Feb. 16, 1965 F. B. LANE 3,169,503

DEMOUNTABLE BOAT LADDER

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Fig. 1.

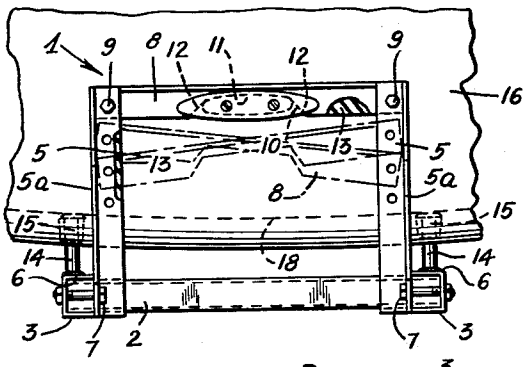
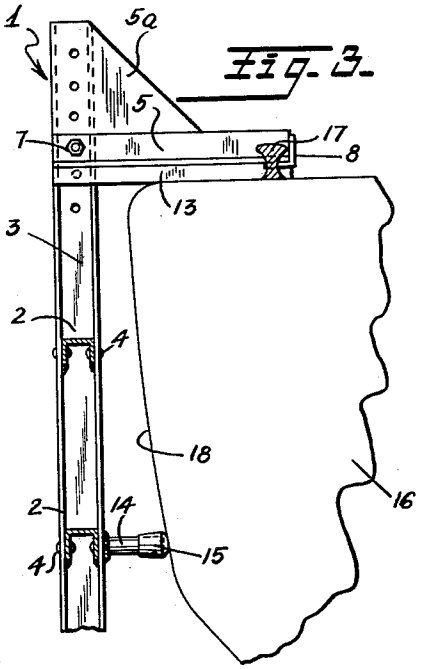


Fig. 3.



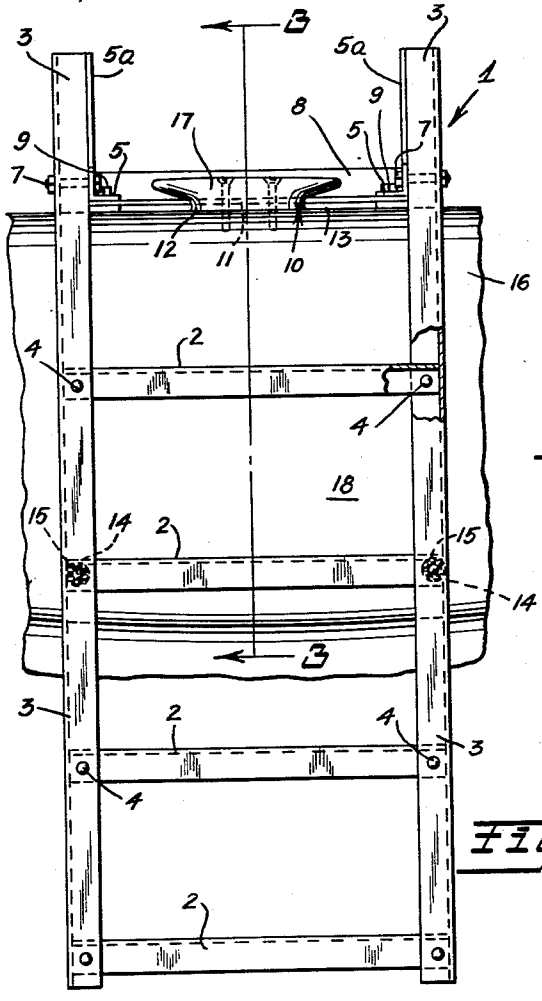
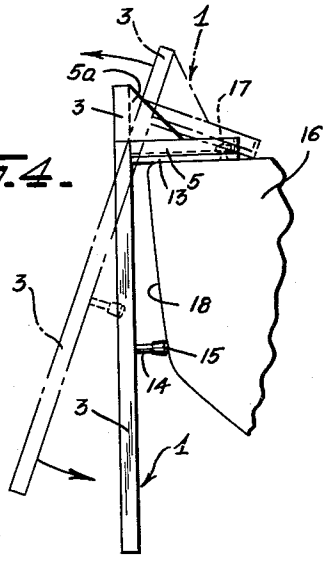


Fig. 2.

Fig. 4.



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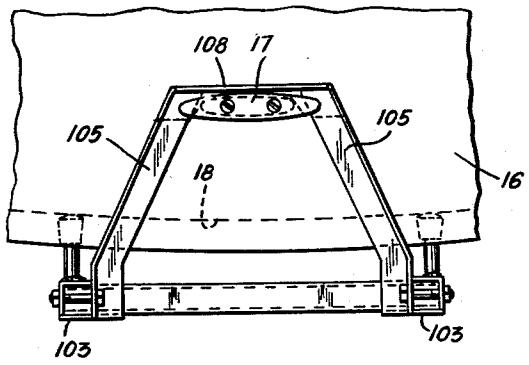


Fig. 5.

