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BOAT FENDING, MOORING AND DOCKING APPARATUS

Original Filed Nov. 9, 1961

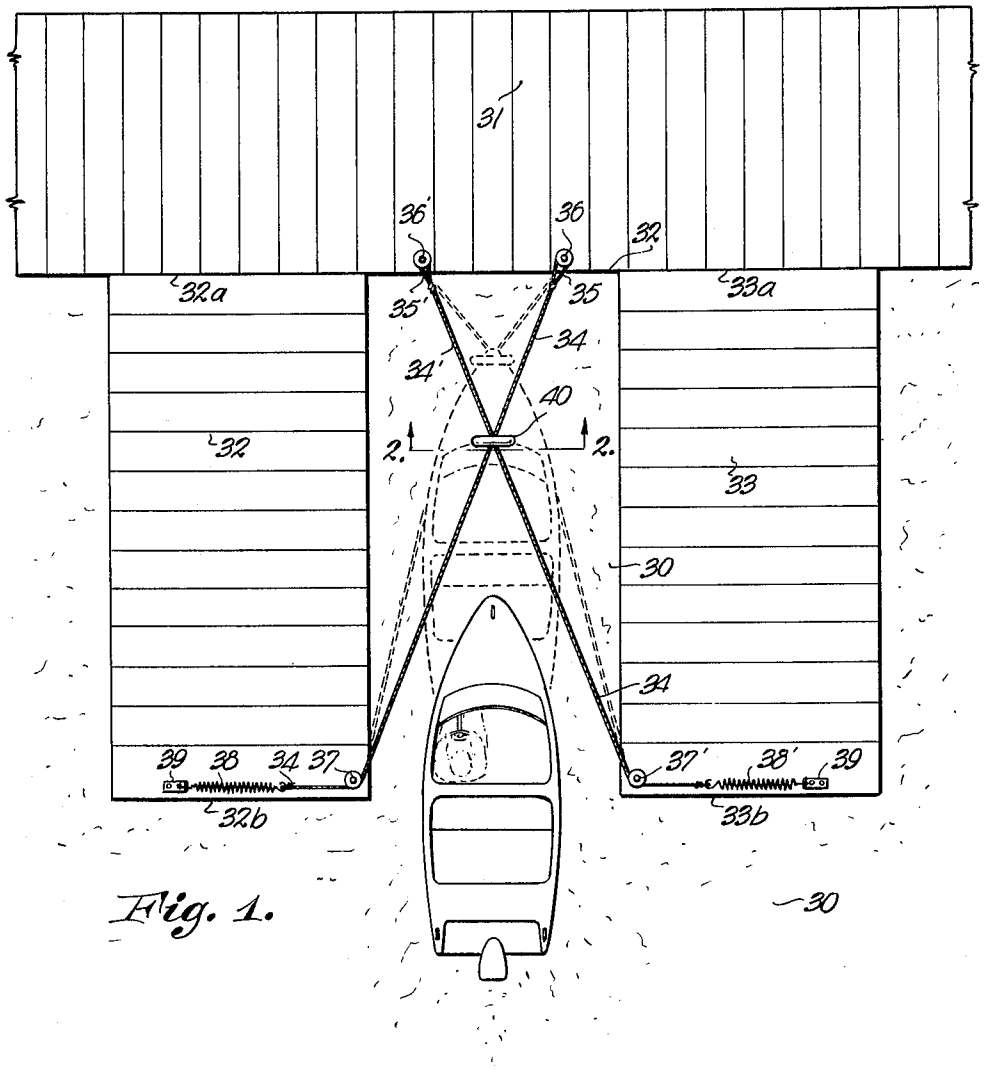


Fig. 1.

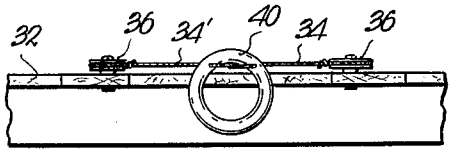


Fig. 2.

