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2,387,352

BOAT HITCH

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Fig. 1.

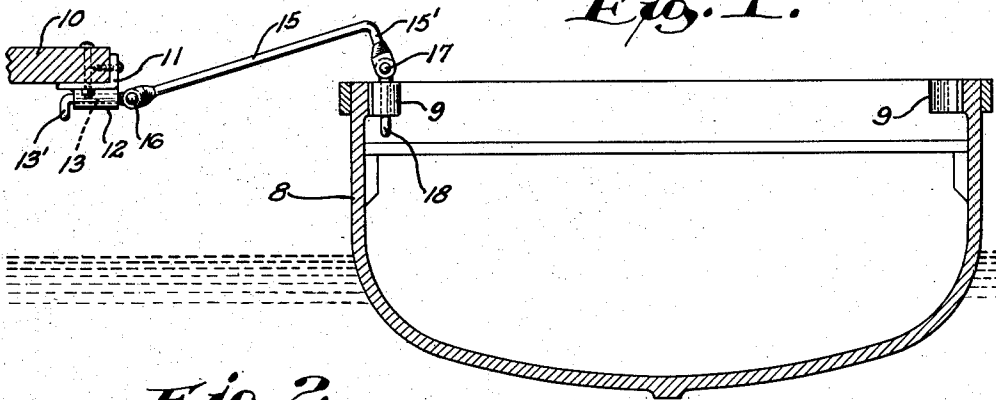


Fig. 2.

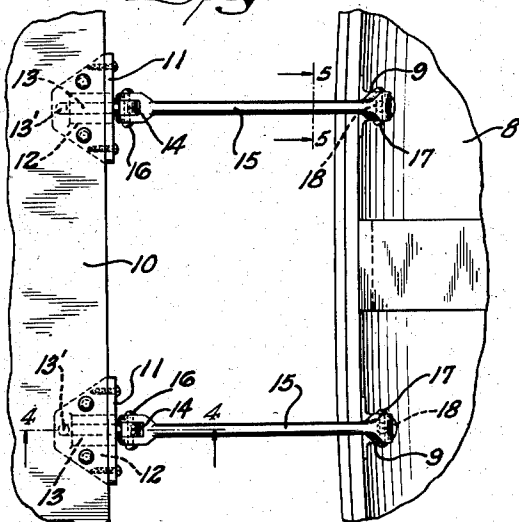


Fig. 5.

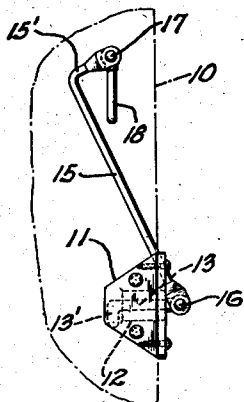
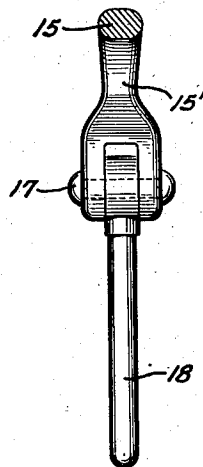


Fig. 3.

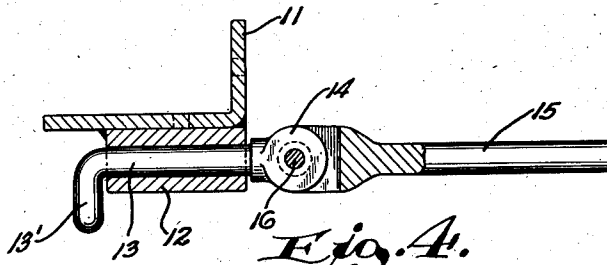


Fig. 4.

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BOAT HITCH

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12 Claims. (Cl. 114—230)

This invention relates to improvements in boat hitches, and more particularly to a device for mooring a rowboat to a dock or pier.

It is the usual practice to hitch or secure howboats to docks, piers or wharfs by means of ropes or chains but these means do not prevent the boats so secured from rubbing or bumping against the piers or adjacent boats under the action of waves or wind.

With the above in mind it is, therefore, a primary object of the present invention to provide a simple and effective boat hitch applied between a pier and a boat to secure the boat to the pier in a manner so as to restrain horizontal and lateral movement of the boat, but at the same time permitting vertical and rocking movements of the boat occasioned by wave or wind action.

A further object of the invention is to provide a boat hitch anchored to a pier or dock and quickly releasably engageable with the standard oar lock sockets of a rowboat for mooring purposes.

A further object of the invention is to provide a boat hitch carried by a dock or pier and movably projectable therefrom for boat mooring purposes or foldable under the pier platform in an unobtrusive position when it is not in use.

A further object of the invention is to provide a boat hitch arm movably connected with a pier or dock for pivotal movement in a plurality of planes relative thereto, and removably, pivotally engaged with an oar lock socket of a rowboat.

A further object of the invention is to provide a boat hitch of very inexpensive construction which may be easily attached to a pier or dock, which is quickly engageable with or removable from a standard rowboat, which is strong and durable, which effectively restrains undesired movement of a moored boat while permitting rocking, rolling or other motion imparted to the boat by weather action, and which is well adapted for the purposes described.

