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2 Sheets-Sheet 1

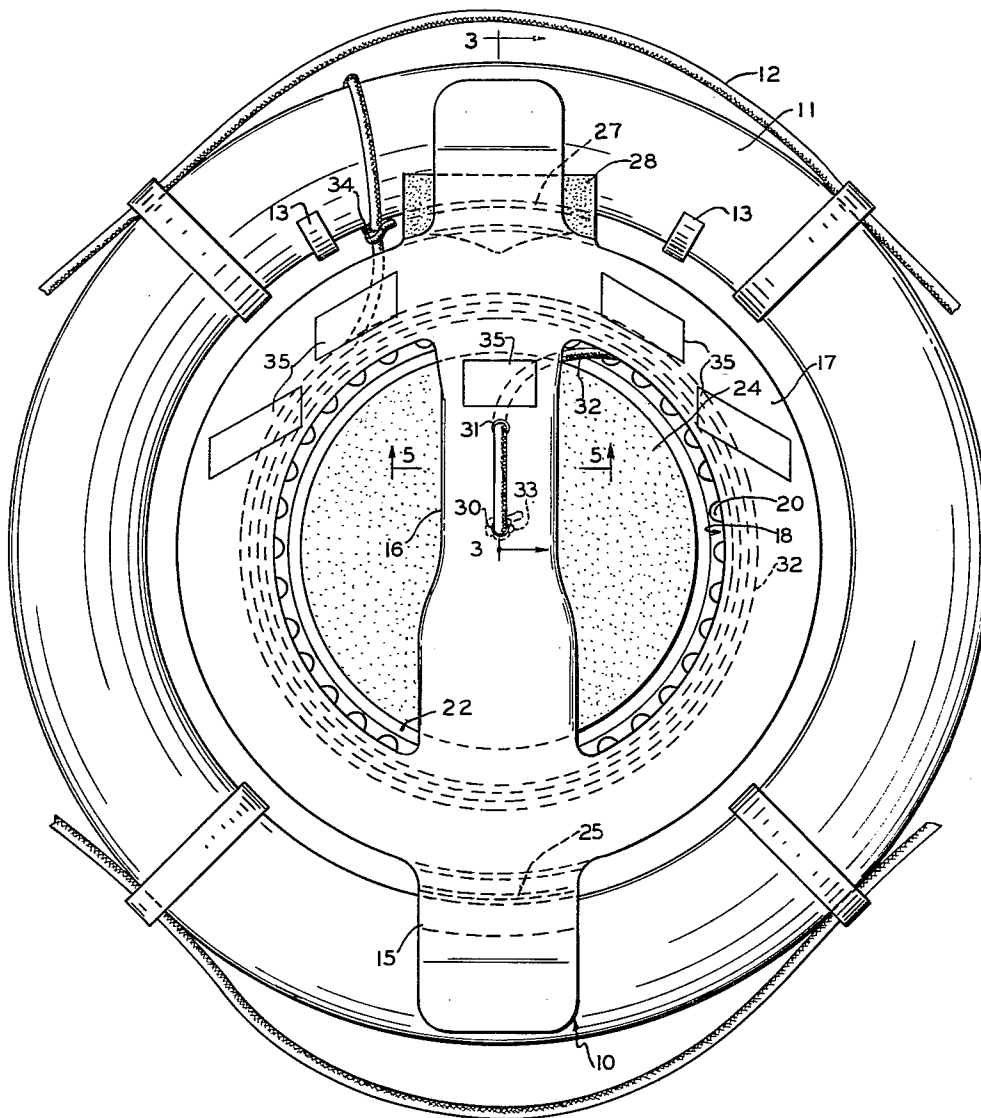


Fig. 1



Fig. 5

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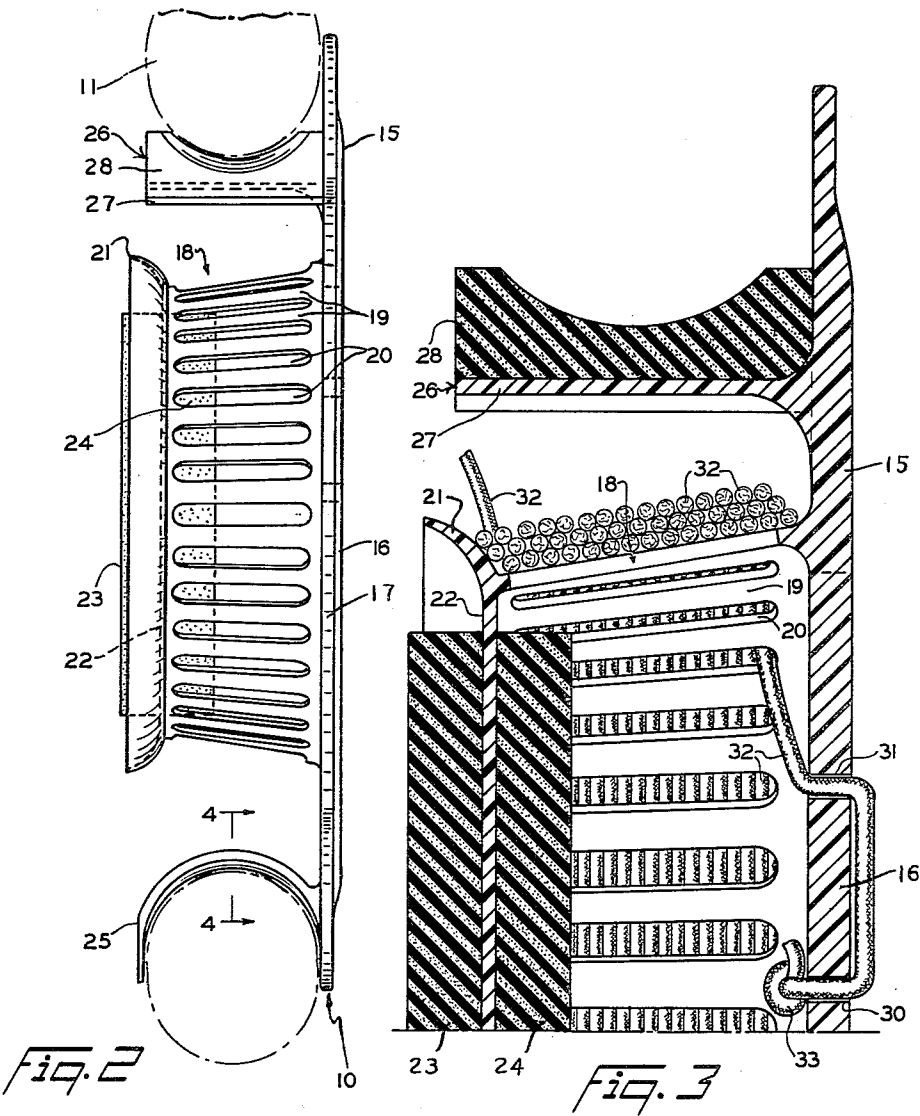
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## LINE HOLDER FOR RING BUOY

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6 Claims. (Cl. 9—313)

This invention relates generally to life saving apparatus, and has particular reference to a device for holding the line for a ring buoy pre-coiled for instant use.

Life saving equipment on larger boats, docks, and other installations on the water usually include ring buoys, hung at various locations in readiness to be thrown to a person who has fallen overboard or is in distress near the boat or installation. Usually when an accident occurs the ring buoy must be instantly ready for use and there is no time for complicated preparation or laborious assembling of equipment. A retrieval line is normally provided for pulling the person in distress toward the boat or installation, or for retrieving an improperly thrown buoy for another try.

Line holders for ring buoys have heretofore been provided but have had various disadvantages. Many of these holders require time-consuming and laborious uncoiling of the line from the holder and preparation of the proper throwing coils before the life saving equipment can be used. Some line holders are connected to the rack which holds the buoy or are connected to throwing equipment which can only be used from one position on the boat and cannot be readily moved to another location that is closer to the person in the water. Other holders are secured to, and must be thrown with the buoy. Such buoys require considerable skill to use and result in increased weight and less buoyancy in the water. Still other line holders, or reels, are not adapted to be removably secured to the buoy and are therefore not ready for instant use.

