June 17, 1924.

A. L. STAPLES

1,498,332

HANDLAMP

Filed Feb. 21, 1921

2 Sheets-Sheet 1

Fig. 1.

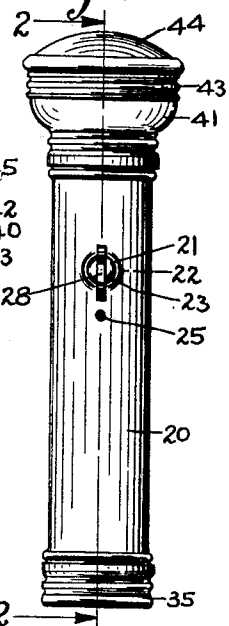


Fig. 2.

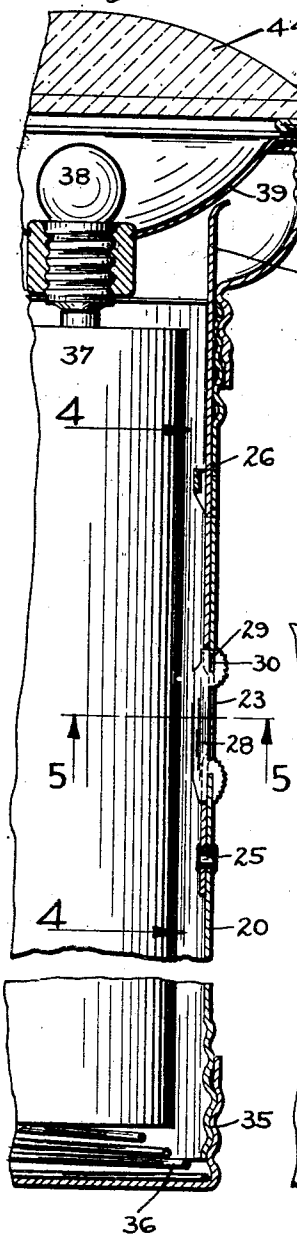


Fig. 3.

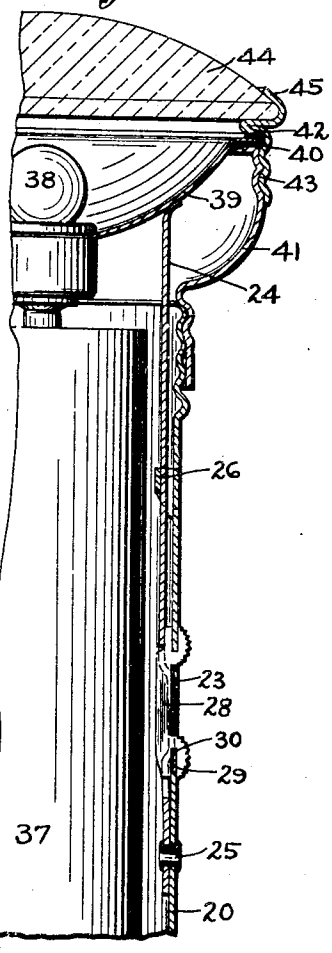


Fig. 4.

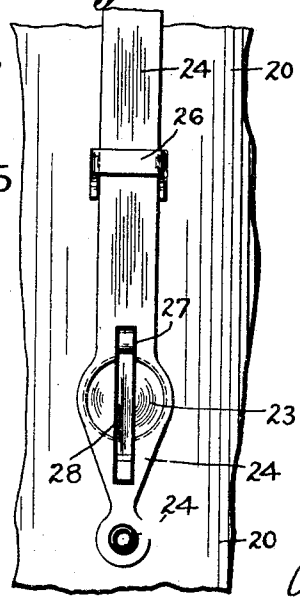
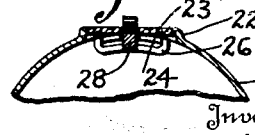


Fig. 5.



Inventor

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Fig. 6.

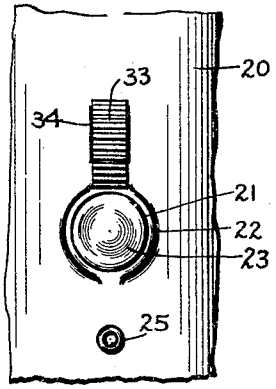


Fig. 7.

