

W. H. OWENS AND J. L. TAYLOR.

DREDGE HULL.

APPLICATION FILED MAR. 11, 1922.

1,430,179.

Patented Sept. 26, 1922.

4 SHEETS—SHEET 1.

Fig. 1.

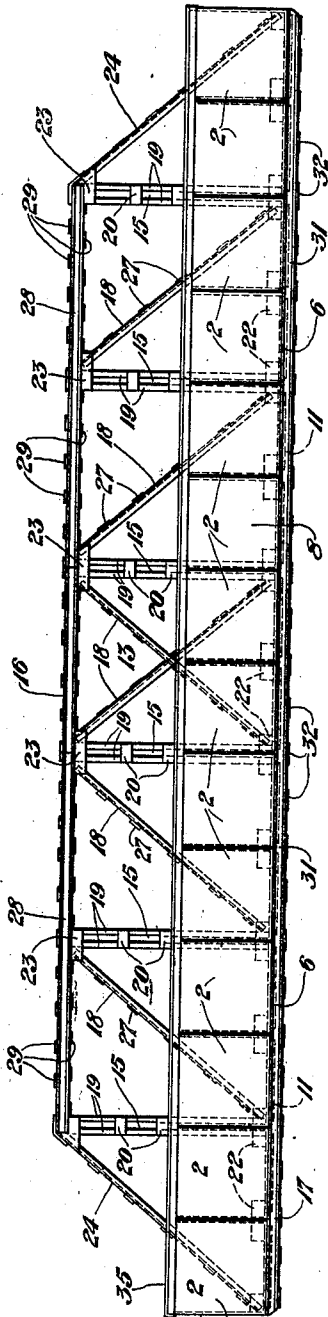
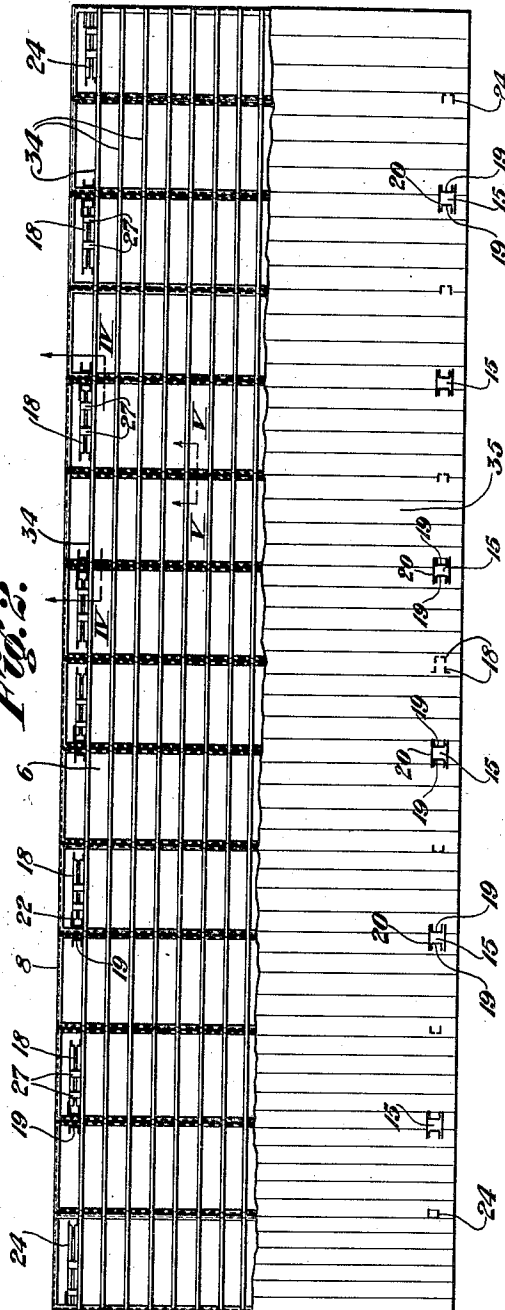


Fig. 2.



Witnesses:

Edwin Trust

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4 SHEETS—SHEET 2.

Fig. 3.

