The present invention relates to a combination flashlight and keyholder.

In using a key at night, it is frequently difficult to find the keyhole. Most persons do not habitually carry a flashlight. Moreover, the use of a flashlight and a key at the same time ordinarily requires two hands, one to hold the light and the other to insert and turn the key. If a person is carrying a package, the unlocking of a door at night is inconvenient and frequently time-consuming.

It is an object of the present invention to provide a combination flashlight and keyholder that is convenient to use, being so arranged that the light and key can easily be held in one hand with the light in position to illuminate the keyhole into which the key is to be inserted. Another object of the invention is to provide a combination flashlight and keyholder which is inexpensive to manufacture and easy to assemble. A further object is to provide a combination flashlight and keyholder with which keys can easily be placed on, and removed from, the keyholder and the lamp and battery of the flashlight can be readily replaced.

Other objects and advantages of the invention will be apparent from the following description and appended claims in conjunction with the accompanying drawings which show, by way of example, preferred embodiments of the invention.

In the drawings:

Fig. 1 is a combination flashlight and keyholder in accordance with the invention.

Fig. 2 is a front end view.

Fig. 3 is a longitudinal section.

Fig. 4 is a rear end view.

Figs. 5 and 6 are side elevations of two other embodiments.

Fig. 7 is a longitudinal section of a further embodiment of the invention.

The embodiment of the invention illustrated in Figs. 1 to 4 comprises a tubular case 1 and a tubular cap 2. The forward end of the case 1 and the rear end of the cap 2 fit telescopically into one another. As shown in the drawing, the cap fits over the forward end of the case and has a shoulder 2a adapted to engage the forward edge of the case to limit the distance the cap is slipped onto the case. The opening at the rear end of the case 1 is restricted by an in-turned rim 1b. The opening of the forward end of the cap 2 is similarly restricted by an in-turned rim 2b.

While, for convenience, the members 1 and 2 are referred to respectively as a case and cap, it will be understood that the two members together constitute a casing or housing for the flashlight and that the relative lengths of the two members may be varied as desired. It has been found preferable, however, to make the rear portion 1 of the casing somewhat longer than the forward portion 2.

In the forward portion of the casing, there is an electric lamp 3 having a bulb 3a and a base 3b comprising a peripheral contact or shell 3c and a central contact 3d at the rear end of the base. The lamp bulb is of a diameter larger than the restricted opening in the front end of the cap 2, so that the lamp is retained in the cap by the rim 2b. The bulb 3c of the lamp is preferably provided with a lens portion for focusing the light emitted by the lamp.

In the rear portion of the casing, there is a dry cell or battery 4 which is slideably axially of the casing. At its front end, the battery 4 has a central contact or terminal 4a which preferably projects forwardly from the surrounding portion of the battery. The other terminal of the battery is provided by its tubular casing 4b or by its rear end 4c, or both.

A helical compression spring 5 is disposed between the lamp 3 and the battery 4. The forward end portion of the spring 5 engages the peripheral shell or contact 3c of the lamp base 3b, providing an electrical contact between the spring and the peripheral contact of the lamp base and, at the same time, helping to hold the lamp in proper position. Preferably, the lamp base is threaded with a coarse thread corresponding approximately to the pitch of the helical spring 5 so that the spring can be screwed onto the base of the lamp. The rear end of the spring 5 engages the front end of the battery 4 and preferably, although not necessarily, engages the casing 4b of the battery. The spring 5 is of sufficiently large diameter to surround, and be spaced from, the forward terminal 4a of the battery so as to avoid electrical contact therewith.

It will be seen that the spring 5 tends to push the battery 4 and the lamp 3 away from one another. However, the rim 2b of the cap 2 and the rim 1b of the case 1 engage the lamp and the rear end of the battery, respectively, so as to limit the distance the lamp and battery can be pushed apart. The proportions of the parts are such that, in the normal positions of the battery and lamp as shown in Figs. 3, the terminal 4a of the battery is spaced sufficiently from the central contact 3d of the lamp to avoid accidental contact between them and also to allow for manufacturing tolerances in lamp and battery size. A spacing of approximately 1/8 inch to 3/16 inch has been found satisfactory.

At the rear end of the case 1, there is a pusher or plunger 6 which has an out-turned flange portion 6a held between the bottom of the battery and the in-turned rim 1b of the case and a central portion 6b which projects rearwardly through the restricted opening in the rear end of the case 1. By pressing inwardly on the plunger 6, the user of the flashlight can slide the battery 4 forwardly against the action of the spring 5 so as to bring the terminal 4a of the battery into engagement with the central contact 3d of the lamp, thereby lighting the lamp. In addition to pushing the battery forwardly, the plunger 6 may also provide electrical contact between the bottom 4c of the battery and the case 1. While, for clarity, the spring 5 has been shown slightly separated from the casing, it actually engages either the casing of the flashlight or the tubular case 4b of the battery or both, so as to provide electrical contact between the battery and the peripheral shell 3c of the lamp base 3d.

