United States Patent

Haglund et al.

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[45] **July 11, 1972**

[54] QUICK-RELEASE STORAGE OF A LIFE RING

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[52] **U.S. Cl.** **9/14**, 114/190

[51] **Int. Cl.** **B63c 9/22**

[58] **Field of Search** 9/14; 114/190; 221/295

[56] **References Cited**

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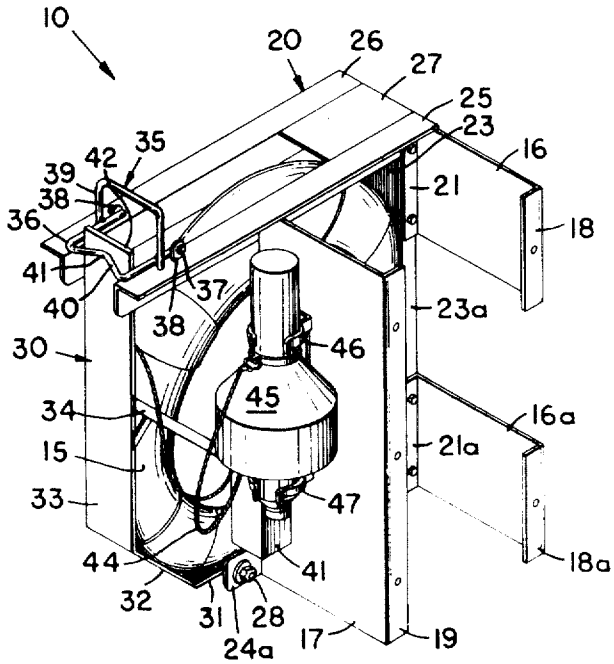
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[57] **ABSTRACT**

A quick-release device for storing a ring buoy. Spacing and support means secure the device to a bulkhead extending transversely to the fore-and-aft line of a ship. A stationary frame supported by the spacing and support means provides a vertical end wall, a horizontal bottom portion having pivot means spaced from the end wall, and a horizontal upper portion. The ring buoy rests against the end wall and is held there normally by a swingable ramp pivoted to the pivot means with its center of gravity well beyond the pivot means on the opposite side thereof from the end wall. This ramp has a short bottom wall portion, an inclined portion, and an end portion, which during stowage is substantially vertical, and when it is vertical, it snugly holds the ring buoy, with the ring buoy resting on the ramp's bottom and inclined portions and against the end portion. The ramp means also has guide means for retaining the ring buoy in proper position so that it will not fall to one side. Latch and release means supported by said horizontal upper portion, holds the upper edge of the ramp when its end portion is in a vertical position. A simple upward pull releases the edge of the ramp, whereby it seeks its natural center of gravity and swings out around the pivot means and provides a ramp pathway projecting the ring buoy out and away from a vertical drop and causing it to describe a trajectory that frees it from the ship.