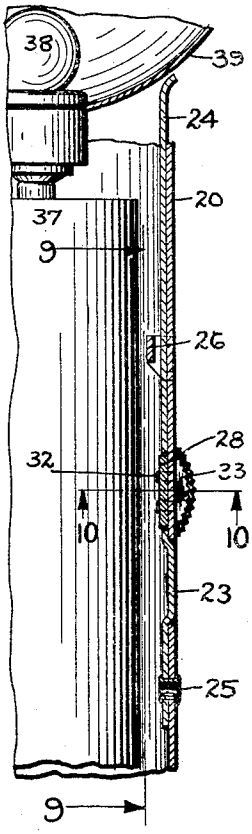


Fig. 8.

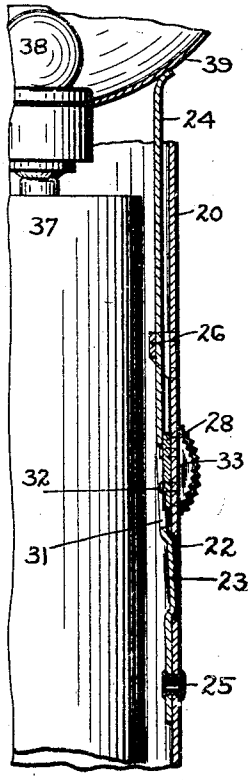


Fig. 9.

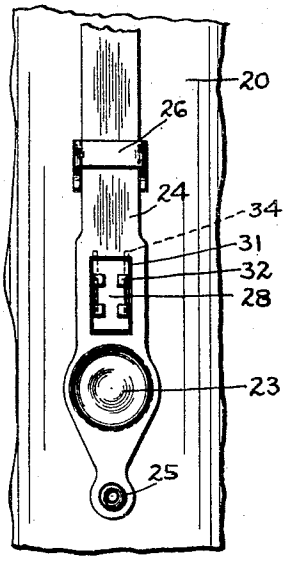
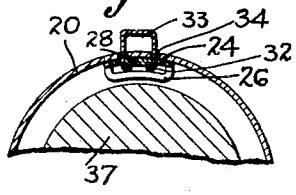


Fig. 10.



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Patented June 17, 1924. 1,498,332

UNITED STATES PATENT OFFICE.

ARTHUR L. STAPLES, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION.

HANDLAMP.

Application filed February 21, 1921. Serial No. 446,737.

To all whom it may concern:

Be it known that I, ARTHUR L. STAPLES, a citizen of the United States, residing at New Haven, in the county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Handlamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to portable electric lamps comprising a casing, a battery and an incandescent lamp mounted therein, and a contact device on the casing by which the flow of current from the battery through the lamp may be controlled at will.

In a portable lamp of this character, it is desirable that the user shall be able to flash the lamp, that is, light it for short periods of time, as in signaling, or for such length of time as it is convenient for the operator to hold his thumb on the contact device. It is also desirable that means be provided for closing the switch to light the lamp for a longer period of time and without the need for continuous thumb pressure on the contact mechanism.

It is an object of the present invention to provide a hand-lamp with a contact mechanism so arranged that the lamp can be flashed or can be permanently lighted, as desired, but with the additional feature that the contact mechanism cannot be inadvertently locked in closed circuit position through accidental pressure on the contact device. This permits the hand lamp to be carried about with tools or in the pocket of an automobile door without the danger that when the lamp is needed its battery will be found exhausted because, through accident, the switch had been closed and the lamp had been lighted without the knowledge of the user.

Other objects and advantages will become apparent from the following description, which is to be taken in conjunction with the accompanying drawings, wherein—

Fig. 1 is a view in elevation of a hand-lamp embodying my invention.

Fig. 2 is an enlarged broken view thereof in vertical central section, partly in elevation, on the line 2—2 of Fig. 1, showing the circuit closing device in its open circuit position.

Fig. 3 is a view corresponding to Fig. 2 in the closed circuit position.

Fig. 4 is an enlarged broken view of a portion of the interior, as shown by the arrows 4—4 of Fig. 2, showing the contact device.

Fig. 5 is an enlarged broken view in transverse section on the line 5—5 of Fig. 2.

Fig. 6 is an enlarged broken view of an alternative form of my invention showing the exterior of the contact device.

