June 11, 1968 L. D. ADAMS, JR 3,387,811

LIFERAFT CRADLE

Filed July 11, 1966 2 Sheets-Sheet 1

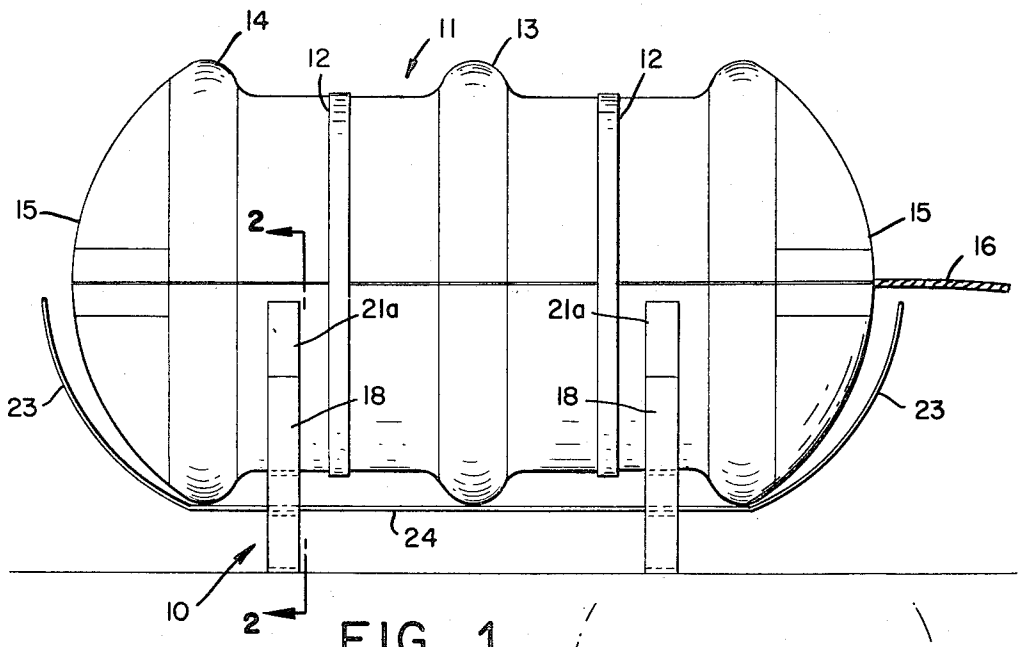


FIG_1

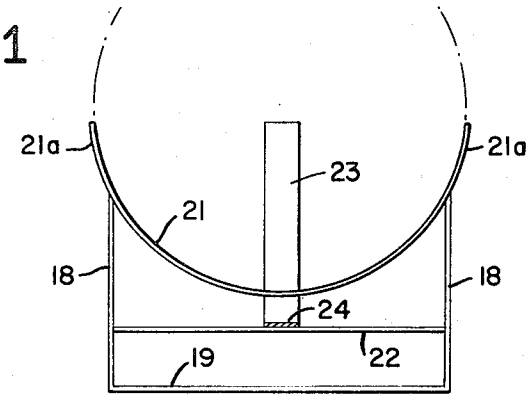


FIG_2

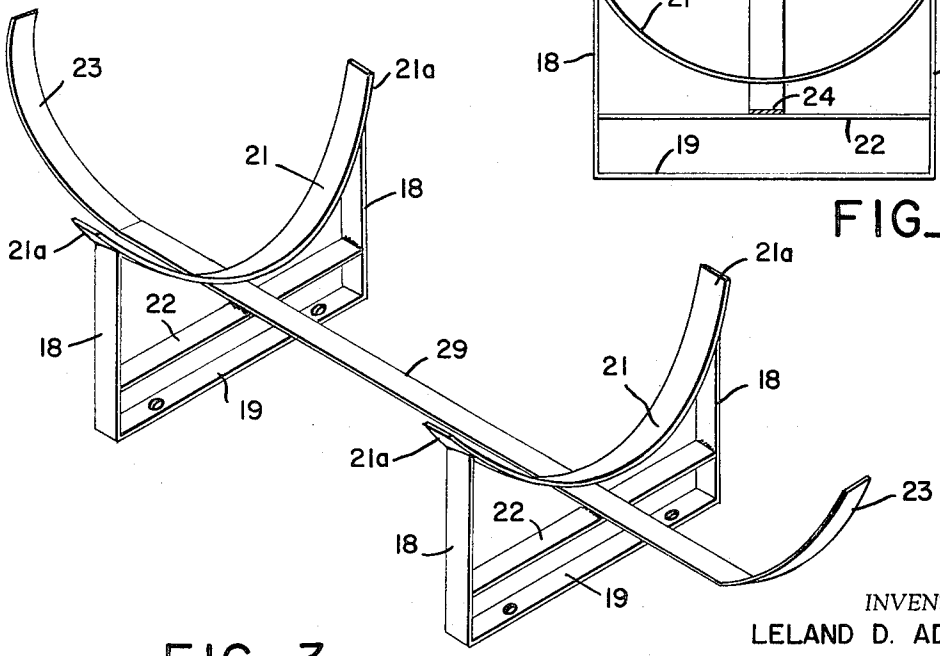


FIG_3

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LIFERAFT CRADLE

