Aug. 8, 1950 D. C. STOPKEVYC 2,518,091

PONTOON ASSEMBLY

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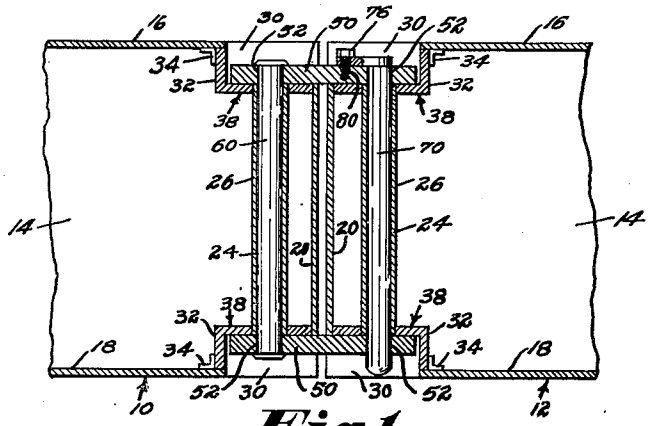


Fig. 1

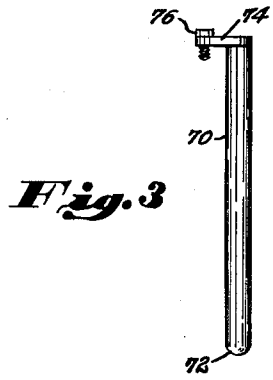


Fig. 3

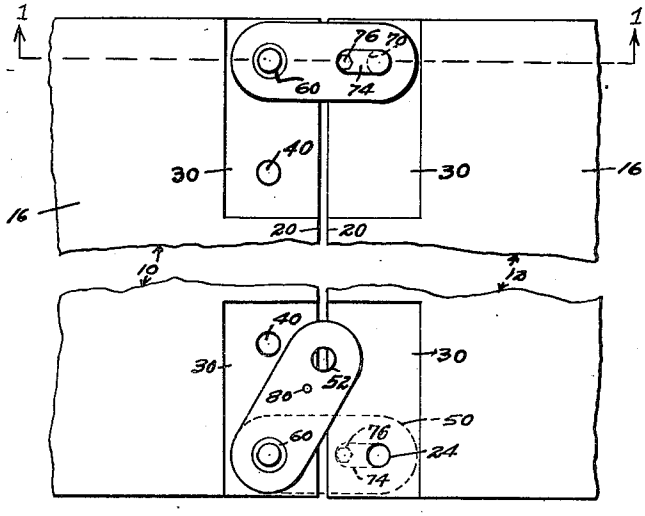


Fig. 2

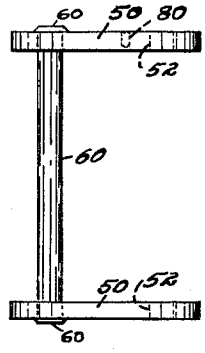


Fig. 4

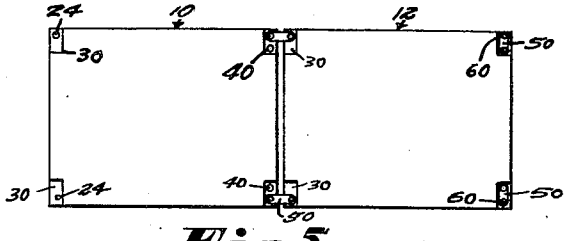


Fig. 5

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PONTOON ASSEMBLY

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1 Claim. (Cl. 114—77)

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The present invention relates to pontoons, floating docks, waterborne bridge sections and more particularly to a mechanism to join two or more of such structures together.

It is an object of the invention to provide a locking mechanism which is so constructed and the parts thereof so cooperatively arranged with respect to each other that two or more flotation members may be readily joined together, end-to-end or side-by-side to form a dock or bridge adapted to support and carry heavy loads.

Another object of the invention is to provide a locking mechanism for the above stated purposes which will distribute the pressure created by uneven loading or movement of vehicles on one or more floatation units to another or to a series of such units.

Another object of the invention resides in the provision of a locking device for securing adjacent pontoons together both at their upper and at their lower sides which is releasable with respect to both upper and lower interconnections, from the accessible upper side of said pontoons.

A further object of the invention is to provide a mechanism for the above stated purposes which is so constructed that it will not interfere with various operations upon its upper surface or will not become damaged on its under surface by contact with ground during use in shallow water.

Other and still further objects and advantages will be understood from the following detailed description of a preferred embodiment thereof.

In the drawings:

Figure 1 is a view-in-section, taken along line 1—1 of Figure 2, showing two pontoons positioned end to end and locked together. The opposite end of each pontoon is broken way for purposes of illustration.

Figure 2 is a top plan view of the two pontoons and two of the locking mechanisms of Figure 1, one mechanism being unlocked, another locked. The pontoons are broken away lengthwise and crosswise, and a locked position of one mechanism is shown in dotted lines.

Figure 3 is a side elevation of the locking shaft of the invention.

Figure 4 is a side elevation of a further shaft employed, shown as attached to the locking lugs of the invention.

Figure 5 is a diagrammatic top plan view of two whole pontoons shown locked end to end.

The pontoon assembly of this invention is best seen in Figure 5 and includes two pontoons generally indicated at 10 and 12.

The pontoons 10 and 12 are preferably of identical construction and are coupled together by means provided by the invention and later described. End portions of the pontoons 10 and 12, adjacent a coupling, are shown in Figure 1 in which each pontoon is provided with a hollow interior 14.

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The interiors 14 are each surrounded by generally rectangular walls including top decks or walls 16, bottom walls 18 and end walls 20. The top and bottom walls 16 and 18 are preferably disposed in parallelism while the end walls 20 are at a right-angle with respect thereto.

