Feb. 14, 1961 W. J. FORTUNE 2,971,601

BOAT LADDER

Filed July 29, 1959

Fig. 1.

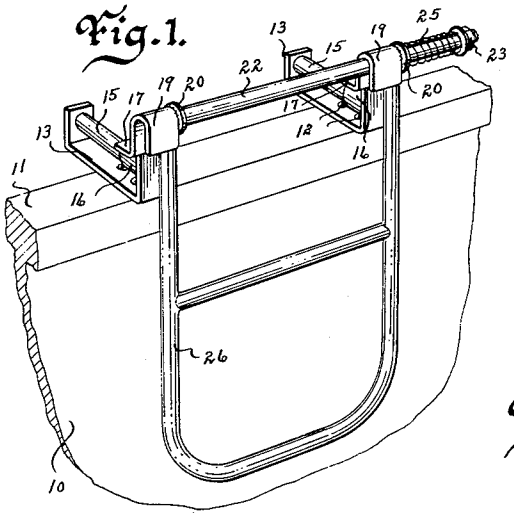


Fig. 3.

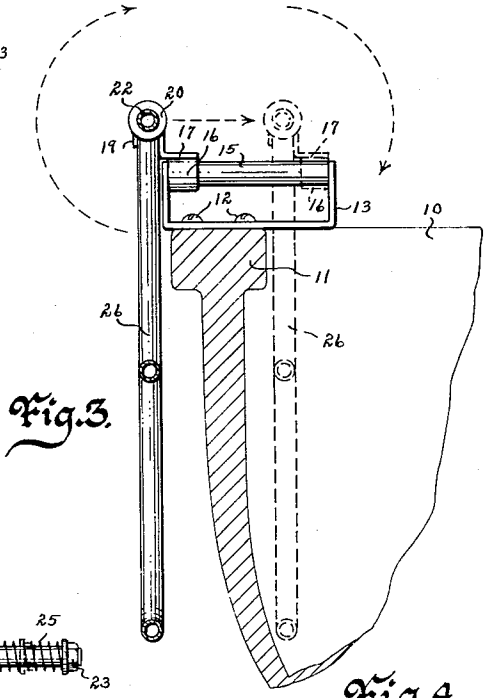


Fig. 2.

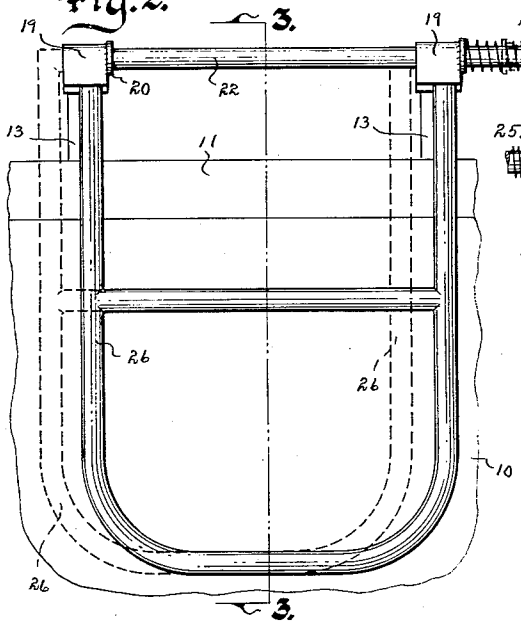


Fig. 4.

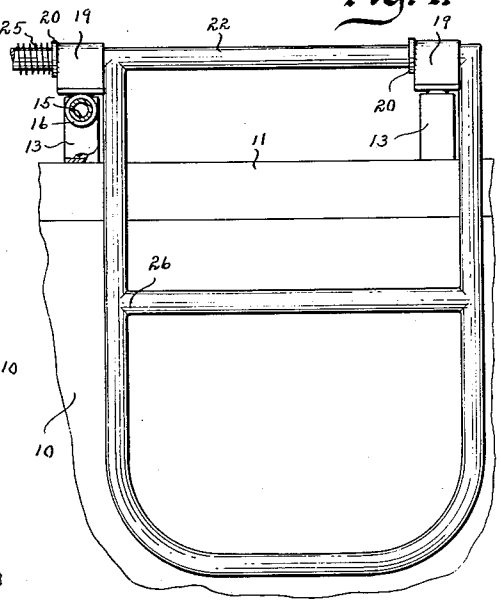
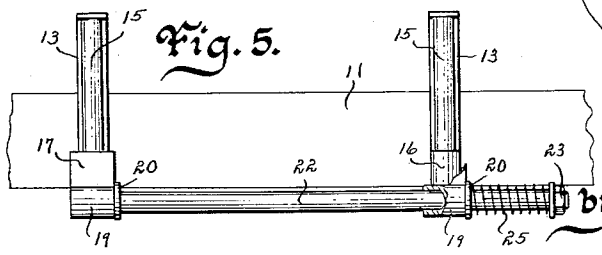


Fig. 5.



