C. HUBERT.

PORTABLE ELECTRIC LIGHT.

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1,186,197.

Patented June 6, 1916.

Fig. 1.

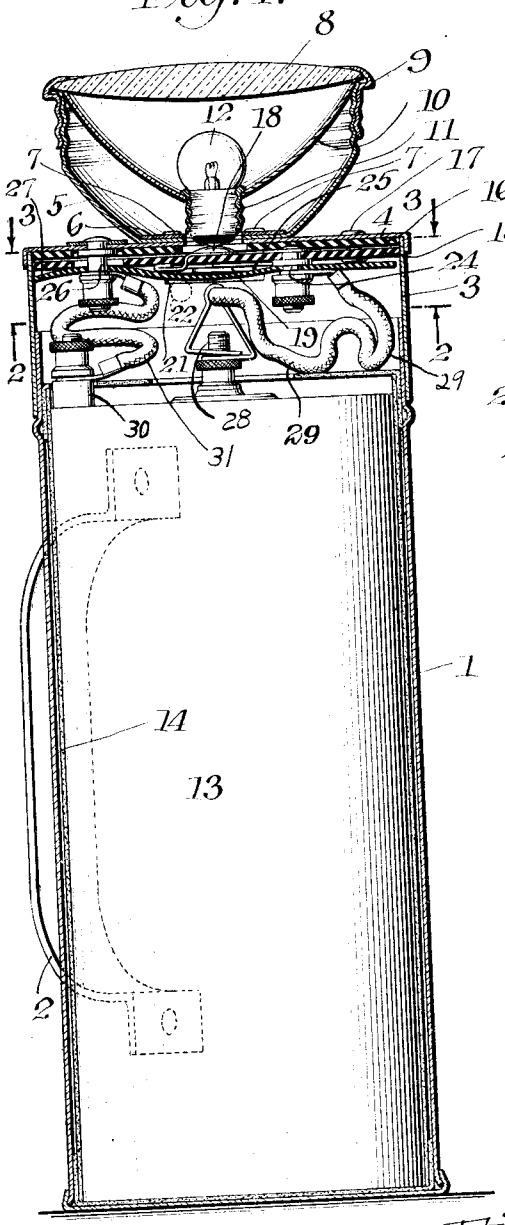


Fig. 2.

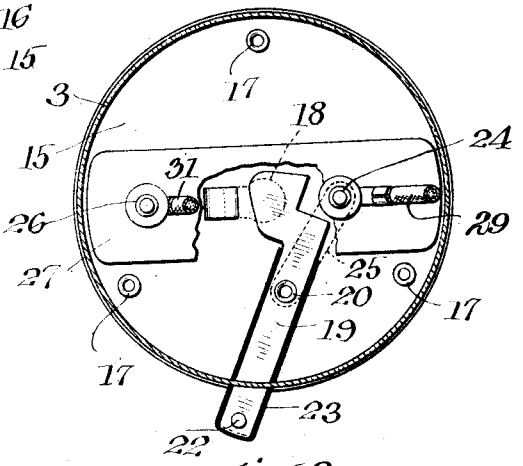


Fig. 3.

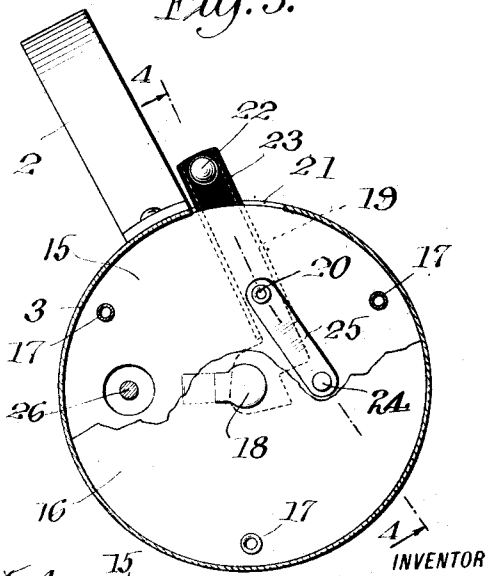
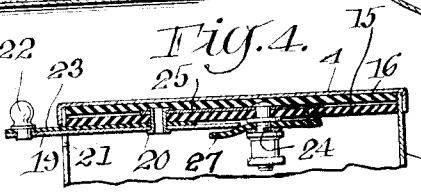


Fig. 4.



