United States Patent

Godbersen

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[54] FLOATING DOCK SECTION

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[52] **U.S. Cl.** ..... **114/0.5 F**

[51] **Int. Cl.** **B63b 35/00**

[58] **Field of Search** ..... 114/230, 0.5 F; 14/27

[56] **References Cited**

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3,455,115 7/1969 Watts et al. ..... 114/0.5 F X

2,326,236 8/1943 Lindsay 14/27

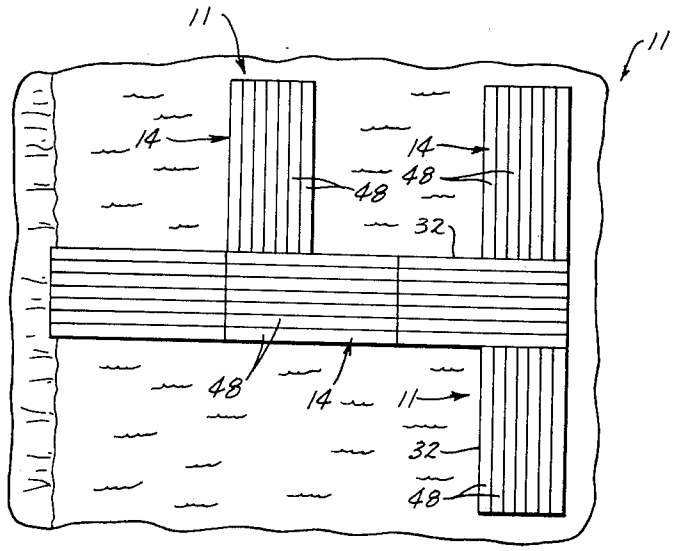
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[57] **ABSTRACT**

This invention relates to a floating dock section which is rigidly securable to adjacent sections. A first member extends centrally and longitudinally of the dock section and terminates proximate opposite ends of the dock section. Second members mate with the ends of the first members of adjacent sections and secure adjacent sections together. The entire dock is rigid in the water and very stable laterally as the first members distribute torque over the entire dock.

