

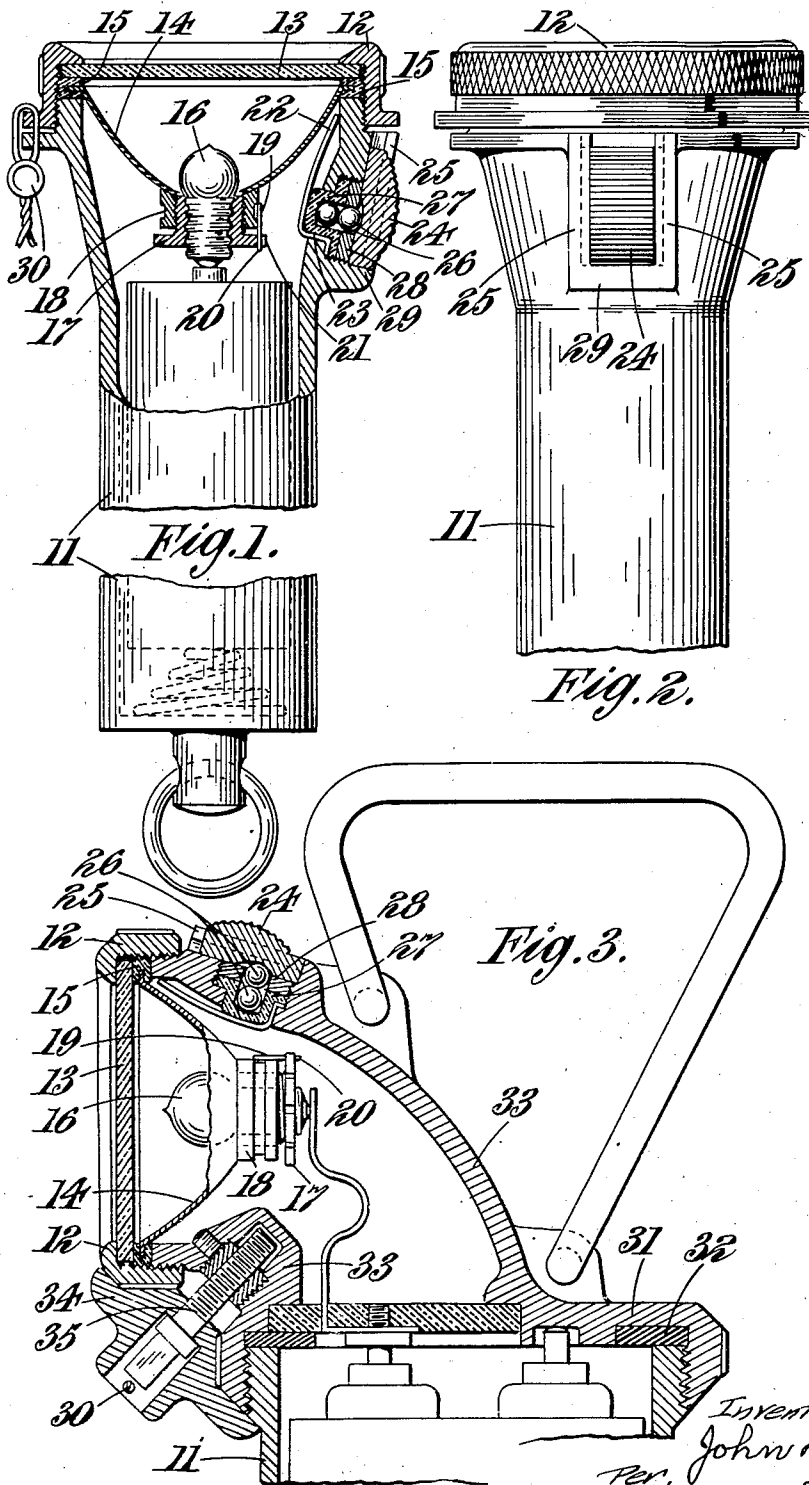
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J. DOWNS

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PORTABLE ELECTRIC LAMP

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per
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UNITED STATES PATENT OFFICE

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PORTABLE ELECTRIC LAMP

Application filed September 24, 1928, Serial No. 308,003, and in Great Britain May 25, 1928.

This invention has relation to portable electric lamps intended for use in mines or other places in which explosive or combustible gases or vapours may be present.

The invention has for its object to provide improvements of such character and nature that the sealing of the openings through which combustible or explosive gas or vapour could reach parts within the lamp at which the gas or vapour could be ignited, is effected during assembly by the construction and arrangement of the parts.

The invention further has for object to provide improvements of such character and nature that a lamp can be readily dismantled for the replacement of a discharged battery or a faulty or burnt out lamp or the focusing of the beam of light and then quickly re-assembled.

In the accompanying drawings, two constructional embodiments are illustrated:

Fig. 1 is a longitudinal sectional view; and

Fig. 2 an elevational view of an electric torch; and

Fig. 3 is a vertical sectional view of an electric hand lamp, parts being broken away in each figure.

Referring now to Figs. 1 and 2.