WITNESSES

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PORTABLE ELECTRIC LIGHT.

1,186,197. Specification of Letters Patent. Patented June 6, 1916.

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To all whom it may concern:

Be it known that I, CONRAD HUBERT, a citizen of the United States, residing in the borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Portable Electric Lights, of which the following is a specification, reference being had therein to the accompanying drawings, forming part thereof.

My invention relates to flash lights or portable electric lights and relates more particularly to that type of these lights known as electric lanterns.

An object of my invention is to produce an improved flash light adapted to use a cell of ordinary dry battery such as is employed for ignition on a motor car as well as for many other purposes, and in this relation other objects of my invention are simplicity of construction, inexpensiveness of manufacture, durability, certainty of operation and of maintenance in operable condition and other more particular objects and advantages which will hereinafter appear.

My invention includes features of construction and combinations of parts as will appear from the following description.

I shall now describe the electric lantern illustrated in the accompanying drawings embodying my invention and shall thereafter point out my invention in claims.

Figure 1 is a central longitudinal section of the lantern with parts in elevation. Fig. 2 is a transverse section, with parts broken away, on a plane indicated by the line 2—2 of Fig. 1 as seen from below and shows parts of the circuit controlling means in inverted plan. Fig. 3 is a transverse section with parts broken away on a plane indicated by the line 3—3 of Fig. 1 as seen from above and shows parts of the circuit controlling means in plan. Fig. 4 is a partial longitudinal section on planes indicated by the bent line 4—4 of Fig. 3 as viewed from the left.

In the electric lantern embodying my invention illustrated in the accompanying drawings a battery-containing casing is made up of a cylindrical cup or shell 1 shown as closed at the bottom and as provided with a handle 2 and a removable cover part including a circumferential ring portion 3 and a flat end closure 4. The cover part comprising the ring 3 and end closure 4 is made of suitable thin metal and the cylindrical shell 1 may also be composed of similar thin metal and that is the material indicated in the drawings. A flaring or bell-shaped metal outer end part 5 is firmly secured to the end closure 4 in conductive relation therewith, for example, by means of a thin flat ring or washer 6 and rivets 7. A usual lens 8 is carried by a usual metal ring or band 9 shown as screw-threaded over the outer end of the flaring metal end part 5. The lens 8 and its supporting band 9 hold a metallic reflector 10 in place on the flaring end part 5 in electrically conductive relation therewith. A metallic screw-threaded lamp socket 11 is centrally carried by the reflector 10 in electrically conductive relation therewith and projects inwardly therefrom in alinement with a central opening in the end closure 4. It will be noted that the lamp socket 11 is in electrically conductive connection with the end closure 4 and its circular flange 3. An ordinary miniature incandescent lamp 12 is shown as screwed into the lamp socket 11 so that its central contact terminal is exposed at the inside of the casing through the central aperture in the end closure 4, and the other contact terminal of the lamp is in electrically conductive relation with all of the metal casing parts through the lamp socket 11. The metal casing is adapted removably to contain a battery cell 13 having the usual insulating covering or jacket 14 which insulates the battery cell 13 from the casing shell 1.

