

April 30, 1957

H. MARCONI

2,790,187

BUOY

Filed Oct. 21, 1955

FIG. 1.

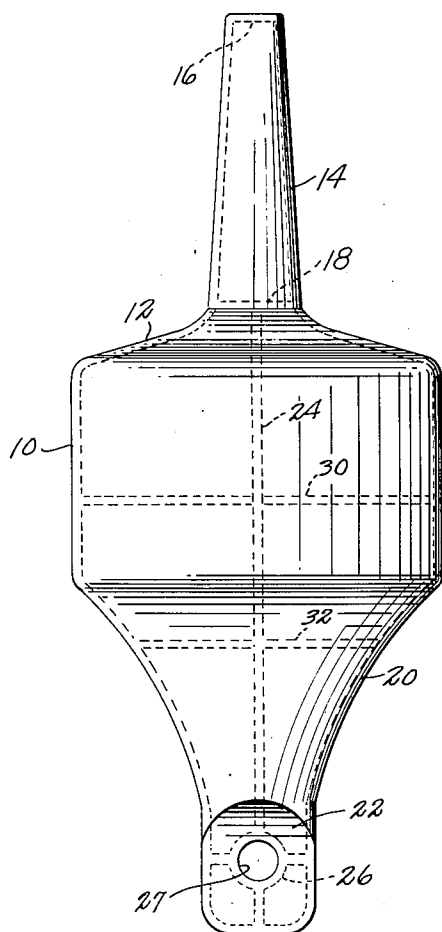


FIG. 3.

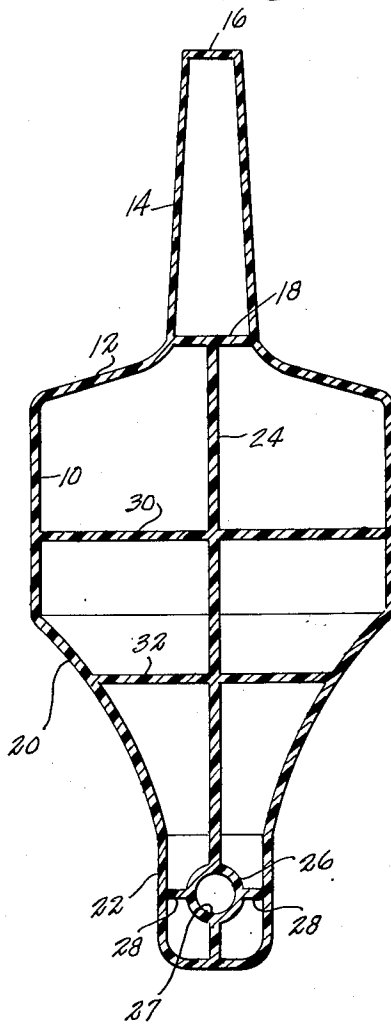
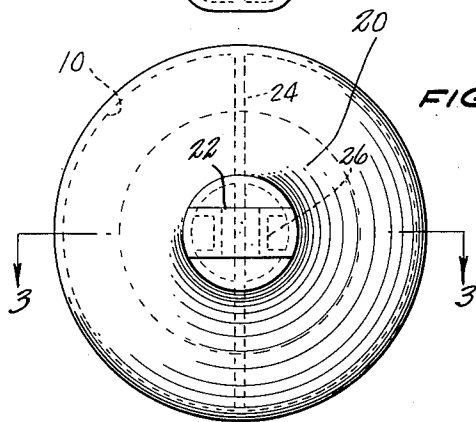


FIG. 2.



INVENTOR.
HUGO MARCONI,
BY

McMorrow, Gorman & Davidson
ATTORNEYS.

1

2,790,187

BUOY

Hugo Marconi, Badgers Island, Kittery, Maine

Application October 21, 1955, Serial No. 542,014

2 Claims. (Cl. 9—8)

This invention relates to buoys, and more particularly has reference to a buoy which is adapted to be formed entirely from molded plastic or similar material, thus to provide a highly durable, but relatively inexpensive buoy, especially adapted for manufacture by mass production methods, and particularly well suited to indicate the moorings of small boats, cabin cruisers, and similar craft.

