Nov. 18, 1930. W. B. SACHS 1,782,015

FLASH LIGHT

Filed April 3, 1929

Fig. 1.

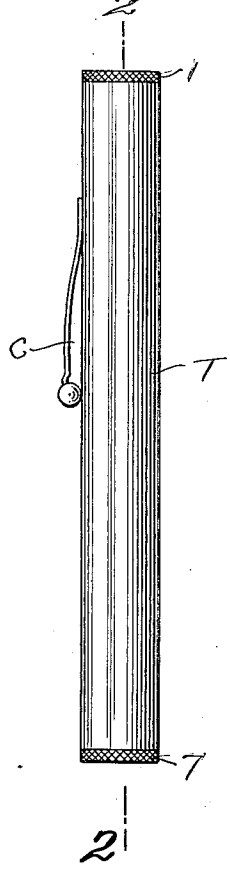
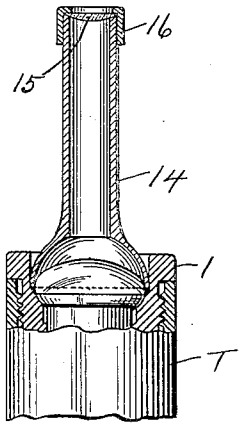


Fig. 5.



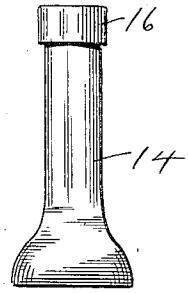


Fig. 6.

Fig. 2.

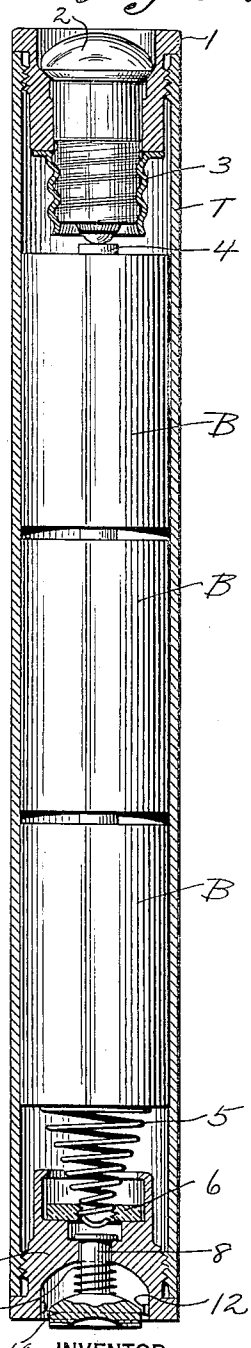


Fig. 3.

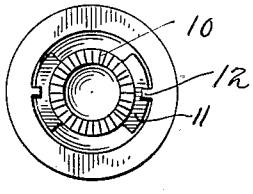
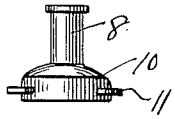


Fig. 4.



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UNITED STATES PATENT OFFICE

WILLIAM B. SACHS, OF JAMAICA, NEW YORK

FLASH LIGHT

Application filed April 3, 1929. Serial No. 352,075.

My invention relates to a new and improved flashlight.

One of the objects of my invention is to provide a new and improved compact flashlight which can be the size of an ordinary fountain pen and which can be provided with a spring clip so that it can be carried like an ordinary fountain pen.

Another object of my invention is to provide a device of this type having a simple and compact switch device.

Another object of my invention is to provide a simple device of this type having a switch device which can be either held in operative position by the user, or which can be locked into position to give a steady light.

Another object of my invention is to provide a flashlight having a simple and efficient device for concentrating the rays of the bulb, so that the device can be used by physicians and other persons who require a powerful concentrated beam of light.

Other objects of my invention will be set forth in the following description and drawings which illustrate a preferred embodiment thereof, it being understood that the above general statement of the objects of my invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a side elevation.

Fig. 2 is a sectional view along line 2—2 of Fig. 1.

Fig. 3 is a bottom view.

Fig. 4 is an elevation of the plunger.

Fig. 5 is a detail view partially in section showing the light-concentrating device.

Fig. 6 is an elevation of the light-concentrating device or tube.

The device comprises a tubular casing T which can be made of any suitable metal decorated in any suitable manner. The casing T may be provided with the ordinary clip C.

One end of the casing, which may be called the top end for convenience, is provided with an insert 1, part of whose outer wall is threaded so that it can engage a corresponding threading provided upon the adjacent interior wall of the tube T. The electric bulb 2 fits within the hollow top insert 1 and it is held in position by means of another member 3 which engages the threaded bottom of the bulb 2. Since the members 1 and 3 are made of metal, one contact of the bulb 2 is connected to the outer casing T. The member 3 is suitably connected to insert 1.