10 Claims, 8 Drawing Figures



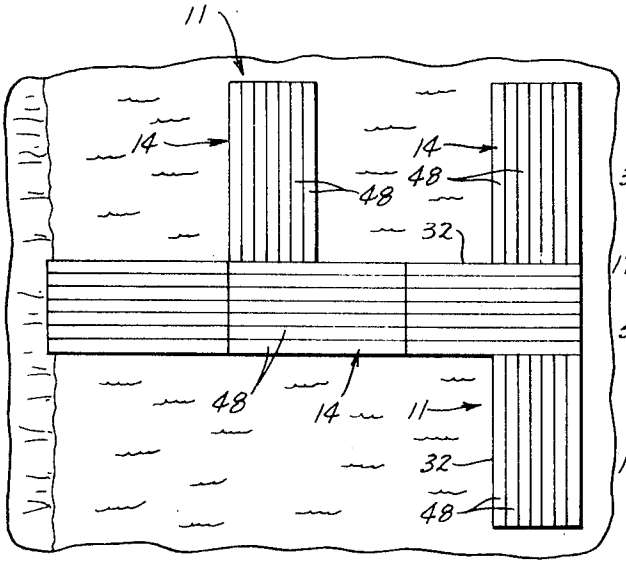


Fig. 1

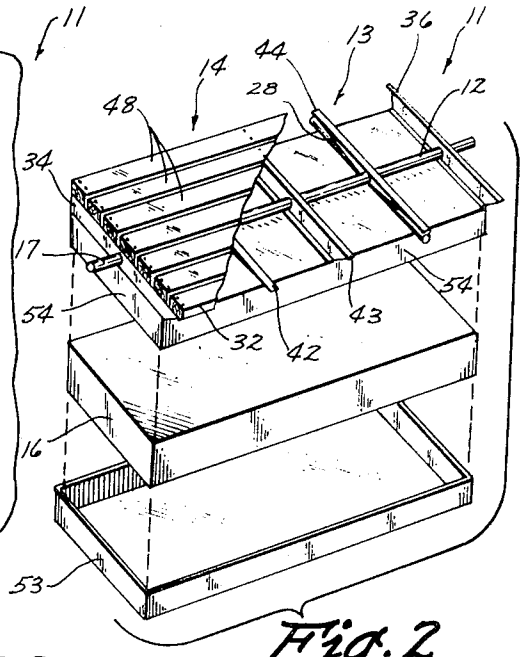


Fig. 2

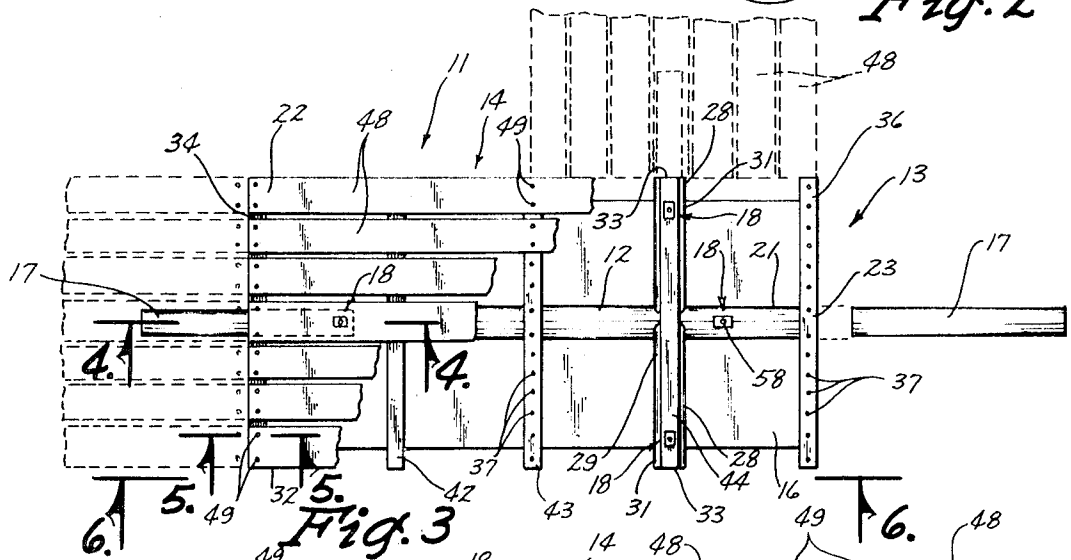


Fig. 3

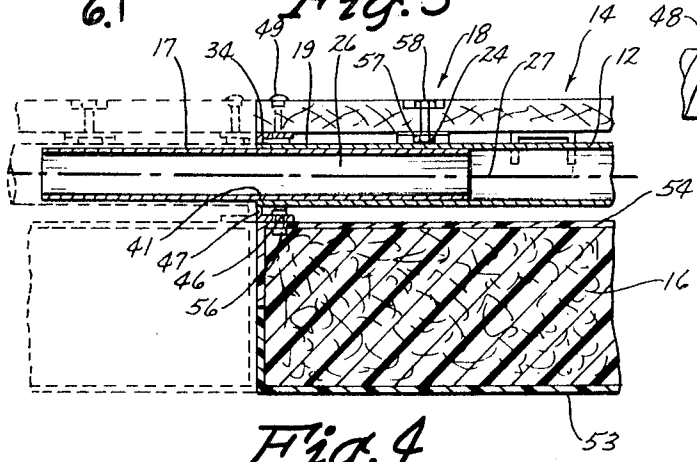


Fig. 4

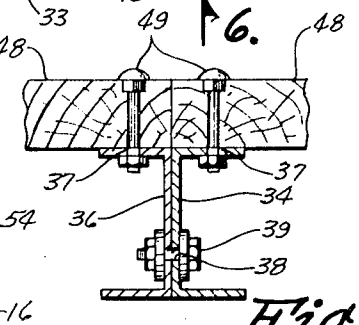


Fig. 5

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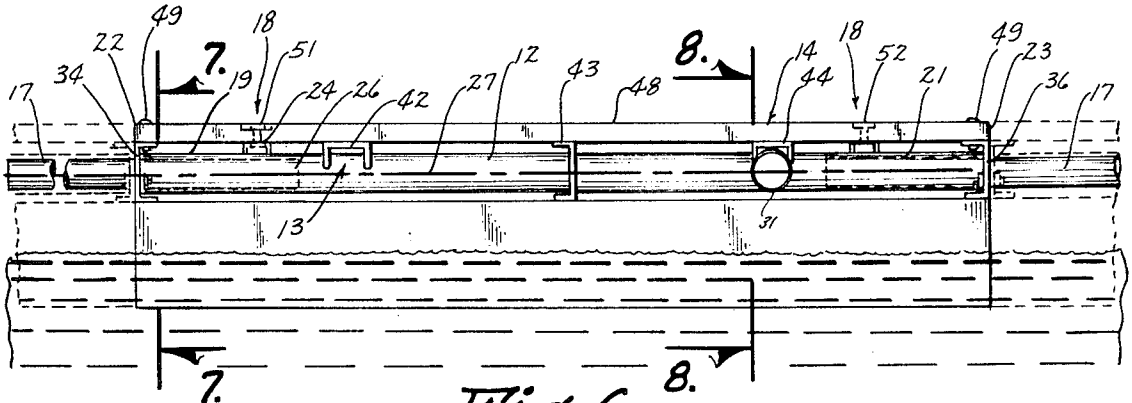


