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COMBINED KEY AND FLASHLIGHT

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This invention relates to illuminating devices and more particularly to a combined key and flashlight whereby the unlocking of locks in dark surroundings may be materially facilitated.

One of the objects of the present invention resides in the provision of a key having an illuminating means associated therewith, the construction being such as to secure a novel, compact and unitary assemblage of parts which may be readily and efficiently employed in operating locks situated in darkened places.

Another object of the invention comprehends a construction of the foregoing character which is so constituted as to avoid the use of depending key chains, rings, etc., the arrangement of the present invention being such as to provide a relatively small article capable of being carried in the pocket or purse of the user and hence available for instant use.

A further object is to provide a novel unitary key and flashlight construction embodying relatively few parts occupying a comparatively small space, thus resulting in a material saving in its manufacture and assembly.

A still further object is to provide a combined key and flashlight construction of the above type wherein the arrangement is such that the light beams from the flashlight are directed along the key in order to efficiently illuminate the key opening of the lock to be opened.

Still another object resides in a novel arrangement of the constituent parts of the invention so as to provide a structure capable of use as an ordinary flashlight without the necessity of removing or rearranging any of the structural elements.

The above and other objects and novel features of the invention will appear more fully hereinafter from the following detailed description when taken in connection with the accompanying drawing, wherein one embodiment of the invention is illustrated. It is to be expressly understood, however, that the drawing is employed for purposes of illustration only and is not designed to an exact definition of the limits of the invention, reference being had for this purpose to the appended claims.

In the drawing, wherein similar reference characters refer to similar parts throughout the several views:

- Fig. 1 is a longitudinal sectional view of a combined key and flashlight constructed in accordance with the present invention;
- Fig. 2 is an exploded view in perspective of the parts of Fig. 1;
- Fig. 3 is a transverse view in section taken along lines 3—3 of Fig. 1 and looking in the direction of the arrows, and
- Fig. 4 is a transverse section taken along lines 4—4 of Fig. 1 and looking in the direction of the arrows.

Referring more particularly to Figs. 1 and 2, the present invention is illustrated therein as including a key 5 having one end thereof formed as a relatively flat elongated lock-cooperating portion 6 and the other end thereof constructed as a tubular cylindrical portion 7. These portions of the key are integrally connected by an intermediate section 8 which is so formed as to gradually merge the relatively flat contour of the lock-cooperating portion 6 into the contour of the cylindrical portion 7. It will be understood from the above that the key 5 is thus somewhat similar to the usual well known flat key construction with the exception of the cylindrical end portion 7 and the intermediate section 8, which latter portion and section are provided in order to secure the advantages of the present invention which will be readily apparent in the description that follows.

In order to associate the key 5 with a flashlight to provide the novel construction of the present invention, the cylindrical portion 7 has a head or flange 9 formed on its exterior, and, on opposite sides of this flange, the portion 7 is provided with threaded sections 10 and 11 respectively. A hollow casing 12, closed at one end and internally threaded at the other, is detachably connected to the threaded section 10 of the cylindrical portion 7 and is adapted to house a relatively small flashlight battery 13. The casing 12 may, moreover, be provided with a spring clip 14 for enabling the device to be carried in the pocket of the user, and a removable cap 15 having an open end 16 may be removably secured to the threaded section 11, if desired.

Housed within the cylindrical portion 7 is a light bulb or lamp 17, such lamp being provided with the usual threaded base 18 and a glass bulb or light-emitting portion 19. The lamp 17 is preferably of the type wherein the tip 20 of the bulb is so constructed as to direct the light beams forwardly of the bulb when energized by the battery 13.

Means are provided for maintaining the lamp 17 in the position shown in Fig. 1, wherein the lamp snugly and compactly fits the interior of the cylindrical portion 7. As shown, such means are constituted by a spring 21 which also serves the purpose of urging the battery 13 toward the
left, as viewed in Fig. 1, in order to separate the center electrode 22 of the battery and the center terminal 23 of the lamp. The other electrode 24 of the battery is urged by the spring 21 into engagement with any suitable switch member 25, the latter being constantly electrically connected with the threaded base 18, constituting the other terminal for the lamp 17, through metallic rings 12, cylindrical portion 7 and spring 21. From this discussion, it will readily appear that operation of the switch 25 to move battery 13 to the right against the tension of spring 21 will serve to bring electrode 22 and terminal 23 into engagement in order to energize the lamp.

The novel construction is employed for enabling the light rays issuing from the light-emitting portion 19 of the lamp 17 to be directed along the lock-cooperating portion 6 of the key upon opposite sides thereof in order to efficiently illuminate the opening of the lock to be opened. Such construction includes the provision of a pair of oppositely-disposed openings 26 and 27 located in the side wall of the intermediate section 8 and adjacent the light-emitting portion 19 of the lamp. As shown, these openings are elongated and are slightly concaved from one end to the other by reason of the gradual increase in size of the intermediate section 8 from the end thereof connected to the lock-cooperating portion 6 to the opposite end associated with the cylindrical portion 7. The intermediate section 8 is, moreover, formed with an internal shoulder 28 for cooperation with shoulder 28 on the lamp, this construction enabling the spring 21 to maintain the lamp in proper centered relation with respect to the cylindrical portion 7 with shoulder 28 engaging shoulder 28, so that the light rays issuing from the light-emitting portion 19 of the lamp will be directed forwardly and along opposite sides of the lock-cooperating portion 6 of the key.