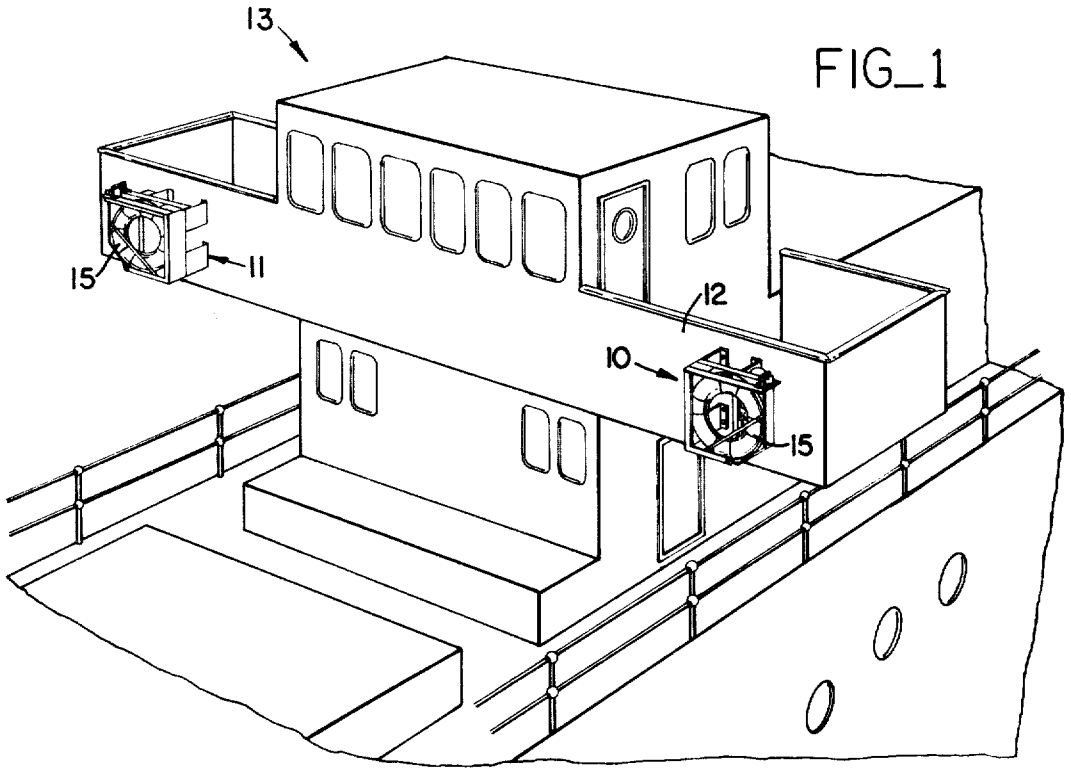
9 Claims, 7 Drawing Figures



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SHEET 1 OF 2

FIG_1



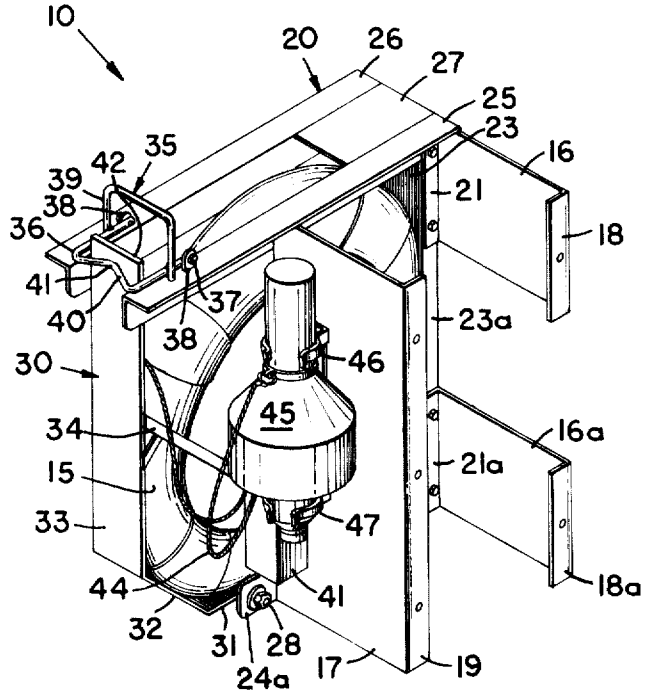


FIG_2

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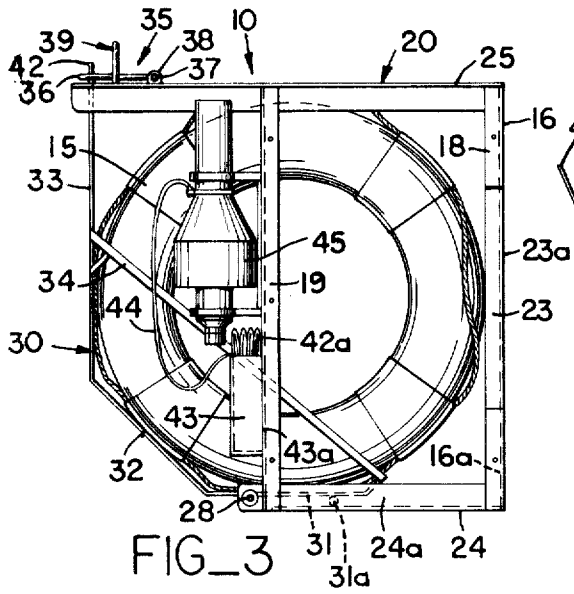


