May 22, 1951 C. VAN DEVENTER 2,553,798

BUOY

Filed April 26, 1946

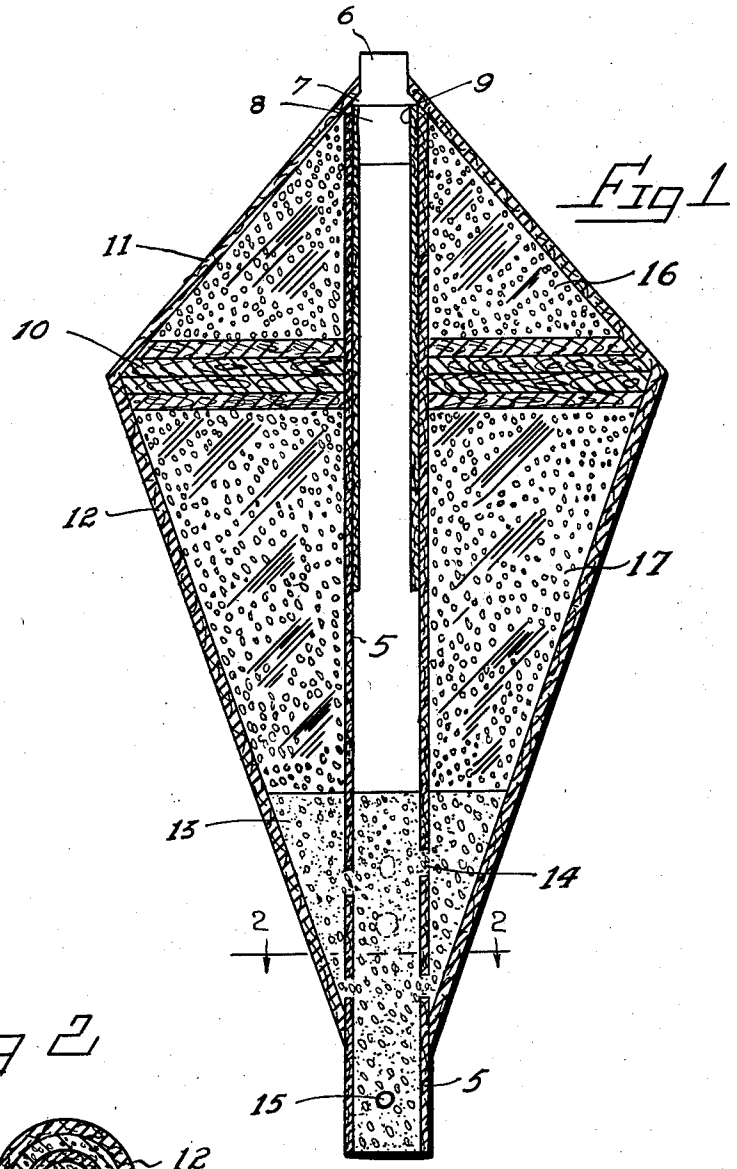


Fig 1

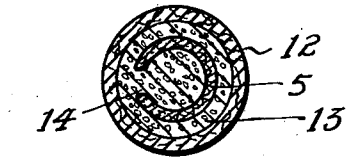


Fig 2

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BUOY

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2 Claims. (Cl. 9—8)

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This invention relates to buoys, and has as its principal object the provision of a novel construction whereby all metallic parts are eliminated, and a light, watertight body suitably weighted at one end is obtained.

It is also a purpose of my invention to provide a buoy with a novel shell and bracing structure all rigidly bonded together, and a light weight filling for the shell capable of keeping the water content in case of shell puncture to a minimum.

It is also a purpose of my invention to provide a buoy wherein the material itself, except for the weighting part, is buoyant in water, and the weight is intimately interlocked with the buoyant materials.

The nature and advantages of my invention will appear more fully from the following description and the accompanying drawings illustrating a preferred embodiment.

In the drawings:

Figure 1 is a vertical sectional view through a buoy embodying my invention, and

Figure 2 is a sectional view on the line 2—2 of Figure 1.

Referring now to the drawings, the improved buoy construction comprises a central hollow spar or tube 5 which is made up of a laminated fibrous sheet material, preferably a paper or lignin or wood tube impregnated with a suitable waterproofing material. One way of making the tube is by wrapping paper impregnated with a phenolic resin about a mandrel with several turns and applying heat and pressure to complete the bonding of the layers to each other.

This spar 5 has its top end closed by a plug 6 having an outwardly flaring part 7 providing a frusto-conical seating face for a purpose hereinafter described, and a reduced upper part 8 to which a tubular sleeve 9 is fixed. The plug is preferably of a phenolic resin impregnated wood, and the sleeve 9 is constructed like the spar 5. The tube 9 is forced into the spar to permanently secure them together.

Intermediate the ends of the spar preferably nearer the top than the bottom, a disc 10 of substantial thickness is positioned. This disc is constructed of a laminated material. For example, three ply phenolic resin impregnated plywood is satisfactory. The disc 10 is provided with an aperture to receive the spar 5 and with oppositely directed, frusto-conical peripheral seating faces.

The buoy has its shell made up of an upper tapered section 11, and a lower tapered section 12. As shown, these sections are conical, the upper one being much shorter in altitude than

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the lower one. These sections are constructed in the same manner as the spar 5, or they may be built up of resin bonded plywood. The conical sections meet on the seating faces of the disc 10, and are attached thereto by suitable fastening means. The upper section 11 fits over the seating face defined by the flared part 7 of the plug 6.

In order to provide necessary weight, I fill the lower end of the spar 5, and a portion of the lower end of the shell section 12 with concrete 13. The spar has a series of apertures 14 therein within the shell 12, so that the concrete is firmly interlocked with the spar. The spar extends below the section 12, and its lower end is also filled with concrete which may be suitably reinforced. An anchor cable hole 15 is provided through the spar 5, and the concrete 13 below the shell section 12.

The upper and lower chambers 16 and 17, separated by the disc 10, are both filled with a material that is full of tiny closed air chambers. Such a material is "foam glass." Alternately I may use such a material as phenolic resin emulsified, or the material sold under the trade name of "Bubblefil."

From the foregoing description, it is believed to be evident that I have provided a novel light rigid buoy construction that is capable of withstanding the shocks and abuse of the conditions under which buoys are used.

Having thus described my invention, I claim:

1. A buoy comprising an elongated hollow spar, a disc secured to said spar intermediate the ends thereof and extending therebeyond, upper and lower tapered hollow shell sections having abutting open ends secured to said disc and having their opposite open ends secured to said spar at points spaced along the length thereof, solid, dense material providing ballast in the lowermost extremity of said lower shell section and adjacent portions of said spar to close the lower end of said spar while serving to maintain said buoy in upright position in use, and cellular buoyant material contained within and filling the remainder of said shell sections.

2. A buoy comprising an elongated hollow spar, closure means disposed in one end of said spar to close the same, a disc secured to said spar intermediate the ends thereof and extending outwardly therebeyond, said disc having inclined edge portions, upper and lower tapered hollow shell sections having abutting open ends lying against the inclined edge portions of said disc and secured thereto, and having their opposite

open ends secured to said plug and said spar respectively, relatively dense ballast material partially filling said lower shell section and the adjacent portion of said spar to close the lower end of said spar while serving to maintain the buoy in upright position in use, and cellular buoyant material contained within said shell sections.

CHRISTOPHER VAN DEVENTER.

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