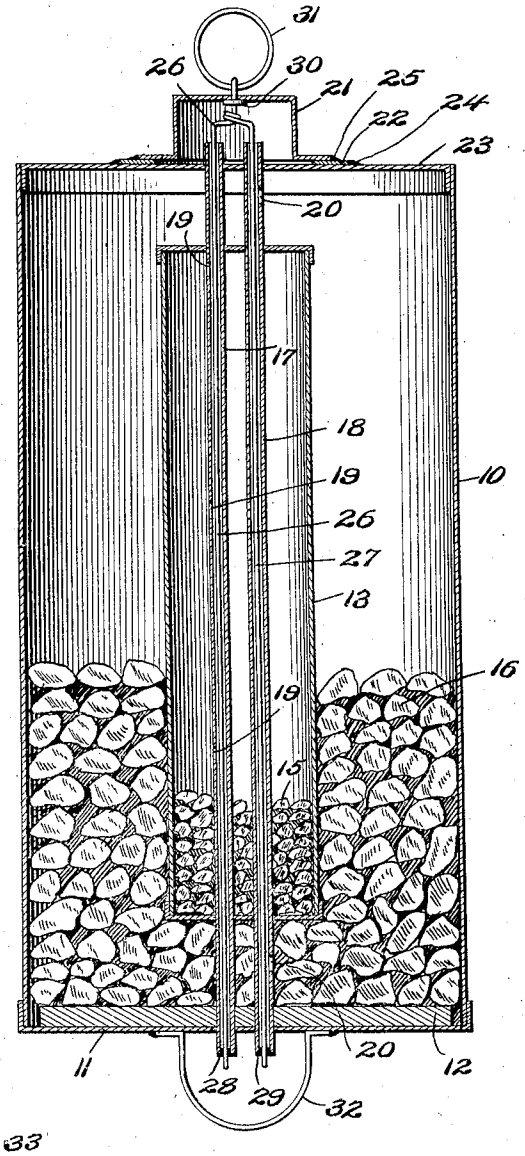
G. R. HOLMES.

MARINE TORCH.

APPLICATION FILED AUG. 26, 1919.

1,333,313. Patented Mar. 9, 1920.

FIG. 1.



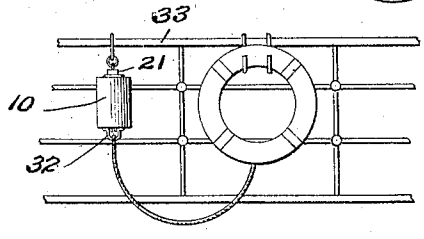


FIG. 2.

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MARINE TORCH.

1,333,313. Specification of Letters Patent. Patented Mar. 9, 1920.

Application filed August 26, 1919. Serial No. 319,876.

To all whom it may concern:

Be it known that I, GWYLLYM R. HOLMES, a citizen of the United States, and residing at Baltimore, Maryland, have invented certain new and useful Improvements in Marine Torches, of which the following is a specification.

The present invention relates to marine torches and more particularly of the type in which illuminating gas is automatically generated and ignited when the torch is launched into the water. Uusually such torches have two chambers, one containing illuminating gas forming material and the other the igniter gas forming material, water being admitted to the chambers through independent openings, although in the torch disclosed in my Patent 1,296,664, a single opening is employed. Where two openings have been used one of the chambers has usually been placed at the top of the torch and as a consequence only small quantities of water enter the chamber and at irregular intervals, if at all. Thus where the water opening for the igniter containing chamber is located at or near the top of the torch and the material is calcium phosphid, the small quantity of water entering causes a layer of lime to be formed over the phosphid, thereby preventing the formation of the igniter gas, and if no hard layer of lime is formed the small amount of water entering the top is not sufficient for igniting purposes. In my said patent I have described a torch designed to remedy the above mentioned defects, and to this end a single opening for the water was provided near the bottom of the torch. According to the present invention a torch is provided which overcomes the defects mentioned above and employs two independent water openings both situated below the water line and adapted to be opened simultaneously when the torch is launched.

The objects and features of novelty will be apparent from the description taken in connection with the drawings in which:

Figure 1 is a sectional elevation of a torch constructed in accordance with the present invention; and

Fig. 2 illustrates the manner of supporting the torch on a vessel when used in connection with a life preserver.