Fig. 6

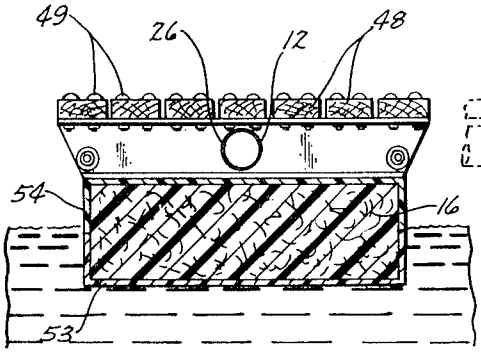


Fig. 7

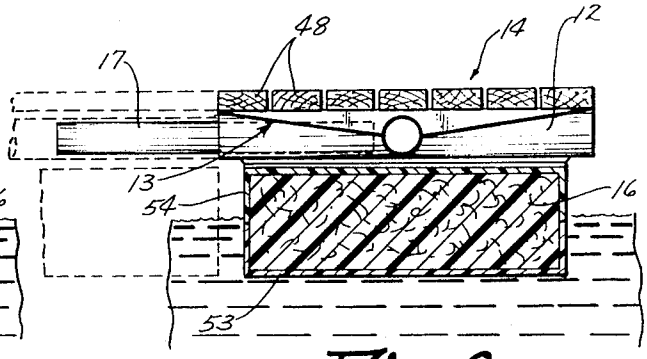


Fig. 8

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FLOATING DOCK SECTION

BACKGROUND OF THE INVENTION

This invention relates to floating dock sections utilizing novel means for rigidly securing adjacent dock sections together.

Floating docks have heretofore been disclosed in the prior art. Rigid docks of this general type are disclosed in Sebring, U.S. Pat. No. 3,289,621; Mayer, U.S. Pat. No. 3,152,568; Lamb, U.S. Pat. No. 3,073,274; and Brill, U.S. Pat. No. 3,073,271. All of these patents illustrate methods of forming and joining floating dock sections. However, these devices suffer from common faults in that they are cumbersome, difficult to build and difficult to join together. Also lateral stability of the dock is dependent primarily on the dock section on which force is being applied.

The floating dock sections of this invention are designed to overcome the problems presented by the prior art. They are of simple construction, easily joined together, and have superior lateral stability.

SUMMARY OF THE INVENTION

This invention relates to a prefabricated floating dock section comprising a first member having two ends disposed proximate opposite ends of the dock section, support means rigidly affixed to the first member and normally horizontally disposed, deck means juxtaposed over and secured to the support means, and buoyant means disposed under the deck means and secured to the support means. Second members are utilized to secure adjacent dock sections together and are disengagably matable with the ends of the first member and extend outwardly of the opposite ends of the dock section. Fastening means disengagably secure the second members in mating relation with the first member.

An object of this invention is to provide an improved floating dock section with a novel means of securing adjacent sections together.

Another object is to provide a floating dock comprised of a plurality of these sections which is very stable laterally and is comprised of sections rigidly joined together.

A further object is to provide floating dock sections which can readily be assembled in a variety of configurations.

A still further object is to provide floating dock sections which can be assembled in the water from the deck of a dock section.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top view of several of the floating dock sections in the water and in assembled relation.

FIG. 2 is an exploded perspective view of a dock section with the deck means partially cut away.

FIG. 3 is an enlarged top view of a dock section with the deck means partially cut away and adjacent dock sections illustrated in phantom.

FIG. 4 is a greatly enlarged and abbreviated cross-sectional view taken along line 4—4 of FIG. 3 illustrating the mating relation of the second members with the first member.

FIG. 5 is greatly enlarged and abbreviated cross-sectional view taken along line 5—5 of FIG. 3.

FIG. 6 is an enlarged side view of the dock section taken along line 6—6 of FIG. 3.

FIG. 7 is a cross-sectional view of the dock section taken along line 7—7 of FIG. 6.

FIG. 8 is a cross-sectional view of the dock section taken along line 8—8 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, the floating dock section is indicated generally at 11 in FIGS. 1–3. The floating dock section 11 is comprised of a first member 12, support means 13 rigidly affixed to said first member 12 and normally horizontally disposed, deck means 14 juxtaposed over and secured to said support means 13, and buoyant means 16 secured to the support means 13 under the deck means 14. Second members 17 (FIGS. 3 and 4) mate with the first member 12 and are utilized to secure adjacent dock sections 11 together. Fastening means 18 (FIG. 4) disengagably secure the second members 17 in mating relation with the first member 12.