With the parts assembled as shown in Fig. 1, the structure of the present invention provides a relatively thin elongated device which may be readily carried in the pocket or purse of a user. It will be understood that the lock-cooperating portion 6 of the key 5 may be indented for cooperation with the lock which the user desires to operate. Usually, a lock would comprise that in front door of a home or may even comprise the ignition lock of a vehicle. It will be observed that the present construction is such that notwithstanding the combination of the key and flashlight provided by the present invention, the latter is capable of use as an ordinary flashlight without the necessity of dismanting any parts of the structure. In this use of the device, the cap 15 may be retained and the light beams issuing from the light-emitting portion of the bulb pass out through the open end 16 of the cap 15 in a relatively narrow pencil of light. If desired, cap 15 may be formed of polished metal in order that its interior may provide a reflecting surface. On the other hand, the cap may be formed of a transparent or translucent plastic and in this latter event the opening 16 in the end of the cap may be closed.

There is thus provided by the present invention a novel, unitary and compact flashlight construction which is unusually efficient in its operation and which is, moreover, of a type capable of being manufactured economically. The arrangement is such as to avoid the use of key chains or rings and thus presents a neat and pleasing appearance. It is to be especially pointed out that the key and flashlight portion are arranged in longitudinal alignment and the light issuing from the lamp is directed longitudinally of the key. This construction provides an unusually efficient illuminating device and it is desired to illuminate a keyhole in darkened surroundings, it being only necessary to direct the device toward the keyhole, whereupon the swift and sure guidance of the key is assured while maintaining the illumination at the point desired. In unlocking a lock, the flashlight provides a convenient handle for the key.

While one embodiment of the invention has been shown and described herein with considerable particularity, it is to be understood that the same is not limited to the form shown but may be capable of a variety of expressions, as well understood by those skilled in the art, without departing from the spirit of the invention. Reference will, therefore, be had to the appended claims for a determination of the limits of the invention.

What is claimed is:

1. A device of the class described comprising a key member having a lock-cooperating portion at one end thereof and a hollow cylindrical portion at the other end, said latter portion being formed with an external flange and having threaded sections on opposite sides of said flange, a light bulb positioned within said cylindrical portion, the latter being formed with diametrically-opposed openings adjacent the light-emitting portion of the bulb, such bulb cap adapted to be threadedly attached at one end and having threaded sections to cover the lock-cooperating portion, a hollow casing threadedly attached to the other of said threaded sections, a battery in said casing, resilient means interposed between said battery and bulb, and means for establishing an electrical connection between said battery and bulb.

2. A device of the class described comprising a key member having a relatively flat elongated key at one end thereof and a hollow cylindrical portion at the other, said key and cylindrical portion being interconnected by an intermediate section having a cut-away portion defining a through opening, the cylindrical portion being formed with an external flange and having reduced threaded sections on opposite sides of said flange, a light bulb housed in the cylindrical portion and having its light-emitting portion projecting outwardly of said cylindrical portion into the intermediate section adjacent the through opening for directing light along opposite sides of said flat key, a hollow cap adapted to be threadedly attached at one end to one of said threaded sections to cover the key, a hollow casing threadedly secured to the other threaded section, a battery in said casing, resilient means interposed between said battery and bulb, and means for establishing an electrical connection between said battery and bulb.
between said battery and bulb, and means for establishing an electrical connection between said battery and bulb.

3. A device of the class described comprising a key member having a relatively flat elongated key at one end thereof and a hollow cylindrical portion at the other, said key and cylindrical portion being interconnected by an intermediate section having a cut-away portion defining a through opening, the cylindrical portion being formed with an external flange and having reduced threaded sections on opposite sides of said flange, a light bulb housed within the cylindrical portion and having its light-emitting portion projecting outwardly of said cylindrical portion into the intermediate section adjacent the through opening for directing light along opposite sides of said flat key, a hollow cap adapted to be threadedly attached at one end to one of said threaded sections to cover the key, a hollow casing threadedly secured to the other threaded section, a battery in said casing, a shoulder within the cylindrical portion, a shoulder on said bulb, resilient means interposed between the battery and bulb and serving to maintain the bulb in position with said shoulders in engagement, and means for electrically connecting said battery and bulb.

4. A device of the class described comprising a key member having a relatively flat elongated key at one end thereof and a hollow cylindrical portion at the other, said key and cylindrical portion being interconnected by an intermediate section having a cut-away portion defining a through opening, the cylindrical portion being formed with an external flange and having a reduced threaded section on one side of said flange, a light bulb loosely positioned within the cylindrical portion and having its light-emitting portion projecting outwardly of said cylindrical portion into the intermediate section adjacent the through opening for directing light along opposite sides of said flat key, a hollow casing threadedly secured to said threaded section, a battery in said casing, a shoulder within the cylindrical portion, a shoulder on said bulb, a spring interposed between the battery and bulb and serving to maintain the latter in position within said cylindrical portion with said shoulders in engagement, and means for electrically connecting said battery and bulb.

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