Jan. 22, 1924. 1,481,583

M. ANUNDI

ELECTRICALLY ILLUMINATED BUOY

Filed Sept. 26, 1923

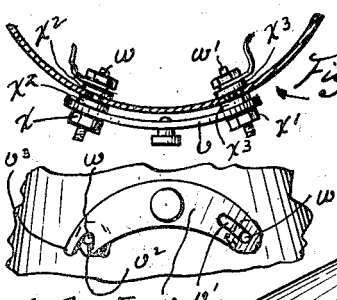

Fig. 6.



Fig. 5.



Fig. 1



Fig. 4.

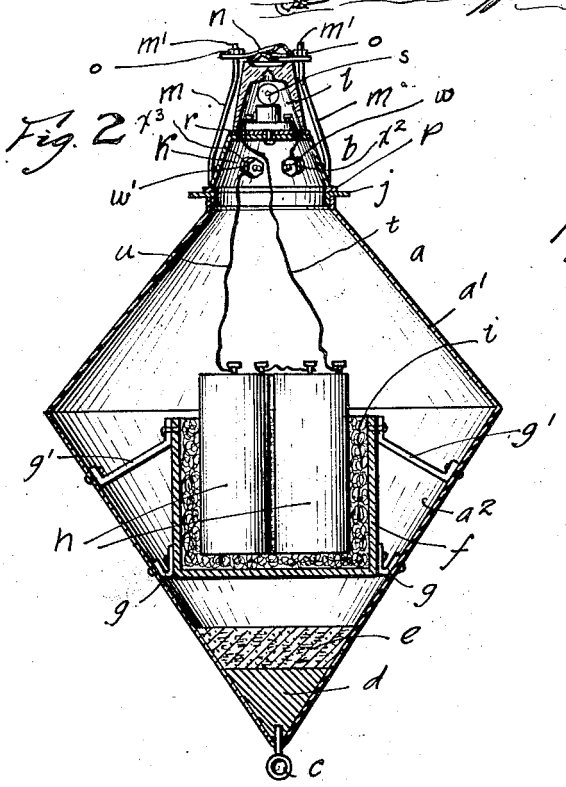

Fig. 2

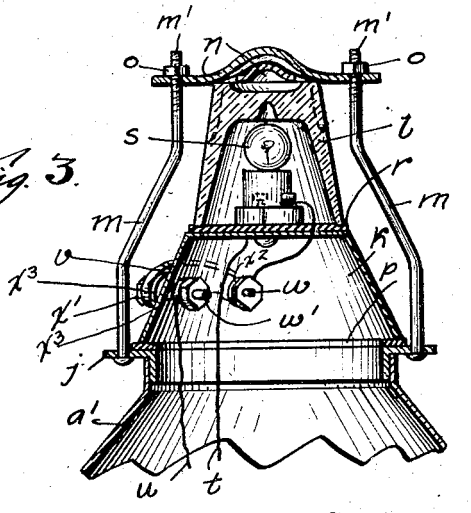

Fig. 3.

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# UNITED STATES PATENT OFFICE.

MATT ANUNDI, OF CLATSKANIE, OREGON.

## ELECTRICALLY-ILLUMINATED BUOY.

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*To all whom it may concern:*

Be it known that I, MATT ANUNDI, a citizen of the United States, and a resident of Clatskanie, county of Columbia, State of Oregon, have invented a certain new and useful Improvement in Electrically-Illuminated Buoys, of which the following is a specification.

One of the main objects of my invention is to provide an illuminated buoy which is lighted by electric means, the buoy being so constructed as to contain the electric means and the source of energy in a manner which would render these means normally unaffected by the action of the elements.

A further and more specific object is to provide means in a buoy of this character by which a storage battery may be carried inside of the buoy so as not only to be unaffected by the rocking of the buoy but also to be unaffected by the deposit of moisture through condensation within the buoy itself.

The special use to which I put my buoy is in connection with fishing nets and for this use it is necessary, that the buoy will be very sturdy and extremely water tight. When these nets are in use and are let drift down the stream, very often the bottom edge of the net will catch on a snag in the bed of the stream and the action of the downward flow of the stream will cause the net to be entirely submerged.

A net caught by a snag in this manner may not be readily seen because of the depth of the water and although it is provided with floats which tend to make it buoyant and to raise it to the surface of the stream, very often these nets are lost.

On the other hand when I have one of my buoys in place connected to the net and it is submerged the location of the position of the net is very easily seen because of the light and my buoy, also because of its relatively greater size, tends to more quickly lift the net from the snag and thus bring it to the surface.