Referring to the drawings the torch comprises a buoyant container 10 the bottom 11 of which preferably carries a weight 12 to cause the torch to maintain an upright position when floating in the water. A vessel 13 is arranged within the container 10 and is designed to hold the igniter gas forming material 15 which usually is calcium phosphid. As shown, both the container 10 and vessel 13 are cylindrical in form. The illuminating gas forming material 16 is disposed in the chamber formed between the outside of the vessel 13 and the interior surface of the container 10.

A pair of tubes 17 and 18 extend the length of the container 10 and through the vessel 13, the latter being held in position by these tubes. Both tubes have open ends and one, as 17, is provided with spaced openings 19 in its wall, the lower opening being disposed below the water line of the torch when launched and the upper openings above said water line, all of said openings being in communication with the vessel 13. The other tube 18 also has spaced openings 20 in its wall in communication with the illuminating gas chamber, the lower of said openings being disposed below the water line and the upper above the same. Both the gas chambers are arranged so that at least a portion thereof is below the water line. Hence when the torch is floating, water may enter through the open lower ends of the tubes and flow through the opening 19 into the inner chamber and through the opening 20 into the outer or illuminating gas chamber.

The upper ends of the tubes are closed by a cap 21 secured to the container in such manner that when the torch is launched said cap will be torn off. For this purpose an annular piece of lead 22 is disposed between the cap and the top 23 of the container. The outer edge of the lead disk is soldered to the top 23 as at 24 and likewise the outer edge of the cap is soldered to said disk as at 25 and the disk is of such thickness that when the torch is launched it will be torn free from the cap 21.

For the purpose of closing the lower ends of the tubes a pair of rods 26 and 27 extend throughout the length of the tubes and are soldered to the bottom thereof as at 28 and 29. At their upper ends these rods are connected to the cap. As shown one of the rods at 26 extends through the cap having a collar or abutment 30 below the same and a ring 31 outside the cap. The other rod 27 may be secured to the rod 26 if desired. At

its bottom the container 10 has an eye 32 to which is secured the line from the life preserver. The ring 31 at the other end of the torch is permanently secured to a portion of the vessel as the rail 33.

In launching the torch, the cap 21 together with the rods 26 and 27 are pulled out of the same thereby opening both ends of the tubes. Hence when the torch floats in the water, water will enter through the bottom ends of the tubes and be supplied to both chambers. The igniter gas generated in the inner chamber will flow into the tube 17 through the upper openings 19 and be discharged at the upper end of said tube. Illuminating gas will flow into the tube 18 through the upper openings 20 and be discharged at the upper end of the tube where it will be ignited by the igniter gas coming from the other tube. It will be seen therefore that a torch is provided having independent water inlets for both chambers, these inlets being normally closed but opened automatically when the torch is launched.

Although a specific form of the invention has been described in detail it is not thus limited but includes modifications and changes which come within the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A marine torch comprising a buoyant container having two chambers, a portion at least of each chamber being below the water line, one adapted to hold igniter gas forming material and the other illuminating gas forming material, both gases being generated by the addition of water, a pair of tubes extending throughout the length of the container and open at their tops and bottoms, each tube adapted to supply water through its open lower end to one of the chambers and to conduct gas from said chamber to discharge the same at its upper end, and means closing both ends of said tubes adapted to be removed by launching the torch.

2. A marine torch comprising a buoyant container having two chambers, a portion at least of each chamber being below the water line, one adapted to hold igniter gas forming material and the other illuminating gas forming material, both gases being generated by the addition of water, a pair of tubes extending throughout the length of the container and open at their tops and bottoms, each tube adapted to supply water through its open lower end to one of the chambers and to conduct gas from said chamber to discharge the same at its upper end, a cap closing the upper ends of the tube, and a rod disposed in each tube closing the lower end thereof and connected to the cap, the cap adapted to be pulled off in launching the torch simultaneously pulling out the rods and opening the tubes.

3. A marine torch comprising a buoyant container having two chambers, a portion at least of each chamber being below the water line, one adapted to hold igniter gas forming material and the other illuminating gas forming material, both gases being generated by the addition of water, a tube extending the length of the container having a pair of spaced openings in its wall in communication with one chamber, a second tube extending the length of the container having a pair of spaced openings in communication with the other of said chambers, one opening in each tube being below the water line and the other above the same, and means closing the ends of the tubes adapted to be rendered inoperative when the torch is launched.

In testimony whereof I affix my signature.

GWYLLYM R. HOLMES.