The primary object of the present invention, accordingly, is to provide a line holder for ring buoys so that this life saving equipment may be ready for instant use with the line ready-coiled for throwing the ring overboard.

A further object is to provide a buoyant line holder for a buoyant ring which is normally supported by the ring so as to be transportable with the ring, which is normally stored within the ring so as to be out of the way, which can be easily disengaged from the ring, and which can be held in one hand so that the line will be freely uncoiled without snarling or fouling when the ring is thrown with the other hand.

Still further objects are to provide an accessory for life saving buoys which enables even an inexperienced person to readily and quickly grasp the life saving buoy, run to the best position for throwing, and throw the buoy to the person in distress while retaining the end of the retrieval line.

Other objects and advantages will become apparent from the following description taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a front elevational view of a line holder according to the invention secured to a ring buoy suspended on a vertically extending surface;

FIGURE 2 is an elevational view of the line holder as viewed from the left in FIG. 1;

FIGURE 3 is an enlarged half sectional view on the line 3—3 of FIG. 1;

FIGURE 4 is a sectional view on the line 4—4 of FIG. 2; and

FIGURE 5 is a sectional view on the line 5—5 of FIG. 1.

In FIGURE 1, the line holder 10 is shown supported on a ring buoy 11 which has the usual becket 12. Two

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clamps or hooks 13 support the buoy or ring 11 adjacent a vertically extending surface, such as a bulkhead, in the usual manner. Alternatively, the ring may be supported by one or more hooks in engagement with the becket.

The holder 10 has a long and comparatively narrow handle portion 15, diametrically disposed along the outer surface of the ring 11, the ends of the handle engaging the sidewall of the ring at diametrically opposite points. Handle 15 is provided with a hand grip portion 16 at its center and is normally vertically disposed so as to be easily grasped in the hand. Integral with handle 15 is a flat annular drum support 17, of less diameter than the inner diameter of the ring 11, for joining the handle to a coil-supporting drum 18.

Drum 18 is slightly tapered as shown in FIGURES 2 and 3, down from its outer (with respect to the supported ring buoy) end to the inner end for a hereinafter apparent reason. The drum wall is formed with laminations or ribs 19 alternating with slots 20, as shown, or is perforated, to lessen its weight and provide ventilation for the inner turns of line coiled on the drum. At its inner end the drum has a flared curved annular rim 21 which is tapered to a relatively thin edge. The holder 10 including drum 18 and rim 21 is preferably made of a light plastic material such as polystyrene, and rim 21 is softened by heat treatment, or otherwise, for providing a smooth and resilient line retaining ridge as will hereinafter appear.

The inner end, or upper base, of drum 18 is closed by an end wall 22, as distinguished from the outer end, or lower base, which is open to provide access to the hand grip 16 and ventilation for the line.

Within the rim 21 a round flat pad 23 of polyethylene closed-cell foam or other soft material is secured as by adhesive to the drum end wall 22. Pad 23 projects slightly beyond rim 21 so that it rests against the bulkhead and prevents the line holder and ring buoy from marring or scratching the bulkhead.

A similar pad 24 of the same or other buoyant material is secured to the other side of the drum end wall 22, within the drum, for making the holder more buoyant if it is dropped in the water.

Adjacent each end of handle 15 there is an inwardly projecting ring-engaging member or arm that is integral with or secured to the handle. Since the handle 15 is preferably normally vertically disposed, the lower arm 25, also preferably of polystyrene, is comparatively rigid and is curved as shown in FIGURE 2 to embrace a major part of the inner surface of the ring 11, and is also curved as shown in FIG. 4 to conform to the inner circumference of the annulus of the ring. The inner end of support arm 25 is tapered, as shown, so as to provide a degree of flexibility for gripping the ring and so as not to extend beyond the rim 21.

