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B. L. BERG ET AL

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DOCK ROLLER FOR BOATS AND THE LIKE

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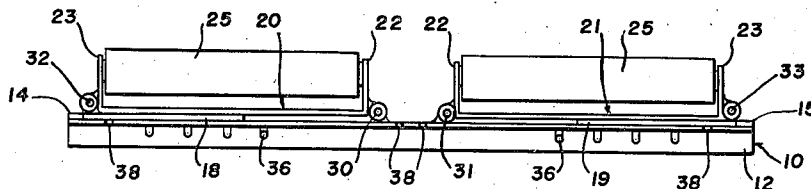


FIG. 1

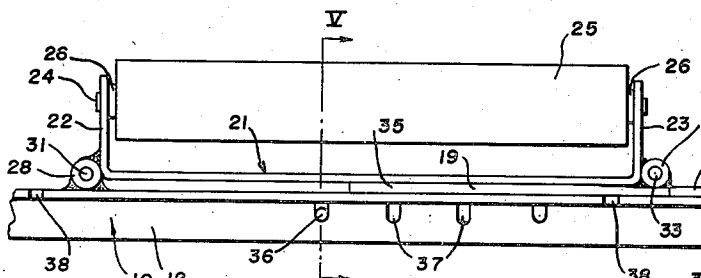


FIG. 2

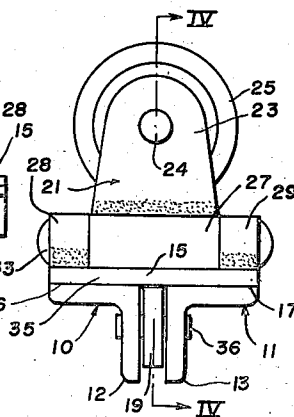


FIG. 3

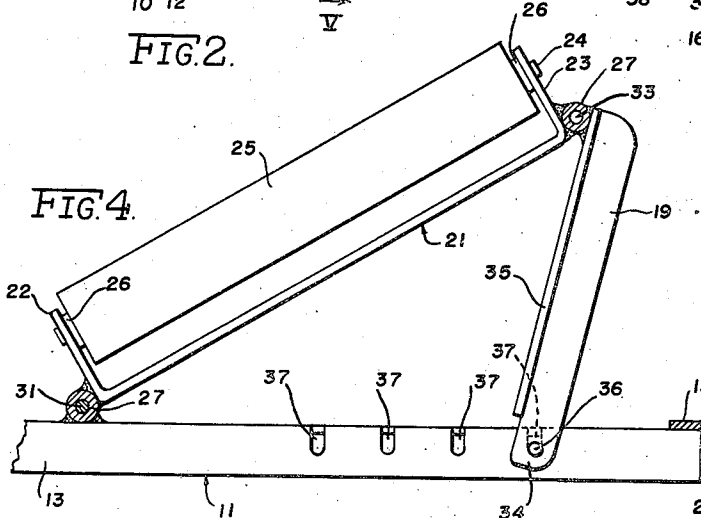


FIG. 4

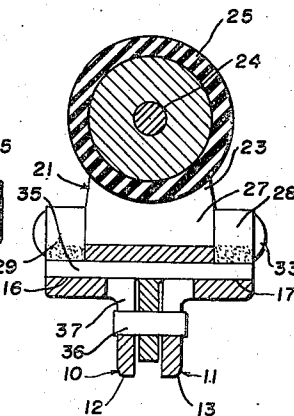


FIG. 5

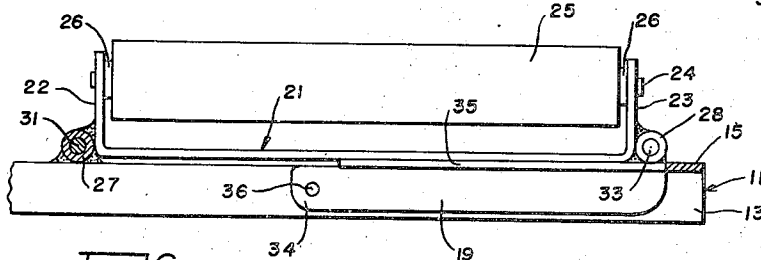


FIG. 6

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DOCK ROLLER FOR BOATS AND THE LIKE

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5 Claims. (Cl. 193—42)

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This invention relates to dock rollers for boats and the like and more particularly to a combination of rollers that are spaced to permit the boat keel to pass therebetween during displacement between the water surface and the dock.