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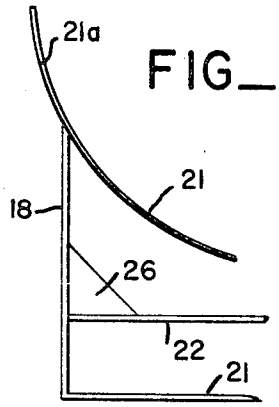


FIG_4

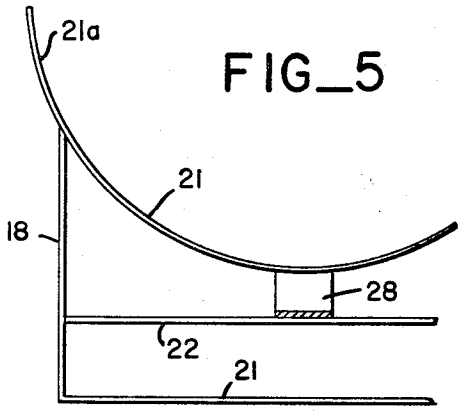


FIG_5

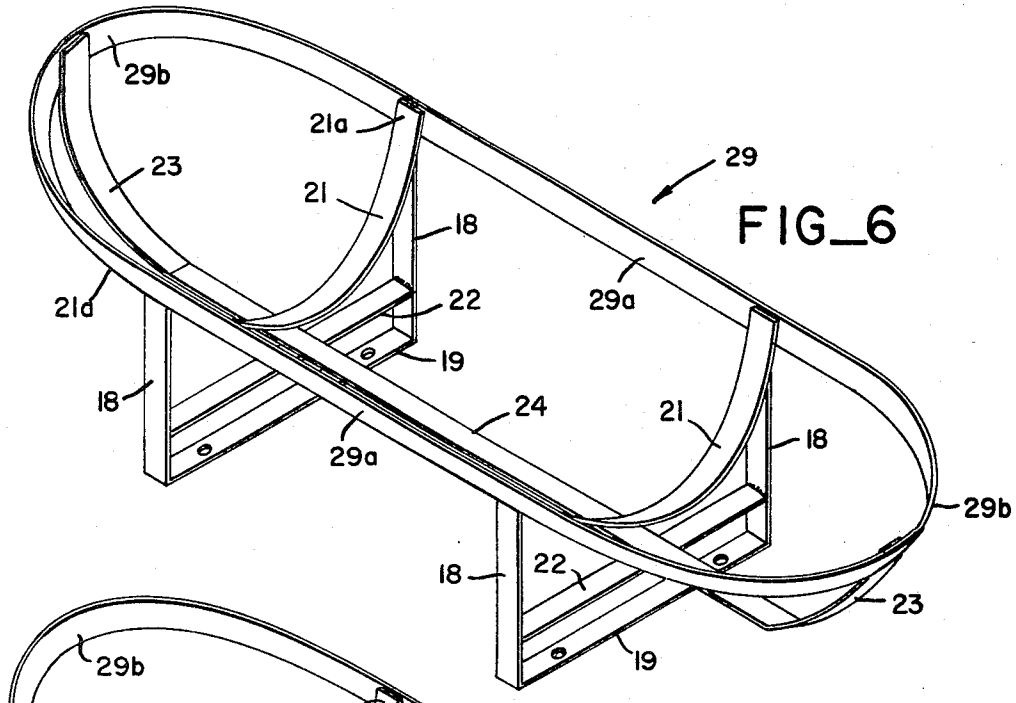


FIG_6

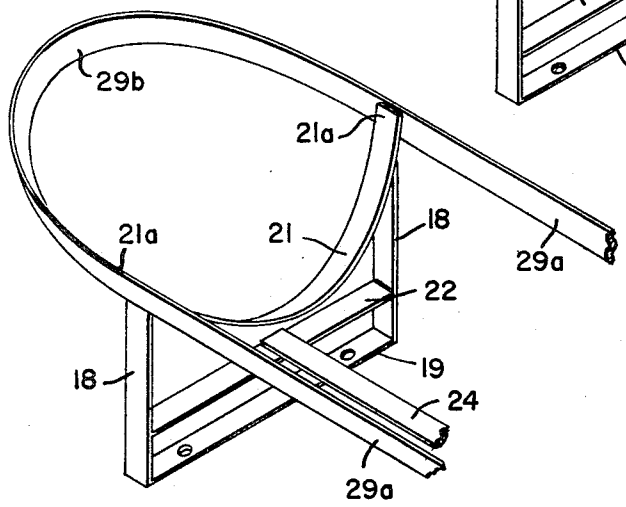


FIG_7

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LIFERAFT CRADLE

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7 Claims. (Cl. 248—146)

