B. B. LEWIS.

SUBMARINE LIGHTING.

APPLICATION FILED SEPT. 14, 1915.

1,161,939. Patented Nov. 30, 1915.

Fig. 2.

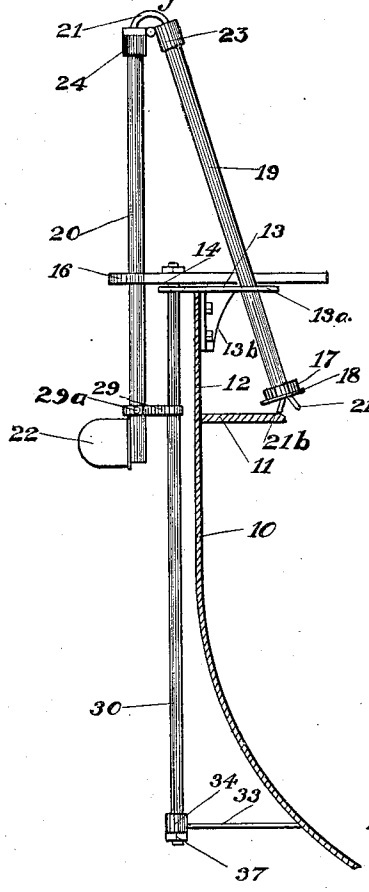


Fig. 7.

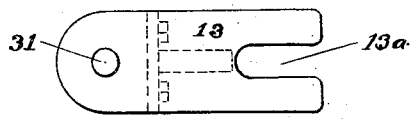


Fig. 1.

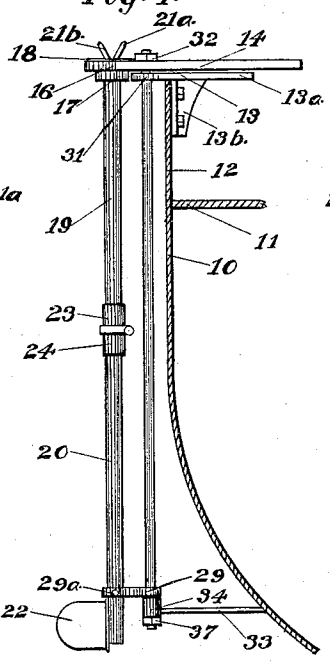


Fig. 8.

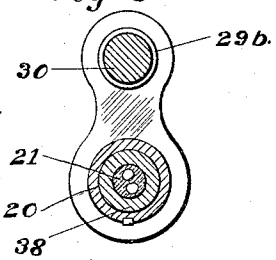


Fig. 6.

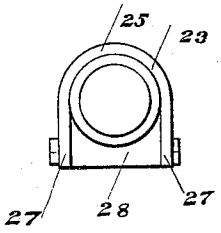


Fig. 3.

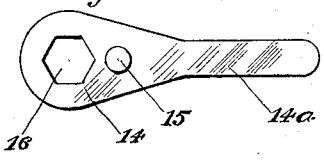


Fig. 4.

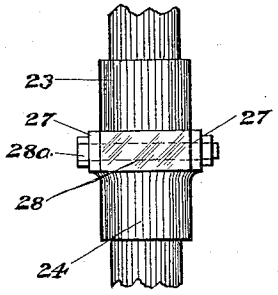
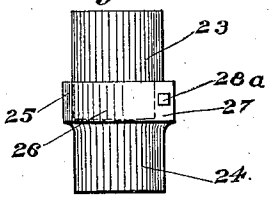


Fig. 5.



WITTNESSES

P. A. Hubbard

Wm. F. Penny

INVENTOR

Benjamin B. Lewis

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BENJAMIN B. LEWIS, OF BRIDGEPORT, CONNECTICUT.

SUBMARINE LIGHTING.

1,161,939. Specification of Letters Patent. Patented Nov. 30, 1915.

Application filed September 14, 1915. Serial No. 50,633.

To all whom it may concern:

Be it known that I, BENJAMIN B. LEWIS, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Submarine Lighting, of which the following is a specification.

This invention relates to that class of submarine lighting in which use is made of an electric current which by means of a suitable lamp properly adjusted within a transparent, water tight inclosure serves to light up a more or less extended area of the surrounding water.

More especially this invention is designed for use on a vessel and consists in a combination of parts by which the aforesaid submarine lamp may be readily lowered to a depth approximately that of the vessel's bottom, and which, in that position, may be readily turned to the right or left with a searchlight effect, through a considerable arc, and may, also, when not in use be raised from the water and held securely in position on the prow of the vessel.