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BOAT LADDER

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4 Claims. (Cl. 182—97)

This invention relates to a ladder mechanism, and more particularly to a ladder for use on boats and like.

One of the most difficult tasks is the boarding of a boat from the water. One approaching the boat in the water is usually unable to climb into the boat without the helping hands of others in the boat. This is true even of small rowboats and especially true in the case of small family cruisers. Besides the phase of saving the lives of people in the water, the many numerous occasions wherein people exit from a boat and into the water or climb aboard the boat from the water involve swimming, skin diving, and like water pastimes.

This problem of getting out of or into the boat has been partially solved by the use of a rope ladder. However, such ladders are highly objectionable due to their flexibility. In case the boat has capsized such rope ladders are almost worthless in aiding the person in climbing onto the inverted hull of the boat. On the other hand, if a rigid ladder is permanently affixed to the outer side of the boat, it and possibly the boat will become damaged by coming into contact with a wharf or like.

Therefore, one of the principal objects of my invention is to provide a rigid lockable ladder means for boats that is capable of being moved to an inoperative position inside the boat when not in actual use.

A further object of this invention is to provide a rigid ladder for boats that is capable of being easily and quickly installed.

A still further object of this invention is to provide a boat ladder that will become automatically rigidly locked when swung to an operative position at the outer side of the boat.

Still further objects of my invention are to provide a rigid ladder for boats that is economical in manufacture, durable in use, and refined in appearance.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my ladder installed on a boat and in operative position,

Fig. 2 is an enlarged front view of my ladder swung to an operative position adjacent the outer side of a boat,

Fig. 3 is an enlarged vertical sectional view of the device taken on line 3—3 of Fig. 2,

Fig. 4 is a enlarged side view of my boat ladder swung to a position adjacent the inner side of the boat, and

Fig. 5 is a top plan view of my installed boat ladder.

In these drawings I have used the numeral **10** to generally designate a boat having the usual top railing **11**. I secure two bracket bearings in spaced apart relationship on the top of the railing **11**. The bracket bearings

may be secured by any suitable means such as clamps, bolts, screws or like **12**. Inasmuch as these bracket bearings are substantial duplicates of each other, I will describe the specific structure of only one, it being understodd that like numerals will be used for both bearing brackets. The numeral **13** designates a U-bracket, the central area of which is secured to the railing **11** as herebefore indicated. These U-bracket members extend transversely to the longitudinal axis of the boat and are of sufficient length to extend inwardly beyond the railing **11** a substantial distance as shown in Fig. 3. Mounted in and extending between the two upper end portions of the U-bracket is a horizontal shaft **15**. Slidably mounted on the shaft **15** is a bearing **16**. The numeral **17** designates a strap bar secured to the bearing **16**. This strap bar extends upwardly and then is curved upwardly, outwardly, and downwardly to provide an inverted U-portion **19** as shown in Fig. 1. The numeral **20** designates a bearing washer secured to the right side of the U-shaped portion **19**, as shown in Fig. 2. When the two U-bearing brackets are installed, they are spaced apart from each other, and the open ends of the inverted U-portions **19** will, when in positions as shown in Fig. 1, face downwardly at the outer side of the boat. The numeral **22** designates a horizontal shaft slidably rotatably extending through the two bearing washers **20**. The right end portion of this shaft **22** extends substantially beyond the bearing washer located to the right. Threaded onto the right free end portion of the shaft **22** is a nut **23**. The numeral **25** designates a coil spring embracing this right end portion of the shaft **22**, having one end engaging the nut **23** and its other end engaging the washer bearing adjacent the right end portion of the shaft **22**. This spring yieldingly holds the shaft **22** in a right sliding position. The numeral **26** designates a rigid ladder having the two upper ends of its two standards secured to the shaft **22** at the left sides, respectively, of the two washer bearings. Any number of cross rounds may extend between the two side standards of the ladder. These side standards of the ladder extend radially from the shaft **22**, and the shaft **22** extends substantially parallel to and with the railing **11**. When the device is in a position as shown in Fig. 1, the spring will have moved the shaft **22** to the extreme right in its sliding movement, thereby bringing the left standard of the ladder within the left bearing bracket unit portion **19**. With the left standard of the ladder in such position, the ladder will be locked in a downwardly vertical position and prevented from any upward and outward swinging action.

