C. WACHTEL.

PORTABLE ELECTRIC LIGHT.

APPLICATION FILED DEC. 9, 1914.

1,206,275

Patented Nov. 28, 1916.

Fig. 1.

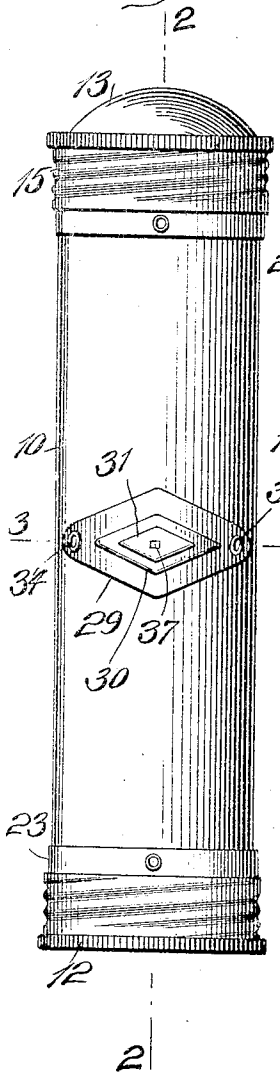


Fig. 2.

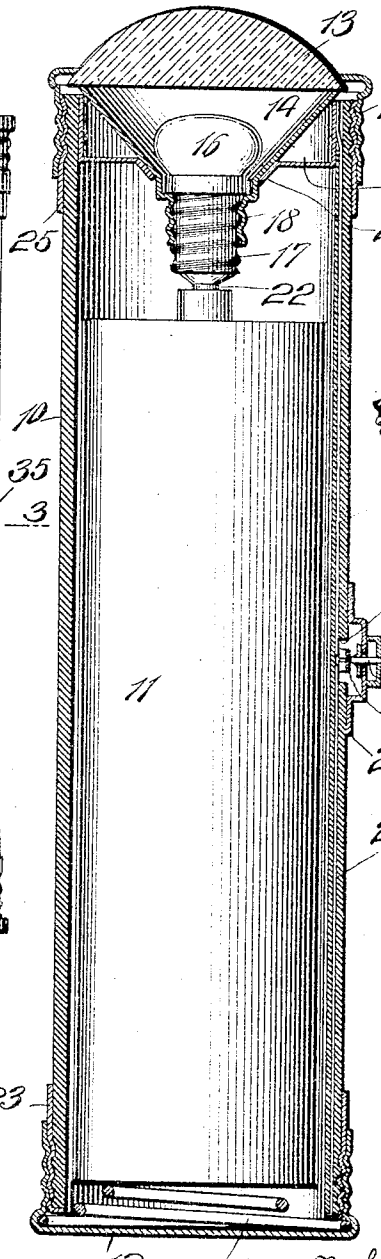


Fig. 3.

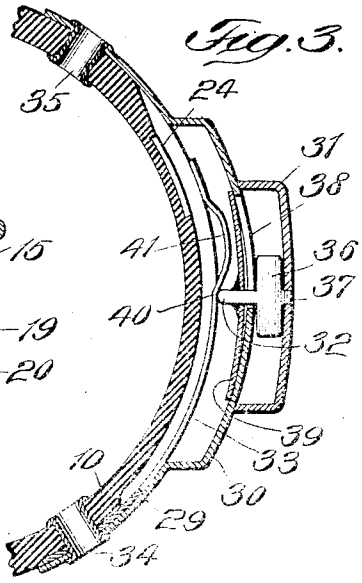


Fig. 4.

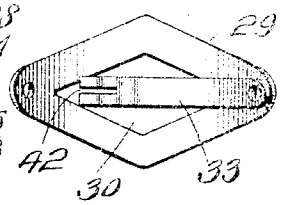
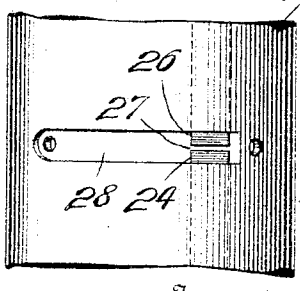


Fig. 5.



Witnesses:

Julius H. Hall

Arthur Marion.