The other contact of the bulb 2 abuts the adjacent contact 4 of the adjacent battery or dry cell B.

Any number of said dry cells B can be provided, three of them being shown in this embodiment.

The batteries B are held in operative position by means of the coil spring 5. This coil spring 5 has a tapered form and the narrow bottom thereof is shaped so that it can be screwed into the central opening of the washer 6, which is made of bakelite or other suitable insulating material.

The inner wall of the insulating washer 6 is threaded so that it engages the adjacent turns of the holding spring 5, in the same manner that a nut engages a bolt. The washer 6 is located within a metal insert 7, part of whose outer wall is threaded to engage with corresponding threading of the adjacent inner wall of the casing T. A metal plunger 8 is slidably mounted in the bottom insert 7. This plunger 8 is provided with an enlarged head so that it cannot drop out of the insert 7. A compression spring 9 holds the plunger 8 in the normal position shown in Fig. 2. The plunger 8 is provided with an enlarged head 10 by means of which the said plunger 8 can be pressed inwardly to contact with the narrow end of the spring 5. This closes the circuit of the batteries B because the metal parts 7 and 8 serve to complete the connection between the metal casing T and the holding spring 5. Since the washer 6 is inwardly movable, the spring 5 is compressed by the inward movement of plunger 8.

This device provides light as long as the finger of the user presses the head 10 inwardly.

As shown in Fig. 3, the bottom of the head

10 is knurled so that this can be readily turned.

The head 10 is provided with lateral wings 11 which are adapted to be engaged by pins or projections 12 forming part of the insert 7.

In the position shown in Fig. 3, it is assumed that the plunger 8 has been turned until the wings 11 thereof are located above the projections 12. The projections 12 then serve to maintain the plunger 8 in its operative position, in which it contacts with the narrow end of the holding spring 5, thus providing a steady light. In order to move the plunger 8 into the inoperative position shown in Fig. 2, it is merely necessary to turn the same by means of its knurled head 10, until the members 12 release the wings 11.

In order to provide a concentrated beam of light, the focusing tube 14 is employed. This focusing tube 14 has a lens 15 which is held in place by a cap 16. The focusing tube 14 has an outer end which is held frictionally within the insert 1. The interior of the focusing tube 14 is smooth and polished so that it serves to reflect light. I have found that the use of a substantially straight or cylindrical tube 14, having a bell-shaped inner end, is superior to the ordinary conical tube.

It is immaterial if parts of the casing T are cut away for ornamental or other purposes as long as current can flow from the insert 7 to the insert 1. While I prefer to have the member 7 fit within the tube T and to be held therein by means of cooperating threading, I do not wish to be limited to these details, since the end member 7 could be connected to the end of the tube T in any suitable manner. An important feature of the invention is that all the parts can be made of metal, save for the washer 6, and that the circuit is completed by an inner axial movement of a metal part which is in conductive relation to the metal tube or casing T. Likewise, the invention is not to be limited to the specific assembly of the parts illustrated herein.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from the spirit of my invention.

I claim:—

1. A flashlight device comprising a casing having a first insert located therein and also having a second insert located therein and spaced from said first insert, a bulb located in the first insert and provided with contacts, a spring located adjacent the second insert and adapted to hold a battery so that one of the contacts of said battery touches one of the contacts of said bulb and the other of said contacts is electrically connected to said holding spring, and a plunger movably located in the second insert and adapted to contact with the adjacent end of the holding spring, the second insert being electrically connected to the other contact of said bulb.

2. In a flashlight a casing adapted to have a battery located therein, a coil spring located within said casing and having an inner end adapted to contact with the battery, a support for said spring, the outer end of said spring having its coils in threaded engagement with the internally threaded inner wall of a hollow washer, and a switch adapted to make contact with said outer end of the spring.

3. A flashlight device comprising a metal casing having a first metal insert, an electric light bulb located in said insert and having one contact connected to said insert and having a second contact insulated from said insert, a second metal insert located at the other end of said casing, said second insert having a hollow insulating washer located therein, an axially directed coil spring having its outer end in threaded engagement with the threaded inner wall of said washer, said spring being adapted to operatively hold battery means between it and said contact, and a switch located in said second insert and comprising an axially movable plunger operable from the exterior of said casing to contact with the outer end of said spring.

In testimony whereof I affix my signature.

WILLIAM B. SACHS.