

W. T. COULSON.
DIVER'S LANTERN.
APPLICATION FILED JAN. 23, 1918.

1,308,579.

Patented July 1, 1919.

Fig. 1.

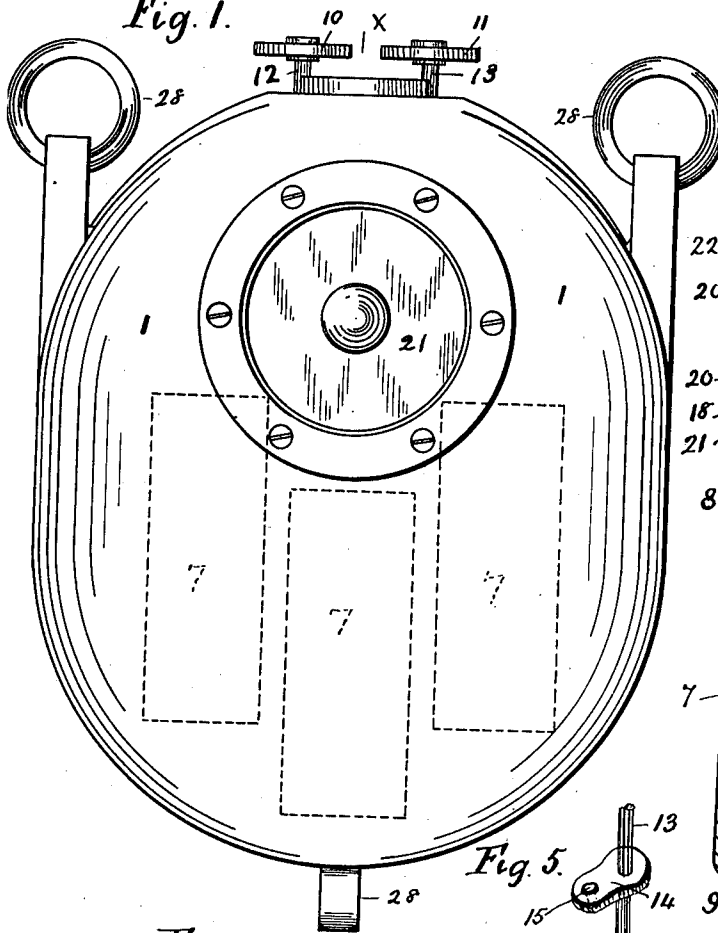


Fig. 2.

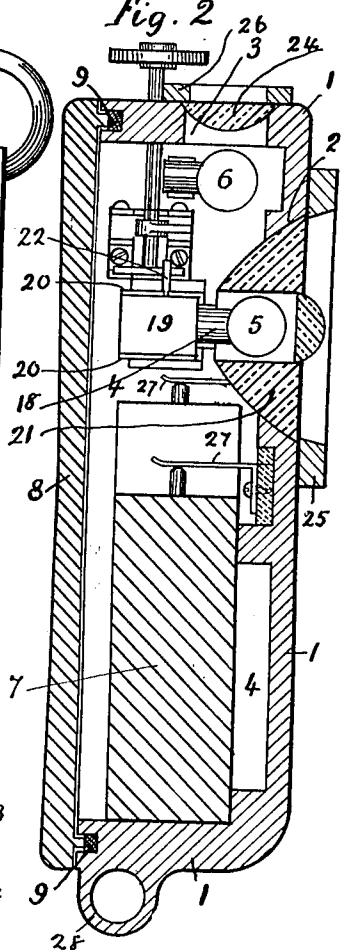


Fig. 3.

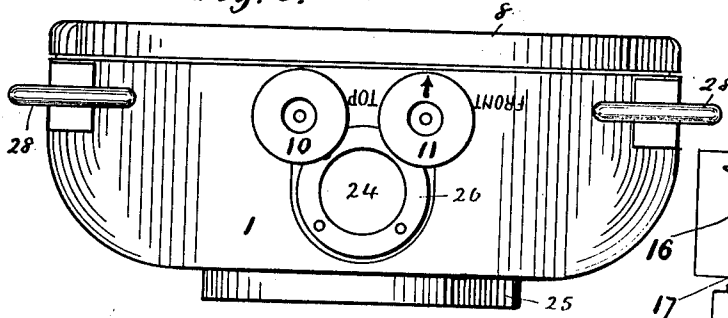


Fig. 6.

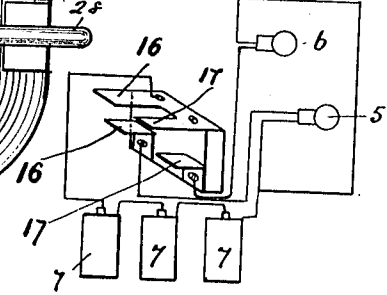
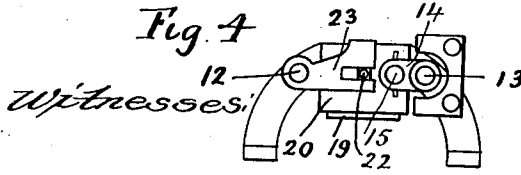


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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DIVER'S LANTERN.

1,308,579.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM THOMAS COULSON, a subject of the King of Great Britain, residing at Anerley, London, England, have invented certain new and useful Improvements in Divers' Lanterns, of which the following is a specification.

This invention relates to that class of submarine electric lamps in which the battery, lamp and other fittings are hermetically sealed within a casing, the switch being operable from outside.