In the drawing Figure 1 is a side elevation of the apparatus attached to the prow of a vessel, with the lamp in a position for submarine lighting. Fig. 2 is a side elevation showing the lamp in a raised position, the two halves of the cable tube being turned approximately parallel. Fig. 3 is a plan view of the controller, showing an hexagonal aperture fitting the headpiece of the cable tube and also a hole for the passage of the holding rod. Fig. 4 is a side elevation of the pivoted joint of the cable tube. Fig. 5 is a rear elevation of the same. Fig. 6 is a plan view of the same. Fig. 7 is a plan view of the carrying plate. Fig. 8 is a plan view of the tube guide, with holding rod, tube and cable shown in section.

Numerals 10 indicate the prow of a vessel having a deck 11, and forward bulwarks 12. At the top of the bulwarks 12 is a carrying plate 13 firmly attached by brackets 13^b to the bulwarks, having an open slot 13^a in its interior and a hole 31 in its outer extension beyond the line of the bulwarks. Directly above the carrying plate is located controller 14, also having a hole 15 in line with that of the carrying plate. Through holes 15 and 31 passes the holding rod 30 secured at its upper end by a fixedly attached nut 32, its lower end passing through an eye 34 of brace 33 which is securely attached to the hull of the vessel. Slidingly journaled on holding rod 30 is a tube guide 29, having, also, at its opposite end a hole 29^a through which passes the lower section 20 of the cable tube, being rigidly attached to the same and connected at its lower terminal to electric lamp 22.

Sections 19 and 20 of the cable tube are united by a joint of a peculiar construction adapted to the special purpose required. This pivoted joint is made up of an upper half 23 and a lower half 24. Upper half 23 fits into an enlargement 25 of lower half 24 which forms an interior shoulder 26 on which the bottom end of part 23 rests when the joint is closed. From either side of semi-diameter, enlargement 25 extends backward rectangularly, forming the projecting ears 27. A corresponding lug 28 at the bottom of part 23 has an equal backward extension and thickness with ears 27, fitting the space between the same. A bolt 28^a passes through ears 27 and lug 28 exteriorly to the inside diameter of the joint, forming a pivot on which the separate parts of the joint may be opened or closed as may be desired. Sections 19 and 20 of the cable tube are screw threaded into parts 24 and 23 respectively of the pivoted joint. Upper terminal of section 19 of the cable tube has fixedly attached to it a hollow hexagonal head piece and cap, hexagonal 17 fitting into hexagonal aperture 16 of the controller while cap 18 is so enlarged as to form a retaining shoulder for the same. Aperture 16 of the controller is made of such a size as to allow the passage of the cable tube joint, while at the same time fitting the hexagonal section of the head piece, the enlarged cap of which forms a shoulder on which rests the weight of the suspended tube.

21^b and 21^a are terminals of the conductors of the inclosed cable 21 of the cable tube to which the lamp is attached and may be readily connected to the positive and negative conductors of an electric circuit. In lower cable tube 20 the cable is preferentially surrounded by solid hydrocarbon as indicated by the numerals 38 in Fig. 8 of the drawing, the operation being performed in the usual manner by pouring the melted hydrocarbon into the tube and thus rendering this tube section impervious to water.

To place this mechanism in operative position for the purposes set forth the method of installation may be described as follows: Carrying plate 13 is firmly bolted to the forward bulwarks 12 by means of downward extending bracket 13^b, the top of the carrying plate reaching outwardly beyond the line of the bulwarks. Brace 33 having an eye 34 is firmly attached to the lower hull of the vessel. The upward end of holding rod 30 is first passed upward through hole 31 of the carrying plate and hole 15 of the controller and secured in place by an exterior nut 32. Upper section 19 of the cable tube is then passed upward through the hexagonal aperture 16 of the controller and the hexagonal head piece 17, having cap 18, is fixedly attached thereto and thus holds the end of section 19 in a rigid connection with the controller. Tube guide 29 and lamp 22, having been previously rigidly attached at opposite angles to each other on the lower end of section 20 of the cable tube, holding rod 30 is now passed through hole 29^b of the tube guide and eye 34 of the brace and is held in position by exterior nut 37.

When not in use the cable tube and attached lamp are carried in the position shown in Fig. 2 in which the cable tube is raised and the upper section of the tube is turned backward and downward on the pivoted joint into slot 13^a of the carrying plate to a position approximately parallel to the lower section which with the attached lamp are thus lifted above the water and may be lashed securely to the gunwale of the vessel.