An inner insulating plate or disk 15 and a similar outer insulating plate or disk 16 are secured together and to the flat end closure 4 in any suitable way, such as by means of tubular rivets 17, and the outer insulating plate 16 has a central aperture or opening registering with the central opening in the end closure 4. A small metal contact member 18 passes snugly through a small slot in the inner insulating plate 15 so that its opposite end portions are exposed at opposite sides of the inner insulating plate 15. The outer end portion of the contact member 18 is at the center of the inner insulating plate 15 opposite to or so as to be outwardly exposed through the registering openings in the outer insulating plate 16 and end closure 4 in position for making contact with the central terminal of the lamp 12 and is shown as slightly enlarged and of slightly rounded or dome shape. The inner end portion of the contact member 18 extends away from the center of the inner insulating plate 15

in contact therewith and is shown as turned back upon itself adjacent to the insulating plate 15.

A thin metallic switch lever 19 is pivoted within the casing at the inner side of the inner insulating plate 15 upon a tubular metal pivot 20 which extends through the inner insulating plate 15 and is insulated from the end closure 4 of the casing by the outer insulating plate 16. The inner end of the switch lever 19 is movable into or out of contact with the contact member 18 and has a wiping contact with such contact member with large coöperating contact surfaces. The outer end of the circuit-closing switch lever 19 projects to the outside of the casing through a transverse slot 21 in the flange 3 of the removable electrically conductive upper casing part, providing for manual actuation of the switch lever 19, such actuation being facilitated by a small handle knob 22 carried by the outer end of the switch lever 19. The switch lever 19 is electrically insulated from the metallic casing part through which it projects by means of an insulating strip 23 of greater width than the switch lever and held upon the upper or forward side of the switch lever by the pivot 20 and the handle 22 so as to prevent the top of the switch lever and also its edges from coming into contact with the metallic casing in any position of the switch lever 19, the projecting edges of the insulating strip 23 serving as stops for the switch lever at the end of its movement in either direction. The other side of the switch lever 19 does not carry any insulation but is spaced away from the metal casing part 3 because of the extra width of the slot 21 as appears in Fig. 4 of the drawings.

A binding post 24 is carried by and projects downward or inward from the inner insulating plate 15 and extends upward or outward through this plate and at its upper end is insulated from the end closure 4 by the outer insulating plate 16. A thin metal strip 25 is held by and connects the upper ends of the binding post 24 and the switch lever pivot 20 between the insulating plates 15 and 16. A second binding post 26 is carried by the end closure 4 of the casing and projects to the inside of the casing through registering apertures in the insulating plates 15 and 16 as most clearly appears in Fig. 1. At the inner side of the inner insulating plate 16 an insulating cover strip or plate 27 is held in place by the binding posts 24 and 26 and covers the inner contact-making end of the circuit-closing switch lever 19 and the inner end of the lamp-connected contact member 18 so as to protect these covered parts, and also the cover strip 27 assures a close wiping contact relation between the switch lever 19 and the contact member 18 because of the fact that the inner end portion of the thin switch lever 19 will wedge between the contact member 18 and the cover strip 29. The insulating plates 15 and 16, the cover strip 27 and the switch insulating strip 23 may be composed of any suitable insulating material, for example, vulcanized fiber.

The binding post 24 carried by the inner insulating plate 15 is connected to the central terminal 28 of the battery cell 13 by means of a flexible insulated electrically conductive connector 29, and the binding post 26 carried by the metal end closure 4 is similarly connected to the other battery terminal 30 by means of a similar flexible connector 31. In the closed circuit position of the switch lever 19 the flexible connector 29 completes a path of good electrical conductivity between the central terminal of the lamp 12 and the central terminal 28 of the battery cell 13 and the other flexible connector 31 permanently completes a similar path of good electrical conductivity between the other lamp terminal and the remaining terminal 30 of the battery cell 13. The length and flexibility of the connectors 29 and 31 obviate the necessity of providing for an exact position of the battery cell 13 relatively to the circuit controlling parts carried by the upper removable casing part. The skirt or flange 3 of this upper casing part fits snugly with a friction fit over the upper end of the shell 1 and may be placed thereon with the switch lever 19 in a convenient position for actuation while the hand grasps the handle loop 14, for example, as most clearly appears in Fig. 3, with the switch lever 19 projecting above and just to the left of the handle 14 within convenient reach of the thumb of the hand which grasps the handle 14. In the drawings, and as clearly appears in Figs. 2 and 3, the open circuit condition of the lantern is illustrated. To close the circuit the outer end of the switch lever 19 would be moved in a clockwise direction away from the handle 14 as seen in Fig. 3 and in a counter-clockwise direction as seen in the inverted position of Fig. 2.