The upper support member 26 is preferably of two-piece construction. A shelf member 27, curved as indicated in FIG. 1 to conform to the inner circumference of the annulus of ring 11, is preferably integral with handle 15, and projects inward short of the end of rim 21. A filler or locking piece 28 of polyurethane or closed-cell foam, or similar flexible material, is secured to the shelf member 27 and handle 15 by adhesive or otherwise. The locking piece 28 is curved, as indicated in FIG. 1, to conform to shelf member 27 and is also curved to embrace the curved inner surface of ring 11 as shown in FIGURES 2 and 3. Being deformable, the locking piece provides means for securing the holder 10 to the ring and, at the same time, means for allowing the holder to be easily disengaged from the ring by pulling on the grip 16 of the handle.

Two holes in the grip portion 16 of the handle, indicated at 30 and 31 (FIG. 3), are provided and the line 32 is

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knotted at 33, passed out through the hole 30, back inside the drum through hole 31, and hence through one of the slots 20. Line 32 is then coiled around the drum as indicated in FIGURE 3 and the outer end is tied around the ring buoy as shown at 34 in FIGURE 1. Line 32 is preferably of polyethylene, or similar material which will float, and is preferably yellow in color, as is the holder 10, since this color is internationally known for sea-rescue equipment.

The drum support 17 may also be provided with embossed plaques or areas 35 (FIG. 1) which bear a name suggestive of the use for which the line holder is intended or printed instructions for use.

The operation of the line holder will now be described. The ring buoy or ring 11 is normally hung ready for use in case of emergency on the hooks 13 which are secured in the bulkhead or other vertically extending surface. The holder is supported on the ring and the line is pre-coiled on the drum 18 as shown.

The body or handle extends vertically and diametrically across the outer side of the ring and the ends thereof are in contact with diametrically opposite portions of the outer side of the ring. The ring support members 25 and 26, fixed to the handle on its inner side adjacent the ends thereof, extend inward of the ring and the curved portions of the members embrace and contact the inner surface of the ring at top and bottom to secure the holder in place. The upper member, having its filler piece 28 of deformable polyethylene foam, is easily distorted for removal of the holder from the ring in case of emergency.

The line is wound around the drum ready for use, the inner end of the coil on the drum passing through one of the holes between the laminations forming the lateral wall of the drum and being secured to the hand grip portion of the handle as previously described. The outer end of the line is tied around the ring. The soft pad 23 at the inner end of the drum rests against the bulkhead preventing marring thereof.

When an emergency occurs the ring may be removed from the hooks in the usual manner. The grip portion 16 of the handle is grasped with one hand and the ring is grasped with the other hand, and holder and ring are easily separated. When the rescuer reaches the point nearest to the person in distress the ring is thrown in the usual manner, the rescuer holding the handle in the hand not used in throwing.

The line is easily axially unwound from the drum since the drum is tapered toward the smaller open end. The rim 21 is slightly flexible, especially at its radially outward tapered end, and provides a smooth, slippery and somewhat resilient surface over which the line slides when the ring 11 is thrown, but normally holds the line coiled on the drum for storing. If the smaller end of the drum is pointed in the direction in which the ring is thrown, practically no restraining force is exerted by the drum on the unwinding line.

Drum 18 affords room for some 60 to 70 feet of line which is a longer distance than the ring can ordinarily be thrown. Should the holder be dropped into the water, the flotation pad 24 within the drum provides sufficient buoyancy to float the holder so that it may easily be recovered. Normally, however, the holder will remain gripped in the hand of the rescuer for pulling in the person in distress or for retrieving the ring.

When the ring buoy is recovered by use of the line 32, the line may easily be rewound on the drum 18, the holder inserted in the ring and the ring rehung on the hooks 13 with the line holder again stored within the ring and out of the way.

It will now be apparent that there has been provided a light but strong line holder which may be separably secured to the ring buoy itself so as to be readily portable to the most convenient spot for use and instantly

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available. The precoiled line is always ready for use and is stored out of the way within the buoy.