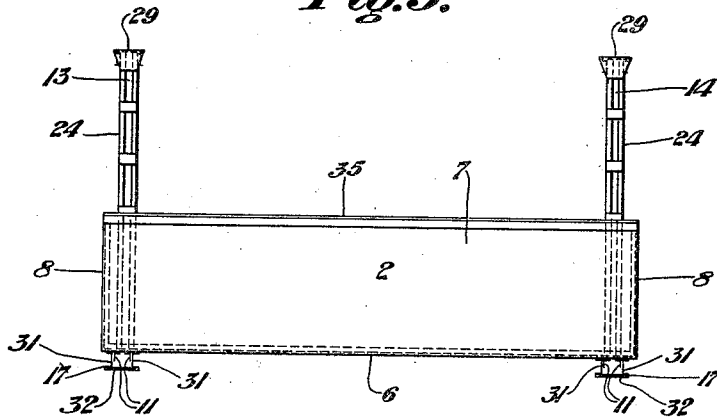


Fig. 5.

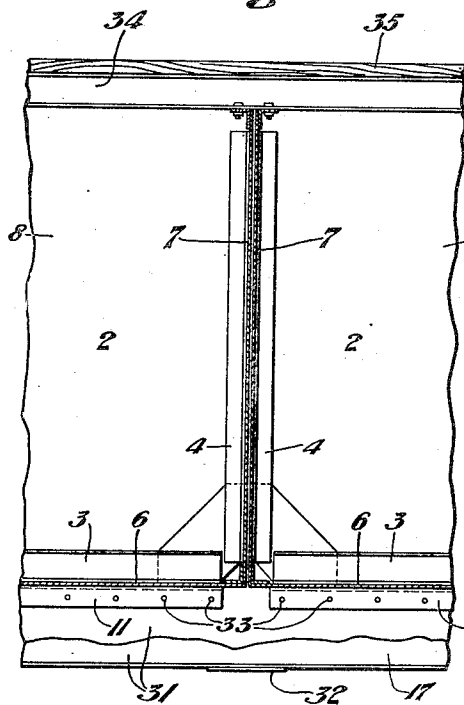
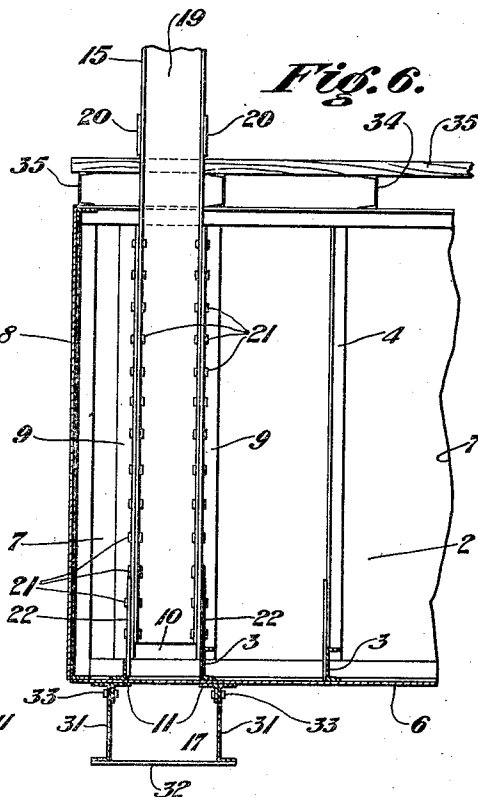


Fig. 6.



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4 SHEETS—SHEET 3.