Fig. 7 is an enlarged broken view thereof in central vertical section partly in elevation showing the contact device in its open circuit position.

Fig. 8 is a corresponding view in closed circuit position.

Fig. 9 is an interior view corresponding to Fig. 6, as shown by the arrows 9—9 of Fig. 7.

Fig. 10 is an enlarged broken view in transverse section on the line 10—10 of Fig. 7.

In carrying out my invention as herein shown I employ a tubular sheet metal case 20 having an aperture 21 in the side thereof surrounded by a slight, substantially plane rim 22 formed from the metal of the case. In the aperture 21 is located a flat push-button 23 formed from the material of a strip-like sheet metal spring-contact 24 which lies longitudinally, snugly against the inner surface of the case, and is fastened to the same by a rivet 25 at the lower end of the contact 24. Near the upper end of the contact 24 it passes under a sheet metal retaining bridge 26 rigidly attached to or integral with the interior of the case 20 and adapted to prevent lateral movement of the strip while permitting radial motion thereof.

The strip 24 is longitudinally slotted as at 27 for the reception of a slide 28. In the preferred form shown in Figs. 1 through 5 the slide 28 is a radially arranged piece of sheet metal which rises through a pair of corresponding slots 29 on opposite sides of the aperture 21 and has at each end a knurled operating ear and a transverse slot 30 to receive the case 20 at the ends of the slots 29, whereby the slide is held in place.

The distance between the bottoms of the slots 30 is less than the distance between the ends of the slots 29 so that the slide 28 is limitedly slidable relative to the case 20, but the slide 28 just fills the slot 27 so that it is held against longitudinal motion so long as the parts are in the position shown in Fig. 2.

In the alternative form, shown in Figs. 6 through 10 the slide 28 is an I shaped piece of sheet metal lying longitudinally flatwise against the inner surface of the case 20 and in a corresponding slot 31 in the spring-contact strip 24, whereby it is held against longitudinal movement. The slide 28 is held in place by inturned lugs 32 formed at the bottom of the side walls of a hollow, knurled thumb-piece 33 located on the outside of the case 20 just above the rim 22. The side walls of the thumb-piece pass through longitudinal slots 34 in the casing. In this way the thumb-piece 33 and the slide 28 are held in place and since the slots 34 are longer than the side walls of the thumb-piece, the latter is mounted slidably, relative to the case, although, in the position of the parts shown in Fig. 7, such motion is prevented by the fact that the slide 28 fills the slot 31 of the spring contact 24.

In other details the construction is well known and old in the art. The tube 20 is provided at its rear end with the customary removable metallic cap 35 and spring 36, the latter being interposed between the cap 35 and the naked rear terminal of a battery 37 positioned within the case, which battery will usually consist of one or more cells placed end to end and enclosed within an open-ended insulating cover. The other terminal of the battery contacts with the central terminal of an ordinary flashlight bulb 38, the outer threaded terminal of which is screwed into the threaded central aperture of a metallic reflector 39. The reflector is held in position by having its outer rim, which is covered by an insulating strip 40, gripped between the inturned edge of an enveloping cup 41, which is attached to the upper end of the tube 20, and an inwardly projecting flange 42 of the lens holder 43. A lens 44 is held between the flange 42 and the spun over rim 45.

In its normal position as shown in Fig. 2 the upper end of the contact 24 is adjacent to but not quite in contact with the reflector 39. Thus there is a nearly continuous electrical circuit through the parts as follows:—the contact 24, the case 20, the cap 35, the spring 36, the battery 37, the bulb 38 and the reflector 39. This circuit is interrupted only by the gap between the contact 24 and the reflector 39.

By pressure on the push-button 23 the contact 24 may be sprung inwardly to contact at its upper end with the reflector, thus closing the circuit and lighting the lamp as long as the pressure is maintained. To obviate the necessity of maintaining the pressure manually, the slide 28, which is freed from the restraint of the slot 27 or 31 by the inward movement of the contact strip 24, may be slid upward by manipulation of the knurled portions of the slide, thus holding the spring contact 24 in its circuit-closing position, as shown in Fig. 3, until the lock 28 is returned to its normal position when the latter snaps into the slot 27 or 31 again, releasing the spring contact to spring back into circuit breaking position.