With the above and other objects in view the invention consists of the improved boat hitch, and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a transverse vertical sectional view through a rowboat showing an improved boat hitch applied to the rowboat and to a pier, there being a fragmentary sectional showing of the latter;

Fig. 2 is a fragmentary plan view of a rowboat

and pier with a pair of the improved boat hitches carried by the pier and engaging the boat for mooring purposes;

Fig. 3 is a view showing the boat hitch in collapsed or folded position below the platform of a pier when the boat hitch is not in use, the platform of the pier being shown in broken lines;

Fig. 4 is an enlarged detail sectional view taken on line 4—4 of Fig. 2; and

Fig. 5 is an enlarged transverse sectional view through the arm of a boat hitch and showing the oar lock socket pin carried thereby.

A standard rowboat 8 is provided along the inner margins of its opposite gunwales with spaced pairs of oar lock sockets 9. Opposite pairs of these oar lock sockets alternatively receive the projecting oar lock pins of rowing oars. When a rowboat is docked or brought alongside of a pier, the oars are removed from the oar lock sockets 9, and a pair of said standard sockets 9 along the same side of the boat are then available for use in connection with the present invention.

As best shown in Fig. 2, the mooring of a rowboat 8 to a pier or dock 10 is accomplished by the utilization of a pair of spaced boat hitches, both of which are permanently secured at their inner ends to a marginal portion of the platform of the pier 10 with the spacing between said hitches corresponding to the distance between a pair of oar lock sockets 9 on one side of a boat 8. Although a pair of the improved boat hitches are used for the mooring of a rowboat, inasmuch as the hitches are identical in construction, only one will be described in detail. Each boat hitch comprises an angled attaching plate 11 secured to the side edge and bottom surface of the platform portion of a pier or wharf by means of bolts, as shown. Secured fast to the bottom of the attaching bracket or plate 11 is a tubular bearing sleeve 12 which rotatably receives within its bore a trunnion 13 having an angled extension 13' at its inner end. The forward end of the trunnion 13 is formed with an eyed enlargement 14 engaged in the forked extremity of a rigid arm 15 and pivotally secured thereto by a pin or bolt 16. From the arrangement thus far described, it will be evident that the trunnion 13 may have turning movement on a horizontal axis within the sleeve 12 and the arm 15 may have pivotal movement relative to the eyed extremity of the trunnion, so that in effect, multi-movement of the arm 15 is provided for. In use, the arm 15 extends horizontally outwardly and slightly upwardly from the side margin of the pier or wharf 10.

The outer end portion of the arm 15 is down-

turned, as at 15', and said portion terminates in a fork in which is pivotally engaged, on a pin or bolt 17, the upper eyed extremity of an oar lock socket pin 18.

When the dock-carried boat hitches are not in use, they are folded or swung to an out of the way position below the platform of the pier, in the manner shown in Fig. 3. To accomplish this arrangement the arm 15 is turned through an angle of 90° from its position of Fig. 1 or Fig. 2, the mounting of the trunnion 13 in the sleeve 12 permitting this turning movement. Then, the arm is pivoted on the bolt 16 angularly inwardly until it assumes the position of Fig. 3, being disposed compactly below the platform portion of the pier or wharf, and the socket pin 18 may be folded compactly inwardly. An important feature of the device, which permits it to retain the folded position described, is the angled extension 13' on the trunnion 13. Said angled extension 13' will, when the trunnion and arm have been turned, lodge against the undersurface of the bracket 11 and act as a stop to prevent the arm 15 and boat hitch assembly from undesirably swinging downwardly.

When a boat 8 is drawn alongside of the pier or wharf 10 and the oars are removed from the oar lock sockets, then it is merely necessary to swing a pair of the boat hitch arms 15 outwardly horizontally and turn the same on the trunnions 13 to the position of Fig. 1. The depending pins 18 are thereupon registered with the two oar lock sockets 9 and are dropped thereinto, as in Figs. 1 and 2. The mooring thus accomplished by a pair of boat hitches is such that the boat is effectively secured against longitudinal horizontal movement or against movement toward and away from the dock. This effectively restrains the moored boat from rubbing or bumping against the pier or against adjacent boats, under the action of waves or wind. The pivotal mountings of the inner ends of the arms 15 in relation to the bracket-carried sleeves 12 is such that the boat, under the action of waves or wind, may rise and fall without placing any strain on the rigid arms 15 or the oar lock sockets. The arm-carried pins 18 may retain their proper relationships within the sockets 9 due to the pivotal mounting of the upper ends of the pins. The revoluble mounting of the trunnions 13 on a horizontal axis permit the moored boat to rock in an end to end direction, which rocking may be caused either by wave action or by the weight of a person stepping into an end of the boat, without actually shifting its longitudinal relationship.