FIG_3

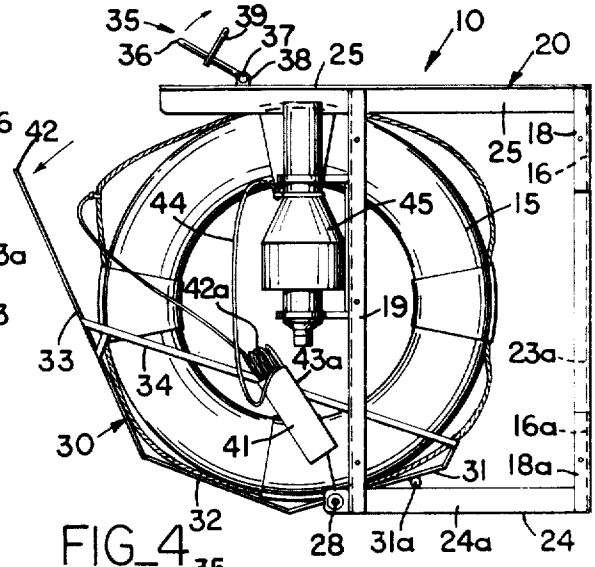


FIG_4

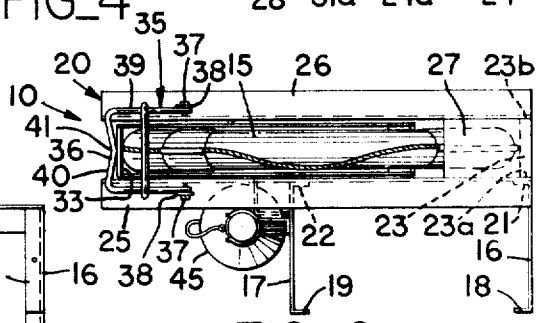


FIG_6

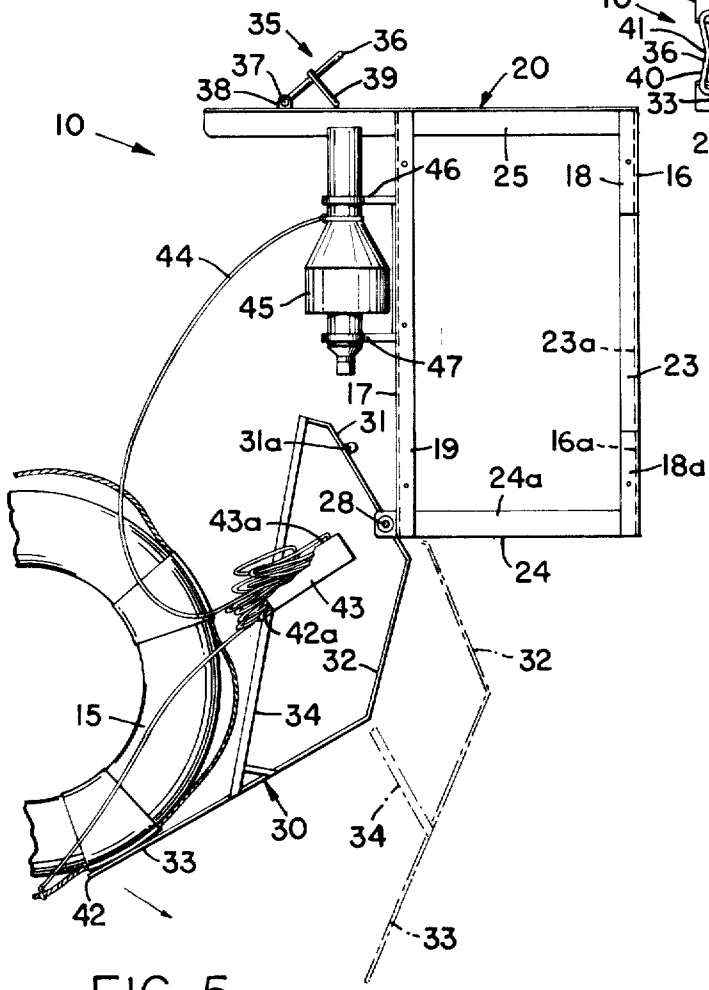


FIG_5

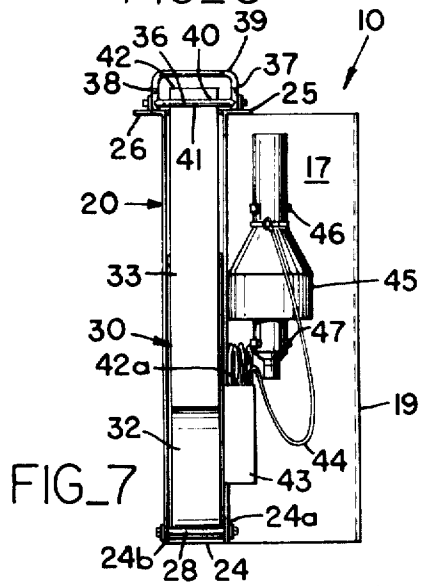


FIG_7

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QUICK-RELEASE STORAGE OF A LIFE RING

BACKGROUND OF THE INVENTION

This invention relates to a quick-release device for a life ring.