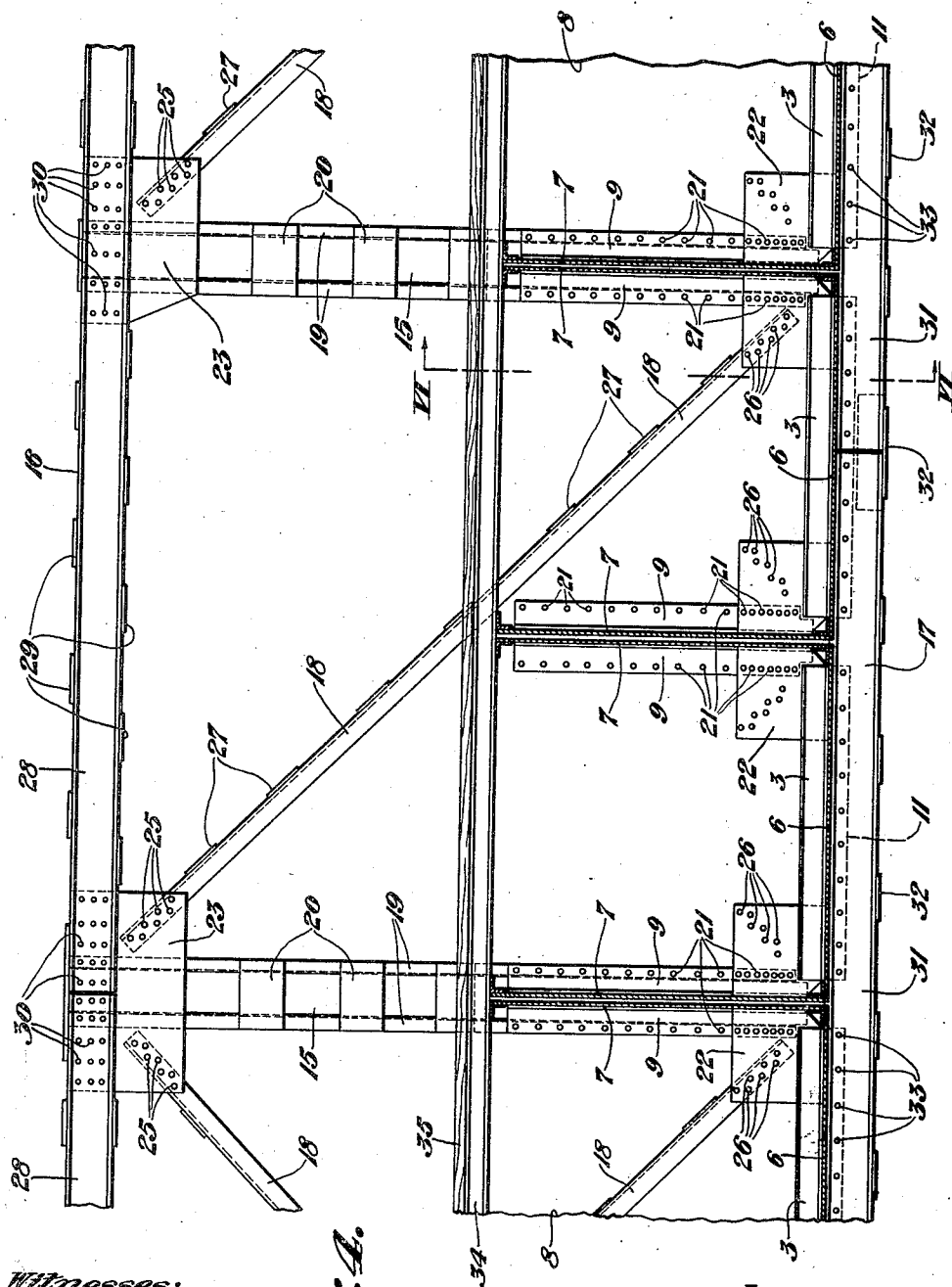


FIG. A.

Witnesses:

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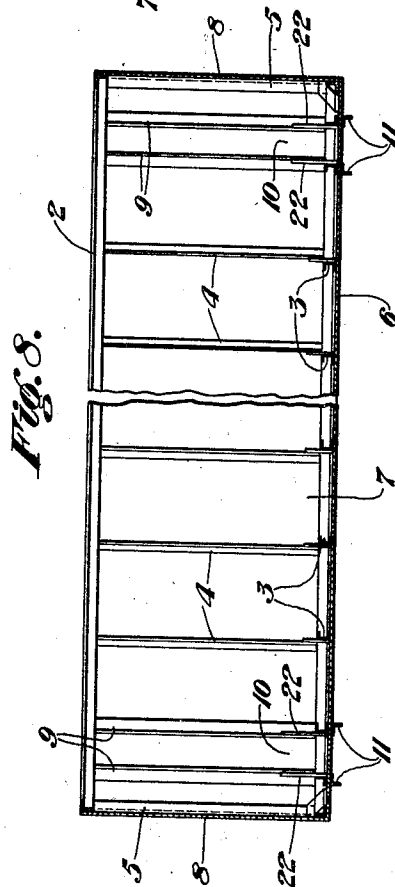
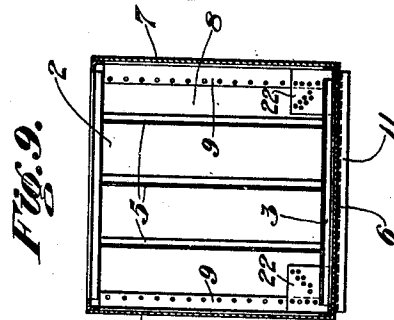
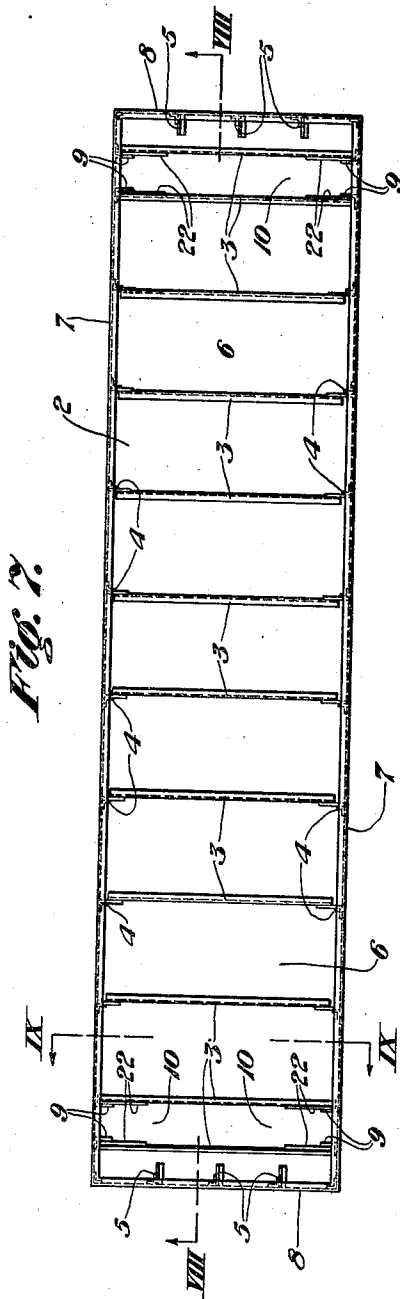
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4 SHEETS—SHEET 4.



Witnesses:

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Patented Sept. 26, 1922.

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UNITED STATES PATENT OFFICE.

WILLIAM H. OWENS, OF EVANS CITY, AND JOHN L. TAYLOR, OF WEST VIEW, PENNSYLVANIA.

DREDGE HULL.

Application filed March 11, 1922. Serial No. 542,941.

To all whom it may concern:

Be it known that we, WILLIAM H. OWENS and JOHN L. TAYLOR, citizens of the United States, and residents, respectively, of Evans City, in the county of Butler, and West View, in the county of Allegheny, both in the State of Pennsylvania, have invented certain new and useful Improvements in Dredge Hulls, of which the following is a specification.

This invention relates to hull constructions and more particularly to portable hulls for supporting dredging or other similar machinery, and has for one of its objects the provision of such a hull that may be dismantled and shipped over land to different points for service, and reassembled without the use of special or heavy tools and without damage to any of its parts.

Hulls of the type to which this invention pertains are used principally for dredging irrigation or drainage canals in inland territory to which the hull cannot be taken as a whole or in one piece.

Heretofore it has been the practice to build hulls for this purpose of wood and, at the completion of the particular operation on which it was engaged, to strip the hull of machinery, salvage a comparatively small portion of the lumber and abandon the rest. This practice has become so expensive that various efforts have been made to construct portable hulls. However, little or no success has been obtained with the portable hulls heretofore constructed.

The principal defect in the portable hulls heretofore constructed has been that they would not retain their shape so as to keep machinery installed on them in alinement, and furthermore they were not readily dismantled and assembled. All of these difficulties and objections have been overcome in the present hull construction.

In the drawings, Figure 1 is a side elevation of a hull constructed in accordance with this invention.

Figure 2 is a plan view of the same, one-half being a plan on the line of the deck framing and the other half being a plan on the deck line.