It contemplates more especially the provision of linearly aligned and spaced rollers mounted on a dock near the water edge thereof to permit the ready displacement of boats between the surfaces of the water and the dock with minimum effort, delay and wear between the coacting surfaces of the boat and dock.

The problem of raising and lowering boats out of the water and displacing them onto a dock is laborious and involves a great deal of time as well as wear on the coacting solid surfaces. Then, too, boats usually are of different sizes and shapes to the end that their displacement over the edge of a dock from the water surface calls for the exertion of a great deal of strength and wear on the boat as well as the dock. This problem is made all the more difficult by the provision of a keel on most boats and their appreciable weight.

This operation has been made much more simple by the provision of a combination of linearly aligned and spaced rollers fixed to or proximate to the edge of a dock for accommodating the keel of a boat therebetween and permitting the ready displacement thereof between the water surface and the dock with minimum or negligible wear to the coacting solid surfaces. Additionally, these rollers are preferably though not essentially inclinable at various angles relative to each other to accommodate round and other geometrically shaped boat bottoms. This has been accomplished with a simple, inexpensive and effective structure.

One object of the present invention is to simplify the construction and improve the operation of devices of the character mentioned.

Another object is to provide a combination of linearly aligned and spaced rollers rotarily mounted for attachment to or proximate to the edge of a dock to permit the ready displacement of boats with or without keels between the water and dock surfaces.

Still another object is to provide linearly spaced rollers journaled on a bracket for attachment to or proximate to the water edge of a dock for ready removal of boats from the water for displacement onto the dock with minimum wear and effort.

A further object is to provide a linear series of spaced rollers that are adjustably connected

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to a bracket for varying inclinations to accommodate an arcuately shaped boat bottom with or without a keel.

A still further object is to provide rubber rollers in linear spaced relation for journaled rotation in a bracket as attached to or proximate to the water edge of a dock for facilitating the displacement of boats between the water and dock surfaces.

Still a further object is to provide rubber rollers in linear spaced relation for journaled rotation at adjustable angles in a bracket for attachment to or proximate to the water edge of a dock for facilitating the displacement of boats between the water and dock surfaces.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawing:

Figure 1 is a front view in elevation of a dock roller bracket embodying features of the present invention.

Figure 2 is an enlarged fragmentary view of the right hand roller bracket shown in Figure 1.

Figure 3 is a right end view of the roller bracket shown in Figures 1 and 2.

Figure 4 is a sectional view in elevation taken substantially along line IV—IV of Figure 3 with the roller inclined at one of a number of different adjustable angles to accommodate a round or other geometrically shaped boat bottom.

Figure 5 is a sectional view taken substantially along line V—V of Figure 2.

Figure 6 is a view similar to Figure 4 with the roller in its normal horizontal position to accommodate a flat bottomed boat.

The structure selected for illustration is not intended to serve as a limitation upon the scope or teachings of the invention, but is merely illustrative thereof. There may be considerable variations and adaptations of all or part of the teachings depending upon the dictates of commercial practice.

The present embodiment comprises a pair of elongated angle bars 10—11 that have their vertical legs 12—13 confronting each other in spaced rigid relation. The angle bars 10—11 are maintained in spaced relation by cross plates 14—15 welded or otherwise attached to the extreme edges of the angle bars by application to the top surfaces 16—17 thereof. The spacing of the angle bars 10—11 is sufficient to fully accommodate T-irons 18—19 constituting a supporting leg for substantially U-shaped brackets 20—21.

The U-shaped brackets 20—21 each have upstanding ears 22—23 which are apertured to receive steel shafts 24 of rubber rollers 25 for journalled rotation therein. Washers 26 are preferably disposed on the shaft ends 24 between the ends of the rollers 25 and the upstanding ears 22—23 of the brackets 20—21 to minimize the end friction between the rubber roller 25 and the bracket ears 22—23 when these are disposed at any inclined angle as will appear more fully hereinafter.

Each of the brackets 20—21 have hinge loops 27 welded or otherwise attached thereto for complementary interfitting relation with spaced hinge loops 28—29 welded or otherwise attached to the top surfaces 16—17 of the angled bars 10—11. Hinge pintles 30—31 extend between the cooperating hinge loops 27 and 28—29 to pivotally anchor the roller brackets 20—21 in spaced relation to each other proximate to the center of the angle bars 10—11 and at a sufficient distance to permit the keel of boats to pass therebetween.

