July 29, 1924. 1,502,939

E. CHASSERAUX

FLASH LIGHT APPARATUS

Filed Sept. 24, 1923

Fig.1.

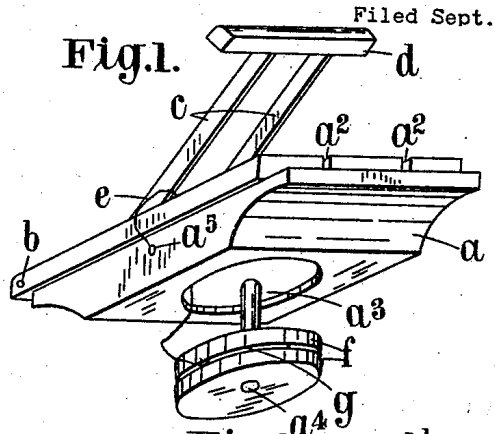


Fig.2.

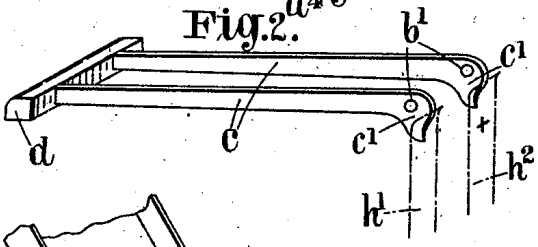


Fig.3.

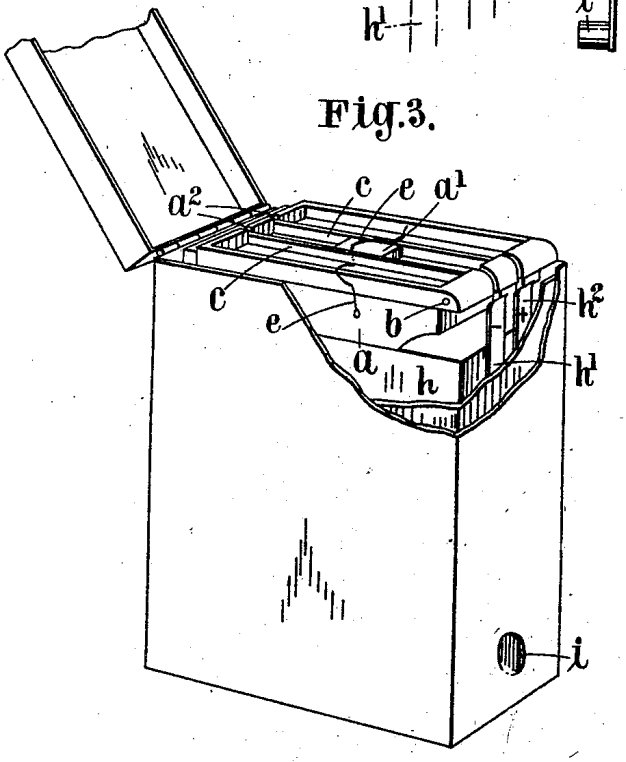


Fig.4.

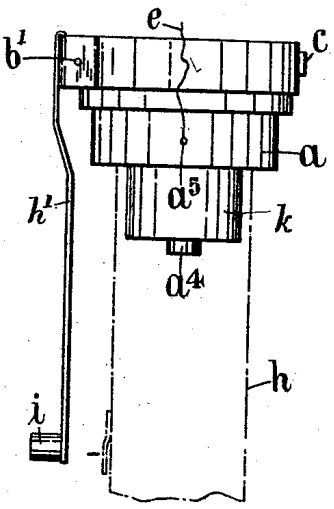
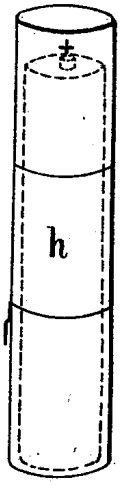


Fig.5.



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UNITED STATES PATENT OFFICE.

EMILE CHASSERAUX, OF PARIS, FRANCE.

FLASH-LIGHT APPARATUS.

Application filed September 24, 1923. Serial No. 664,633.

To all whom it may concern:

Be it known that I, EMILE CHASSERAUX, a citizen of the French Republic, residing at 19 Rue Turgot, Paris, IX, France, have invented certain new and useful Improvements in Flash-Light Apparatus, of which the following is a specification.

This invention has reference to flashlight apparatus of the type in which a flashlight powder is ignited by passing an electric current through a wire stretched across two insulated terminals, and it consists mainly in a portable flashlight apparatus comprising in combination a dry battery mounted in a case, a cap in the form of a block or plate of insulating material mounted on the said case and adapted to receive on its upper face a charge of flashlight powder, a bobbin mounted rotatably in or on the said cap, a fine fusible wire wound on the said bobbin, and a pair of contact arms pivotally mounted on the said cap and adapted to clamp the free end portion of the wire upon its upper face, one of the said arms making electrical contact with one pole of the battery and the other arm being adapted to be connected to the other pole by means of a switch when the wire has been so clamped. A particular construction of the bobbin is also comprised in the invention.

