

United States Patent

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[54] **BOAT RACK**
3 Claims, 4 Drawing Figs.

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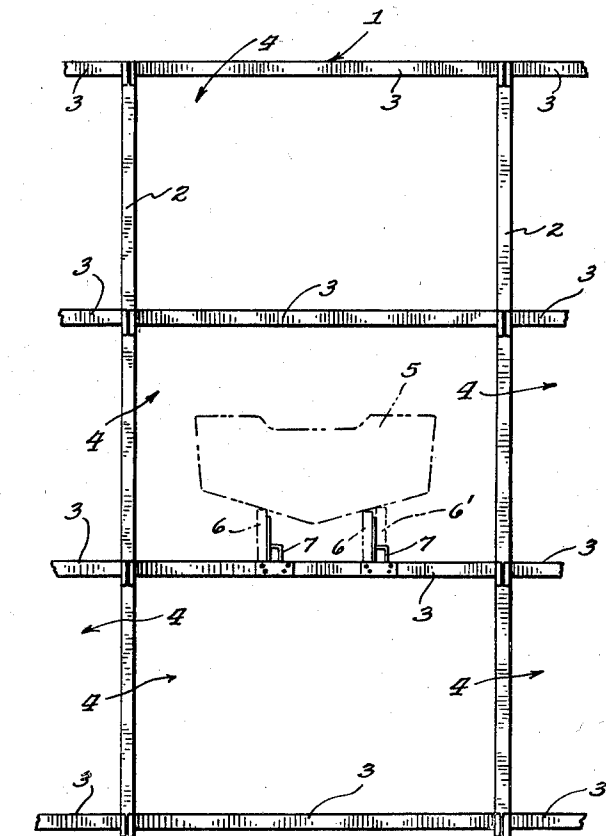
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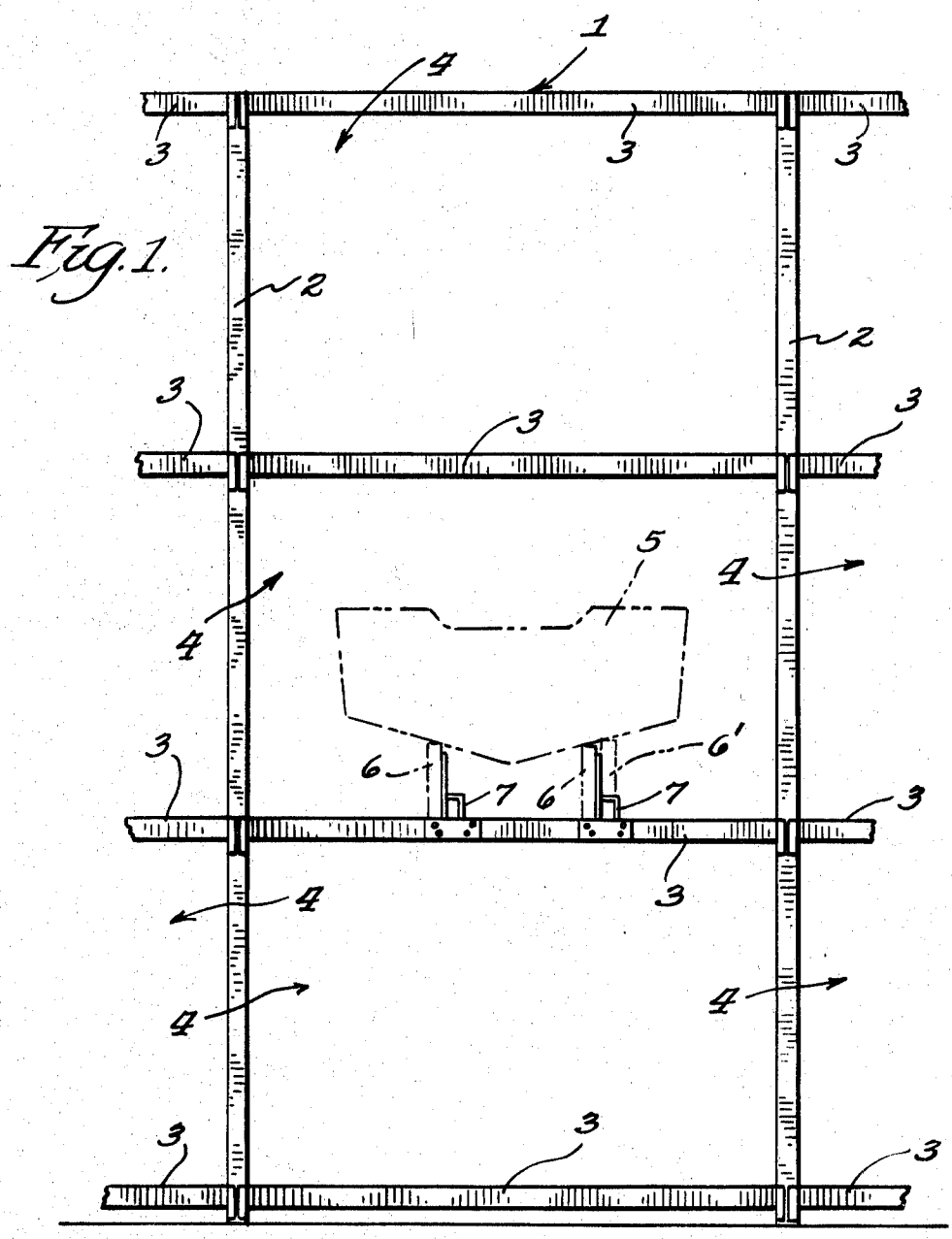
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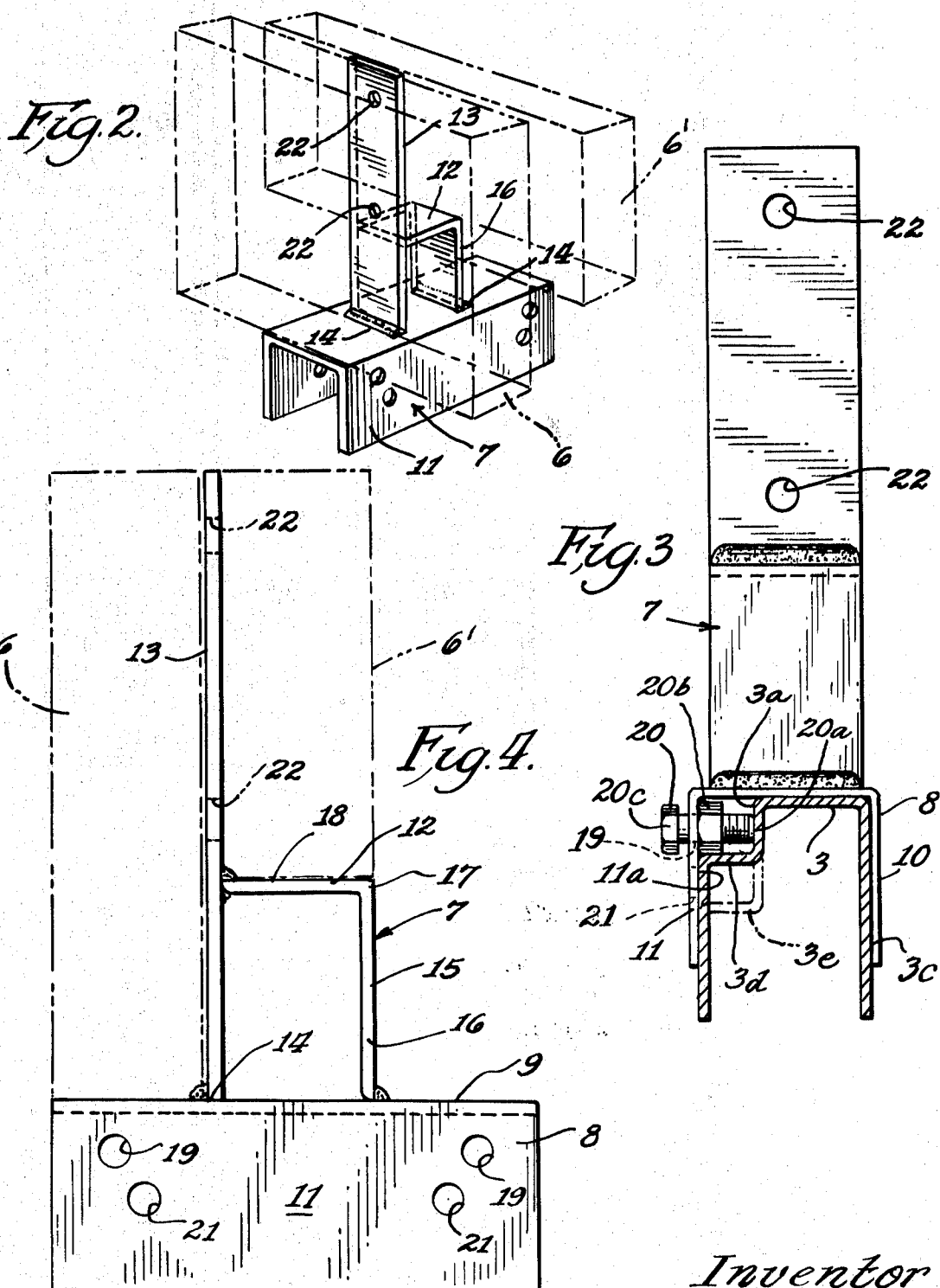
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ABSTRACT: A support structure for storage of boats and like articles in the form of a rack structure with defined openings in which the articles are stored. Brackets are provided in the openings for supporting horizontal beams which directly support the articles. The brackets have fastening means for frictionally engaging the rack structure to secure the brackets to the rack structure, the frictional engagement being easily releasable to permit shifting of the brackets for adjustable bracket spacing to accommodate different size articles.