Heretofore, it has been proposed to provide buoys, having intermediate portions of relatively large diameter, and tapering end portions one of which is adapted to project upwardly above the water level to provide means capable of being conveniently grasped for the purpose of pulling the buoy from the water, the other being adapted for attachment of a mooring cable or the like. However, in general, the buoys of the prior art have been formed of sheet metal, wood, various buoyant compositions, and the like, and have been composed of relatively heavy materials subject, over a period of time, to deterioration resulting from extensive and prolonged immersion in water. Further, the buoys previously devised have involved the provision of an excessive number of parts, to provide the necessary projections on the buoys and to impart thereto a sufficient ruggedness to withstand heavy use, all of which have added to the expensiveness of manufacture as well as to the weight of the buoy when the same is lifted from the water.

The present invention has among other important objects the provision of a buoy in which the deficiencies noted above will not be present; the formation of the buoy in such a manner as to incorporate therein a compartmentation designed to insure to the maximum the continuous floating of the buoy despite leaks that may tend to develop at various locations therein, and to insure further, the maintenance of the buoy in a substantially upright position despite the existence of leaks causing flooding of one or more compartments; the formation of the buoy in such a way that the same can be constructed entirely from molded plastic, to impart a desired lightness thereto without sacrifice of strength; and the arrangement of the partitions of the buoy in such a manner as to cause said partitions to discharge a dual function, namely, longitudinal and transverse bracing of the buoy, and compartmenting of the buoy into a plurality of individually sealed compartments.

A further object is to incorporate in the buoy a means for attaching a mooring cable thereto, which means will extend directly through, but will be wholly sealed off from adjacent compartments of the buoy, thus to extend the compartmentation for the full length and breadth of the buoy, despite the provision of a mooring ring in the buoy adjacent one end.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a side elevational view of a buoy formed according to the present invention;

Figure 2 is a bottom plan view of the buoy; and

2

Figure 3 is a longitudinal sectional view through the buoy on line 3—3 of Figure 2.

As will be noted from Figure 3, the buoy constituting the present invention is formed entirely of a plastic material, and it will be understood that said plastic can be suitably colored during the manufacture of the same, with the color extending through the full thickness of the plastic. Alternatively, the plastic can be painted exteriorly as well as internally, according to the desires of the particular manufacturer.

The buoy includes intermediate its ends a cylindrical hollow body 10 of substantial diameter, and said body, at its upper end, is integral with an upper end wall 12 steeply tapered and formed with a center opening in which is permanently and sealably engaged the larger inner end of an upstanding, gradually tapered, elongated axial projection 14. Projection 14 is integrally formed with an outer end wall 16 and an inner end wall 18, the inner end wall closing the opening in the end wall 12 of the body 10.

At its lower end, the body 10 is integral with a depending elongated, tapering extension 20, having as shown in Figures 1 and 3 a concave taper thereto, the extension 20 at its smaller lower end merging into a flattened lower end portion 22.

Lying in a plane coincident with the long axis of the body 10 is a longitudinal partition 24. This extends diametrically of the body 10, with the upper end of said partition being sealably engaged with the end wall 12 and the end wall 18 of the axial projection 14. At its sides, the longitudinal partition 24 is sealably engaged with the inner surfaces of the body 10 and the depending extension 20, the lower end edge of the partition 24 being integral with a transversely extending sleeve 26 extending between the opposite faces of the flattened end portion 22 and opening upon said faces to define an aperture 27 through which is extendable a mooring cable or the like, not shown. Angularly spaced about the circumference of the sleeve 90 degrees from the partition 24 is a transverse partition 28 within the flat, hollow end portion 22, the small transverse partition 28 cooperating with the partition 24 in compartmenting the hollow end portion 22, and further cooperating with the longitudinal partition 24 in bracing the sleeve 26 against strains that may be imposed thereupon by the mooring cable.

Lying in a plane intersecting perpendicularly with the axis of the body 10, intermediate the opposite ends of the body, is a transverse partition 30, and disposed in a plane paralleling that of the partition 30, adjacent the larger end of the extension 20, there is provided within the extension 20 a second transverse partition 32.