By means of the invention, a life ring or ring buoy is propelled into the water from a ship when an operator pulls a simple release handle. The propelling force results solely from a novel use in this environment of the force of gravity to give improved operability and better propulsion.

The United States Coast Guard requires that ring buoys be retained in readiness at certain positions on ships and that they be dropped or propelled overboard upon the pulling of a simple release mechanism without any individual having actually to throw the buoy overboard. Many quick-release devices heretofore in use have relied on a direct vertical drop, but this has often proven unsatisfactory, because the ring buoy may be vertically above a lower deck or guide rail of the ship, and the ring buoy may fall thereon; even if it does fall free, a light wind may blow it back onto the deck or against the hull, thereby preventing it from being properly launched into the water. Other such devices have provided a fixed ramp in an attempt to send it out beyond the side of the ship, but this also has proven insufficient to send the life ring far enough past the hull of the ship so that there is assurance that it will go all the way to the water, since the life ring is still quite close to the hull, and the wind is often sufficient to blow the life ring up against the hull of the ship and to hold it there.

The U. S. Coast Guard additionally requires that a flare or smoke signal accompany the ring buoy and be connected to it by a painter line. Devices heretofore in use, while complying with the requirements, have supported the smoke or flare signal in such a position on the ship that the pull on it from the life ring through the painter line is at right angles to the direction required to free the signal and pull it out, relying on a sufficient force component to achieve the result. Since the life rings are quite light in weight, the force component has often proven unsatisfactory. Even at best, it has slowed down the fall of the life ring and made it more subject to action by the wind.

Devices heretofore in use have some times endangered the safety of the operator and have not been as expeditious as the Coast Guard desires or as anyone who has fallen into the water would desire. The present invention makes the operation more expeditious and simpler and does not impair the safety of the operator.

SUMMARY OF THE INVENTION

The invention provides a bracket for holding a ring buoy in the proper position on the ship, for example, along an axis transverse to the fore-and-aft axis of the vessel and just below the bridge railing. The bracket holds the life ring at a spaced distance away from the supporting bulkhead or railing, so that it will not come against that bulkhead or railing when it is released. It also supports the smoke or flare signal and the painter line connecting the ring buoy to that signal. A pivoted ramp is used to retain the ring buoy: when in retention position, the ramp has a vertical portion locking the ring buoy in position and connected to a horizontal bottom portion by an inclined portion, generally at 45°. The ramp is pivoted well to one side of its center of gravity. A simple mechanical handle release has a latch that normally locks the ramp in place, and when the handle is pulled the force of gravity causes the pivoted ramp to swing out and down and causes the life ring to move out with it and to roll over the ramp, which projects it well away from a simple vertical drop. The flare or smoke signal is held by a bracket parallel to, and closely adjacent to, the life ring itself, so that it is readily pulled loose by the painter line when the ring buoy has fallen the length of that painter line.

Other objects and advantages of the invention will appear from the following description of a preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a view in perspective of a portion of a ship having some of the devices of the invention installed thereon.

FIG. 2 is a view in perspective from the rear of a quick-release life ring assembly embodying the principles of the invention.

FIG. 3 is a view in rear elevation of the assembly of FIG. 2.

FIG. 4 is a view similar to FIG. 3 showing the assembly very soon after release has been obtained by pulling up on the handle.

FIG. 5 is a view similar to FIG. 4 taken a few moments later with the ramp swinging to its lower position and the life ring rolling off. The life ring has been broken off to conserve space, and in broken lines the final position of the ramp is shown.

FIG. 6 is a top plan view of the assembly of FIG. 2.

FIG. 7 is a view in end elevation of the assembly.

DESCRIPTION OF A PREFERRED EMBODIMENT

Two assemblies **10** and **11** embodying the principles of the invention are shown in FIG. **1** installed on a transverse bulkhead **12** of a ship, just below the bridge railing **13**. One is located on each side of the ship, so that there is usually one port and one starboard ring. Other locations may be additionally used, according to the desire of the ship owner and its master and the Coast Guard or other appropriate regulations. Each assembly **10**, **11** holds a ring buoy **15** transverse to the fore-and-aft axis of the ship, and upon release the life ring **15** is propelled out from one end of the assembly **10** or **11** and is projected away from the ship, not simply dropped vertically.