The invention is illustrated in the accompanying drawing, in which:—

Fig. 1 shows in perspective one construction of the battery cap, with the bobbin withdrawn from its seat in the cap;

Fig. 2 shows the contact arms separately, the battery connections being indicated in dotted lines;

Fig. 3 shows the cap with its fittings mounted on a dry battery enclosed in a rectangular case;

Fig. 4 shows the cap adapted to be mounted on a usual form of pocket-torch battery in place of the usual lamp socket; and

Fig. 5 shows such a pocket-torch battery.

Referring to the drawing, a is a block of insulating material shaped to constitute a cap for the case of a dry battery h. As shown in Figs. 1 and 3, the said cap is pivoted on the said case on pins b. The block a is hollowed out on its upper face to form a shallow tray, and a pair of metallic contact arms c spaced apart are pivoted at b^1 at one side of the said tray so that they lie parallel to each other across the tray when they are turned down from the position shown in Fig. 1 into grooves a^2 in the rim of the tray as shown in Fig. 3. The central portion of the tray between the two contact arms c receives the charge of powder and it may project a little above the bottom of the tray as shown at a^1 in Fig. 3. In the lower face of the block a, a recess a^3 is formed to receive a bobbin which is rotatable on a pin a^4 and on which a fine fusible wire e is wound. The wire is led from the bobbin out of the recess a^3 through a hole a^5, from which it is led over the edge of the block a and across the centre of the tray at right angles to and below the contact arms c. By depressing the said arms into the grooves a^2 the free end portion of the wire is clamped by the arms upon the block a at opposite sides of the central portion of the tray on which the charge of powder is placed.

The wire usually employed is of a springy nature, and I have found it necessary to devise a particular construction of bobbin to obviate such wire becoming tangled or kinked and at the same time to enable the bobbin to rotate freely as the wire is drawn off. This bobbin consists of two shells f and a drum g made of insulating material, the shells being secured to the ends of the drum and their rims being only sufficiently far apart to permit of the wire passing between them. A considerable length of wire is preferably wound on the drum, and it will be obvious that if the coils of wire were not confined within the shells they would spring outwards and press against the wall of the recess a^3, thus locking the bobbin against rotation and preventing the wire being drawn off.

As shown in Figs. 1, 2 and 3, the two contact arms c are connected at their free ends by a bar d of insulating material, but this bar may be dispensed with. Each contact arm is formed with a finger c', and these fingers make contact respectively with a negative pole coupling member h' and a positive pole coupling member h^2 of the battery when the arms are turned down as shown in Figs. 2 and 3. The member h^2 is in continuous contact with the positive pole of the battery and the circuit is completed by pressing a button i to bring the member h' into contact with the negative pole, whereupon the portion of the wire e between the two contact arms c is fused and the powder

which has previously been placed in position between the said contact arms so that it covers the wire is instantaneously ignited.

In order to prepare the device to produce a second flare, it is only necessary to raise the contact arms, draw off another length of wire, clamp it in position, and place a fresh charge of powder in the tray.

In the construction shown in Fig. 4 the cap is circular in shape and the pin a^4 on which the bobbin rotates extends upwards through the block a to make contact with one of the two contact arms c, and downwards through a block k of insulating material adapted to fit into the upper end of the case of a pocket-torch battery such as shown in Fig. 5 in place of the usual lamp socket and so that the pin makes contact with the central positive pole of the battery. The other contact arm c is connected to the negative pole of the battery through the intermediary of the coupling member h' by pressing the button i. The pin a^4 may in this case consist of two parts, the upper portion being fixed in the block a and having a screw-threaded bore, and the lower portion being formed with a thread to screw into the said bore.

The invention is not restricted to the particular construction illustrated, and the bobbin may be arranged differently in or on the cap. Other details of construction may also be varied within the scope of the invention as defined in the appended claims.

What I claim is:—

1. A flashlight apparatus comprising in combination a dry battery mounted in a case, a cap formed of insulating material mounted on the said case and adapted to receive on its upper face a charge of flashlight powder, a bobbin supported rotatably by the said cap, a fine fusible wire wound on the said bobbin, and a pair of contact arms pivotally mounted on the said cap and adapted to clamp the free end portion of the said wire upon its upper face, one of the said arms being in electrical contact with one pole of the battery and the other arm being adapted to be connected to the other pole by means of a switch when the wire has been so clamped.

2. A flashlight apparatus comprising in combination a dry battery mounted in a case, a cap in the form of a block of insulating material mounted on the said case and having a recess in its upper face to receive a charge of flashlight powder and a recess in its lower face to receive a bobbin, a bobbin mounted rotatably in the latter recess, a fine fusible wire wound on the said bobbin, and a pair of contact arms pivotally mounted in slots in the upper face of the said block and adapted to clamp the free end portion of the wire at opposite sides of the recess in which the flashlight powder is placed, one of the said arms being in electrical contact with one pole of the battery and the other arm being adapted to be connected to the other pole by means of a switch when the wire has been so clamped.

3. A flashlight apparatus as specified in claim 1, in which the bobbin consists of two shells secured to the ends of a drum on which the wire is wound so that the rims of the said shells are only sufficiently far apart to permit the wire to pass between them, substantially as described.

In testimony whereof I have affixed my signature.

E. CHASSERAUX.