The parts described above are held in assembled relation by means of a spring ball or keyholder 7 having in-turned end portions 7a which project axially and diametrically opposite holes in the telescopically interfitting portions of the case 1 and cap 2. The engagement of the in-turned portions 7a in these holes serves not only to attach the ball pivotally to the casing of the flashlight but also holds the case 1 and cap 2 securely together and prevents their being pressed apart by the pressure of the spring 5. By holding the two parts of the casing together, the bail 7 also holds the plunger 6, battery 4, spring 5 and lamp 3 in assembled position in the casing.
The bail portion 7 has opposite leg portions 7b of sufficient length to permit the bail to swing over the front end of the cap 2 and preferably also has a crossed loop portion 7c, so that the overall configuration of the bail is approximately figure 8-shaped. The leg portions 7b of the bail are preferably shaped so as to lie closely alongside the casing 1, 2, thereby keeping the overall dimensions of the bail to a minimum. The loop portion 7c of the bail is preferably of a diameter which does not exceed the distance between the two leg portions 7b. The bail is preferably formed of suitable spring wire. At the point 7d where the two portions of the wire cross to form the loop 7c, the crossing portions of the wire are substantially in contact with one another.

One or more keys K may be retained in the loop 7c of the bail 7. Preferably, however, the keys are held on a split key ring 8 which in turn is held in the loop portion 7c of the bail.

The case 1 and cap 2 are preferably formed of tubular metal stock and the plunger 6 is preferably a sheet metal stamping. Alternatively, the case 1, cap 2 and plunger 6 may be formed of other suitable material, such as plastic. If they are formed of electrically non-conducting material, care should be taken to see that the rear end of the spring 5 engages the case 46 of the battery 4 so as to provide electrical contact.

The elongation of the holes may be in either the cap or the case, or both. In the normal position of the case and cap, as shown in Fig. 7, the central terminal 34a of the battery is spaced from, and hence out of engagement with, the central contact 33a of the lamp. By pressing the case 31 forward relative to the cap 32, the battery is pressed toward the lamp to bring the terminal 34a into engagement with the central contact 33a of the lamp base. The bottom end of the battery seats on the rear end of the case 31 which may either have a restricted opening, as shown in Fig. 5, or may be closed, as shown at 31c in Fig. 7.

While several embodiments of the invention have been shown by way of example in the drawings and specifically described above, it will be understood that the invention is not limited to these embodiments.

What I claim and desire to secure by Letters Patent is:

1. A combination flashlight and key holder comprising a tubular case open at both ends, a tubular cap open at both ends, the front end of the case and the rear end of the cap being telescopically interfitting with one another with said tubular cap acting as the female fitting and the openings at the front end of the cap and the rear end of the case being restricted, a battery in the case with a central terminal at its forward end and a second terminal, a lamp received in the cap and having a base portion with a central contact and the diameters of the lamp and the battery being greater than the restricted openings in the cap and case respectively, a helical compression spring between the lamp and the battery and pressing on the front end of the battery to hold the central contact of the lamp normally out of contact with the central terminal of the battery, means for pressing the battery and lamp toward one another against the action of said spring to bring said central contact and terminal into engagement with one another, means providing an electrical connection between said second terminal of the battery and the peripheral contact of the lamp base, the telescopically interfitting ends of the case and cap having matching, diametrically opposite holes, and a key holder comprising a spring ball with in-turned ends which extend into said holes to attach the ball pivotally to the case and cap and to secure the case and cap releasably together against the action of said spring, said ball being swingable forward to a position in front of said lamp so that a key held by said key holder can be inserted in a keyhole while illuminated by said lamp.

2. A combination flashlight and key holder comprising a tubular case open at both ends, a tubular cap open at both ends, the front end of the case and the rear end of the cap fitting telescopically one into the other with said tubular cap acting as the female fitting and the openings at the rear end of the case and the front end of the cap being restricted, a battery in the case with a terminal at its forward end and a second terminal, a lamp disposed in the cap and having a rearwardly extending base portion with a peripheral contact and a central contact at its rear end, a helical compression spring between the lamp and the battery, the peripheral contact of the case being understood to be forward peripheral of the spring and the end of the spring pressing on the front end of the battery to hold the central contact of the lamp normally out of engagement with the said terminal of the battery, a pusher in the opening at the rear end of the case for pressing the case forward into engagement with the central contact of the lamp base, means comprising said spring providing an electrical connection between said second terminal of the battery and said peripheral contact of the lamp base, the telescopically interfitting ends of the case and cap having matching, diametrically opposite holes, and a key holder comprising a spring ball having inturned ends which project into said holes to attach the ball pivotally to the base and cap and to secure the
case and cap releasably together against the action of the spring, said bail being swingable forwardly to a position in front of said lamp so that a key held by said key holder can be inserted in a keyhole while illuminated by said lamp.

3. A combination flashlight and key holder comprising a tubular case open at one end, a tubular cap open at both ends, the front end of the case and the rear end of the cap fitting telescopically one into the other and the opening at the front end of the cap being restricted, a battery in the case with a terminal at its forward end and a second terminal, a lamp disposed in the cap and having a rearwardly extending base portion with a helically threaded peripheral contact and a central contact at its rear end, a helical compression spring screwed onto the helical contact of the lamp and engaging the forward end of the battery to hold said terminal of the battery normally out of contact with the central contact of the lamp, the battery being slideable lengthwise in the case to bring said terminal into contact with said central contact, means comprising said spring providing an electrical connection between said second terminal of the battery and said peripheral contact of the lamp base, the telescopically interfitting ends of the case and cap having matching diametrically opposite holes said holes being elongated in one of said telescopically interfitting ends in a direction lengthwise of said case so that said case and said cap can slide axially relative to one another in order that pressing of said case forwardly relative to said cap brings said lamp into engagement with said battery to turn on said flashlight, and a key holder comprising a spring bail having inturned ends which project into said holes to attach the bail pivotally to the base and cap and to secure the case and cap releasably together, said bail being swingable forwardly to a position in front of said lamp so that a key held by said key holder can be inserted in a keyhole while illuminated by said lamp.

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