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BOAT FENDING, MOORING AND DOCKING APPARATUS

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Original application Nov. 9, 1961, Ser. No. 151,322, now Patent No. 3,187,706, dated June 8, 1965. Divided and this application May 17, 1965, Ser. No. 456,193
6 Claims. (Cl. 114—230)

This invention is a divisional of Serial No. 151,322 filed November 9, 1961 entitled, "Boat Fending, Mooring and Docking Apparatus," now Patent No. 2,187,706.

This invention relates to boat fending, docking and mooring aids and refers more particularly to means and devices which are effective for such several purposes.

An object of the invention is to provide means which may be installed upon a boat pier or dock, either shore connected or not, and which are adapted to guide dock approaching boats into proper mooring relationship to the dock. Another object of the invention is to provide means installable on boat piers or docking facilities, shore connected or not, which are adapted to continuously position boats in proper relationship to the docking facilities when the boats are tied or attached thereto, such means thereby minimizing need for conventional fender means and other boat positioning pier aids.

Another object of the invention is to provide means for both aiding boats in approaching docking facilities, and continuously positioning boats relative to the docking facilities after tying up thereto.

Another object of the invention is to provide boat fending, docking and mooring means as described which are strong and rugged in long time all weather outdoor operation.

Another object of the invention is to provide boat handling means and devices such as described which are readily installed, cheap to install and maintain, positive in operation, take up a minimum space and wherein all of the parts are readily accessible for checking, replacement or repair.

Another object of the invention is to provide means which may be very quickly installed by relatively unskilled personnel on boat docking facilities which will greatly aid the handling of boats relative to the docking facilities, both in coming up to the said facilities and tying thereto.

Another object of the invention is to provide boat docking aid means which effectively receive and help the approach of boats to the dock, yet which are self-protecting against injury by the boat as it approaches.

Another object of the invention is to provide such boat docking means and facilities as described which may be used on each side or any side of boat docking arrangements and which take up a minimum quantity of space whereby to provide a maximum convenience in handling boats, yet a minimum of trouble.

Still another object of the invention is to provide means which may be installed in a boat well adapted to guide a boat moving into the well into proper mooring relationship therein.

Another object of the invention is to provide means installable in a boat well adapted to continuously position a boat in proper relationship to the boat well when the boat is tied or moored therein, such means minimizing the need for conventional fender means and other boat positioning pier aids.

Another object of the invention is to provide boat fending, docking and mooring means for use in boat wells which are strong and rugged in long-time, all-weather outdoor operations, which are readily installed, cheap to install and maintain, positive in operation, take up a minimum of space and wherein all parts are readily accessible for checking, replacement or repair.

Another object of the invention is to provide boat well guiding, mooring and docking means which may be quickly installed by unskilled help, which are self-protecting against injury by the boat as it moves into the well and which take up a minimum quantity of space whereby to provide a maximum convenience in handling boats, yet a minimum of trouble.

Other and further objects of the invention will appear in the course of the following description thereof.

In the drawing, which forms a part of the instant specification and is to be read in conjunction therewith, embodiments of the invention are shown and, in the various views, like numerals are employed to indicate like parts.

FIG. 1 is a plan view from above of the inventive guiding, docking and mooring means applied to a boat well, a boat shown approaching the boat well in full lines with the mooring, etc. apparatus shown in its position at that time time in full lines, with the boat engaging the said means shown in dotted lines with the position of the mooring, etc. means at that time shown in dotted lines, as well.

FIG. 2 is a view taken along the line 2—2 of FIG. 1 in the direction of the arrows.

Referring to FIG. 1, at **30** is designated a body of water adapted to receive boats of any type. The particular boat illustrated comprises an outboard motor boat of small conventional type but, it should be understood, that the mooring means illustrated is applicable to any size of boat from the smallest to the largest. A base dock structure **31** has a water facing edge **32** and may be formed of a decking resting on oil drums or the like in a raft-type dock, or on legs embedded in the bottom of the body of water **30** for a fixed dock. A pair of boat well side dock structures **32** and **33** are connected at their inward ends **32***a* and **33***a* to the base dock structure **31** and have their outwardly extending ends **32***b* and **33***b* positioned away therefrom whereby to define the boat well therebetween. The boat well is of any desired width and depth depending upon the type of boat to be received therein.