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BOAT RACK

This invention relates to the art of rack structures and particularly to improvements in rack structures for supporting boats and like articles, with particular emphasis on the immediate support means for articles in a storage opening or bay.

During off season periods, boats are commonly stored in shelf or rack structures provided with storage openings or bays defined by a structure of connected vertical and horizontal frame members. Some of the storage facilities are provided with supporting brackets for the immediate support of the boats, which brackets are permanently secured in place without conveniently permitting variation in spacing to accommodate different sizes of boats. Furthermore, the storage structures are of many designs and manufactured in many different ways from structural members made of either wood or metal or combinations of both. Recently, in line with the ever increasing use of pallet rack structures composed of easily connected beams and uprights, efforts have been made to provide such a rack structure suited for the storage of boats and like articles. It is the principal object of this invention to provide a suitable rack structure constructed of easily detachable beams and uprights which is substantially of standard construction and which has brackets adapted for simple connection to the rack structure for supporting the immediate support members used to support a boat or the like without requiring any revision or change in the standard rack components.

In order to accomplish this objective, it is another object of the invention to provide a bracket for connection to the rack structure which is frictionally connected to it, rather than by means of fasteners protruding through openings in the rack structure.

It is another object of the invention to provide such a bracket which has a channel-shaped base for straddling a first horizontal beam of the rack structure and has a superstructure with face portions to which other beams can be attached, which beams provide the direct support for a boat or the like.

Another object of the invention is to provide such a bracket which has two faces of different height to accommodate horizontal supporting beams of different depths, and bottom ledges are provided on the bracket for suitably supporting the lower portions of the supporting beams when they are fastened to the bracket.

Another object of the invention is to provide a threaded fastener for frictionally connecting the bracket to the rack structure, which fastener has an inner end bearing against a portion of the rack structure and is provided with a nut on the threaded portion of the fastener which bears against an inside portion of the bracket, which nut can be tightened to urge the inner end of the fastener into tight reaction against the rack structure and thereby hold the bracket securely in place.

Other objects and advantages of the invention can be better understood with reference to the accompanying drawings in which:

FIG. 1 shows a front elevation of a rack structure embodying the improvements of this invention;

FIG. 2 shows a perspective view of the bracket of the invention;

FIG. 3 shows an end view of the bracket shown in FIG. 2 assembled onto a beam of the rack structure; and

FIG. 4 shows a front elevation of the bracket.

As shown in FIG. 1, a rack structure 1 is provided made up of vertical uprights 2 spaced from each other and provided with horizontal beams 3 assembled to the uprights to hold them in spaced relationship. Although the front face of the rack structure is shown, it should be understood that there can be uprights behind those visible in FIG. 1 connected to additional beams and there are front to back beams (not shown) which connect between the front row of uprights and those in a row behind it. In this manner, the rack structure consists of a

framework of defined cubicles or openings 4 extending horizontally through the rack structure.

Each of these openings 4 is made large enough to accommodate the entire width of a boat 5 or other similar article positioned in the opening. In order to properly support the boat 5 in an opening 4, it rests upon horizontal beams 6 extending front to back through the opening 4. These beams 6 are suitably mounted on brackets 7 which are, in turn, supported on the beams 3 at the forward and rear regions of the opening 4.

One of the brackets 7 is shown in more detail in FIGS. 2, 3 and 4 where it is evident that a bracket 7 is provided with an inverted channel base 8 having a top wall 9 secured between two sidewalls 10 and 11. Mounted to the top wall 9 is a superstructure 12 which consists of a vertical wall 13 terminating at 14 to the top wall 9 of the base 8. The superstructure 12 also is provided with an angle member 15 arranged as a short vertical wall 16 connected at 17 to an upper ledge or shelf portion 18 above the level of the top wall 9 of the base 8.