The two assemblies **10** and **11** are symmetrical to each other; so that the description of one will suffice for both. The assembly **10** of FIGS. **2–7** comprises a suitable support and spacing member **16**, **16***a* and **17**; the support and spacing member **17** is preferably parallel to the support and spacing members **16** and **16***a* and the members **16** and **16***a* may be one continuous piece, if desired. The members **16**, **16***a* and **17** may be made from sheet metal in sufficient width to space the ring buoy **15** a desired distance from the adjacent bulkhead **12**, flanges **18**, **18***a*, and **19** being secured to the bulkhead **12**.

A main frame **20** of the assembly **10** is secured to flanges **21**, **21***a* and **22** of the spacing members **16** and **17**. The main frame **20** has a stationary vertical end wall **23**, against which the ring buoy **15** abuts, with flanges **23***a* and **23***b*, one of which is bolted to the flanges **21** and **21***a*. The main frame **20** also has a short horizontal bottom wall **24** with flanges **24***a* and **24***b* and a pair of horizontal upper angle irons **25** and **26** spaced apart by a member **27** which may be part of the end wall **23**. Across the lower flanges **24***a* and **24***b* at their outboard end is secured a pivot rod **28**.

A swinging ramp and locking member **30** is pivoted on the rod **28** and has a normally horizontal bottom portion **31**, an angularly extending portion **32**, preferably about **45** degrees to the bottom portion **31**, and a normally vertical end portion **33**, the "normally horizontal" and "normally vertical" referring to the stowing position of FIGS. **2** and **3**. The inclined portion **32** may be replaced with an arcuate curved portion. The ramp **30** is also provided with a pair of diagonal guide and retention members **34**, one on each side that extend between the inner end of the bottom member **31** and an upper part of the end member **33**, which help to hold the life ring **15** in place. The bottom portion **32** carries on its lower surface a rod or projecting portion **31***a* which seats firmly against the bottom wall **24**, while the bottom portion **32** lies parallel to the wall **24**.

The ramp **30** is pivoted so that most of the weight of the ramp lies to one side of the pivot rod **28**, to the left as is shown in FIGS. **2** through **5**, so that when the ramp **30** is permitted to swing freely, it swings to the position shown approximately in broken lines in FIG. **5**. The life ring **15** is mounted to bear on all three major portions, on the bottom **31**, the inclined por-

tion 32, and the end portion 33, which holds it also against the rear wall 23 of the stationary frame 20. The ramp 30 is retained in its stowing position by means of a latching and latch and release assembly 35, which may comprise a latch 36 with an M-like shape pivoted at its ends 37 to brackets 38 on the angle irons 25 and 26, and a handle 39 welded to the latch 36 at right angles to it. The M-shaped latch 36 has a central portion 40 which has a vertex 41 bearing with spring-like action on the end portion 33 of the ramp 30. An upward pull on the handle 39 pulls the latch 36 up above the upper edge 42 of the ramp 30 and lets the ramp 30 fall down.

Once the life ring 15 has been put in place, it is held there by the ramp 30 and the latch and release assembly 35, and once the latch 36 is released, the ramp 30 swings down and the life ring 15 rolls along it and off. What may not be completely apparent at first is that since the life ring 15 itself shifts its weight from primarily on the bottom ramp wall 31 to primarily on the inclined ramp wall 32 then later to the end ramp wall 33, it is already rolling, and the moving ramp 30 has a tendency to give the effect of throwing the life ring 15 overboard, even though everything is governed by the force of gravity. The gravitational forces act, in other words, not only on the ring buoy 15 but also on the ramp 30, so that the normally bottom wall 31 of the ramp 30 becomes a rear wall and helps to impel the ring 15, and so do the inclined wall 32 and the originally vertical wall 33. The projecting bar 31*a* helps on this too. The side members 34 retain the ring 15 in place during this time to assure that it will be projected off the end of the ramp 30.

The ramp 30 also supports a box-like member 43 which is open at one end 42*a* and open on one face 43*a*. Normally the open face 43*a* is held against the upstanding spacing member 17 with the open end 42*a* at the top. During the swinging motion the open face 43*a* is fully exposed and the open end 42*a* rotates to a substantially bottom position. This member 43 is a container for stowing most of a painter line 44, connecting the life ring 15 to a flare or smoke signal 45. These items may be of standard approved equipment, and the key thing is that the painter line 44 is connected at one end to the life ring 15 and at the other end to the flare or smoke signal 45, and that the line 44 in between is safely and neatly stowed in the box 43, but that when the ramp 30 swings away, the box 43 is completely open, so that there is no interference at all with the paying out of the line 44 nor with the attachment to the flare or signal member 45.