More specifically, the first member 12 (FIGS. 3, 6 and 7) has two ends 19 and 21 disposed proximate opposite ends 22 and 23 of the dock section 11 and is preferably centrally and longitudinally disposed under the deck means 14 of the dock section 11. The ends 19 and 21 of the first member 12 are hollow and have a predetermined inside configuration and inside diameter. The preferred configuration of the ends 19 and 21 is cylindrical as shown best in FIGS. 4 and 7. The ends 19 and 21 are flush with opposite ends 22 and 23 of the dock section 11 and the elongated cylindrical first member 12 is maintained out of the water by buoyant means 16.

An aperture 24 (FIG. 4) is formed through each of the ends 19 and 21 of the first member 12 to receive fastening means 18. The apertures 24 are preferably formed vertically through the uppermost portion 26 of the first member 12 and perpendicularly of the longitudinal axis 27 of the first member 12.

In another preferred embodiment of this invention, at least one branch 28 (FIG. 3) is rigidly affixed at one end 29 thereof to the first member 12. The branch 28 is disposed in the same horizontal plane as the first member 12 and is generally affixed perpendicularly of the first member 12. The free end 31 of the branch 28 terminates proximate one of the longitudinal sides 32 of the dock section 11 and has the same inside configuration and inside diameter as the ends 19 and 21 of the first member 12 and has an aperture 33 formed therethrough as described above.

As shown in FIG. 3, two branches 28 can be secured to the first member 12 thereby allowing the T-shaped dock configuration shown in FIG. 1 to be formed. This T-shaped configuration is especially useful in marinas to provide separate boat docking facilities for a large number of boats, and to render the dock even more stable laterally.

The support means 13 is rigidly affixed to the first member 12 and is normally horizontally disposed. A rectangular dock section 11 is defined by the support means 13 which is also of generally rectangular configuration.

Two channel beams 34 and 36 (FIGS. 3 and 6) are disposed normally of the ends 19 and 21 of the first member 12 and aligned with opposing ends 22 and 23 of the dock section 11. Each of these channel beams 34 and 36 has a plurality of bolt holes 37 formed vertically therethrough for securing the deck means 14 to the channel beams 34 and 36. Additionally, holes 38 (FIG. 5) are formed through the channel beams 34 and 36 with the axes of the holes 38 being parallel to the longitudinal axis 27 of the first member 12. Adjacent, aligned dock sections 11 can be rigidly secured together by utilizing bolts 39 (FIG. 5) or the like through the holes 38 to form a rigid dock 40. Both channel beams 34 and 36 have an aperture 41 formed therethrough to allow the second members 17 to mate with the first members 12.

Other channel members 42, 43 and 44 (FIGS. 3 and 6) are rigidly affixed to the first member 12 and disposed normally thereto. These other channel members 42, 43 and 44 may also have a plurality of bolt holes 37 formed therethrough for securing the deck means 14 to the support means 13.

The support means 13 also has bolt receiving holes 46 (FIG. 4) formed through the lower portion 47 thereof to secure the buoyant means 16 to the support means 13. Steel straps (not shown) or the like can also be utilized to secure the buoyant means 16 to the support means 13.

The deck means 14 (FIGS. 6–8) is juxtaposed over and secured to the support means 13 and is disposed over the first member 12. The deck means 14 is preferably comprised of a plurality of redwood planks 48 disposed longitudinally on channel beams 34, 36, 42, 43 and 44 and secured in place by a plurality of bolts 49 (FIG. 4). Openings 51 and 52 are formed through the redwood planks 48 vertically above the apertures

33 formed in the first member 12. The openings 51 and 52 are formed to receive the fastening means 18.

Buoyant means 16 is disposed under the deck means 14 and is secured to the support means. The buoyant means 16 can be manufactured from any buoyant material which will maintain the deck means 14 above the surface of the water. The buoyant material should, preferably, be utilized in sufficient amount to normally maintain the first member 12 above the level of water. Styrofoam is a particularly desirable buoyant material for use herein.

It has been found desirable to ensheath the buoyant material with a plastic material (FIGS. 2 and 4) to prevent damage to the styrofoam by birds, rodents and the natural forces of nature. Plastic materials that can be utilized herein include fiberglass, polyethylene, and polypropylene.