The normal assembly of the bracket 7 to a horizontal beam 3 is indicated in FIG. 3 where a threaded bolt 20 is provided through an opening 19 in the wall 11 of the base 8. The inner end 20a of the bolt 20 is positioned to bear against a wall portion 3a of the beam 3. A nut 20b is threaded onto the threaded portion of the bolt 20 and urged in a direction against the inner wall 11a of the wall 11 of the base 8. In this manner a frictional bearing is provided wherein the bracket 7 is held in place by the bolt 20 bearing against the wall 3a of the beam 3 and the wall 10 of the base 8 against the wall 3c of the beam 3.

With the type of beam shown in FIG. 3, which is stepped at its one corner to have a vertical wall 3a intersecting a horizontal wall 3d, the position of the hole 19 in the base 8 is such that the nut 20b on the bolt 20 is prevented from rotation upon rotation of the bolt 20 because a flat on the head of the nut 20b is close to the wall 3d. This facilitates tightening and loosening of the nut 20b by merely rotating the head 20c of the bolt.

When the beam is provided with a deeper step as indicated in phantom outline at 3e, the bolt 20 is preferably positioned through a lower hole 21 in the base 8 of the bracket 7. This lowers the location of the bolt so that the same automatic locking of the nut can be achieved at the lower position of the deeper step at 3e.

The holes 19 and 21 are provided at opposite ends of the bracket 7 and through both walls 10 and 11 of it so that at least two bolts can be used at a time for stability and the bracket can be positioned in a direction to correspond to the step on the beam used.

The frictional connection shown by the use of the bolt is easy to employ and permits quick assembly and disassembly for facilitating shifting of the brackets along the beam members to vary the spacing between brackets for accommodating different size boats or other articles.

For adequately mounting an article, it is evident from FIG. 1 that two brackets are needed at each end of the article, although the front elevation of FIG. 1 indicates only the front two brackets.

To join the horizontal beams 6, 6' to the brackets, holes 22 are provided in the vertical wall 13. Beam 6 of greatest depth can be mounted on the left side of the bracket as indicated in both FIGS. 1 and 4, or a beam 6' of less depth can be provided on the right of the wall 13. In either case, both beams can bottom on the bracket. The beam on the left can bottom on the top wall 9 while the beam on the right can bottom on the shelf 18. The holes 22 can carry bolts secured to the beams 6, 6' for holding them positioned. It is ordinarily expected that the beams 6, 6' will be covered with carpeting or other soft material so that they will not injure the article 5 resting on them. If the beams 6, 6' are of wood, as is customary, this facilitates securing the carpeting to them in an easy manner by the use of nails or other simple fasteners.

Although only a single embodiment of the invention has been shown and described, it should be apparent that the in-

vention can be manufactured in many different ways without departing from the true scope of the invention as defined by the appended claims.

I claim:

1. A support structure for storage of boats and like articles comprising: vertical uprights and first horizontal beams connected together to provide a rack having defined openings into which the articles are positioned for storage, brackets mounted on the horizontal beams for supporting second horizontal beams which directly support the articles stored in the structure, each bracket having an inverted channel-shaped base for straddling a first horizontal beam and a superstructure for fastening to a portion of a second horizontal beam, fastening means mounted on the base and arranged to frictionally bear against the first horizontal beam straddled by the base in order to attach the bracket to the first horizontal beam, said superstructure having two vertical faces on its opposite sides to which said second horizontal beams are to be connected, the faces being of different vertical heights to thereby accommodate second horizontal beams of different heights depending upon which face the second horizontal beams are connected, the lower end of one of the faces on the superstructure terminating at the upper surface of the channel-shaped base and the lower end of the other face on the superstructure terminating above the level of the channel-shaped base at a shelf portion extending from the face, said upper surface and said shelf portion acting as lower supports for the second horizontal beams secured to said faces of the

superstructure.

2. A support structure for storage of boats and like articles comprising: vertical uprights and first horizontal beams connected together to provide a rack having defined openings into which the articles are positioned for storage, brackets mounted on the horizontal beams for supporting second horizontal beams which directly support the articles stored in the structure, each bracket having an inverted channel-shaped base for straddling a first horizontal beam and a superstructure for fastening to a portion of a second horizontal beam, fastening means mounted on the base and arranged to frictionally bear against the first horizontal beam straddled by the base in order to attach the bracket to the first horizontal beam, said fastening means being a threaded fastener passing through an opening in a wall of said base, the inner end of the fastener reacting against a wall of the first horizontal beam straddled by the base, and a nut threadably engaged on the fastener to bear against an inside wall of the base in a direction toward the outer end of the fastener to thereby urge the inner end of the fastener into reaction against said wall of the first horizontal beam.

3. A support structure defined by claim 2 characterized by, said nut being prevented from rotation by being confined between a portion of said base and a portion of the first horizontal beam, whereby tightening and loosening of the nut on the fastener can be accomplished by merely rotating the fastener relative to the stationary nut.

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