I am aware that attempts have been made to produce a buoy for this purpose which is illuminated and some have attempted to use storage batteries in connection therewith. These attempts have been unsuccessful in that the storage battery soon absorbs the mositure which will collect within the buoy, due partly from leakage and partly because of condensation of moisture on the inner surfaces of the walls of the buoy.

I, therefore, support the storage battery in my buoy centrally within the buoy and spaced substantially equi-distant from its walls. I support the buoy in this position in a substantial moisture-proof box which is filled with mechanics' waste which has the property of absorbing this moisture and thus results in the storage battery being effective for its normal life and not rendered ineffective because of the absorption of moisture.

A further object of my invention is to provide a novel lens for my buoy by which the light given off is thrown over a larger area than heretofore. I attain this object by providing a hollow cylindrical lens which seats over and at the sides of the electric bulb on my device. The lens is provided with a number of angularly disposed faces at the top, which provide a multifaced lens, each face being arranged angularly with the other so as to direct the rays of light in different directions. I have discovered that the lens which suits my purpose in the most efficient manner is one which is made from an ordinary tumbler and I hold this lens in place by clamping means, the joint between the open face of the tumbler and the buoy being sealed by a gasket, the clamping means tending to force the edge of the tumbler tightly in place against the gasket.

I describe the construction and operation of my invention in detail in the accompanying specification and show the relation of the parts in the accompanying drawings, in which:

Fig. 1 is a diagrammatic perspective view of my improved buoy fastened to a net in place on a body of water;

Fig. 2 is a longitudinal section taken on the line 2—2 of Fig. 1 and shows diagrammatically the connection between the batteries and the electric light bulb;

Fig. 3 is an enlarged fragmentary sectional view of the lantern head of my buoy;

Fig. 4 is an enlarged perspective view of my improved lens; and

Figs. 5 and 6 are detailed views showing the construction of the make-and-break in the electric system of my buoy.

My improved buoy is made with a container $a$ which is in the form of a double cone with their bases connected. The upper cone $a'$ however is truncated and is provided with a removable lantern head $b$ which contains the lighting element. In the apex of the lower cone $a^2$ is provided a fastening ring

$c$ and within this cone is placed a weight $d$ adapted to cause the buoy to stand in an upright position, as shown in Fig. 1, at all times. This weight, as is common in buoys, is preferably made of lead because lead has a high specific gravity. Over the top of the lead I place a layer of cork $e$. I support the container $f$ within the lower cone $a^2$, it being supported by lower brackets $g$ and upper brackets $g'$. This container $f$ is preferably water tight but open at the top and I place the batteries $h$ therein. These batteries are spaced apart and spaced from the sides and bottom of the container $f$ by means of mechanics' waste $i$ or similar substance which absorbs water more readily than the cardboard covering of the batteries $h$. I have found that it is important to place this material around the batteries in that it attracts the moisture within the container more readily than do the batteries and therefore any moisture in the container due to condensation or otherwise will not affect the batteries in that this moisture is attracted to the waste and is absorbed thereby. As will be noted in Fig. 2, this container and substantially all parts of the batteries and the weight $d$ are below the dividing line between the portions $a'$ and $a^2$ of the container. Thus, substantially all of the weight is in the bottom cone and thus the buoy always tends to remain upright in the water.