The constructions disclosed may be varied in many ways without departing from the principles of the invention.

I claim:—

1. In a hand lamp, a casing provided with an opening, a battery and a bulb support housed thereby, a light bulb mounted in said support and means to close the circuit through the battery and bulb, including a depressible contact strip lying adjacent the inner surface of the casing and secured at one end thereto and formed with an upwardly projecting portion extending into the casing opening to be manually engaged.

2. In a hand lamp, a battery casing, a battery and light bulb therein, and means to close the circuit through said battery and bulb including a depressible contact member at one end secured to the casing and lying adjacent the inner surface thereof, a push button rigid upon said contact member for actuating the same, and means movable to a position between the casing and contact member to hold the latter in circuit closing position.

3. In a hand lamp, a casing, a battery, a reflector and light bulb therein, means to close the circuit through said battery and bulb including a contact member depressible into engagement with the reflector, a push button for actuating the same, and means movable to a position between the casing and contact member to hold the latter in circuit closing position.

4. In a hand lamp, a casing, a battery, a reflector and a light bulb therein, and means for completing a circuit through said bulb and battery, comprising a contact strip to engage the reflector and secured at one end to the casing and a push button normally flush with the surface of the casing to depress said strip to close the circuit.

5. In a hand lamp, a casing, a battery and a reflector therein, a lamp bulb having one terminal in connection with the battery and the other terminal electrically connected to the reflector, a contact strip secured at one end to the casing, and having its other end free and positioned to be depressed into contact with the reflector, means for connecting the other terminal of the battery to the contact strip, and means movable to a posi-

tion between the contact strip and the casing to lock the strip in circuit closing position.

6. In a hand lamp, a battery, a reflector and a light bulb mounted therein, and means for electrically connecting the battery and bulb, including a contact strip secured at one end and having its other end in position to be depressed into engagement with the reflector, said contact strip being formed with a push button in position to be manually engaged and lying substantially flush with the casing.

7. In a hand lamp, a battery, a reflector and a light bulb mounted therein, and means for electrically connecting the battery and bulb, including a contact strip secured at one end and having its other end in position to be depressed into engagement with the reflector, said contact strip being formed with a push button in position to be manually engaged, and a locking member slidable to position between said contact strip and the casing to lock the strip in circuit closing position.

8. In a hand lamp, a casing, a battery and light bulb housed thereby, and means to close the circuit through the battery and bulb, including a switch device having a depressible contact member within the casing, a push button having a slot in its upper face and a locking member, for the contact member, disposed within said slot.

9. In a hand lamp, a casing having an opening, a battery and light bulb housed thereby, and means to close the circuit through the battery and bulb, including a contact strip depressible within the casing, having a push button formed thereon and disposed in said opening in position to be manually engaged, said push button being provided with an opening and a locking member disposed in said opening and movably supported by the edge of the casing opening.

10. In a hand lamp, a casing, a battery and light bulb housed thereby, a reflector, means to close the circuit through the battery and bulb, including a contact strip mounted within the casing and depressible into engagement with the reflector and a locking member normally received in an opening in said strip, but movable to position above a solid portion thereof to lock the strip in circuit closing position.

11. In a hand lamp, a casing, a battery and bulb support housed thereby, a light bulb carried by said support, means to close the circuit through the battery and bulb, including a contact strip mounted within the casing and depressible into engagement with said bulb support, and a locking member normally received in an opening in said strip, but movable to position above a solid portion thereof to lock the strip in circuit closing position.

12. In a battery hand-lamp, a casing, a battery therein, an electric light bulb having one of its terminals in contact with one of the poles of the said battery and conductive means interposed between the other terminal of the said lamp and the other pole of the said battery, the said means including a spring contact member within the casing and having one end rigidly attached thereto and a push button for the operation thereof integral therewith and substantially flush with and accessible from the exterior of the said casing.

13. In a battery hand-lamp, a casing, a battery therein, an electric light bulb having one of its terminals in contact with one of the poles of the said battery and conductive means interposed between the other terminal of the said lamp and the other pole of the said battery, the said means including a spring contact member having one end rigidly attached to the said casing and a push button for the operation thereof integral therewith and accessible from the exterior of the said casing, the said push button being normally substantially flush with the external surface of the said casing.