The outside brackets 22—23 have similarly attached hinge loops 27, but these cooperate with spaced hinge loops 28—29 welded or otherwise attached to the extremity of the T-shaped irons 18—19 to receive the pintles 32—33 therein to pivotally connect T-irons 18—19 to the outside ends of the U-shaped brackets 20—21. The other extremities 34 of the T-irons 18—19 have their top flanges 35 removed proximate to the end thereof to permit the displacement in an angular direction between the confronting vertical legs 12—13 of the angle bars 10—11 (Figure 4). So that the T-irons 18—19 will support the rollers 25 in any desired pivotal position, the extremities 34 of the T-irons 18—19 are fitted with pins 36 projecting therefrom to cooperate with a series of vertical slots 37, in this instance four, aligned in each side of horizontally spaced vertical legs 12—13 of the angle bars 10—11 by milling them downwardly from the top surface 16—17 thereof.

As a result, the placement of the T-irons 18—19 with their pins 36 in any one of the vertically aligned slots 37 will maintain the rubber rollers 25 at any desired cooperating angle so that contact will be established with some portion of a geometrically rounded boat bottom, thereby permitting the boat with its keel to be readily displaced therebetween. When it is desired to displace a flat boat thereover, the T-irons 18—19 have their pins 36 in registry with the innermost slots 37 to assume a horizontal position underneath the brackets 20—21 (Figure 1).

The top horizontal flanges of the angle bars 10—11 are provided with vertical apertures 38 therethrough at spaced points therealong to enable the angle bars 10—11 to be anchored to or proximate to the water edge of a dock or pier, preferably between boards therein to accommodate the depending legs 12—13 of the angle bars 10—11. Otherwise, the dock or pier will have to be grooved to receive the depending legs 12—13 or wood strips can be disposed under the horizontal legs of the angle bars 10—11 for attachment thereof to the dock or pier surface.

While we have illustrated and described a preferred embodiment of this invention, it must be understood that the invention is capable of considerable variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and mod-

ifications as come within the scope of the appended claims.

We claim:

1. A device of the character described comprising an elongated member, linearly aligned and spaced rubber rollers journalled for rotation on said elongated member to support the traverse of a boat thereover, said rollers being spaced from each other to permit a boat keel to pass therebetween, and pivotal means for maintaining said rollers in inclined adjustable relation to each other for supporting flat and curved boat bottoms thereover.

2. In a device of the character described, the combination with an elongated frame member, of spaced shaft bearing brackets pivotally connected to said elongated member to rotatively support spaced rollers therein, means for pivotally connecting the adjacent ends of said brackets to said frame, and means for raising and lowering the opposite ends of said roller supporting brackets to effect the adjusted journalled support of said rollers between horizontal and angular planes for the movable support of flat and round bottom boats thereover.

3. In a device of the character described, the combination with an elongated frame member, of spaced shaft bearing brackets pivotally connected to said elongated member to rotatively support spaced rollers therein, means for pivotally connecting the adjacent ends of said brackets to said frame, and means for raising and lowering the opposite ends of said roller supporting brackets to effect the adjusted journalled support of said rollers between horizontal and angular planes for the movable support of flat and round bottom boats thereover, said last named means comprising struts having pivotal supporting bearings on one end thereof and complementary frame member engaging means on the other ends thereof to vary the position of strut engagement with said elongated frame member.

4. In a device of the character described, the combination with a pair of spaced elongated angle irons comprising a rigid frame, of a pair of roller supporting brackets hingedly connected to said frame in longitudinal spaced alignment, rollers journalled for rotation in said brackets, rigid means operatively connected to said brackets and disposed between said spaced elongated angle irons, and complementary means between said last named rigid means and said frame to maintain said brackets in inclined adjustable relation for the movable support of flat and round bottom boats over said rollers journalled in said brackets.

5. In a device of the character described, the combination with a pair of spaced elongated angle irons comprising a rigid frame, of a pair of roller supporting brackets hingedly connected to said frame in longitudinal spaced alignment, rollers journalled for rotation in said brackets, rigid means operatively connected to said brackets and disposed between said spaced elongated angle irons, and complementary means between said last named rigid means and said frame, said complementary means including pins on said rigid means and a series of pin receiving slots along said frame angle irons to maintain said brackets in inclined adjustable relation for the movable support of flat and round bottom boats over said rollers journalled in said brackets.

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