350-319

SEARCH ROOM

June 11, 1957 G. E. VERNIER 2,795,165

UNDERWATER VIEWERS

Filed Dec. 20, 1954

T2653

Fig. 1

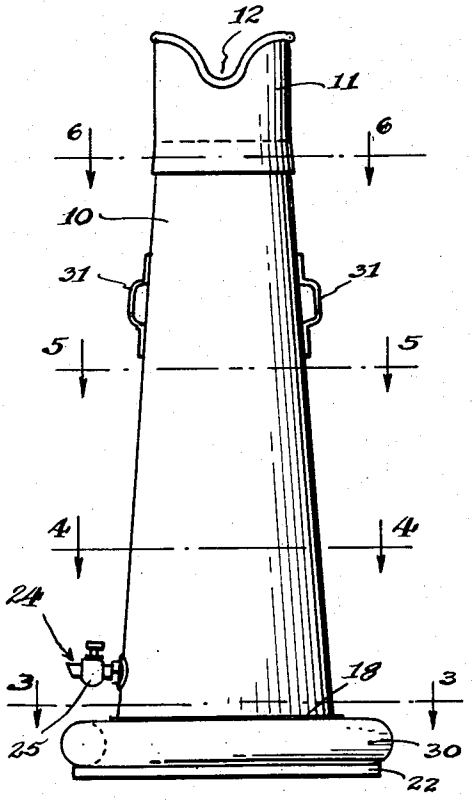
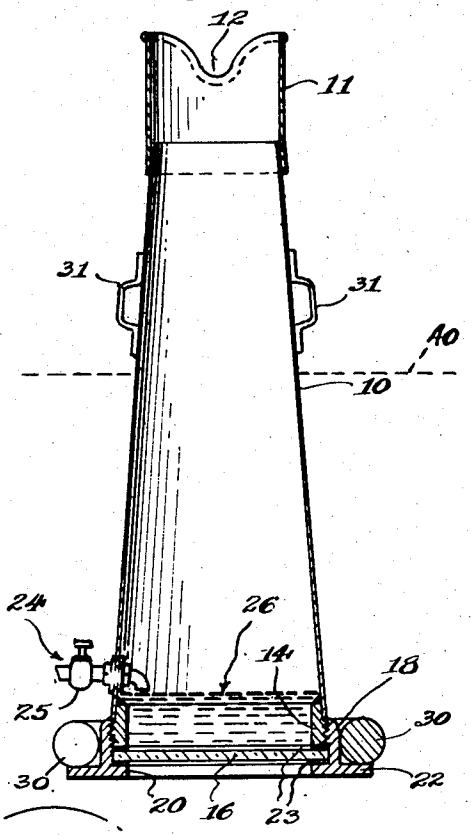


Fig. 2



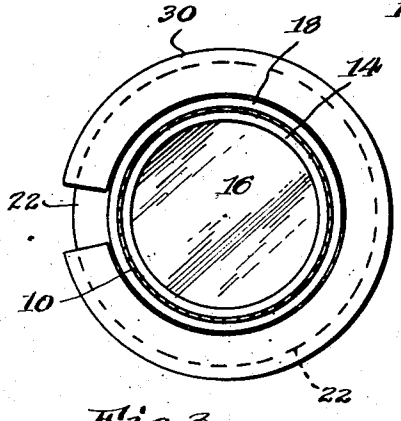


Fig. 3

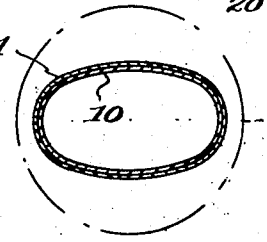


Fig. 6

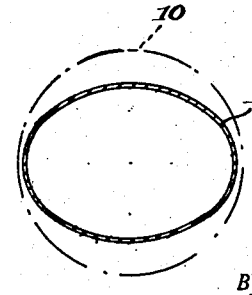


Fig. 4

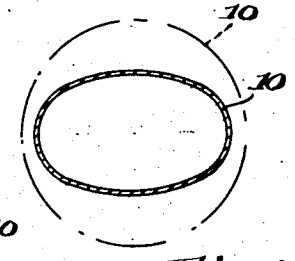


Fig. 5

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UNDERWATER VIEWERS

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1 Claim. (Cl. 88—1)

My invention relates to a viewer for viewing under water conditions and marine life. The present viewer is primarily adapted for operations in shallow waters and is mainly used by fishermen and sportsmen to observe the conditions near the lake bottom such as weeds and floor characteristics, and also to locate and identify living organisms under water such as fish and marine life.