The cell-containing member 11 is of metal, tubular and made or cast in one or more parts. It is closed at one end and is open at the other end where it is screw-threaded to receive a bezel ring 12. The bezel ring 12 holds the glass or lens 13 and a parabolic reflector 14 in place, the ring acting on the peripheries of these parts. On the periphery of, and surrounding, the parabolic reflector 14 is a U-shaped circular washer 15 which, when the bezel ring 12 is screwed home, forms a gas tight joint between the glass or lens 13 and the reflector 14 and between the reflector 14 and the cell-containing member 11. The washer 15 also insulates the reflector 14 electrically from the cell-containing member 11.

The electric lamp 16 is mounted in a flanged

lamp holder 17 screwed into a boss 18 mounted on the back of the reflector 14. The lamp holder 17 is adjustable in position to enable the focusing of the beam of light to be effected and is held in its adjusted position by a spring 19 which is mounted on the boss 18 and has an arm 20 which engages a slot 21 in the flange of the lamp holder 17.

The control of the lamp is effected by a switch consisting of a blade spring 22, one end of which is turned up to enter in an opening 23 formed through the wall of the cell-containing member 11 and to be held therein as will be presently explained. The blade spring 22 is adapted to be pressed against the back of the reflector 14 by switch actuating means comprising a press button or a thumb actuated slide 24 mounted to slide between guides 25 on the exterior of the cell-containing member 11 and having its underface shaped to cooperate with a push member 26 interposed between the blade spring 22 and the slide 24. The push member may comprise a plunger or, as shown, balls. The opening 23 is rendered gas tight by a hat-shaped member 27 of india rubber having its flange or rim held by a screwed bush 28 to a seat formed in the opening 23. The one end of the blade spring 22 is positioned between the seat and the flange or rim of the hat-shaped member 27 and is, therefore, also held by the bush 28. The space between the slide guides is closed permanently at one end by a stop 29 integral with the cell-containing member 11 and at the other end by the bezel ring 12 so that the slide 24 can only be withdrawn or replaced when the bezel ring is removed. The bezel ring 12 is secured against unauthorized removal by a seal 30.

From the foregoing it will be seen that the inside of the torch is effectually sealed against the admission of gas or vapour.

In Fig. 3, parts having similar functions to those shown in Figs. 1 and 2 bear the same reference numerals. In the hand lamp illus-

trated, the cell-containing member 11 is closed by a cap 31 screwed on to the end of the member 11; packing 32 being interposed. The cap is formed or provided with an upward and forwardly extending tubular member 33 on which the bezel ring 12, glass or lens 13 and parabolic reflector 14 and switch 22 are mounted as in Figs. 1 and 2. In this arrangement, the switch actuating means is locked by the bezel ring 12 and the bezel ring 12 and the cap 31 are locked by a member 34 which engages therewith and with the cell-containing member 11. The member 34 is held in position by a screw 35 which enters the tubular member 33. The screw is secured against unauthorized removal by a seal 30.

What I claim is:—

1. A portable electric lamp comprising, a cell containing member having a reflector mounted at one end thereof, a lamp holder mounted in the reflector, a switch mounted on and in electric connection with the cell containing member and adapted to be actuated to make and break electrical contact with the reflector, switch actuating mechanism mounted on the cell containing member accessible at the exterior thereof for forcing said switch into contact with the reflector, and an electrical insulating and gas tight elastic member interposed between the switch and said actuating mechanism to seal the cell containing member against passage of gas thereinto, the said elastic member yielding to permit operation of said mechanism to actuate the switch.

2. A portable electric lamp comprising, a cell containing member having a reflector mounted at one end thereof, means sealing the joint between the reflector and said member, a lamp holder in the reflector in electrical connection therewith, a spring switch mounted in the cell containing member normally out of contact with the reflector and adapted to be forced into contact therewith, switch actuating mechanism mounted in and extending through a side wall of the cell containing member for pressing against and forcing said switch into contact with the reflector, said mechanism accessible and operable from the exterior of the cell containing member, and an elastic electrical insulating and gas tight member disposed between the said mechanism and said switch and sealing the cell containing member side wall at said mechanism to prevent passage of gas therethrough, said elastic sealing member yielding and contracting during operation of said mechanism to actuate the switch.

3. In a portable electric lamp including a cell containing member, an internal switch in said member for making and breaking the circuit for the lamp, switch actuating mechanism mounted in and extending through a wall of said member for operating said

switch, said mechanism accessible for operation at the exterior of the cell containing member, and an elastic electrical insulating and gas tight member mounted in said wall over and closing the same around said mechanism to prevent entry of gas into the cell containing member, the said elastic member disposed between the switch and said actuating mechanism and yielding and contracting as the said mechanism is operated to actuate the switch.

Dated this 11th day of September, 1928.

JOHN DOWNS.

CERTIFICATE OF CORRECTION.

Patent No. 1,756,733.

Granted April 29, 1930, to

JOHN DOWNS.

It is hereby certified that the name of the assignee in the above numbered patent was erroneously written and printed as "Watts Finchem and Company, Limited", whereas said name should have been written and printed as "Watts Fincham and Company, Limited", as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of July, A. D. 1930.

(Seal)

**Wm. A. Kinnan,
Acting Commissioner of Patents.**