14. In a battery hand-lamp, a tubular metal casing: a battery positioned therein having an open ended insulating cover and an upper and a lower terminal: a metal cap closure removably positioned on the lower end of said casing and in electrical contact therewith: a metal spring interposed between the said closure and the said lower battery terminal and electrically connecting the same: a metal bulb support positioned at the upper end of the said casing and insulated therefrom: an electric bulb mounted in the said bulb support, having one of its terminals electrically connected thereto and having the other of its terminals in electrical contact with the said upper terminal of the said battery: a spring contact positioned longitudinally against the inner surface of the said casing, rigidly attached thereto at the lower end of the said spring contact, having its upper end adjacent to but normally not in contact with the said bulb support, and adapted to be sprung into contact with the said bulb support by manipulation from without the casing whereby the circuit of the said battery through the said bulb is closed: and means adapted to be moved between the spring contact and casing after the said spring contact has been sprung into closed circuit position to hold the same in such position.

15. In a battery hand-lamp, a tubular metal casing: a battery positioned therein having an open ended insulating cover and an upper and a lower terminal: a metal cap

closure removably positioned on the lower end of said casing and in electrical contact therewith: a metal spring interposed between the said closure and the said lower battery terminal and electrically connecting the same; a metal reflector positioned at the upper end of the said casing and insulated therefrom: an electric bulb mounted in the said reflector, having one of its terminals electrically connected thereto and having the other of its terminals in electrical contact with the said upper terminal of the said battery: a spring contact positioned longitudinally against the inner surface of the said casing, rigidly attached thereto at the lower end of the said spring contact, having its upper end adjacent to but normally not in contact with the said reflector, and adapted to be sprung into contact with the said reflector by manipulation from without the casing whereby the circuit of the said battery through the said bulb is closed: and means adapted to be moved between the spring contact and casing after the said spring contact has been sprung into closed circuit position to hold the same in such position.

16. In a battery hand-lamp, a tubular metal casing: a battery positioned therein having an open ended insulating cover and an upper and a lower terminal: a metal cap closure removably positioned on the lower end of said casing and in electrical contact therewith: a metal spring interposed between the said closure and the said lower battery terminal and electrically connecting the same: a metal reflector positioned at the upper end of the said casing and insulated therefrom: an electric bulb mounted in the said reflector, having one of its terminals electrically connected thereto and having the other of its terminals in electrical contact with the said upper terminal of the said battery: a spring contact positioned longitudinally against the inner surface of the said casing, rigidly attached thereto at the lower end of the said spring contact, having its upper end adjacent to but normally not in contact with the said reflector, and adapted to be sprung into contact with the said reflector by manipulation from without the casing whereby the circuit of the said battery through the said bulb is closed: and means normally engaged by said spring contact when in its open circuit position and thereby held against motion, but freed from such engagement when the said spring contact is sprung into its closed circuit position whereupon said means may be moved to hold said spring contact in closed circuit position.

17. In a battery hand-lamp, a tubular metal casing: a battery positioned therein having an open ended insulating cover and an upper and a lower terminal: a metal cap closure removably positioned on the lower end of said casing and in electrical contact therewith: a metal spring interposed between the said closure and the said lower battery terminal and electrically connecting the same: a metal reflector positioned at the upper end of the said casing and insulated therefrom; an electric bulb mounted therein in the said reflector, having one of its terminals electrically connected thereto and having the other of its terminals in electrical contact with the said upper terminal of the said battery: a spring contact having a slot therein and positioned longitudinally against the inner surface of the said casing, rigidly attached thereto at the lower end of the said spring contact, having its upper end adjacent to but normally not in contact with the said reflector, and adapted to be sprung into contact with the said reflector by manipulation from without the casing whereby the circuit of the said battery through the said bulb is closed: and a longitudinally slidable thumb-piece mounted on the said casing: having a lug extending within the said casing and within the said slot of the said spring contact when the same is in open circuit position, whereby the thumb-piece is held against motion, but freed from the said slot when the said spring contact is sprung into closed circuit position, whereby the said thumb-piece may be moved to interpose the said lug between the said casing and the said spring contact to hold the latter in closed circuit position.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ARTHUR L. STAPLES.

Witnesses:

THOMAS C. JOHNSON,

ERIK S. PALMER.