Inventor:

Charles Wachtel,

By his Attorney,

Charles C. Gill

UNITED STATES PATENT OFFICE.

CHARLES WACHTEL, OF BROOKLYN, NEW YORK, ASSIGNOR TO INTERSTATE ELECTRIC NOVELTY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PORTABLE ELECTRIC LIGHT.

1,206,273. Specification of Letters Patent. Patented Nov. 28, 1916.

Application filed December 9, 1914. Serial No. 876,190.

To all whom it may concern:

Be it known that I, CHARLES WACHTEL, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Portable Electric Lights, of which the following is a specification.

The invention pertains more particularly to portable electric lamps of the character to be held in the hand and sometimes used as flash lights and at other times for affording a permanent light for a short period, and the object of the invention is to provide a novel and efficient circuit closer construction whereby the circuit through the lamp and battery may be made or broken.

In the class of lamps to which my invention pertains it is highly desirable that the circuit closer mechanism be reliable and durable and capable of efficient use during a long period, since ordinarily the general parts of the flash light are of durable character and remain in continued use, with the renewal from time to time of the battery.

The flash light of my invention involves the employment of conducting terminal strips extending through the material of the shell or casing of the flash light and separated at their adjoining ends by a short space, and circuit closer mechanism applied upon the exterior of the shell or casing and comprising a chambered escutcheon plate, a circuit closer switch or spring confined within the chamber of said plate and secured at one end and a thumb-piece or slide mounted upon said plate and provided with an inwardly extending finger adapted to engage the circuit closer switch and force the free end of the same into electrical engagement with both of said circuit terminal strips when said slide or thumb-piece is moved in one direction and release said switch to spring away from said terminals when said slide is moved in the opposite direction or in a direction to break the circuit. I arrange the escutcheon plate transversely of the shell or casing of the flash light and groove the outer wall of said shell or casing along the line of the circuit closer switch so that the free end of the latter may be pressed inwardly by the finger of the slide on the escutcheon plate into engagement with the terminal strips leading from opposite ends of the battery through the casing or shell of the lamp. I preferably bifurcate the free end of the circuit closer spring or switch so that under any and all circumstances there may be a proper and firm engagement of said switch or spring with both of said terminal strips, any little defects in the riveting or the tilting of the said switch or spring not interfering with the firm electrical engagement of the same with the circuit terminals embedded within the shell or casing of the flash light.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of a flash light embodying my invention; Fig. 2 is a central vertical section on a larger scale, of the same on the dotted line 2—2 of Fig. 1; Fig. 3 is a transverse section, on an enlarged scale, through a portion of the flash light taken on the dotted line 3—3 of Fig. 1; Fig. 4 is a detached inner face view of the escutcheon plate to which the circuit closer switch or spring is secured at one end, and Fig. 5 is a detached side elevation of a portion of the exterior shell or casing of the flash light, the escutcheon plate and its parts being omitted.

In the drawings, 10 designates the exterior shell or casing, 11 the battery therein, 12 the customary cap closing the lower end of said casing or shell, 13 the lens, 14 the reflector, 15 the usual cap or ring applied to the forward end of the shell or casing and holding the lens and reflector in position, 16 the lamp bulb having a socket 17 screwed into a neck 18 of said reflector, 19 a metal cap secured within the forward end of the shell or casing 10 and supporting by an annular flange 20 the reflector, and 21 a conducting spring in electrical connection with the cap 12 and engaging the lower or rear end of the battery. One terminal of the lamp engages the forward end of the battery at 22. The cap 12 is screwed upon a metal band 23 which is in electrical connection with a conducting strip 24 embedded within the material of the casing or shell 10. The cap 15 is screwed upon an ordinary metal band 25 fastened upon the forward end of the shell or casing 10. Within the material of the shell or casing 10 is also em-

bedded a conducting strip 26, and the circuit from opposite ends of the battery is through the conducting strips 24, 26.

