

Jan. 7, 1941.

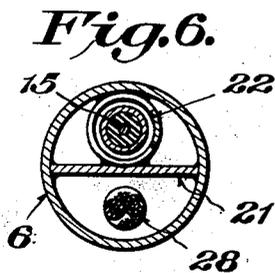
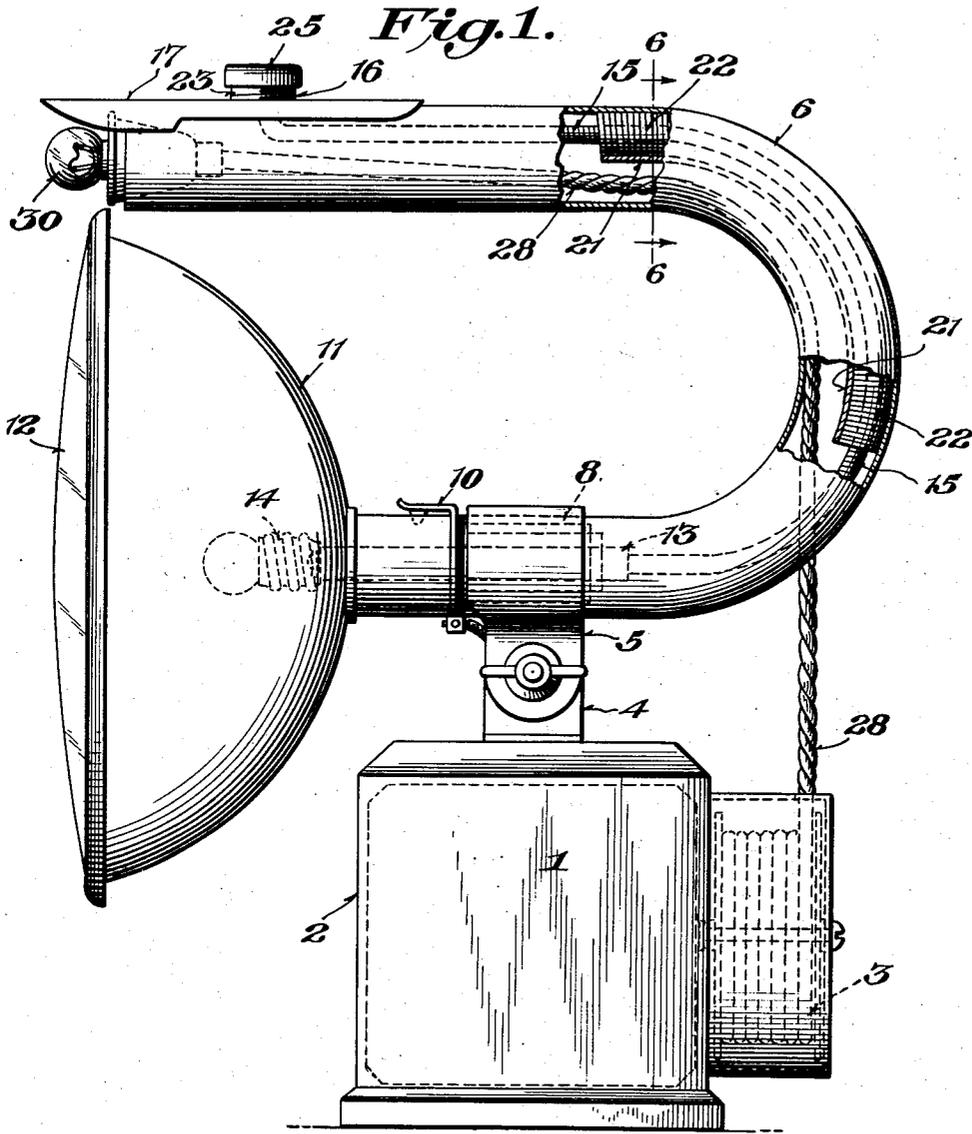
D. L. HARFORD

2,228,009

PORTABLE LANTERN

Filed Dec. 30, 1937

2 Sheets-Sheet 1



Inventor
Dwight L. Harford,

By *Charles F. Whitcomb*
his Attorney

Jan. 7, 1941.