With the ladder so rigidly held at the outside of the boat, it successfully fulfills all requirements. To release the ladder, it is manually slid to the left against the action of the spring until its left standard clears the inverted U-portion **19** at which time the ladder may be swung outwardly and upwardly as shown by the arrow in Fig. 3. With the ladder in an upwardly swung position, it may be moved inwardly by the bearings **16** sliding inwardly on the shafts **15**. At this time the ladder may be swung inwardly and downwardly within the boat as shown in Fig. 4. Neither of the standards of the ladder can enter the inverted U-member portions **19** when the ladder is in this position, due to its engagement with the U-brackets. Although under tension of the spring, the ladder hangs loose within the boat and to place it outside the boat it is merely necessary to swing it upwardly and then downwardly to a position outside the boat. The spring will automatically slide the shaft **22** to the right as soon as the ladder standard clears the left inverted U-portion **19**, thereby locking the ladder in effective position.

In case the boat capsizes, the ladder will loosely hang

downwardly therefrom, if it were originally within the boat. It is an easy procedure to swing the ladder upwardly to a locked position and in such upwardly extending position it is most effective in aiding one to climb up and onto the hull of the overturned boat. In normal use the ladder will be used in passing from the boat into the water or from the water into the boat.

Some changes may be made in the construction and arrangement of my boat ladder without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a ladder structure, two spaced apart brackets adapted to be secured in spaced relationship on a supporting member, a horizontal shaft on each of said brackets, a bearing slidably and rotatably mounted on each of said shafts, a second bearing operatively secured to each of said two first mentioned bearings and each arranged transversely of the bearing to which it is operatively secured, a shaft rotatably and slidably mounted in said two second bearings, a ladder having one of its ends rigidly secured to said last mentioned shaft, and an inverted U-member secured to at least one of said second bearings overlapping a portion of said ladder when said last mentioned shaft is in one position of its sliding movement.

2. In a ladder structure, two spaced apart brackets adapted to be secured in spaced relationship on a supporting member, a horizontal shaft on each of said brackets, a bearing slidably and rotatably mounted on each of said shafts, a second bearing operatively secured to each of said two first mentioned bearings and each arranged transversely of the bearing to which it is operatively secured, a shaft rotatably and slidably mounted in said two second bearings, a ladder having one of its ends rigidly secured to said last mentioned shaft, an inverted U-member secured to at least one of said second bearings overlapping a portion of said ladder when said last mentioned shaft is in one position of its sliding movement, and a spring means for yieldingly holding said shaft in one direction of its sliding movement.

3. In a ladder structure, two spaced apart brackets adapted to be secured in spaced relationship on a supporting member, a horizontal shaft on each of said brackets, a bearing slidably and rotatably mounted on each of said shafts, a second bearing operatively secured to each of said two first mentioned bearings and each arranged transversely of the bearing to which it is operatively secured, a shaft rotatably and slidably mounted in said two second bearings, a ladder having one of its ends rigidly secured to said last mentioned shaft, an inverted U-member secured to at least one of said second bearings overlapping a portion of said ladder when said last mentioned shaft is in one position of its sliding movement, and a spring means for operatively yieldingly holding said ladder in a position where a portion of the ladder is overlapped by said inverted U-member.

4. In a ladder structure, two spaced apart brackets adapted to be secured in spaced relationship on a supporting member, a horizontal shaft on each of said brackets, a bearing slidably mounted on each of said shafts, a second bearing operatively secured to each of said two first mentioned bearings and each arranged transversely of the bearing to which it is operatively secured, a shaft rotatably and slidably mounted in said two second bearings, a ladder having one of its ends rigidly secured to said last mentioned shaft, a locking means on one of said second bearings capable of engaging and locking said last mentioned shaft against rotation when said last mentioned shaft is in one position of its sliding movement, and a spring means for yieldingly holding said shaft in one direction of its sliding movement.

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