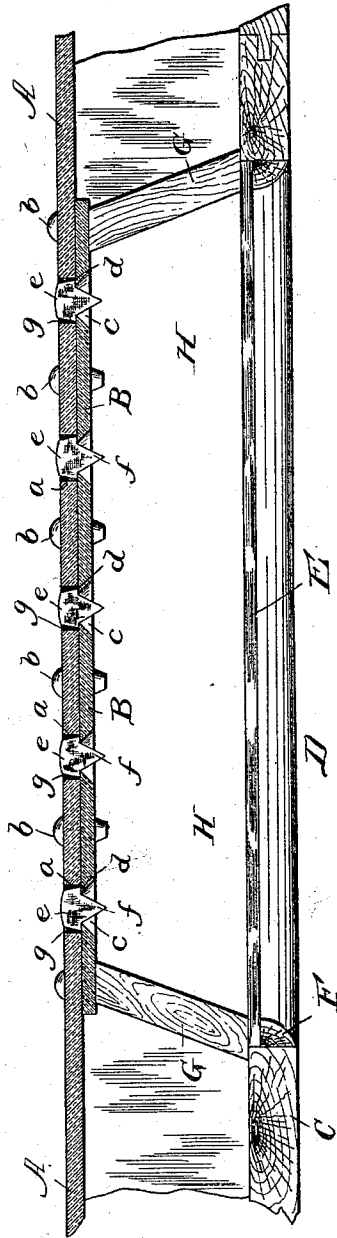


(No Model.)

A. McDOUGALL.
DEAD LIGHT.

No. 513,522.

Patented Jan. 30, 1894.



Witnesses
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UNITED STATES PATENT OFFICE.

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DEAD-LIGHT.

SPECIFICATION forming part of Letters Patent No. 513,522, dated January 30, 1894.

Application filed October 22, 1892. Serial No. 449,692. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER McDOUGALL, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Dead-Lights; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

In using dead-lights on vessels and particularly when employed in the engine and boiler rooms thereof, I have found that the said dead-lights became covered with water from condensation resulting in the difference of temperature of same and the air in the interior of the vessel, whereby the proper lighting of the boat is seriously affected.

By means of the present invention which relates to various new and useful improvements in such dead-lights, I have obtained a device possessing certain advantages over prior devices, and more particularly from the fact that there is little or no condensation on the dead-lights. I accomplish this object by making use of a window or pane placed at a short distance on the inside of the dead-lights, whereby an insulating air space is obtained between the latter and the said window or pane. By this means the possibility of the warm air from the interior of the boat coming in contact with the cold dead-lights is done away with, and therefore little or no condensation can take place.

By means of the present invention I also obtain a dead-light which will be economical in construction, and in which the greatest possible amount of light will be deflected into the interior of the boat.

In the present invention also, there can be no danger of leaking occurring around the dead-lights, and the latter are effectively protected against the possibility of accidental breakage by any object falling on the decks, as I shall presently describe.

For the better comprehension of my invention, attention is directed to the accompanying drawing, forming a part of this specification, and in which a sectional view of the device is shown.

"A" represents the outer plate or skin of a metallic boat. In case the present invention is to be used with wooden vessels, a corresponding or similar plate is to be placed at the proper points therein, for the reception of the dead-lights as I shall presently describe. The plate "A" is provided with a number of circular openings "a" therein which may be either cylindrical or flared inwardly; these openings are for the reception of the dead-

lights. Secured to the under side of the plate "A" by means of rivets "b" is the plate "B." The heads of the rivets "b" should be as prominent as possible as shown in the drawing, so that any object will rest thereon instead of the glass dead-lights themselves. The plate "B" which is the area of the desired dead-lights, is provided with openings "c" therein which coincide with the openings "a" in the plate "A." The openings "c" are flanged inwardly as shown, and at the upper parts thereof are of smaller diameter than the openings "a" so as to thereby form shoulders "d" on which the different dead-lights rest.