The signal member 45 is preferably held by a pair of brackets 46 and 47 that extend out from the spacer member 17 and lie parallel to the life ring 15. The brackets 46 and 47 are made so that release is quite light and simple and does not substantially slow the path of the life ring 15. The painter line 44 is normally about 15 feet long.

To those skilled in the art to which this invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. The disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

We claim:

1. A quick-release device for a ring buoy, including in combination:

spacing and support means for securing the device to a bulkhead extending transversely to the fore-and-aft line of a ship,

a stationary frame supported by said spacing and support means and providing a vertical end wall, a horizontal bottom portion having pivot means spaced from said end wall, and a horizontal upper portion, said ring buoy resting against said end wall,

a swingable ramp pivoted to said pivot means with its center of gravity well beyond said pivot means on the opposite side thereof from said end wall,

said ramp having a short bottom wall portion, and an end portion, which during stowage is substantially vertical and when vertical snugly holds said ring buoy, and a connecting portion joining said bottom wall portion to said end portion, with the ring buoy resting on the bottom portion and connecting portion of said ramp and against its said end portion, said ramp having guide means for retaining the ring buoy in vertical position so that it will not fall to one side, and

latch and release means supported by said horizontal upper portion of said frame for engaging said ramp's end portion near an upper edge thereof when said end portion is vertical, and having release means for releasing said latch upon a simple upward pull, releasing said upper edge, whereby said ramp seeks its natural center of gravity and swings out around said pivot means and provides a ramp pathway projecting the ring buoy out and away from a vertical drop and causing it to describe a trajectory that frees it from the ship.

2. The device of claim 1 wherein said connecting portion is an inclined ramp portion extending about 45° to said end portion and to said bottom wall portion.

3. The device of claim 1 having a bracket on said frame for releasably supporting a signal means and enabling release upon pull in the direction in which the ring buoy moves upon release, a painter line connecting said signal means to said ring buoy.

4. The device of claim 3 wherein said ramp supports box means having an upper open end and an open face that rests against said support and spacing means, said box means moving with the ramp when it swings, to expose the open faces and therefore enable rapid and free paying out of the painter line.

5. A quick-release device for a ring buoy, including in combination:

flanged spacing and support plates for securing the assembly to a bulkhead extending transversely to the fore-and-aft line of a ship,

a stationary frame bolted along a flanged edge thereof to the flanges of said spacing and support plates and providing a vertical end wall, a horizontal bottom portion having pivot means spaced from said end wall, and a horizontal upper portion,

said ring buoy resting against said end wall,

a swingable ramp pivoted to said pivot means with its center of gravity well beyond said pivot means on the opposite side thereof from said end wall,

said ramp having a short bottom wall portion, an inclined portion, and an end portion, which during stowage is substantially vertical and when vertical snugly holds said ring buoy, with the ring buoy resting on the ramp's bottom and inclined portions and against its end portion, said ramp having side bars for retaining the ring buoy from falling to one side, and

latch and release means supported by said horizontal upper portion, for engaging the end portion of the ramp when it is in a vertical position, a simple upward pull releasing said end portion, whereby said ramp seeks its natural center of gravity and swings out around said pivot means and provides a pathway projecting the ring buoy out and away from a vertical drop and causing it to describe a trajectory that frees it from the ship.

6. The device of claim 5 wherein said latch and release means comprises an M-shaped bar pivoted to said horizontal portion at its ends and engaging with its center portion said end portion near an upper edge thereof, and a U-shaped portion welded at right angles to said M-shaped bar and normally extending up vertically above said horizontal upper portion.

7. The device of claim 5 having a projection on the under surface of said ramp's bottom portion adjacent its free edge.

8. The device of claim 5 having on said frame a bracket for releasably supporting a signal means for release upon pull in the direction in which the ring buoy moves upon release, a painter line connecting said signal means to said ring buoy.

9. The device of claim 8 wherein said ramp supports box means having an upper open end and an open face that rests against said support and spacing means, said box means mov-

ing with the ramp when it swings, to expose the open faces and therefore enable rapid and free paying out of the painter line.

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