The cone $a'$ abuts against an outward extending flange $j$ which is preferably welded or soldered thereto. On this flange I mount a truncated cone section $k$ and on the section $k$ I mount the cup shaped lens, which has fluted portions $l'$. The two portions $k$ and $l$ merely rest on each other and are held in place against lateral movement by means of the guiding rods $m$ which follow closely the contour of the parts and are held against longitudinal displacement by means of the cross pieces $n$ which are mounted over the top of the lens $l$. There are preferably four of these guiding rods $m$ which are positioned as at the four corners of a square and the cross pieces $n$ are arranged normal to each other so as to extend between diagonal posts. The guide bars $m$ are provided with threaded ends $m'$ and nuts $o$ are mounted thereon and force the cross pieces downwardly so as to clamp the portion $k$ and the lens $l$ tightly in place. I provide a gasket $p$ between the portion $k$ and the flange $j$ and a ring shaped gasket $r$ between the mouth of the cup-shaped lens and the portion $k$. Thus, as the nuts $o$ are screwed downwardly, the lens and the portion $k$ are forced firmly against the gasket so as to make a water tight connection. The batteries $h$ give off current which energizes the electric light bulb $s$. The bulb is connected to the battery by one wire $t$ and a return wire $u$. I provide a make-and-break member $v$ in the connection $u$ which connects across the binding posts $w$ and $w'$. The make-and-break member $v$ forms a connection between these binding posts and is provided with a slot $v'$ by which the connection is made with the binding post $w'$ and a notch $v^2$ on the opposite end by which connection is made with the binding posts $w$. This notch $v^2$ has an elongated lip $v^3$ which will not pass by the binding posts $w$ in the utmost adjustment with the binding posts $w'$ in the slotted hole $v'$. That is, it is possible by adjusting the position of the binding posts $w'$ in the slot $v'$ to engage or disengage the slot $v^2$ of the binding posts $w$ but it is not possible to move the make-and-break $v$ in the downward direction beyond the binding post $w$. The binding posts $w'$ are provided with an adjustable nut $x$ and insulators $x^2$. These nuts will hold the make-and-break $b$ in set position if screwed down on either of the binding posts and will only permit its release by loosening the same. This type of connection is very important in that it has been found that ordinary make-and-break will disengage itself due to the rough usage to which this buoy is subjected, and it is necessary to have positive locking and unlocking means when the buoy is in use to prevent inadvertent movement of the make-and-break member.

I claim:

1. A buoy comprising a hollow body consisting of two oppositely disposed conic portions in abutment at their bases, a lantern head removably mounted on one conic portion, an electric lamp in said lantern head, a box-like battery holder supported centrally within the lower portion of the body, so spaced from the walls of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume, the battery holder having walls of substantial height, a battery element secured in the battery holder, a weight in the bottom of the buoy body adapted to hold it in upright position while afloat.

2. In a buoy, a hollow body consisting of two oppositely disposed conic portions in abutment at their bases, a lantern head removably mounted on one conic portion, a box-like battery holder supported by brackets affixed to said battery holder and extending radially therefrom centrally within the lower portion of the body, so spaced from the walls of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume, the battery holder having walls of substantial height, the sides and bottom of the battery holder having a lining of material protecting the shell of the battery element from the moisture which may be contained within the buoy body, a weight in the bottom of the buoy

body adapted to hold it in upright position while afloat.

3. In a buoy, a hollow body consisting of two oppositely disposed conic portions in abutment at their bases, a lantern head removably mounted on one conic portion, a box-like battery holder supported by brackets affixed to the top and bottom of said battery holder and extending radially therefrom centrally within the lower portion of the body, so spaced from the walls of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume, the battery holder having walls of substantial height, the sides and bottom of the battery holder having a lining of material protecting the shell of the battery element from the moisture which may be contained within the buoy body, a weight in the bottom of the buoy body adapted to hold it in upright position while afloat.

4. In a buoy, a hollow body consisting of two oppositely disposed conic portions in abutment at their bases, a lantern head removably mounted on one conic portion, a box-like battery holder supported by brackets affixed to said battery holder and extending radially therefrom, centrally within the lower portion of the body, so spaced from the walls of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume, the battery holder having walls of substantial height, the sides and bottom of the battery holder having a lining of moisture absorbing material protecting the shell of the battery element from the moisture which may be contained within the buoy body, a weight in the bottom of the buoy body adapted to hold it in upright position while afloat.

5. In a buoy, a hollow-body, a box-like battery holder supported centrally within the lower portion of the body, so spaced from the walls and bottom of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume.

6. In a buoy, a hollow body, a box-like battery holder supported centrally within the lower portion of the body, so spaced from the walls of the latter as not to be immersed in the water which may collect in the buoy-body during any inclination which it may assume, a battery element having a moisture absorbent shell, the sides and bottom of the battery holder having a lining of moisture absorbing material protecting the shell of the battery element from the moisture which may be contained within the buoy-body.

7. In a buoy, a removable lantern head, an electric lamp contained in the latter, said head comprising two sections, the lower of which constitutes a chamber in which the ends of the electric wires are fastened, the upper of said sections consisting of a removable cup shaped glass functioning as a lens, means for securing said lantern head on the buoy body.

8. In a buoy, a removable lantern head, an electric lamp contained in the latter, said head comprising two sections, the lower of which constitutes a chamber in which the ends of the electric wires are fastened, the upper of said sections consisting of a removable cup shaped glass the sides of which are angularly disposed thus adapted to constitute a lens with a plurality of angularly disposed faces, means for securing said lantern head on the buoy body.

MATT ANUNDI.