ABSTRACT OF THE DISCLOSURE

A stand to support inflatable life rafts of the type that are packed in a drum-like container, at least two pairs of upright members adapted to be secured to the supporting deck, arcuate members attached to the upper ends of the upright members, the regions of attachment being spaced from the free ends of the arcuate members to provide end portions that have spring action to engage the side walls of the container and members loosely engaging the end portions of the container to thereby permit the container to float free from the cradle.

This invention relates generally to inflatable liferaft equipment, and particularly to cradles for such equipment.

One type of lifesaving equipment widely used on marine vessels consists of an inflatable raft that is packed in a drum-like container. Normally the container is stored in a cradle mounted on the deck or other exposed portion of the vessel, with lashing to hold the container in place until released. Release is effected by some suitable releasable latching device, such as one operated manually or automatically by hydrostatic pressure. Such equipment is known to have certain advantages and limitations. Particularly it requires considerable maintenance to ensure proper working condition of the releasable latch devices. Also the latch devices and lashing involve considerable expense.

In general, it is an object of the present invention to provide liferaft equipment of the above character which avoids the use of lashing and release devices.

Another object of the invention is to provide equipment of the above character having a novel supporting cradle for the liferaft container, the cradle being so constructed and employed that it effectively holds the container under normal conditions, but enables the container to float free of the cradle when the vessel sinks.

Additional objects and features of the invention will appear from the following description in which the preferred embodiments have been set forth in detail in conjunction with the accompanying drawing.

Referring to the drawing:

FIGURE 1 is a side elevational view showing my cradle together with a liferaft container;

FIGURE 2 is a cross-sectional view of the cradle taken along the line 2—2 of FIGURE 1;

FIGURE 3 is a perspective view of the cradle shown in FIGURES 1 and 2;

FIGURE 4 is a detail illustrating one manner of reinforcing the cradle;

FIGURE 5 is a detail illustrating another manner of reinforcement;

FIGURE 6 is a perspective view illustrating another embodiment of the cradle; and

FIGURE 7 is a perspective view showing one end portion of the cradle shown in FIGURE 6.

Referring to FIGURE 1 of the drawing, I have shown my cradle 10 supporting the liferaft container 11. In a typical instance the liferaft container will be made of relatively strong material like fiberglass (i.e., glass fiber reinforced resin), and in two halves or sections normally held together by the break-away straps 12. The intermediate and end ribs 13 and 14 provide reinforcement and facilitate rolling the container on the deck. The end portions 15 may be crowned or dome shaped to provide greater strength. The operating cord 16 extends from one end. After a certain amount of this cord is pulled from the container, a sharp jerk serves to release compressed gas which causes the straps 12 to be broken and the raft to be inflated.

The cradle (FIGURES 1–3) consists of two pairs of vertical members 18 having their lower ends connected by the base member 19. The upper ends of the vertical members 18 are attached to the arcuate members 21. A brace member 22 extends parallel to and above the base member 19, and has its ends attached to the vertical members 18. The points or regions of attachment of the vertical members 18 to the arcuate members 21 are spaced from the arcuate members to provide the free portions 21*a*.

At the ends of the cradle, means is provided for loosely embracing the end portions of the container 11. In the form illustrated in FIGURES 1–3, this means consists of arms 23 which are extensions of the member 24. Member 24 extends lengthwise of the cradle and is attached to the brace members 22. These end portions are then bent upwardly to form the arms 23. All the members of the cradle as described above may be made of suitable metal bars or straps, such as steel bars of suitable grade provided with a finish to prevent corrosion.

The arcuate members 21 are so dimensioned that they snugly fit the outer surface of the container. The dimensions are such that the portions 21*a* are sprung outwardly a small amount when the container is placed upon the cradle. In other words, the portions 21*a* are normally sprung toward and against the adjacent side walls of the container. This is desirable in that it prevents any rolling motion of the container with respect to the cradle, while at the same time permitting the container to float free of the cradle when the vessel sinks. It will also be noted thta the arcuate members 21 extend about somewhat less than 180° of the container. In actual practice, I have found it satisfactory to proportion the arcuate members 21 whereby they embrace the container from a minimum angle of about 130°, to a maximum of about 162°, depending upon the diameter of the container and the particular service involved.