The dead-lights themselves which I use in the present invention are of novel construction as will be observed from the drawing. These dead-lights consist of the usual bull's-eye or lens portion "e," and with the conical deflecting stem "f" depending therefrom. The diameter of each of these deflecting stems at its widest portion which is at the top, corresponds to the smallest diameter of the openings "c," so that when the dead-lights are in position as shown, the said conical deflecting stems will fit snugly therein, with the bottom of the lens portion of each dead-light resting on the shoulder "d," before referred to. When the dead-lights are thus placed in position in the openings "a," they will be held securely therein by means of suitable cement "g;" and by making the lens portion of each dead-light at an angle to the sides of the openings "a," they will be prevented from coming loose, as will be readily understood.

"C" represents the interior wood-work or wainscoting of the boat, which is generally used and which is secured in any suitable manner some distance from the outer plating

of the vessel. This framework or wainscoting is provided with a window "D" therein opposite to the dead-light, and in this opening is placed an ordinary pane of glass "E," held in place by ordinary beads "F." By means of suitable wooden pieces or frames "G," I form a small insulated air chamber "H" between the dead-lights and the said window "E," but this is not absolutely necessary since the air space between the wood-work and the outer plating of the vessel may be utilized for this purpose.

When my invention is applied to wooden vessels, or when the interior wood-work or wainscoting is not used, a separate wooden insulating air chamber is to be formed around the dead-lights in any suitable way. By making use of this insulating chamber the warm air of the interior of the boat is kept from coming in contact with the dead-light, thereby preventing condensation, and should there be any condensation on the window or pane "E," the large area thereof compared with the combined areas of the dead-lights is so great as not to interfere with the proper deflection of the light.

By making use of the conical depending portions of each dead-light, the light in passing through the same will be deflected in all directions so as to greatly facilitate the proper lighting of the vessel.

It is to be understood that my improved dead-lights may be used with or without the said insulating air chamber, and that said insulating air-chamber may be used with or without said improved dead-lights, but I prefer to make use of the particular combination of elements which I have described herein, since thereby I am enabled to increase the efficiency of the device in many important respects.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The combination of the plate A, having openings therein; the plate B, having flared openings corresponding to the openings in the plate A, but of smaller diameter at their upper ends than the said openings in the plate A, so as to form shoulders *d*; and dead lights resting on said shoulders and held in place in the openings in the plate A, by means of cement and entirely above the plate B, substantially as set forth.

2. The combination of the plate A, having openings therein; the plate B, secured thereto and having openings corresponding to those in the plate A, but of smaller diameter at their upper ends, so as to form shoulders *d*; dead lights resting on said shoulders and held in position in the openings in the plate A by cement entirely above the same, and an insulating chamber H, beneath said dead lights for the purpose mentioned, substantially as set forth.

3. An improved dead light for use on vessels, consisting of the lens or bull's eye portion *e*, of smaller diameter at its upper end and a conical deflecting portion *f* integral therewith, extending down from its lower face, the whole being made of glass, substantially as set forth.

4. An improved dead light for use on vessels, consisting of the plano-convex lens portion *e*, of smaller diameter at its upper end, and a conical deflecting portion *f* extending down from its concave face and integral therewith, the whole being made of glass, substantially as set forth.

5. In an improved dead light for use on vessels, the combination of the plate A, having openings therein; the plate B, secured thereto by means of rivets, the heads of which extend on the outside of the vessel so as to protect the dead lights, said plate B being provided with flared openings corresponding with openings in the plate A, but of smaller diameter at their upper ends, so as to form shoulders *d*, and dead lights resting on said shoulders entirely above the plate B, and held in place by cement, substantially as set forth.

6. In an improved dead light for vessels, the combination of the plate A, having openings therein; the plate B, secured thereto by means of rivets and provided with openings corresponding with openings in the plate A, but of smaller diameter at their upper ends, so as to form shoulders *d*, dead lights resting on said shoulders and held in place by cement; the wall or wainscoting C, of the vessel, and the glass pane E, in said wainscoting beneath the dead lights, substantially as set forth.

ALEXANDER McDOUGALL.

In presence of—
FRANK L. DYER,
J. B. MCGIRR.