J. VINCE.

FLASH LIGHT.

APPLICATION FILED JAN. 18, 1921.

1,404,077. Patented Jan. 17, 1922.

Fig. 1.

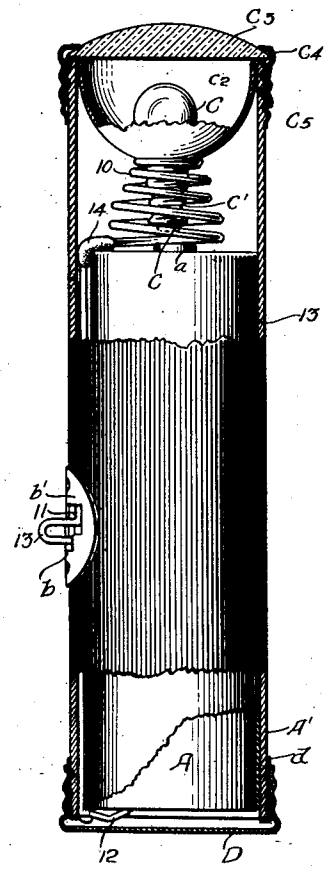


Fig. 2.

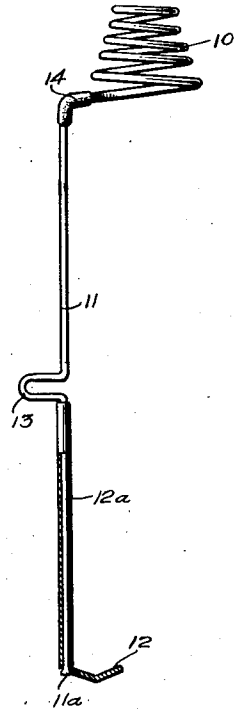
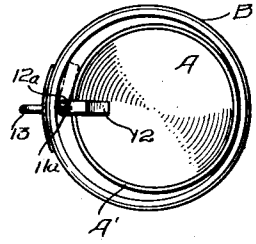


Fig. 3.



WITNESSES

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FLASH LIGHT.

1,404,077. Specification of Letters Patent. Patented Jan. 17, 1922.

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To all whom it may concern:

Be it known that I, JOSEPH VINCE, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Flash Light, of which the following is a description.

My invention relates to electric flashlights and has for its general object to provide a conductor element so related to the shell and to the battery that it may be operated from the exterior of the shell and close the circuit and at the same time the arrangement minimizes the possibility of the battery "freezing" to the shell and makes provision for the ready removal of the battery and conductor strip without damage to the strip even should the battery "freeze" by long disuse.

Reference is to be had to the accompanying drawing forming a part of this specification, it being understood that the drawing is merely illustrative of one example of the invention.

Figure 1 is a sectional side elevation of a flashlight embodying my invention, my improved circuit-forming attachment being shown in elevation and the covering of the battery being partly broken away;

Figure 2 is a side elevation of the conductor device completing the circuit through the battery and lamp showing said device in its preferred form;

Figure 3 is a rear end of the flashlight with the rear cap removed.

In the illustrated example of the invention, A indicates a battery which may be of any approved form and composed of one or more cells, A′ indicating the usual paper or like insulating wrapper on the battery; and *a* the front contact of the battery. The letter B indicates the shell usually employed in flashlights of the indicated character for enclosing the battery A and carrying at its front end the electric lamp designated generally by the letter C as well as a bottom cap D, the threaded flange of which engages a threaded external band *d* on shell B.

The shell B employed in carrying out my invention may be of the conventional form and dimensions except that the usual conductor and contact elements on said shell with the usual coacting switch to close the circuit are omitted in carrying out my invention. The lamp C shown is of known form having the usual contact *c* to engage the opposed front battery contact *a*, *c′* indicating the usual neck of the lamp; c^2 the reflector; c^3 the lens; and c^4 the usual threaded retaining ring for said lens and arranged to engage the threaded band c^5 fixed to the shell at the forward end.

In the form shown means is provided tending to force the battery A rearwardly to separate the contacts *a*, *c* for breaking the circuit. For the purpose, use preferably is made of a spring and preferably and advantageously, said spring is a compression spring 10 coiled about the lamp neck *c′* and bearing at its front end against the reflector c^2 and bearing at its inner end against the front of the battery A. Said spring 10 is utilized in the form of my invention shown as part of the means for completing the circuit at the outside between the lamp reflector and the rear of the battery, for which purpose said spring may, as shown, be formed integral with an elongated conductor strip 11 lying close to the battery A outside of the paper wrapper A′ of the battery between the same and the shell B.

I provide for making or breaking the circuit by means operable from the exterior of the shell and extending through the same at a side thereof, for which purpose, said strip 11 has formed thereon or secured thereto a member 13 projecting laterally outward through a longitudinal slot *b* in shell B, to be thereby operated by shifting it forward or back in the slot *b* by the thumb or finger of the hand holding the flashlight, thereby making the light a one-hand flashlight.