When being put into commission for submarine work section 19 of the cable tube is removed from slot 13^a of the carrying plate while at the same time outer section 20 is lowered through aperture 16 of the controller; section 19 is further turned on the pivoted joint 16 of the controller till the sections are in line, when the pivoted joint is passed through aperture 16 and the cable tube lowered until the hexagonal head piece rests within the hexagonal aperture of the controller and lamp 22 is in position at the bottom end of holding rod 30. Connections are now made by means of terminals 21^b and 21^a with a suitable source of electric supply and a current of electricity sent through lamp 22, illuminating a more or less extended area of the water beneath and surrounding the vessel.

The action of the controller may be stated as follows: Hexagonal head piece 17 fitting hexagonal aperture 16 of the controller establishes a laterally rigid connection between these parts; hence, a turn of the handle of the controller to the right or left causes the cable tube throughout its entire length to turn in its bearings correspondingly to the movement given to the handle of the controller. The light from the lamp reflector is thus turned alternately in either direction as may be desired. Different methods of preserving a laterally rigid connection between the controller and the tube head may be employed, it being only necessary that these operative parts shall so fit into each other as to obviate any danger of relative movement in such direction. A removable pin or set screw or another form of tube head and socket might thus with more or less efficiency be made use of to secure the results of sustaining the weight of the tube and also the lateral rigidity of connection between the two. A holding rod and brace of one piece may also be employed when deemed preferable, these related parts having been previously forged into an approximately rectangular relative position.

I claim:—

1. A carrying plate attached to the bulwarks of a vessel, a holding rod passing through the carrying plate, a brace attached to the hull of a vessel and fixedly connected with the holding rod, a controller pivoted on the upper end of the holding rod, a cable tube in two or more sections, a pivoted joint connecting the sections, the lower section having an electric lamp joined to its outer terminal, the upper section passing through an aperture in the controller and being upheld by it in a laterally rigid connection, a tube guide fixedly attached to the cable tube and slidingly journaled on the holding rod, and an electric cable having positive and negative conductors, within the cable tube connected to a lamp at the bottom end of the cable tube and to a suitable source of electrical supply at the upper end of the same.

2. A carrying plate attached to the bulwarks of a vessel, having rearwardly an open slot, a holding rod passing through the carrying plate, a brace attached to the hull of the vessel and fixedly connected with the holding rod, a controller pivoted on the upper end of the holding rod; a cable tube in two or more sections, a pivoted joint connecting the sections, the lower section having an electric lamp joined to its outer terminal, the upper section passing through an aperture in the controller and being upheld by it in a laterally rigid connection, a tube guide fixedly attached to the cable tube and slidingly journaled upon the holding rod, an electric cable containing positive and negative conductors within the cable tube connected at the bottom end of the tube to the poles of an electric lamp and having terminals at the upper end of the tube for attaching the wires of an electric circuit.

3. A carrying plate fixedly attached to the bulwarks of a vessel, a holding rod passing through the carrying plate, a brace attached to the hull of the vessel and fixedly

connected with the holding rod, a controller pivoted on the upper extremity of the holding rod, a cable tube in two or more sections, a pivoted joint connecting the sections, said pivoted joint having an upper half resting on a flanged shoulder of the lower half, having also a posterior lug matching the flange ears of the lower half and a bolt passing through the flange ears and the inclosed lug; the lower section of the cable tube having also an electric lamp joined to its outer terminal, its upper section passing through an aperture in the controller and being upheld by it in a laterally rigid connection, an electric cable containing positive and negative conductors within the cable tube, connected at the bottom end of the tube to the poles of an electric lamp and having terminals at the upper end of the tube for attaching the wires of an electric circuit.

4. A carrying plate attached to the bulwarks of a vessel, a holding rod passing through the carrying plate, a brace attached to the hull of the vessel and having an eye at its outer end through which the holding rod passes, a controller pivoted on the upper extremity of the holding rod and having an hexagonal aperture in its outer extension, a cable tube in two or more sections, a pivoted joint connecting the sections, said pivoted joint having an upper half resting on a flanged shoulder of the lower half, having also a posterior lug matching the flange ears of the lower half and a bolt passing through the flange ears and the inclosed lug, the lower section of the cable tube having an electric lamp joined to its outer terminal, the upper section terminating in an hexagonal head piece and retaining cap fitting the aperture of the controller, a tube guide fixedly attached to the cable tube and slidingly journaled on the holding rod; an electric cable having two conductors, within the cable tube, an electric lamp whose poles are attached to the lower cable terminals, said cable having also terminals at the upper end of the tube for attaching the conductors of an electric circuit.

In witness whereof I have hereto signed my name in the presence of two subscribing witnesses.

BENJAMIN B. LEWIS.

Witnesses:
PAUL S. CHAPMAN,
CHARLES GREGORY.

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