D. L. HARFORD

2,228,009

PORTABLE LANTERN

Filed Dec. 30, 1937

2 Sheets-Sheet 2

Fig. 2.

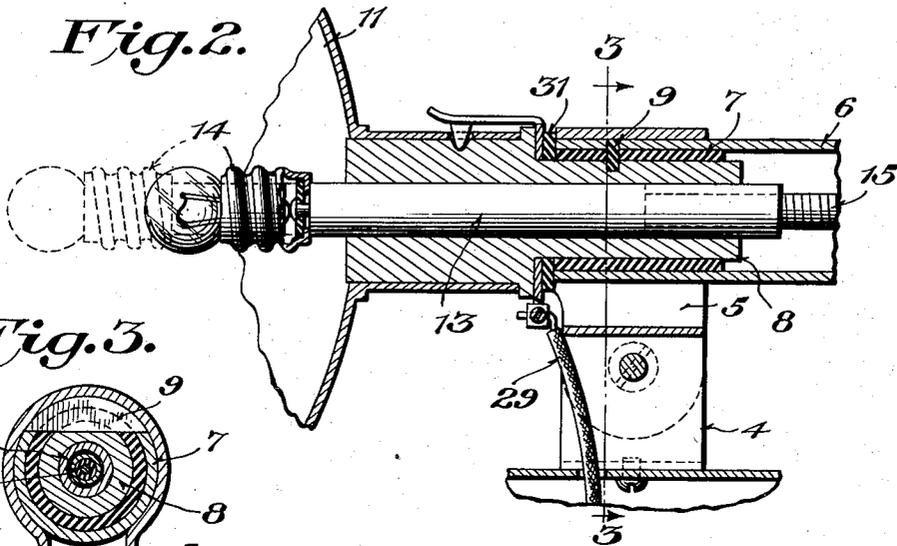


Fig. 3.

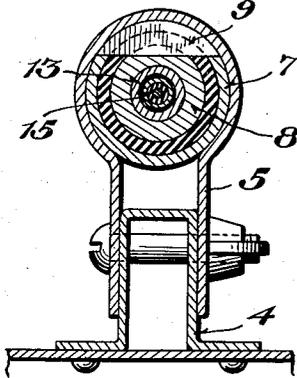


Fig. 4.

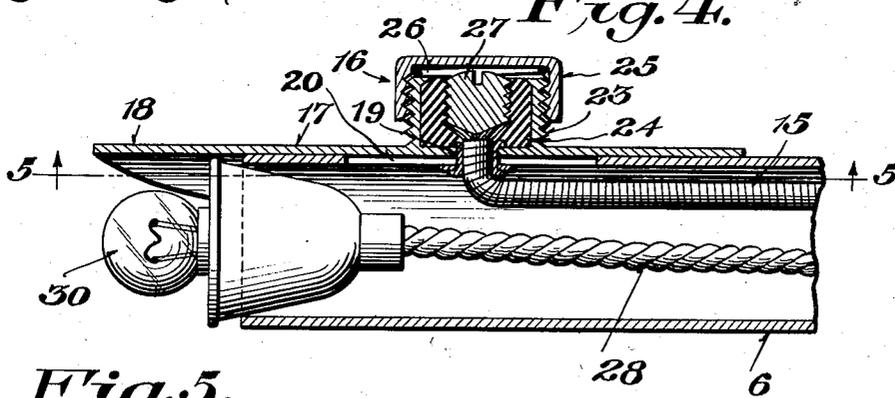
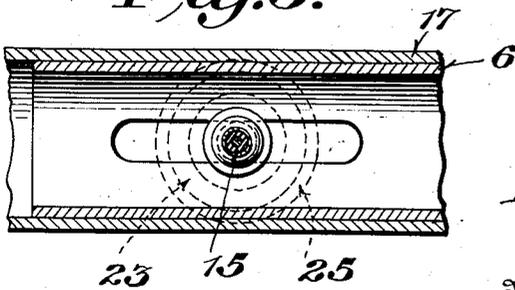


Fig. 5.