The holder is easily disengaged from the buoy and requires no extraordinary training or skill in use. The axial unwinding of the line is automatic for preventing snarling or fouling of the line and is substantially frictionless if the drum is pointed in the direction in which the buoy is thrown.

It is contemplated that the line holder may be made for any of the larger sizes of ring buoys. It will also be appreciated that a line holder of the above described construction made for a 24 inch diameter buoy, for instance, may be adapted for use with a 26, 28 or 30 inch buoy by the simple expedient of making locking piece 28 thicker and by providing a similar filler piece secured to the concavely curved surface of the supporting member 25.

As will be apparent to those familiar with the art, the invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The embodiment disclosed therefore is to be considered in all respects as illustrative rather than restrictive, the scope of the invention being indicated by the appended claims.

What is claimed is:

1. In combination with a ring buoy adapted to be removably supported on a wall and a retrieval line for said buoy, a line holder comprising: a handle portion extending across the center of the ring and contacting two diametrically opposite portions on the outer side of the ring remote from the wall; support members secured to said handle portion adjacent either end and projecting inwardly of the ring, said members being curved to engage the inner surface of said ring at diametrically opposite sides thereof, at least one member being deformable for easy disengagement from the ring; and a hollow drum secured to said handle portion between the support members, said drum having its axis projecting inward substantially at the center of the ring and having an opening at its outer end affording a hand grip at the center of the handle, the major portion of said line being wound on the exterior surface of the drum and having one end secured to the handle and the other end secured to the ring buoy.

2. A line holder for a ring buoy which is normally supported on a vertically extending surface comprising: a handle extending across the center of the ring and contacting two diametrically opposite portions on the outer side of the ring; inwardly projecting support members secured to the handle adjacent either end, said members being curved to engage the inner surface of said ring for supporting said holder on the ring, at least one member being deformable whereby said handle may be disengaged from the ring; a frusto-conical line supporting drum secured to the handle between said support members, said drum being hollow and substantially coaxial with the ring and extending into the interior thereof a distance substantially equal to the ring thickness, the larger base of said drum having an opening affording a hand grip at the center of the handle, and the smaller base of the drum having a radially flaring curved rim normally positioned adjacent said ring supporting surface; and at least one opening in said drum whereby the major portion of the line is normally wound around the drum between the rim and the handle with its outer end secured to the ring and its inner end secured to the handle.

3. The line holder of claim 2 wherein said radially flaring curved rim is of resilient material and is tapered to a thin edge adjacent the ring supporting surface, whereby the line may be easily axially unwound from the drum when the holder is disengaged from the ring and the ring is thrown.

4. The line holder of claim 2 wherein the smaller base of the drum has a pad of soft material projecting beyond

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said rim for providing a non-marring surface in contact with said ring supporting surface.

5. The line holder of claim 2, wherein said drum has a flotation pad of buoyant material secured therein.

6. A line holder for a ring buoy comprising: a handle 5  
extending diametrically across one side of said buoy; support members fixed to the handle adjacent either end and projecting within said buoy, said members being conformed to the inner surface of the buoy for supporting engagement therewith, one of said members having a 10  
portion of deformable material whereby said handle may be disengaged from the buoy; a frusto-conical hollow line supporting drum on said handle between said mem-  
bers and extending coaxially within said buoy; said handle 15  
having a handgrip portion adjacent the larger end of the drum; a flexible radially flaring rim at the smaller end of the drum; a mar-preventing pad on said drum pro-

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jecting beyond said rim; and at least one hole through said drum, said drum being adapted to have the line wound thereon with the outer end of the line secured to the buoy and the inner end of the line passing through the hole and secured to said hand grip portion; whereby said buoy and holder may be normally hung from hooks on a bulkhead with said pad in contact therewith, available for instant use by grasping the buoy in one hand and the handle in the other, the axial unwinding of the line from the drum preventing snarling of the line when the holder is disengaged and the buoy is thrown.

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