

"ELECTRIC TORCH"

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The present invention relates to an electric torch.

An electric torch has been suggested in which a battery holder is provided in the central portion of the torch, and a front cover, which is provided with a battery contact, a socket, a bulb, a reflector and a transparent glass cover, is screwed to the front portion of the torch. The torch also has a rear cover which is provided with a negative contact and which is screwed to the rear end portion of the torch.

Such an electric torch has the disadvantage, however, that when the front cover is removed in order to change the batteries, the bulb of some other part of the torch may be accidentally dropped and broken, or may be lost.

According, therefore, to the present invention, there is provided an electric torch comprising a battery holder which is open at one end thereof; a bulb support member having battery contact means and holder means for holding a bulb, the bulb support member being secured to the battery holder, at least the main portion of the bulb support member being movable with respect to the battery holder; and a cover member through which light from the bulb may be transmitted and which is detachably connected to the battery holder so as to close the said open end; the arrangement being such that, when the cover member

is removed from the battery holder, at least the said main portion of the bulb support member may be moved through the said open end to a position in which the bulb support member does not obstruct battery replacement through said open end.

Thus in the case of the torch of the present invention, the batteries can be changed merely by removing the cover member and moving the bulb support member without the risk of losing or breaking parts of the torch.

Preferably, the main portion of the bulb support member is connected to an attachment portion thereof at a hinge, the attachment portion being secured to the battery holder.

Preferably, when the cover member is detachably connected to the battery holder, a portion of the cover member engages a part of the bulb support member so as to push the latter into a position in which the battery contact means can effect battery contact.

The cover member may be provided with a reflector for reflecting the light from the bulb.

The reflector preferably constitutes the said portion of the cover member.

Preferably the bulb support member is provided with an outwardly projecting plate which constitutes the said part of the bulb support member.



The cover member is preferably provided with a transparent bulb cover.

The said holder means may comprise a socket member.

5 The invention is illustrated, merely by way of example, in the accompanying drawings, in which:-

Figure 1 is an exploded sectional view of an electric torch according to the present invention, and

10 Figure 2 is an enlarged right side view of the torch of Figure 1 with the front cover removed.

Referring to the drawings, an electric torch according to the present invention comprises a battery holder 1 which is provided with an opening 1a at its front end portion. Three batteries 2 are mounted in the battery holder 1, the batteries 2 having been introduced through the opening 1a. The battery holder 1 is provided with pillars 1b to which an attachment portion 3a of a bulb support member 3 is secured by screws 4. The main portion of the bulb support member 3 is connected to the attachment portion 3a at a hinge 3b so that the said main portion is movable with respect to the battery holder 1. A battery contact 5 (or a plurality of such contacts) is secured to or integral with the inwardly facing side of the bulb support member 3. A socket 7 for a bulb 6 is secured to an outwardly projecting plate 8 which is

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screwed to the main portion of the bulb support member 3.

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A switch 10 for making or breaking an electrical connection between the bulb 6 and the batteries 2 is mounted on a circuit board 9. By pushing a button 11 which is mounted on the battery holder 1, the switch 10 is turned on or off. A front cover 12 is provided with a reflector 13 for reflecting the light from the bulb 6 and is also provided with a transparent bulb cover 14 through which the light from the bulb 6 is transmitted. The front cover 12 is screwed onto the battery holder 1 and is thus detachably connected thereto so as to close the open end 1a. When the front cover 12 is screwed on to the battery holder 1, the innermost portion of the reflector 13 abuts against the plate 8 so as to push each battery contact 5 against the positive terminal of the respective battery 2. A battery contact 15 (one for each battery) contacts the negative terminal of each battery 2.

When it is desired to change the batteries, the cover 12 is first removed and the main portion of the bulb support member 3 is moved through the open end 1a to a position shown in phantom lines in Figure 1 in which the batteries 2 can be easily removed through the opening 1a. Thus, in the said position, the bulb support member 3 does not obstruct battery replacement through the open end 1a. After changing the batteries, the bulb support member 3 is returned to its original position shown in solid lines in Figure 1 and the

battery contact or contacts 5 contact the positive terminals of the batteries. Then the front cover 12 is screwed onto the battery holder 1 so as to close the open end 1a and so as to push the plate 8 by means of the end portion of the reflector 13, whereby the battery contact or contacts 5 contact the batteries 2.

Thus in the construction described above, changing of batteries can be easily performed after removing the front cover 12. Since the battery contact or contacts 5, the bulb 6 and the like are secured to the bulb support member 3 in one unit, there is no fear of losing any part thereof when the front cover 12 is removed. Further since the batteries 2 can be changed through the front opening 1a, a timepiece or the like (not shown) can be mounted at the rear end portion of the electric torch, and can, if desired, be driven by the batteries 2.



C L A I M S

1. An electric torch comprising a battery holder which is open at one end thereof; a bulb support member having battery contact means and holder means for holding a bulb, the bulb support member being secured to the battery holder, at least the main portion of the bulb support member being movable with respect to the battery holder; and a cover member through which light from the bulb may be transmitted and which is detachably connected to the battery holder so as to close the said open end; the arrangement being such that, when the cover member is removed from the battery holder, at least the said main portion of the bulb support member may be moved through the said open end to a position in which the bulb support member does not obstruct battery replacement through said open end.
2. An electric torch as claimed in claim 1 in which the main portion of the bulb support member is connected to an attachment portion thereof at a hinge, the attachment portion being secured to the battery holder.
3. An electric torch as claimed in claim 1 or 2 in which, when the cover member is detachably connected to the battery holder, a portion of the cover member engages a part of the bulb support member so as to push the latter into a position in which the battery contact means can effect battery contact.

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4. An electric torch as claimed in any preceding claim in which the cover member is provided with a reflector for reflecting the light from the bulb.

5. An electric torch as claimed in claim 4 when
5 appendant to claim 3 in which the reflector constitutes the said portion of the cover member.

6. An electric torch as claimed in claim 3 or 5 in
which the bulb support member is provided with an
outwardly projecting plate which constitutes the said
10 part of the bulb support member.

7. An electric torch as claimed in any preceding claim in which the cover member is provided with a transparent bulb cover.

8. An electric torch as claimed in any preceding
15 claim in which the said holder means comprises a socket member.

9. An electric torch substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

20 ~~10. Any novel integer or step, or combination of integers or steps, hereinbefore described and/or as shown in the accompanying drawings, irrespective of whether the present claim is within the scope of, or relates to the same or a different invention from that of, the preceding~~
25 ~~claims.~~