The plastic material is conveniently formed into two identical half-shells 53 and 54 as shown in FIGS. 2 and 4. The half-shells 53 and 54 are filled with buoyant material and then sealed. The half-shells 53 and 54 may be secured to the support means 13 by screws 56 (FIG. 4) or the like.

The second members 17 (FIGS. 3 and 4) are matable with the ends 19 and 21 of the first member 12 and extend outwardly of the opposite ends 22 and 23 of the dock section 11. The second member 17 is preferably disengagable from the first member 12 to facilitate securing together or detaching adjacent dock sections 11.

The second members 17 have the same general outside configuration as the inside configuration of the ends 19 and 21 of the first member 12, preferably cylindrical. The outside diameter of the second member 17 is slightly smaller than the inside diameter of the ends 19 and 21 of the first member 12 to provide a disengagably mating fit between the first member 12 and the second member 12. The second member 17 is quite short in comparison with the first member 12 but is sufficiently long to rigidly secure adjacent dock sections 11 together.

The second members 17 are rigidly and disengagably secured in mating relation with the ends 19 and 21 of the first member 12 by fastening means 18. The fastening means 18 (FIG. 4) comprises a tapped nut 57 affixed to the first member 12 and aligned with the aperture 24 formed through the first member 12. A bolt 58 is threadably secured in the nut 57 and is engagable, through aperture 24, with the second member 17. The bolts 58 can be turned down to secure the second members 17 in rigid and mating relation with the first member 12.

The dock sections 11 can readily be joined together by simply affixing a first dock section 11 to the shore. An additional dock section 11 with a second member 17 secured therein is floated out to the end of the first dock section 11. The second member 17 is matingly received by the first member 12 of the first dock section 11 and the bolt 58 is turned down on the second member 17. Additional sections 11 can be added in this same manner.

Although a preferred embodiment has been described, it is to be remembered that various modifications may be made without departing from the invention as defined in the appended claims.

I claim:

1. A prefabricated floating dock section comprising:
- a first member having two ends, said ends of said first member being disposed proximate opposite ends of the dock section;
- support means rigidly affixed to said first member and normally horizontally disposed;
- deck means juxtaposed over and secured to said support means, said deck means being disposed over said first member;
- buoyant means disposed under said deck means and secured to said support means;
- second members mating with said ends of said first member, and each second member extending outwardly of the opposite ends of the dock section for releasable mating engagement with an end of another first member of a like floating dock section; and
- fastening means for disengagably securing said second members in mating relation with said first member.

2. The floating dock section of claim 1 wherein:
- said support means is of generally rectangular configuration thereby defining a rectangular dock section; and
- said first member is centrally disposed of said rectangular configuration.

3. The floating dock section of claim 2 wherein:
- said first member is centrally and longitudinally disposed of said rectangular configuration and said ends are hollow and have a predetermined inside configuration and inside diameter;
- said second members have the same general configuration as the inside configuration of said ends and have a slightly smaller outside diameter than the inside diameter of said ends;
- whereby said second members are disengagably and matingly receivable by said first member.

4. The floating dock section of claim 3 wherein:
- an aperture is formed through each of said ends of said first member perpendicularly of the longitudinal axis of the first member; and wherein
- said fastening means comprises threaded means affixed to said first member and aligned with said apertures, and bolt means threadably secured in said threaded means and engagable with said second members to, thereby, secure said second members in rigid and mating relation with said first member.

5. The floating dock section of claim 4 wherein:
- said first member is of elongate, cylindrical configuration; and
- said second member is of cylindrical configuration and has an outside diameter slightly less than the inside diameter of said first member.

6. The floating dock section of claim 5 wherein said first member has at least one branch, said branch being rigidly affixed at one end perpendicularly of said first member and disposed in the same horizontal plane as said first member, the free end of said branch terminating proximate one of the longitudinal sides of said dock section, said branch having the same inside configuration and inside diameter as said ends of said first member.

7. The floating dock section of claim 6 wherein said buoyant means is sufficiently buoyant to normally maintain said first member above the level of water.

8. The floating dock section of claim 7 wherein;
- said apertures are formed vertically through the uppermost portion of said first member; and
- openings, vertically aligned with said apertures, are formed in said deck means to receive said bolt means.

9. The floating dock section of claim 8 wherein a portion of said support means is disposed normally of said first member and aligned with opposing ends of the dock section; said portions having holes formed therethrough with axes parallel of the longitudinal axis of said first member; whereby adjacent, aligned dock sections can be rigidly secured together by bolts or the like to form a floating dock.

10. The floating dock section of claim 8 wherein said buoyant means is comprised of styrofoam ensheathed in a plastic material.

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