within the body and provided with outwardly projecting locking lugs on said flange adapted to pass through the longitudinal recesses and engage in the annular grooves at the rear end of the body to force the edge of said flange against the rear end of said conductor, means interposed between the cap and cell to electrically connect the cap with the rear terminal of the cell, and a circuit closer adapted to make and break the circuit through said conducting means.

In testimony whereof I hereunto affix my signature.

CHARLES WACHTEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."