Each pontoon is provided with an elongated bore 24 extending therethrough to the bottom thereof. The bores 24 are provided with enclosure means comprising cylindrical tubes 26 forming walls around the bores 24 so that each bore is provided with an open end above and another open end below the respective pontoon, for sealing each bore from the adjacent hollow pontoon interior.

The pontoons are preferably provided with recesses 30 adjacent each corner of the upper decks thereof. The recesses 30 are preferably rectangular and extend inwardly from the pontoon corners and each recess extends inwardly from one side wall of its pontoon and inwardly from the upper or lower side of the pontoon as the case may be.

The other two walls of each recess are formed preferably by members in the shape of a right-angle in cross-section as shown at 32, the latter being secured by means of suitable brackets 34 to their respective top or bottom walls in a water-tight manner.

A leg 38 of each angle 32 is normally disposed horizontal and in parallelism with the top and bottom walls 16 and 18.

Some of the pontoon corners are preferably provided also with another bore 40 which is for the purpose of storage of a lock pin as later described.

The bores 40 are disposed spaced apart from the bores 24 in a direction in parallelism with the end wall 20. The storage bores 40 are surrounded by enclosure means similar to those shown at 26, although the enclosure means for the storage bores 40 are now shown in the drawing.

Upper and lower connector plates 50 are provided and are composed of flat, elongated plates disposed respectively on the upper and lower sides of the pontoons and extending in use across the adjacent edges of the pontoons 10 and 12 in use. In other words, the plates 50 extend

across the legs 38 of the members 32, which legs form a part of the top and bottom walls 16 and 18 respectively.

The connector plates 50 are each provided with two spaced apart apertures 52 in the ends thereof. The apertures 52 are for the purpose of receiving an axle 60 and a lock pin 70 respectively.

The axle 60 is disposed through the bore 24 of one of the pontoons, extends through the apertures 52 of the top and bottom plates 50 of that pontoon, and the ends of the axle 60 are peened over the outer sides of the lug 50. The lock pin 70 is of a size for reception in the bore 24 in the other pontoon and extends slidably through the apertures on the other end of the plate 50 in use.

The lower end of the lock pin 70 is grounded as shown at 70, while the upper end is provided with an arm 74 extending at a right-angle from the remainder of the pin 70. The arm 74 is provided with a threaded aperture therethrough for receiving a lock screw 76 which latter extends through the arm 74 in parallelism with the main body portion of the pin 70.

The upper connector 50 is provided with a threaded recess 80 for the reception of the screw 76, the recess 80 being spaced from the aperture 52 an equal distance with respect to the spacing of the screw 76 and the pin 70.

As thus described, it will be seen that the axles 60 are rigidly secured at their respective ends to their respective upper and lower connectors 50. Also, the connectors 50 are constructed and disposed so that when the connectors are in locking position, extended between the bores 24, the apertures 52 will be in alignment with the respective bores 24.

The storage bore 40 is spaced from the bore 24 of the axle 60 of its pontoon a distance equal to the distance between the apertures 52 of the connector 50.

As thus described in operation at a time when two pontoons are brought together so that either their sides or their ends are adjacent each other, the lock pin 70 may be removed from the storage bore 40 and the connectors 50 swung into position so that the lock pin 70 may be dropped through the upper connector 50, a bore 24 and will extend outwardly through the bottom of the lower lug 50.

To maintain the lock pin 70 in this position the screw 76 may be secured in the screw recess 80.

When the lock is in this position, the pontoons will move up and down in the water as a single unit under the weight of vehicles passing over the top of the pontoon intersection.

The tendency of the pontoons to become inclined at an angle with respect to each other under the force of a load at their intersection will be minimized by the locking device of this invention. This is because of the locking of the pontoon at both the top and bottom thereof.

The recesses 30 enable the parts of the locking device to be disposed inwardly of the outer walls of the pontoons. This is of particular advantage since should parts protrude upwardly of the pontoons they would conflict with passing traffic also, parts protruding from the sides and bottom of the pontoons would catch and bump against other pontoons and occasionally against the bottom of a river upon which the pontoons are being used.

The axle 60 is preferably outwardly against the lug members 50 or otherwise secured thereto for causing the axle and connectors, as shown in Figure 4, to be rotatable as a single unit. This makes it possible for an operator swinging the accessible upper lug 50 to simultaneously swing the lower connector 50.

It will be seen that it is also possible to lock the pontoons side-by-side as well as end-to-end.

When the locking devices are not in use the lugs 50 may be swung over the storage bore 40 and the pin 70 dropped through the upper lug 50, through the storage bore 40 and through the lower connector 50.

From the foregoing description, it is thought to be obvious that a pontoon assembly constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason, I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice, except as claimed.

I claim:

A pontoon assembly including two pontoons, said pontoons being disposed adjacent each other, said pontoons each having hollow interiors, each pontoon being provided with an elongated bore extending therethrough from the top to the bottom thereof, said pontoons each being provided with enclosure means forming a wall around said bore so that each bore is provided with an open end and another open below the respective pontoon and so that said bore is completely sealed from said hollow pontoon interior; upper and lower connector lugs disposed respectively on the upper and lower sides of said pontoons and extending in use across the adjacent edges of said pontoons; an axle rotatably disposed in the bore of one of said pontoons and extending outwardly of the ends of said bore, said axle being rigidly secured at its respective ends to said upper and lower lugs, said lugs each being provided with an aperture extending normally vertically therethrough, said lugs being constructed and disposed so that when said lugs are in locking position said apertures will be in alignment with the bore of the other pontoon; and a lock pin disposed through said lugs and through the bore of said other pontoon.

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