Assuming that the container is centrally positioned upon the cradle, the arms 23 are so constructed that they are spaced from the end portions of the container as illustrated in FIGURE 1. The length of these arms is such that they terminate somewhat short of the central horizontal plane of the container. In practice they may terminate in the same plane as the ends of the arcuate members 21. In general these arms aid in generally centralizing the container on the cradle, and they prevent endwise displacement. Also during the float-off process they prevent such endwise movement as might cause cocking or jamming.

Operation of the cradle described above is as follows. The cradle is mounted in a suitable location on the ship by attaching the base members 19 to the ship deck. The inflatable liferaft, suitably packaged in its container, is placed upon the cradle in the approximate position shown in FIGURE 1. The arcuate members 21, and particularly the sprung end portions 21*a*, retain the container in such a manner as to prevent any rolling motion of the container relative to the cradle. Endwise movement of the container with respect to the cradle is resisted somewhat by frictional engagement of end portions 21*a* with the container walls, and also by the arms 23. In the event the vessel sinks the container floats free of the cradle, and the inflation of the raft is initiated either automatically or by manual pulling upon

the operating cord 16. If one should desire to use the raft under conditions other than sinking of the vessel, the container can be readily lifted from the cradle and used as desired.

Depending upon various operating conditions and the size of the inflatable raft, it may be desirable to reinforce the cradle. Thus as shown in FIGURE 4, angle gussets 26 may be secured at the intersections between the vertical members 18 and the horizontal members 24. In place of, or together with, such angle gussets, members 28 can be secured between the lowermost portions of the arcuate members 21 and the members 22.

In the embodiment of FIGURE 6 the vertical members 18 are likewise attached to arcuate members 21 in the same manner as in FIGURES 1–3. However, the generally oval shaped bar 29 is incorporated in the assembly. This bar is shaped to provide parallel side portions 29*a* that are attached to the end portions 21*a* of the arcuate members 21. In addition the rounded or semicircular end portions 29*b* are provided, and these portions loosely embrace the end portions of the container. The arms 23 are shown having their upper ends attached to the curved portions 29*b*.

The embodiment of FIGURE 6 provides somewhat greater strength than the embodiment of FIGURES 1–3. Also it provides a rounded configuration for the ends of the assembly. It will be evident that the embodiment of FIGURE 6 can be reinforced in the manners illustrated in FIGURES 4 and 5.

The embodiment of FIGURE 7 is somewhat similar to FIGURE 6. However, in this instance the arms 23 have been omitted, and the bar member 24 terminates at the brace members 22.

It will be evident from the foregoing that I have provided a life raft equipment having a number of desirable features. In particular, it avoids the use of conventional lashing and release devices, and thus it provides a relatively inexpensive installation, which requires a minimum of maintenance. Although the raft container is securely held for all normal operating conditions of the vessel, it floats free in the event the vessel sinks, without any manual or automatic release operation.

I claim:

1. In a mounting cradle for the retention of inflatable liferafts of the type that are packed in a drum-like container, at least two pairs of upright members adapted to be secured to a supporting deck of a marine vessel, arcuate members attached to the upper ends of the upright members, the regions of attachment being spaced from the free ends of the arcuate members to provide end portions that have spring action, said arcuate members being adapted to accommodate and support a drum-like raft container with said end portions being sprung outwardly by engagement with adjacent side walls of the container, the upper ends of the arcuate members terminating short of a horizontal plane coincident with the axis of the drum-like container whereby engagement of the arcuate members with the container is over an angle of less than 180°, and means serving to loosely embrace the end portions of the container to thereby prevent endwise displacement of the container without preventing free floatoff of the container from the cradle.

2. A mounting cradle as in claim 1 in which said last named means consists of arms that extend outwardly and upwardly adjacent the end portions of the container.

3. A cradle as in claim 1 in which said last means comprises a strap bent to provide two side parallel portions and rounded end portions, the side portions being attached to the end portions of the arcuate members, said rounded portions serving to generally embrace the end portions of the container.

4. A cradle as in claim 3 together with arms extending outwardly and upwardly about the end portions of the container, the upper ends of said arms being attached to said rounded portions.

5. A cradle as in claim 1 together with base members extending between and attached to the lower extremities of said upright mmebers, and brace members extending above and parallel to said base members and having their ends attached to said upright members, said last named means being in the form of a bar attached to medial portions of said brace members, the extending ends of said bar being bent upwardly to loosely embrace the adjacent end portions of the container.

6. A cradle as in claim 1 together with a base member extending between and connected to the lower ends of the upright members, and brace members extending between said upright members and secured thereto, said brace members extending above and parallel to said base members and intermediate said base members and said arcuate members.

7. A cradle as in claim 6 together with reinforcing means interconnecting the medial portions of said arcuate member with medial portions of said brace members.

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