Inventor
Dwight L. Harford,

By *Charles F. Whistler*
his Attorney

UNITED STATES PATENT OFFICE

2,228,009

PORTABLE LANTERN

Dwight L. Harford, Los Angeles, Calif.

Application December 30, 1937, Serial No. 182,597

5 Claims. (Cl. 240—10.6)

The object of my invention is to provide a new, useful and convenient light or lantern having a more or less general application, but which is particularly adapted for use in exploring obscure locations and in the inspection of machines, the elements of which are commonly and necessarily in restricted and obscure positions or which must be examined at night.

I attain these objects by the device illustrated in the accompanying drawings in which—

Figure 1 is an elevational view of the lantern or light with parts broken away to show internal construction; Fig. 2 is a longitudinal sectional view of the lower portion of the U-shaped handle, reflector, battery clamp, focus tube casing, and focus tube, the adjustment of the focus tube and light being shown by the different positions of the bulb; Fig. 3 is a sectional view on the line 3—3 in Fig. 2; Fig. 4 is a longitudinal sectional view of the upper portion of the U-shaped handle; Fig. 5 is a longitudinal section of the upper portion of the handle taken at right angles to the view in Fig. 4, and on the line 5—5 of Fig. 4; Fig. 6 is a cross-section on the line 6—6 in Fig. 1.

Similar numerals refer to similar parts throughout the several views of the drawings.

In carrying out my invention I employ a battery 1 enclosed in a battery box 2 to one side of which is attached a reel-case 3, and on top of which is fixed a bracket 4 to which is clamped for angular adjustment by means of a bolt and wing-nut a band 5 embracing the lower portion of the U-shaped handle 6 enclosing an insulating collar 7 within which is a focus tube casing 8. The casing, fiber collar and handle are all fastened together by a fiber key 9 held in place by the band 5. There is also a fiber washer 31 for insulating the end of the handle from the focus tube casing. To the tubular casing 8 is connected by a snap-catch 10 a reflector 11 having a lens-glass front 12. Within the casing 8 is a sliding tube 13 bearing at one end a lamp socket 14. From the inner lamp contact extends a cable 15 leading through the handle 6 to a switch 16 placed on a sliding plate 17 carrying a shield 18. The plate has a hollow rivet 19 passing through a slot 20 of the handle to steady and guide the plate and shield in their sliding connection with the handle. Within the handle is a strap-metal division plate 21, the cross-section of which equals the internal diameter of the handle tube, thus dividing said interior into two equal compartments or channels, and in the exterior one of these channels is a coiled spring 22 through which passes the cable 15, the spring 22 acting as a passageway for the cable

and also serving to take up slack and prevent buckling in the cable.

The details of the shield 18, its plate and the switch 16 may be described as follows: To the sliding plate is attached an exteriorly screw-threaded hub 23 enclosing an insulating collar 24; and passing upwardly through the interior of the collar 24 is the end of the cable 15. Engaging the screw-threaded hub 23 is a cap 25. The thread within the cap and that on the hub are so formed that there is a slight vertical play possible between the cap and the hub independent of the vertical movement of the cap by reason of its screw-threaded engagement. Within the collar 24 and resting on the cable 15 is a pin or plug 27. The cap 25 and plug 27 are normally held out of engagement by a spring 26 inserted between the cap and hub 23.

To the reel within the reel-case is attached one end of a lamp cable 28 which is wound by the ordinary spring arrangement and may pass conveniently up through the inside division of the handle tube and carry a lamp socket. By pulling on this cable the lamp may be carried into places at a distance from the battery box or where it might be inconvenient or impossible to carry the lamp as a whole. One of the two wires of the cable is grounded to the reel case, the other wire being in contact with the live side of the battery box plate. This lamp is turned on or off by screwing or unscrewing the bulb in its socket.