Figure 3 is an end elevation of the hull.

Figure 4 is an enlarged detail elevation on the line IV—IV of Figure 2.

Figure 5 is an enlarged detail on the line V—V of Figure 2.

Figure 6 is an enlarged detail elevation on the line VI—VI of Figure 4.

Figure 7 is a top plan of one of the pontoons.

Figure 8 is a longitudinal sectional elevation on the line VIII—VIII of Figure 7.

Figure 9 is a transverse sectional elevation on the line IX—IX of Figure 7.

Referring particularly to the drawings, the several pontoons comprising the hull are each designated generally by the numeral 2. Each pontoon is of identical construction and comprises bottom frame members 3, side frame members 4, and end frame members 5 adapted to support and stiffen the bottom plating 6, side plating 7, and end plating 8, respectively. A pair of angle shaped stiffening and supporting members 9 are arranged in spaced relation on the side plating adjacent each end of the pontoon. The extended flange or leg of the members 9 is of considerably greater depth than the members forming the side framing and the space between the members 9 forms a guideway for a purpose to be described.

Angle bars 11 are secured to the under side of the bottom plating of the pontoons adjacent each end also for a purpose to be described.

The pontoons 2 as thus described are all shop riveted and water tight and form small individual floating units or boats.

The pontoons are of such size as to be readily handled for transporting over land and are adapted to be set up side by side in any order they are received, since they are of identical construction, thus facilitating the assembly of the hull.

Detachable truss members 13 and 14 extend in a fore-and-aft direction the entire length of the hull and serve to tie the several pontoons together and strengthen them.

The trusses 13 and 14 are of identical construction and are composed of posts 15, top chord 16, bottom chord 17, and diagonal braces 18.

The posts 15 are formed of a pair of channel members 19 spaced apart by spacing plates 20, and are adapted to straddle or span each alternate joint formed by the abutting side faces of the pontoons. The

channel members 19 are adapted to fit snugly within the guideways 10 between the angle members 9 and to be securely but detachably bolted to the angle members 9 by bolts 21.

Each of the members 9 have connecting plates 22 permanently secured thereto at their lower ends, and said plates are also secured to the bottom frame members 3 extending between the members 9.

Other connecting plates 23 are permanently secured to the flanges of the channel members 19 forming posts 15 adjacent their upper end, and project outwardly beyond the one side of said posts and are adapted to have suitable diagonal bracing members 18 secured thereto. The plates 23 on the two center posts, however, extend beyond the posts both in a fore-and-aft direction to receive crossed diagonal bracing members.

The diagonal brace members 18 are detachably secured to each of the plates 23 by bolts 25 and extend downwardly and are detachably secured by bolts 26 to the plates 22 secured to the angles 9 between which the next adjacent post is secured. That is, the two center posts are tied together by diagonal braces extending from the top of each post to the bottom of the other, and other diagonal braces extend from the top of the center posts to the bottom of the next post and from the top of this post to the bottom of the next, and so on until all posts are thus tied together.

The end posts are provided with diagonal braces 24 which are tied to the plates 22 in the end pontoon.

The braces 18 and 24 are arranged in pairs. That is, one extends from each of the plates 23 and 23^a to the plates 22, and each pair of braces are tied together by tie plates 27 permanently secured thereto and thus form one unit.

The top chord of each truss is composed of comparatively short lengths of channel members 28 arranged in pairs so as to form a double channel chord. The pairs of channel members 28 are permanently tied together by tie plates 29 and are detachably secured to the tops of the posts 15 and plates 23 by bolts 30.

The bottom chord of each truss is also composed of comparatively short lengths of channel members 31 arranged in pairs and tied together by tie plates 32 to form a double channel chord. The bottom chord is detachably secured to the clips 11 secured to the bottom of each pontoon by bolts 33.

Suitable channel deck framing 34 is bolted across the top of the pontoons in a fore-and-aft direction and is adapted to support deck flooring 35 which may be heavy wood planks as shown or metal plates as desired.

It will thus be seen that the trusses are sufficiently strong and durable to firmly hold

the pontoon sections 2 together and to form a rigid hull therefrom, while being so constructed as to be readily dismantled when desired, also that all parts of the hull are of such size, weight, and construction as to provide for ready shipment over land without the provision of any special equipment.