The shell or casing 10 is preferably formed from vulcanized fiber and the conducting strips 24, 26 are at first in one strip and positioned by the winding of the sheet of fiber upon said strip during the formation of the shell or casing, the strip being located between the convolutions of the sheet, so that finally when the shell or casing is completed the single strip of metal to constitute the conductors 24, 26 is embedded therein and extends lengthwise thereof and is not only secured in place but protected from contact with the battery. The original strip from which the conductors 24, 26 are formed I sever at 27 to form a break in the strip and thus create the independent conductors or strips 24, 26 from the single original strip. The circuit through the lamp is made and broken at the adjoining ends of the conductors 24, 26 and therefore said ends must be exposed to the action of a circuit closer or switch, and in carrying out my invention I form a transverse groove 28 in the outer surface of the shell or casing 10 in line with the break 27 between the conductors 24, 26, thereby exposing the adjacent ends of said conductors and providing a space into which the circuit closer or switch may be projected, when desired, into engagement with said ends of said conductors. Upon the outer face of the shell or casing 10 and concealing the groove 28 therein is secured an escutcheon plate 29 which may be of ornamental outline and has an outwardly projecting box-like section 30 upon which is mounted a thumb-piece or transverse slide 31 which carries an inwardly projecting finger 32 whose inner end engages a transverse circuit closer spring or switch 33, the latter being secured to the escutcheon and also against the outer face of the shell or casing by means of an eyelet 34, this eyelet being used also to secure one end of the escutcheon in place. The other end of the escutcheon 29 is secured to the shell or casing 10 by means of an eyelet 35. The finger 32 is formed upon a plate 36 which has a lug 37 riveted in the center of the thumb-piece or slide 31 and said finger 32 projects from said plate through a transverse slot 38 formed in the outer face of the box-like portion 30 of the escutcheon 29. Within the box-like portion of the escutcheon there is secured upon the finger 32 a thin plate 39 which engages the inner surface of the box-like portion 30 and presses with a light spring action at its end portions against said surface. The plate 39 serves to secure the thumb-piece 31 in position on the box-like section 30 and at the same time permits said thumb-piece to have a proper transverse movement.

The circuit closer or spring switch 33 is, as may be seen from Figs. 1 and 2, fastened at one end and free at the other end and extends transversely of the box-like portion 30 of the escutcheon 29. The circuit closer or spring switch 33 is bent slightly inwardly, as at 40, to form a pocket for the inner end of the finger 32 when the thumb-piece or slide 31 is in its normal inoperative position or centrally upon the box-like section 30, and beyond this part 40 of the circuit closer or switch the latter is bent outwardly, as at 41, to form a cam surface against which the inner end of the finger 32 will ride when the thumb-piece or slide 31 is moved transversely in a direction toward the free end of the said circuit closer or switch, with the result that said end of the circuit closer or switch will be forced inwardly against the exposed adjoining ends of the conductors 24, 26, thereby to complete the circuit through the lamp and battery. I bifurcate the free end of the circuit closer or switch 33, as shown at 42, so as to render the two parts at the free end of the circuit closer or switch independently yieldable to the conductors 24, 26, and thereby I am enabled to secure a firm, electrical engagement of the switch with the conductors 24, 26 regardless of any small defects or irregularities which otherwise, were the end of the switch not bifurcated, might prevent the switch from engaging both of the conductors 24, 26. The groove 28 in the outer surface of the shell or casing 10 permits the circuit closer or switch 33 to have a hinged action and also enables the free end of the circuit closer or switch to reach the conductors 24, 26 when the slide 31 is moved to effect that purpose.

The operation of the circuit closer mechanism will be readily understood without further special description. When the thumb-piece or slide 31 is in its normal position shown in Figs. 1 and 3, the switch 33 will stand free of the conductors 24, 26 and the circuit will be broken at the space 27 between the adjoining ends of said conductors. When it is desired to light the lamp the thumb-piece or slide 31 will be moved transversely or toward the left, looking at Fig. 1, so as to carry the finger 32 upon the projecting portion 41 of the circuit closer or switch, and thereby cause the free end of said switch to engage the conductors 24, 26 and complete the circuit. When it is desired to extinguish the light the thumb-piece or slide 31 will be moved back to its initial position shown in Fig. 1, carrying the finger 32 from the outwardly projecting portion of the switch 33 and allowing said switch of its own resiliency to spring outwardly from the conductors 24, 26, thereby breaking the circuit at the space 27 between said conductors. The upper end of the conductor 26 is in engagement with the cap 19 which is a

conductor and in engagement with the reflector 14.