A first cable means **34** is connected at its inward end **35** to a suitable cleat or fastener **36** on a dock structure **31**. Cleat **36** is spaced away from side dock structure **32**. Cable means **34** passes over the boat well to a guide means or pulley **37** on the side dock structure **32** adjacent the outer end thereof and also adjacent the boat well. A resilient spring or other resilient means **38** is positioned preferably at the end of cables **34** and connects at one end therof to the end of the cable and at the other end to any suitable connection **39**. The resilient means may be positioned in the cable **34** anywhere intermediate the ends thereof and preferably adjacent one of the ends thereof, most preferably in the position shown.

A second cable means is provided of the same type as cable means **34** and is mounted in the same but opposite fashion, whereby all of the parts thereof will be numbered the same as cable means **34**, but primed. The second cable means will not be redescribed as it is the same as cable **34**, the first cable means, but opposed thereto. The two cable means **34** and **34'** cross in the boat well, preferably adjacent the base dock structure **31**. The closer together the cleats **36** and **36'** are placed, the closer the juncture of the cables to the base dock structure **31** will be. The juncture must be spaced sufficiently into the boat well to avoid the boat coming thereinto striking the base dock structure if its velocity is relatively high. Also, the mass of the boat and strength of the cables must be taken into account as well as the fitting thereof.

Engaging means **40** are preferably provided to overlie the juncture of the cables whereby to limit the translation of the juncture or separation of the cables by the

movement of a boat therebetween as seen in FIG. 1. Such an engaging means may conveniently be an automobile tire or the like or a ring of like resilient strong material.

In use and operation of the modification of the invention shown in FIGS. 1 and 2, with the apparatus in full line showing of FIG. 1, the boat **41** approaches directly into the boat well. One of the great advantages of this system applied to the boat well is that a boat coming in at an angle is deflected, from either side, to a proper center position without striking the walls of the well. As the prow of the boat moves up to the juncture of the cables, depending upon the velocity of the boat, the juncture is translated inwardly with the engaging means **40** moved toward the base dock structure **31**. As the momentum of the boat is absorbed in the cable system in springs **38** and **38'**, the boat comes to a halt and tie-up to the cleats on the dock structures as described may be effected. For disembarking, the stern of the boat may be moored closer to one side dock than the other. To move the boat out of the boat well, the moorings are merely cast off and the boat pushed or backed out. While mooring, the cable means prevent the boat striking either of the side dock structures or the end structure and obviate the need for fending means. Indeed, the prow of the boat alone can be moored, if desired, with the cables spacing the boat from the dock side structures.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. In the system of docking and mooring boats relative to a boat well having a well base dock structure, and two outwardly extending well side dock structures defining therebetween the boat well, the improvement which comprises first cable means connected at one end to the base dock structure at a point spaced from a first of said side dock structures and passing over the boat well to a connection at its other end on the said first side dock structure adjacent the free end of the latter; resilient means in said cable between the end connections thereof, second cable means connected at one end to the base dock structure at a point spaced from a second of said side dock structures and passing over the boat well to a connection at its other end on the said second side dock structure adjacent the free end of the latter; resilient means in said second cable intermediate the end connections thereof, said first and second cables crossing one another in said boat well.

2. A system as in claim **1** wherein said resilient means are positioned adjacent one end of said cables.

3. A system as in claim **1** including means engaging said two cable means adjacent their juncture to limit forcing apart of the cables by a boat entering the boat well.

4. A system as in claim **1** wherein the end of each cable means connected to a side dock structure is led around an angle pivot prior to its connection thereto and the resilient means is positioned between said angle pivot and said side dock structure connection.

5. A system as in claim **1** including means encircling the two cables at their juncture to limit forcing apart of the cables by a boat entering the boat well.

6. A system as in claim **1** wherein the connections of the cables to the dock structures at both ends thereof are so positioned as to position the juncture of the cables closer to the base dock structure than to the free ends of the side dock structures.

No references cited.

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