It is an object of my present invention to provide an improved portable type viewer, constructed to facilitate the observation of underwater life and conditions. Anyone using devices of this type are often prevented from seeing clearly due to the fact that the inside of the lens often clouds up or becomes foggy, and I have discovered that a thin layer of water on the inside surface of the lens helps to make it possible to clearly see underwater.

For a more detailed understanding of my invention, reference may be had to the accompanying drawing illustrating a preferred embodiment of my invention in which like parts are referred to by like characters throughout the several views, and in which

Fig. 1 is an elevational view of the underwater viewer,

Fig. 2 is a vertical sectional view thereof,

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1, and

Figs. 4, 5 and 6 are sectional views taken respectively on the lines 4—4, 5—5, and 6—6 of Fig. 1, and showing the cross-sectional design of the viewer. A sufficient amount of water should be admitted so that if the viewer is tilted the water will still cover the lens.

My improved viewer comprises a tubular section **10** tapered outwardly from top to bottom and which also converges from a round substantially circular section at the bottom to an elliptical section at the top. An elliptical eye piece **11** is telescopically fitted onto the top open end of the tubular section, said eye piece being preferably recessed as at **12** to better fit the contour of the face.

At the bottom end of said tubular section, I have preferably welded or otherwise suitably secured an internal reinforcing ring **14**, the bottom perimeter thereof serving as a seat for the lens **16**. This lens **16** is clamped to the ring **14** by the annular cap **18**, said cap being preferably threaded onto the ring **14**. The cap has an internal extending flange **20** engaging the lens and an outwardly extending flange **22**. Suitable gaskets **23** are employed to seal the lens in place.

A water inlet fixture **24** is fitted to the viewer as particularly shown in Figs. 1 and 2 and when same is immersed in water, one can reach down and open the valve **25** to let in a little clear water into the viewer interior, where same covers the inside surface of the lens as at **26**. (Fig. 2). In general, the viewer is immersed in water about to the point indicated by the dotted line **40**.

It is best to open the valve under water so as to let in

clear water only, thus preventing for the most part the entrance of foreign matter to the inside of the viewer, as is found in the water at the surface. Water which is dipped in usually carries an objectionable amount of dust, dirt or other foreign matter, and such particles of dirt will interfere with clear vision.

Such viewers as usually employed in this work are extremely heavy and one of the objects of my present invention is to make the viewer light in weight so as to make same readily portable. Therefore, the tubular section **10** is constructed of relatively thin sheet metal, with the result that the viewer is relatively light in weight and is rather buoyant when immersed in the water, with the result that it is difficult to immerse the viewer to a point or level **40**. It is preferable in most instances to sink or immerse the viewer about half way in the water and to readily do this, I slip the iron ring or weighted member **30** over the tubular section and allow this iron ring or weighted member to come to rest on the flange **22**, thus weighting down the under water portion of the viewer. This ring is readily detachable from the assembly, and one or more of such rings may be used, the second being thus superimposed on top of the first ring. As many rings as are needed may be used.

Handles **31** are secured externally to the tubular section at a convenient location, and it will be observed that the elongated eye piece permits the operator to place his face tight against the small elongated open end of the viewer. The tapered construction enables the operator to obtain a relative wide angle view.

Figs. 4, 5 and 6 graphically illustrate how the tubular section converges from the circular cross section at the lens or bottom end to an elongated elliptical section adjacent the eye piece or upper end.

While I have described in detail only one preferred embodiment of my invention, it will be apparent to those skilled in the art to which my invention pertains that various changes and modifications may be made without departing from the spirit of my invention or from the scope of the appended claim.

I claim:

An underwater viewer comprising a tapering tubular section having a circular opening at one end and an elongated elliptical opening at the other end, said tubular section progressively converging from the circular cross section to said elliptical cross-section, a cap structure secured to the circular open end of said tubular section, a lens supported by said cap, said cap having a radially outwardly extending flange, and a separate weighted member supported solely by the said flange, and valve means for entrapping a relatively thin layer of water interiorly of said viewer and which overlies the inside face of the lens, and a manually actuated valved water inlet fixture carried by said tubular section adjacent to the lens end of said viewer, whereby to permit the intake of water to the interior thereof when said viewer is immersed in water, and to prevent fogging of said lens by virtue of the water overlying the face of the lens aforesaid.

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