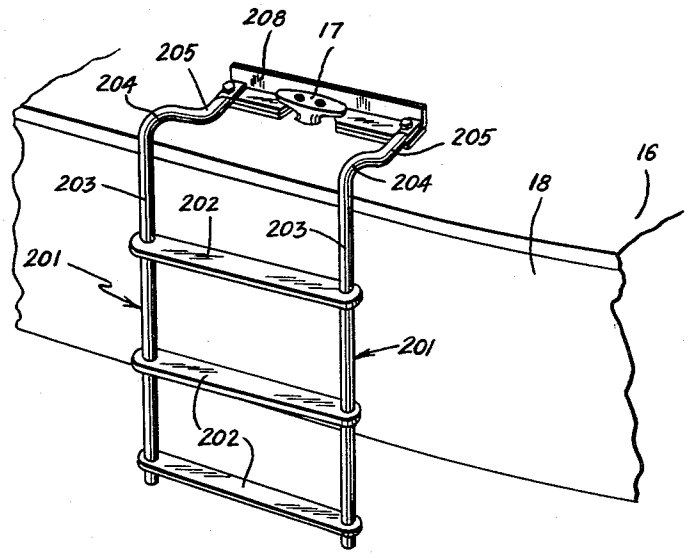


Fig. 6.

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DEMOUNTABLE BOAT LADDER

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3 Claims. (Cl. 114—221)

This invention relates generally to boarding ladders for boats, and more specifically to a novel boat-boarding ladder which is firmly attached to the boat in use but which may be readily demounted when desired.

Ladders have long been used to facilitate getting on and off boats and are particularly useful in boarding from the water during such activities as swimming, scuba diving and the like. Such ladders have often been permanently mounted on one side of the boat hull by means of screws, slides, bolts or the like, but in such cases these fittings from a permanent extra part which projects from the hull contour and has definite disadvantages.

Demountable ladders have been employed in the past but they have not been wholly satisfactory, primarily because no mounting arrangement has been developed which is firmly connected when in use and still convenient to install or remove. Such ladders normally involve hook connections or key-hole shaped slot connections which necessitate special connecting fixtures on the boat. The most common type in use consists of hook attachments which simply drop over the gunwhale or coaming of the boat. These have the well known disadvantage of being unstable because any fore and aft load caused by wave motion or the weight of a person will raise one or the other side up from its point of engagement on the boat, creating an unstable situation. Also, the hook type of attachment is usable only with narrow coaming boats and therefore cannot be employed with many other types of boats, such as cruising sailboats.

It is, therefore, a primary object of the present invention to provide a demountable boat-boarding ladder which can be conveniently installed at virtually any desired position on the boat and readily removed therefrom, and one which is securely held when installed to provide a stable gripping and footing support when in use.

Another important object is to provide a demountable ladder which may be attached by means of the cleats already provided on the boat deck and does not require the provision of special fixture elements to clutter up the deck or hull surface.

Another object is to provide a demountable boat ladder which is mounted in such a way that the weight of the ladder itself and load thereon tend to tighten its connection even more securely.

Another object is to provide a light-weight demountable boat ladder which does not mar the surface of the boat during installation or use.

Still another object is to provide a demountable boat ladder which is simple in construction, economical to manufacture and durable in use.

Other objects and advantages will be apparent from the following description, when read in conjunction with the accompanying drawings, in which:

FIG. 1 is a top plan view illustrating a demountable boat ladder constructed in accordance with the principles of the present invention;

FIG. 2 is a front elevation of the ladder illustrated in FIG. 1;

FIG. 3 is a fragmentary sectional view taken on the line 3—3 of FIG. 2;

FIG. 4 is a side elevation on a reduced scale indicating the manner in which a ladder device may be mounted on or removed from a boat;

FIG. 5 is a top plan view illustrating a modification of the construction shown in FIGS. 1 through 4; and

FIG. 6 is a perspective view illustrating another embodiment of the invention.

Referring now in more detail to the drawings, the ladder assembly is indicated generally in FIG. 1 by the numeral **1**. It comprises a plurality of horizontal rung members **2** arranged in vertically spaced relation with each rung being secured at its opposite ends to vertical side rails or stile members **3**, as by bolts or rivets **4**. The rung members **2** and stile members **3** may be formed of channel-shaped or L-shaped extrusions formed of aluminum or other non-corrosive material. It will be understood, however, that the material and configuration of these elements is not an essentiial part of the invention and could be varied considerably consistent with such objectives as durability, strength, weight, weather resistance, appearance and economy.