The boat 8 is effectively held relative to the pier or dock by the rigid arms 15 against inward and outward movement and also against longitudinal movement. Said arms are sufficiently short so that a person may step directly from the boat to the dock with the transfer being safe due to the fact that the boat is confined against shifting in either direction. The boat hitches, being secured to the side of the boat, do not obstruct either end of the boat and the stern is left free for the mounting of an outboard motor or for other purposes. No auxiliary equipment or appliances with respect to the boat proper are required, inasmuch as the pins 18, carried by the mooring arms 15, engage directly with standard rowboat oar lock sockets.

From the foregoing description it will be seen that the improved boat hitch is of simple and novel construction, is compactly and unobjec-

tionably disposed relative to the side of a pier or dock, is of inexpensive construction, and is well adapted for the purposes set forth.

What is claimed as the invention is:

1. A mooring device for a standard boat having oar lock sockets, comprising a rigid mooring arm, means pivotally attaching one end of said arm to a fixed support, and a connecting pin pivotally carried by the other end and engageable and disengageable with a boat oar lock socket.
2. A mooring device for a standard boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a joint connecting one end of the arm with the bracket permitting revoluble and pivotal movements of the arm, and means pivotally and detachably connecting the other end of said arm with a boat oar lock socket.
3. A mooring device for a standard boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a joint connecting one end of the arm with the bracket, said joint including a pair of pivots whose axes are at right angles to each other, and means pivotally and detachably connecting the other end of said arm with a boat oar lock socket.
4. A mooring device for a boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a joint connecting one end of the arm with the bracket, said joint including a pair of pivots whose axes are at right angles to each other, stop means on one of the pivots engageable with the bracket for limiting movement of the arm in one direction, and means pivotally and detachably connecting the other end of said arm with a boat oar lock socket.
5. A mooring device for a boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a joint connecting one end of the arm with the bracket, said joint including a pair of pivots whose axes are at right angles to each other, a pivotal connection at the other end of the arm, and a pin carried by said pivotal connection and insertable in a boat oar lock socket upon a swinging movement of the arm in a vertical plane.
6. A mooring device for a boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a joint connecting one end of the arm with the bracket, said joint including a pair of pivots whose axes are at right angles to each other, a pivotal connection at the other end of the arm, and a pin carried by said pivotal connection and insertable in a boat oar lock socket upon a swinging movement of the arm in a vertical plane, the axis of the last-mentioned pivotal connection being parallel to the axis of one of said joint pivots.
7. A mooring device for a boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a horizontal trunnion, means revolubly mounting said trunnion on the support, means pivotally connecting one end of said arm to the trunnion, the arm when not in use being foldable under the support, and a pin hingedly carried by the other end of the arm and insertable into a boat oar lock socket.
8. A mooring device for a boat having oar lock sockets, comprising a rigid mooring arm, a bracket secured to a support, a horizontal trunnion, having an angularly directed extension, means revolubly mounting said trunnion on the support, means pivotally connecting one end of said arm to the trunnion, the arm when not in use being turned and folded under the support with the extension engaging the bracket to pre-

vent downward movement of the arm, and a pin hingedly carried by the other end of the arm and insertable into a boat oar lock socket for boat mooring purposes when said arm is extended outwardly of the support.

9. Mooring means for a standard boat having a pair of longitudinally separated oar lock sockets on one of its sides, comprising a pair of dual-movement joint members secured to a support in longitudinally spaced relation, a pair of mooring arms each having its inner end attached to a joint member, and an oar lock socket pin hingedly carried by the outer end of each arm.

10. In combination, a boat having a pair of longitudinally separated standard oar lock sockets on one of its sides, a pier, a pair of dual-movement joint members secured to side edge portions of the pier and spaced from each other a distance substantially equal to the distance between said oar lock sockets, a pair of rigid mooring arms each having its inner end attached to a separate joint member, and an oar lock socket pin hingedly depended from the outer end of each arm and each inserted in a separate oar lock socket for boat mooring purposes.

11. A mooring device for a boat having oar lock sockets comprising a rigid mooring arm, means for pivotally connecting one end of the arm to a dock including a joint at the inner end of the arm which provides for swinging movement of the arm in a vertical plane and rotative movement of the arm on a horizontal axis, and a

pin pivotally suspended from the outer end of the arm and positioned to be engageable within one of the oar lock sockets when the arm is swung downwardly from a raised position, the joint at the inner end of the arm being constructed to prevent swinging movement of the arm in a lateral direction when it is engaged with a socket, the axis of pivotal connection between the pin and outer end of the arm being parallel to the axis for vertical swinging movement at the inner end of the arm.

12. A mooring device for a boat having oar lock sockets comprising a pair of rigid mooring arms, means for pivotally connecting one end of each of the arms to a dock including a joint at the inner end of the arm which provides for rotating movement on a horizontal axis and for pivotal movement in a vertical plane when the arm is in operative position on an axis at right angles to the axis of rotating movement, and a pin pivotally suspended from the outer end of each arm and positioned to be engageable within one of the oar lock sockets when the arm is swung downwardly from a raised position, the joint at the inner end of the arm being constructed to prevent swinging movement of the arm in a lateral direction when it is engaged with a socket, the axis of pivotal connection between the pin and the outer end of the arm being parallel to the axis for vertical swinging movement at the inner end of the arm.

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