As shown in Figure 3, the body 10, together with its end wall 12 and extension 20, and the partitions 24, 30, 32 and 28, and also the sleeve 26, can all be integrally formed as a single piece of molded plastic, by first forming two identical halves and then molding the two halves together after which the axial, upstanding projection 14 is cemented or otherwise sealably connected to the upper end of the body. By reason of this arrangement, there is provided a light, highly durable buoy, the material of which will be substantially impervious to chemical action that might otherwise result from long immersion of the same in the water. Further, the arrangement, while providing a very light buoy, nevertheless imparts substantial strength to the buoy, due to the provision of intersecting longitudinal and transverse partitions integral with one another and with the sleeve 26 that provides the mooring cable opening 27. As will be noted, the compartmentation of the buoy extends over the full inside area thereof, with the exception of the area of the opening 27, the compartmentation even extending

about the sleeve 26 within the depending portion 22 across which the sleeve extends. This provides for maximum buoyancy in relation to the over-all size of the buoy, that is, a very light, thin-walled buoy is provided, the dead weight of which is quite low as compared to that of other buoys of equivalent size, and the buoyancy of which is of a high value due to the thin-walled, light construction thereof. Despite these highly desirable characteristics of the buoy, the buoy is still of substantial strength, by reason of the particular bracing hereinbefore described.

In addition to the above, the buoy has the desirable characteristic wherein it is composed of a substantial number of compartments considering the over-all size thereof, with each of said compartments being wholly sealed, permanently, from any other compartments. As a result, should a leak tend to occur in a compartment, the buoy will still be possessed of a high degree of buoyancy, and it may be noted, in this regard, that the longitudinal partitioning of the buoy in forming the compartments, which partitioning extends fully from the lower end of the buoy to the handle defining projection 14, taken in conjunction with the transverse partitioning of the same, forms compartments which are not only separated from one another longitudinally of the buoy, but also transversely thereof. Leakage in a compartment at one side of the partition, accordingly, will not cause flooding of the buoy over the full transverse area thereof, and as a result, the buoy will tend to settle lower in the water to a far lesser extent than is true of buoys not having this desirable characteristic.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A buoy comprising a hollow body formed with a depending, tapering extension at one end thereof said extension merging into a hollow flattened portion at its smaller end; a sleeve integral with opposite walls of said hollow portion and extending transversely of the

hollow portion, said sleeve opening through said wall of the hollow flattened portion to define an opening therein adapted to receive a mooring cable; an upstanding projection on the other end of said body; a longitudinal partition bisecting the body lengthwise thereof and extending from said projection to said one end of the tapering extension of the body and formed integrally with said sleeve; and a plurality of transverse partitions intersecting with the longitudinal partition at locations spaced longitudinally of the body and extension, the several partitions forming in the body a series of compartments, the longitudinal partition defining in the body pairs of side by side, identically but oppositely formed compartments and the transverse partitions spacing said pairs apart longitudinally of the body and extension.

2. A buoy comprising a hollow body formed with a depending, tapering extension merging into a hollow flattened portion at its smaller end; a sleeve integral with opposite walls of said hollow portion and extending transversely of the hollow portion, said sleeve opening through said walls of the hollow, flattened portion to define an opening therein adapted to receive a mooring cable; and upstanding, hollow, sealed projection on the other end of said body; a longitudinal partition bisecting the body, tapering extension, and flattened portion and formed integrally with said sleeve; a plurality of transverse partitions integral with the body and extension and with the longitudinal partition, said transverse partitions being spaced longitudinally of the body, extension, and flattened portion with one of the transverse partitions being integral with the sleeve at locations spaced 90 degrees about the circumference thereof from the connection of the longitudinal partition to said sleeve, thus to brace the sleeve against strains imposed thereon by pull of the mooring cable, the longitudinal and transverse partition defining within the body a plurality of compartments wholly sealed from one another and from said projection.

References Cited in the file of this patent

UNITED STATES PATENTS

1,252,559	Erickson	Jan. 8, 1918
2,381,394	Beach	Aug. 7, 1945
2,411,202	Gardner	Nov. 19, 1946

FOREIGN PATENTS

393,423	Great Britain	June 8, 1933
---------	---------------	--------------