It is obvious that various modifications may be made in the construction shown in the drawings and above particularly described within the principle and scope of my invention.

I claim:

1. A portable electric light comprising a battery-containing casing having an electrically conductive casing part including a substantially flat end closure, inner and outer insulating plates secured at the inside of the end closure, communicating openings being provided in the end closure and adjacent outer insulating plate, an electrically conductive lamp socket arranged to expose the central terminal of the lamp through

said openings toward the inside of the casing, a contact member passing through the inner insulating plate for making contact with the central lamp terminal at the outer side of such inner plate, an electrically conductive switch lever at the inner side of the inner insulating plate and coöperative with the contact member at the inner side of such inner plate and projecting through said casing part to the outside of the casing for manual actuation, an electrically conductive pivot for the switch lever extending through the inner insulating plate and insulated from the end closure by the outer insulating plate, electrically conductive means connecting the pivot of the switch lever to one of the terminals of the battery, and other electrically conductive means connecting the electrically conductive casing part to the other terminal of the battery.

2. A portable electric light comprising a battery-containing casing having an electrically conductive casing part including a substantially flat end closure, inner and outer insulating plates secured at the inside of the end closure, communicating openings being provided in the end closure and adjacent outer insulating plate, an electrically conductive lamp socket arranged to expose the central terminal of the lamp through said openings toward the inside of the casing, a contact member passing through the inner insulating plate for making contact with the central lamp terminal at the outer side of such inner plate, an electrically conductive switch lever at the inner side of the inner insulating plate and coöperative with the contact member at the inner side of such inner plate and projecting through said casing part to the outside of the casing for manual actuation, an electrically conductive pivot for the switch lever extending through the inner insulating plate and insulated from the end closure by the outer insulating plate, a binding post carried by and extending through the inner insulating plate and projecting to the inside of the casing and insulated from the end closure of the casing by the outer insulating plate, an electrical conductor connecting the binding post and the pivot of the switch lever between the insulating plates, a second binding post carried by the end closure of the casing and projecting through both insulating plates to the inside of the casing, and conductors connecting the respective binding posts to the respective battery terminals.

3. A portable electric light comprising a battery-containing casing having an electrically conductive casing part including a substantially flat end closure, inner and outer insulating plates secured at the inside of the end closure, communicating openings being provided in the end closure and adjacent outer insulating plate, an electrically conductive lamp socket arranged to expose the central terminal of the lamp through said openings toward the inside of the casing, a contact member passing through the inner insulating plate for making contact with the central lamp terminal at the outer side of such inner plate, an electrically conductive switch lever at the inner side of the inner insulating plate and coöperative with the contact member at the inner side of such inner plate and projecting through said casing part to the outside of the casing for manual actuation, insulation carried by the projecting portion of the switch lever for insulating the switch lever from said casing part, an electrically conductive pivot for the switch lever extending through the inner insulating plate and insulated from the end closure by the outer insulating plate, a binding post carried by and extending through the inner insulating plate and projecting to the inside of the casing and insulated from the end closure of the casing by the outer insulating plate, an electrical conductor connecting the binding post and the pivot of the switch lever between the insulating plates, a second binding post carried by the end closure of the casing and projecting through both insulating plates to the inside of the casing, an insulating cover strip held by the binding posts and covering the contact member and the inner end of the switch lever at the inside of the inner insulating plate, and flexible conductors connecting the respective binding posts to the respective battery terminals.

In testimony whereof I have affixed my signature in presence of two witnesses.

CONRAD HUBERT.

Witnesses:
HARRY C. LEWIS,
FRANCES A. REICHENBERG.