In the embodiment shown in FIG. 1, a pair of connecting arms **5** project from the rear or inboard side from the respective stile members **3**. Thus the inner ends of arms **5** are secured to the outwardly turned legs **6** of stiles **3** by bolts **7** or the like, at opposed points spaced a substantial distance from the upper ends of the stile members. A plurality of apertures may be provided along the length of the stile members **3** so that the attachment can be made at a selected position of vertical adjustment. Gusset plates **5***a* are preferably provided to strengthen the construction, being secured at their lower ends on arms **5** and having forward edge portions bearing against the rear of stiles **3**. A transverse horizontal attachment member **8** is mounted at the rearward end of the arms **5** in spaced relation behind the ladder defined by stiles **3** and rungs **2**. As shown, the attachment member **8** may be secured at its opposite ends to the respective inner ends of the arms **5** by bolts **9** or the like. For purposes of adjustment, however, a plurality of apertures are provided along the length of arms **5** for this purpose and accordingly the attachment member can be secured at an angle with respect to the plane of the ladder as illustrated in phantom lines in FIG. 1. This enables the attachment member to be mounted on a cleat that is not disposed parallel with the adjacent side of the boat hull, and at various distances inboard of the boat side.

The attachment member **8** is shaped to provide a flat bottom surface that overlies the deck and may be provided with a cut-out portion **10**. The cut-out portion **10** is in the form of a notch having a bottom **11** of sufficient width to accommodate the neck of a conventional deck cleat, and having sides **12** which taper outwardly therefrom. The underside of attachment member **8** and arms **5** may be provided with rubber padding **13** or the like to prevent damage to the boat deck either during installation or in use.

The ladder may also be provided with bumper elements **14** to hold the ladder in a substantially vertical position and to prevent damage to the sides of the boat hull. The elements **14** are secured by any suitable means to the respective stile members **3** at corresponding points spaced a substantial distance below the level of the arms **5** and attachment member **8**. Rubber caps **15** are provided on the inner ends of the respective bumper elements **14** for engagement with the sides of the hull to prevent marring.

To mount the ladder assembly **1** in position on a boat such as that illustrated by the numeral **16** in FIG. 4, the ladder is cocked at an angle to permit attachment member **8** to be readily hooked behind a deck cleat, such as indicated by the numeral **17**. Once this is achieved, the ladder is pivoted downwardly and inwardly toward the side **18** of the boat hull until bumper elements **14** engage thereagainst. In this position, the weight of the ladder and any load placed thereupon, tends to pull the attachment member **8** tightly against deck cleat **17**, wedging the tapered sides **12** of cut-out portion **10** into tight lock-

ing engagement with the neck of deck cleat **17**. As will be seen in FIG. 2, the arms of the deck cleat each have an inwardly tapered lower surface and thus a second wedging action is achieved, wedging the attachment member downwardly against the deck. The ladder is thereby securely mounted in position but removal can readily be effected by reversing the operation described above.

A modification of the construction is illustrated in FIG. 5 wherein a relatively short attachment member **108** is employed. Connecting arms **105** extend outwardly therefrom and are secured to the stile members **103** to present a substantially trapezoidal configuration. The remainder of the structure in this embodiment is substantially identical with that which has been described in connection with FIGS. 1 through 4.

Another embodiment is shown in FIG. 6 wherein the stile members **203** are tubular in configuration, extending upwardly above the level of the boat deck to provide hand grips **204** at this level comparable to what is provided by the upper end portions of stile members **3** in the original embodiment disclosed. As illustrated, tubular elements **201** defining the stile members **203** are each integral and are successively looped over and turned outwardly to define arm members **205** for mounting the attachment member **208**. In this embodiment, enlarged rung members **202** are secured between the stile members **203** to effect a greater tread surface and a more pleasing design.

The embodiments and modifications described hereinabove, are presented by way of illustration rather than limitation. Those skilled in the art will readily appreciate that numerous changes may be made in the construction, assembly, design and materials without departing from the spirit of the invention of the scope of the annexed claims.

I claim:

1. In combination, a boat having a hull and a deck

mounted on said hull, a deck cleat mounted on said deck at a position adjacent to but spaced inwardly from one side edge of said hull, said deck cleat having a neck portion, a ladder positioned vertically on one side of said hull, said ladder including a plurality of horizontal rung members fixedly mounted between a pair of vertical stile members, a horizontal attachment member disposed in spaced relation rearwardly of said ladder in an inboard direction therefrom, said attachment member being hooked over said deck cleat and having a cut-out portion engaging the neck portion thereof on the inboard side, said cut-out portion comprising a notch approximately equal in size to the width of the neck of said deck cleat at its narrowest point and having sides tapering outwardly therefrom to wedgingly engage said deck cleats, and connecting means secured between said ladder and said attachment member to hold said ladder in an upright position at the side of said boat.

2. The combination of claim 1 wherein rearwardly extending bumper elements are secured to said ladder at a level spaced below that of said attachment member for engagement with the side of the boat.

3. The combination of claim 1 wherein padding material is provided on the underside of said attachment member and said connecting arms.

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