Any novel features hereinbefore described and not claimed herein because of the limitation of this application to circuit closer mechanism, will be made the subject of a separate application for Letters Patent.

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

1. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising normally separated circuit terminal conductors extending along said casing, said casing being recessed in its outer wall to expose adjacent end portions of said conductors, a chambered escutcheon plate secured to said casing over said recess, a spring switch in the chamber of said plate and at one end rigidly held and having near its free end an outward projection, and a slide mounted on and guided by said plate and having a finger to be moved along the said switch and by engaging said projection force the free end of the switch against the adjoining ends of both said conductors.

2. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising circuit terminal conductors extending along said casing in line with each other and normally separated from each other at adjoining ends and exposed at said ends, a transversely disposed chambered escutcheon secured to said casing and insulated from both said conductors, a spring switch within said escutcheon having a bifurcated end, and a slide mounted on and guided by said escutcheon and adapted to operate said switch to force the free end thereof inwardly against the adjoining ends of both said conductors, thereby to complete the circuit.

3. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising circuit terminal conductors extending along said casing in line with each other and normally separated from each other at adjoining ends and exposed at said ends, a transversely disposed chambered escutcheon secured to said casing and insulated from both said conductors, a spring switch within the chamber of said escutcheon and at one end rigidly held and having near its free end an outward projection, and a slide mounted on and guided by said escutcheon and having a part to be moved along the said switch and by engaging said projection force the free end of the switch inwardly against the adjoining ends of both said conductors.

4. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising circuit terminal conductors extending along said casing in line with each other and normally separated from each other at adjoining ends and exposed at said ends, a transversely disposed chambered escutcheon secured to said casing and insulated from both said conductors, a spring switch within the chamber of said escutcheon and at one end rigidly held and having near its free end an outward projection, and a slide mounted on and guided by said escutcheon and having a part to be moved along said switch and by engaging said projection force the free end of the switch inwardly against the adjoining ends of both said conductors, said switch at its free end being bifurcated to afford independently yieldable parts for engagement with said conductors.

5. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising normally separated circuit terminal conductors extending along said casing, said casing being transversely recessed in its outer wall to expose adjacent end portions of said conductors, a chambered escutcheon plate secured to said casing over said recess, a spring switch in the chamber of said plate and at one end rigidly held and having near its free end an outward projection and at said end being bifurcated to afford independently yieldable members, and a slide mounted on and guided by said plate and having a part projecting through said plate and engaging said switch to be moved along the same and by engaging said projection to force said members at the free end of the switch against the adjoining ends of said conductors, thereby to complete the circuit.

6. In a portable flash light of the character described a casing containing a battery and an electric lamp, circuit closing means comprising circuit terminal conductors extending along said casing in line with each other and normally separated from each other at adjacent ends, an escutcheon on the exterior of said casing and insulated from both said conductors and a manually operative conductor adapted on being moved for the purpose to engage and electrically connect said ends of said terminal conductors, said terminal conductors being embedded within the material of said casing and said casing being recessed at the adjacent ends of said terminal conductors and thereat exposing said ends, and said manually operative conductor being a spring rigidly held at one end and at its other end facing the adjoining ends of said terminal conductors, associated with an exposed slide mounted on said escutcheon.

7. In a portable flash light having a casing containing a battery and an electric lamp, circuit closing means comprising normally separated circuit terminal conductors

extending along said casing from opposite ends thereof, an escutcheon secured to said casing, a spring switch concealed by said escutcheon to electrically connect adjacent ends of said conductors, a slide mounted on and guided by said escutcheon and having a finger extending through the same to engage and operate said switch and also a spring plate to engage the inner curved surface of the escutcheon and bind the slide against the outer surface thereof.

Signed at Brooklyn, in the county of Kings and State of New York, this 30th day of November A. D. 1914.

CHARLES WACHTEL.

Witnesses:
ARTHUR MARION,
CHAS. C. GILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."