In accordance with my present invention I provide on the strip 11 at the rear end a lateral arm 12 which is turnable on the body of the strip so the said arm may occupy a position extending laterally inward at the back of the battery and in contact with the rear pole of the latter or be turned laterally outward into the plane of the strip 11 out of the path of the battery so that said battery may be dropped from the shell or forced outward. In the illustrated forms the arm 12 is integral with an elongated sleeve 12^a, said sleeve being held in place by riveting or upsetting the rear end 11^a of the strip 11. To prevent short-circuiting by the wearing of the paper cov-

ering A′ at the front end of the battery, by rubbing of the conductor strip, suitable insulation may be provided on said strip at that point, there being indicated a rubber sheath 14 for the purpose. With the described arrangement the arm 12 may be engaged by the thumb nail, a knife blade, or other implement, and swung away from the battery to permit removal of the latter, after which the member 13 may be pressed laterally inward through the slot *b* and the conductor strip 11 readily removed. The conductor strip while the battery is in position, it will be noted, is applied to the battery rather than to the shell, and the arrangement is sufficiently flexible to prevent damage to the battery even should the latter freeze to the shell.

The forward movement of the circuit-closing control member 13 acts to carry forward the conductor strip 11 and the latter by its lateral arm 12 will carry with it the battery and effect engagement of the opposed contacts *a*, *c*. Upon the forward pressure on the member 13 being relieved the spring 10 will cause a separation of contacts *a*, *c*, thus breaking the circuit. In order to hold the circuit-controlling member 13 in the forward position with the circuit closed, I provide for restraining the same against rearward movement by the spring 10, a simple means available for the purpose consisting of a short branch slot *b*′ complementary to the slot *b* and extending laterally, thereby producing an L-shaped or bayonet slot so that the turning of the member 13 laterally into the branch slot maintains a closed circuit. The conductor strip 11 may have any suitable cross section but advantageously, in practice, it is made flat to occupy the minimum space between the battery and the shell. The usual space between the battery and the shell B in known makes is provided to accommodate the usual contact strips on the shell B which provides ample space for my described conductor strips.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. A light of the class described including a shell having a lamp thereon, a battery removably enclosed by said shell, said lamp presenting a contact opposed to one pole of the battery, and a removable conductor strip on said battery externally thereof, and separate therefrom, said conductor strip having an arm at the rear end turnably mounted to turn relatively to said strip about the axis of the latter to dispose said arm extending laterally inward from the strip to engage the rear end of the battery or to an outer position away from the battery.

2. As a new article of manufacture, a flashlight including a shell, a lamp thereon, a battery removably accommodated in the shell, a conductor element between the battery and shell and operable from the exterior of the shell, contact members subject to longitudinal movements of said conductor element to make or break the circuit, and a member on the conductor element and turnable thereon laterally to a position to engage the battery or to a position away from the battery.

3. A light of the class described including a shell, a lamp thereon, a battery removably accommodated in said shell, a conductor strip between the battery and shell and separate from both, said conductor strip having operating means extending to the exterior of the shell, means to make or break the electric circuit by the bodily movement of said conductor strip, said conductor strip having a member engaging the battery at the rear end, said member being turnable to dispose said member at the back of the battery or away from the battery for permitting removal of the same, and the said conductor strip and its operating means, being removable from the shell when said rear end member is turned outwardly and the battery removed.

4. As a new article of manufacture, a conductor strip adapted to be accommodated in a flashlight between the shell and battery thereof and having an element at the rear end turnable on said strip and positioned to extend laterally inward at the back of the battery or to a position away from the battery to permit removal of said battery, said strip having a member extending laterally through the shell for moving said strip, the battery holding the strip against inward movement to dispose said member within the shell and the said strip being displaceable laterally to dispose said lateral member within the shell, and thereby permit withdrawal of the strip from the shell.

5. As a new article of manufacture, a conductor strip adapted to be accommodated in a flashlight between the shell and battery thereof and having an element at the rear end adapted to be moved to a position extending laterally inward at the back of the battery or to an outer position out of engagement with the battery, said strip having a laterally disposed member thereon adapted to extend outwardly through the flashlight shell and the strip being flexible to permit the said laterally disposed member to be pressed into the shell for removal of the strip.

6. A flashlight including a shell having a lamp thereon, a battery removably enclosed by said shell and slidable therein, said lamp presenting a contact opposed to the front pole of the battery, and a conductor strip slidably accommodated between the battery and the shell, there being an arm turnably mounted on the conductor strip at the rear end to turn about the axis of said strip to position said arm in engagement with the rear pole of the battery or laterally outward therefrom, said rear arm when in engagement with the rear battery pole serving to cause a forward movement of the battery upon the conductor strip being moved forwardly.

JOSEPH VINCE.