In the use of the main lamp 14, it will be evident that the operator or inspector has only to grasp the handle, point the lamp in the desired direction and manipulate the switch and shield plate. This switch and shield plate, being connected to the cable 15, the operator can, while holding the handle, shove the plate and switch forward or backward by a thumb or finger, and thus through the cable adjust the focus tube carrying the lamp within the reflector inwardly or outwardly, and thus throw either a flood of light or restricted beam for the illumination of a particular element or section. At the same time he can throw the lamp switch by a slight pressure of the thumb, or if he wishes to use the lamp for some appreciable time to illuminate a particular element or section, he can screw down the cap 25 to hold the connection.

The use of my lantern or lamp in mines, in the holds of ships or other places which may readily suggest themselves, as well as for the inspection of railway cars, engines, air-ships, and many other similar constructions will readily be appreciated.

I claim:

1. The combination in an inspection lantern with a battery box and a battery within the box of a U-shaped handle fastened to the box, a tube slidable in the handle, a lamp carried by the tube, a reflector carried by the handle, a tubular flexible guide member in the handle, a sliding shield plate connected to the handle grip, a conductor cable fastened at one end to the tube passing through the tubular guide member and connected at its other end to the shield plate, whereby the sliding of the shield plate adjusts the tube with reference to the reflector.

2. The combination in an inspection lamp or lantern with a battery box and a battery within the box of a U-shaped handle adjustably fastened to the box, a tube slidable in the handle, a lamp carried by the tube, a reflector carried by the handle, a tubular flexible guide member in the handle, a conductor cable connection from the battery to the tube, a sliding shield plate on the handle and carrying a switch, a conductor cable fastened at one end to the tube, passing through the tubular guide member and connected at its other end to the switch, whereby the sliding of the shield plate adjusts the tube with reference to the reflector.

3. The combination in an inspection lamp or lantern with a battery box and a battery in the box, of a reel case and reel attached to the box, a tubular handle attached to the box, a division plate forming a longitudinal partition in said handle, a flexible conductor cable connected to the battery, wound on the reel and passing through one division of the handle, means for mounting a lamp on the end of the cable whereby said lamp may be moved to a position remote from said handle, a shield plate slidably mounted on said handle for shielding said lamp when in the retracted position, a switch carried by the shield plate, a tube slidably mounted within said handle, a second conductor cable passing through the other division of the handle having one end attached to the sliding switch and the other end fixed to the slidably mounted tube, a second lamp mounted on said tube, and a reflector mounted on said handle and disposed around said lamp

whereby said second lamp is adjustably mounted within said reflector.

4. The combination in an inspection lamp or lantern with a battery box and a battery in the box of a reel case and reel attached to the box, a tubular U-shaped handle attached to the box, a division plate, forming a longitudinal partition in said handle, a flexible conductor cable connected to the battery, wound on the reel and passing through one division of the handle, means for mounting a lamp on the end of the cable whereby said lamp may be moved to a position remote from the handle, a shield plate slidably mounted on the handle, a switch mounted on the shield plate, a tube slidably mounted within the handle, a second conductor cable passing through the other division of the handle attached at one end to the sliding switch and at the other end to the slidable tube, a second lamp mounted on the tube, a reflector mounted on said handle and disposed around said lamp whereby said second lamp is adjustably mounted within said reflector.

5. The combination is an inspection lamp or lantern with a battery box and battery of a reel case and reel attached to the box, a tubular U-shaped handle adjustably mounted on the box, a division plate longitudinally placed in the bent portion of the handle, a flexible conductor cable connected to the battery, wound on the reel and passing through one division of the handle, means for mounting a lamp on the end of the cable whereby said lamp may be carried to positions remote from the handle, a shield plate slidably mounted on the handle, a switch carried by the shield plate, a tubular flexible guide member longitudinally fixed in the other division of the handle, a tube slidably mounted in the handle, a second conductor cable passing through the flexible guide member, having one end fastened to the switch and the other end to the slidably mounted tube, a second lamp mounted on the tube, and a reflector mounted on the handle and disposed around the lamp whereby said second lamp is adjustable within the reflector.

DWIGHT L. HARFORD.