It has been proposed to combine with the front or back weight of a diver's dress, the fittings for an electric light, the switch being operable from outside the weight, and further it has been proposed to employ two lamps one being on the lantern and the other connected therewith, the reflector of the outside lamp being adjustable for focusing purposes.

Now the object of my invention is to construct a complete self contained lantern and source of electric current for use as a diver's chest weight, and not combined with a diver's chest weight as heretofore, such lantern having contained within its casing two lamps and lenses or reflectors positioned for throwing a light in the required direction when the diver is in either the upright, stooping or prone position without it being necessary to alter the position of the lantern on the diver's body the switch for operating either lamp being operable from outside the casing; and further I employ means operable from outside the casing for adjusting one or either lamp within its lens or reflector for focusing purposes.

The case is constructed similar to the ordinary chest weight and is supported in the same manner and for the same purpose, as well as fulfilling its especial duty of affording light when wanted.

The pattern I have designed accommodates a lens of the type in which the reflector from the internal surface is utilized or formed from a co-axial hole extending through it and in which the source of light is placed. The lens thus formed and one lamp are situated in the upper part of the front face of the case to throw a light in a forward direction while the second electric light is placed as to throw its light through a lens at the top of the case and vertically upward when the case is in its normal position. This second lamp is for use when the

diver is in a horizontal or reclining position or when the principal light does not fall as required by the wearer of the lamp.

My invention will be clearly understood from the following description aided by the accompanying drawings in which—

Figure 1 shows the front elevation of the complete lantern.

Fig. 2 is a vertical section on the line X Y of Fig. 1.

Fig. 3 is a top view, and Fig. 4 shows a plan view mechanism for altering the position of the front lamp for focusing purposes and the switch.

Fig. 5 is a perspective elevation of the switch contact and Fig. 6 a diagrammatic view of the electric current.

For the purpose of my invention I construct a metal casing 1 with suitable openings 2, 3 for the two lantern faces; also with internal space 4 for containing the two lamps 5, 6 the batteries 7, 7, 7 and the controlling mechanism; the whole being closed at the back by a cover 8 held in place by screws or bolts and made watertight by a rubber beading 9 against which the cover is tightly pressed by the screws, or bolts. Each of the bolts has a rubber washer under its head. The heads are recessed into the back cover, so as to avoid projections.

The controls are actuated by two disks 10, 11 of about $1\frac{1}{2}$ " in diameter, one on each side of the top light. These disks 10, 11 are secured to the top of vertical rods 12, 13 which pass through stuffing boxes (not shown) into the interior of the case 1. The rod 13 carries within the case 1 a small insulated arm 14 (see Fig. 5) carrying a stud 15 which is insulated from the rod, which stud 15 makes contact with two pairs of springs 16, 16, 17, 17, one pair 16, 16 completing the electric circuit for the front lamp 5 and the other 17, 17 that for the top lamp 6 when the insulated arm 14 by the rotation of the disk 11 and rod 13 is brought between them. The disk 11 is capable of rotation through an arc of 180° , and at the extremes of its movement engages with the respective pairs of springs thus lighting the lamps, while when it is in the middle of its course neither are illuminated.

The control of the focus is effected as follows:—The holder 18 of the lamp 5 is supported at the end of the tube 19 of somewhat larger diameter than the lamp bulb itself. This tube 19 slides easily in another tube 20

which is fastened in the case 1 so that its axis coincides with the optical axis of the lens 21. There is a slot in the outer tube 20 through which a pin 22 secured to the inner tube 19 projects. This pin 22 engages with a forked arm 23 projecting from the rod 12 and the rotation of the disk 10 outside the case 1 moves the tube 19 and consequently the lamp 5 to the position that affords the focal effect the operator desires. While the back 8 is on the case 1 the movement of the actuating fork 23 is limited, but when the case 1 is opened the fork 23 has freedom of movement in a backward direction, and thus allows the bulb carrier to be entirely withdrawn if this is desired. A similar focus control for the second lamp could of course be fitted if wanted.

The lenses 21 and 24 are secured by bezels 25 screwed to the case 1 and made watertight by rubber rings between the metal and glass.

The wiring for the circuit is not shown in Fig. 2 for sake of clearness but will be readily understood from Fig. 6.

The batteries 7, 7, 7 may be held in position in the case 1 by springs 27, 27 which press upon the terminals and these springs may form the connections for the wiring obviating the necessity of manipulating wires when inserting or removing them.

28, 28, 28 are rings which support the lantern similar to those attached to a chest weight.

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

1. A lantern of the class specified for the use of divers to replace the ordinary chest

weight consisting of a casing having front and top lenses with an independent electric lamp associated with each lens, the lamps being both inclosed within the casing, two pairs of spring contacts having a source of electrical supply connected thereto, each lamp being also electrically connected to one pair of said contacts, and a switch having exterior means for operating the same consisting of a rotatable member carrying an insulated arm movable between the pairs of spring contacts for alternately energizing the two lamps.

2. In a diver's lantern of the class specified constructed to replace the front or chest weight of diving dresses consisting of a casing having lenses in one side and at the top thereof, a lamp within the casing adjacent to each lens, the one lamp being adjustable to vary its focal range relatively to its lens, exteriorly operated means for moving the said adjustable lamp, pairs of spring contacts having a source of electrical energy connected thereto, each lamp being connected to one of the pairs of contacts, and a switch operative exteriorly of the casing and having an insulated arm movable between the pairs of contacts for alternately energizing the lamps, the whole apparatus being contained within the casing and the latter rendered water proof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM THOMAS COULSON.

Witnesses:

J. M. BERTHELOT,
WM. O. BROWN.