Assuming that the hull parts have been shipped over land and are ready for assembly, to assemble the operation would be as follows: The lower chords would be first lined up on suitable temporary ways, the pontoons would then be set on the chords in any order they present themselves, and the pontoons would be securely bolted to the chords by bolts 33. The truss post 15 would then be set in position and bolted to the side framing member 9 by bolts 21. The truss diagonal braces 24 would then be set in position and bolted to the connecting plates 22 and 23, then the top chord will be placed on top of the posts 15 and bolted to the posts and to plates 23 by bolts 30.

The hull is now a complete floating structure and the deck framing 34 and deck flooring 35 may be laid before or after launching as desired.

It will be noted that all bolts are in the open and readily accessible and that there are no openings in the skin or shell plating of the pontoons. Therefore, the hull is as nearly leak-proof as is possible to make such structures.

To dismantle or disassemble the hull, all machinery, cabins, etc., will be removed and the various parts will be unbolted in the reverse order to which they were assembled.

We claim:—

1. A hull comprising a plurality of pontoon members, each of said members being composed of bottom, end and side framing having suitable plating rigidly secured thereto, and a plurality of trusses extending in a fore-and-aft direction the entire length of the hull and adapted to rigidly connect said pontoons together, said trusses each being composed of top and bottom chords, a plurality of vertical posts and a plurality of diagonal bracing members.

2. A hull comprising a plurality of pontoon members, each of said members being composed of bottom, end and side framing having suitable plating rigidly secured thereto, and a plurality of trusses extending in a fore-and-aft direction the entire length of the hull and adapted to rigidly connect said pontoons together, said trusses each being composed of top and bottom chords, a plurality of vertical posts and a plurality of diagonal bracing members, said posts and diagonal bracing members being extended from said top chord to the junction of the side and bottom framing of the pontoons and detachably secured thereto.

3. A hull comprising a plurality of pon-

toon members, each of said members being composed of bottom, end and side framing having suitable plating rigidly secured thereto, and a plurality of trusses extending in a fore-and-aft direction the entire length of the hull and adapted to rigidly connect said pontoons together, said trusses each being composed of top and bottom chords, a plurality of vertical posts and a plurality of diagonal bracing members, said posts and diagonal bracing members being extended from said top chord to the junction of the side and bottom framing of the pontoons and detachably secured thereto, said top and bottom chords being formed of a plurality of relatively short lengths detachably secured together, and said bottom chord being detachably secured to the bottom of each pontoon.

4. A hull comprising a plurality of substantially rectangular pontoons, each of said pontoons being composed of bottom, end and side framing having suitable plating rigidly secured thereto, said pontoons being devoid of any erection or connecting holes or other openings in their side, end and bottom plating, and a plurality of trusses extending in a fore-and-aft direction the entire length of the hull adapted to rigidly connect said pontoons together, said trusses each being composed of top and bottom chords, a plurality of vertical posts, and a plurality of diagonal bracing members, said posts and diagonal bracing members being extended from said top chord to the junction of the side and bottom framing of the pontoons and detachably secured thereto, said top and bottom chords

being formed of a plurality of relatively short lengths detachably secured together, and said bottom chord being detachably secured to the bottom of each pontoon.

5. An all metal hull for supporting dredging machinery and the like comprising the combination with a plurality of substantially rectangular pontoons each of which is substantially a small boat in itself, and said pontoons being arranged side by side in close proximity to each other and being composed of suitable bottom, side and end framing having suitable plating rigidly and permanently secured thereto, of a plurality of trusses extending in a fore-and-aft direction the entire length of the hull, said trusses each being composed of top and bottom chords, a plurality of vertical posts, and a plurality of diagonal bracing members, said posts being composed of two parallel spaced members and being arranged to straddle the side walls of two adjacent pontoons, and said posts and diagonal bracing members being extended from said top chord to the junction of the side and bottom framing of the pontoons and detachably secured thereto, said top and bottom chords being formed of a plurality of relatively short lengths detachably secured together, and said bottom chord being detachably secured to suitable clips permanently secured to the bottom plating of each pontoon.

In testimony whereof we have hereunto set our hands.

WILLIAM H. OWENS.
JOHN L. TAYLOR.