May 12, 1931. F. BITTE 1,804,667

FLOATING MARINE WAY

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Fig. 1.

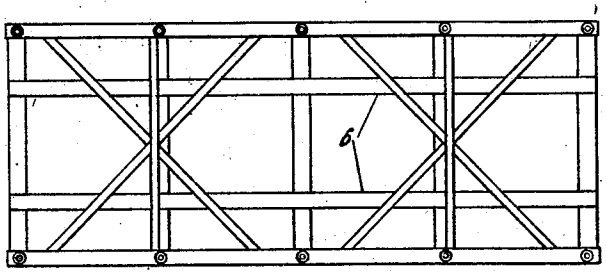


Fig. 2.

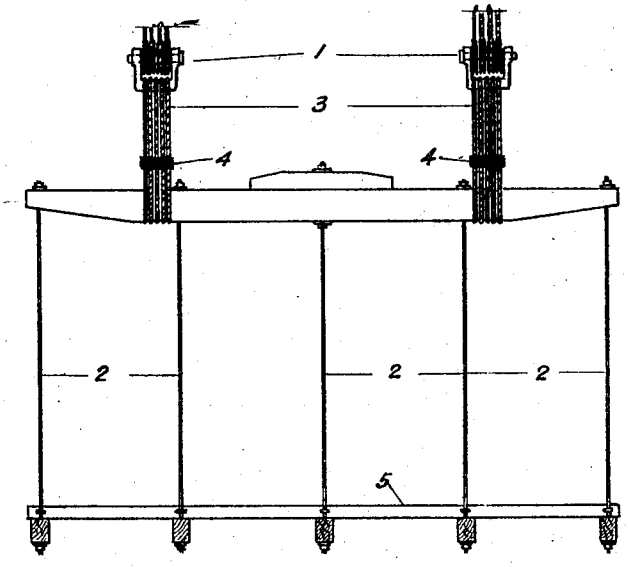
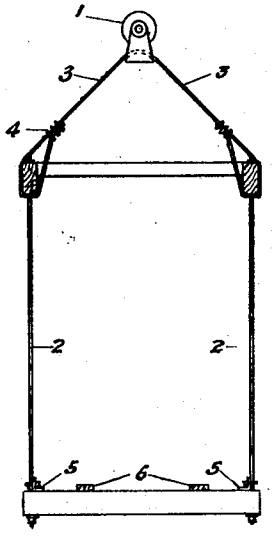


Fig. 3.



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Fig. 4.

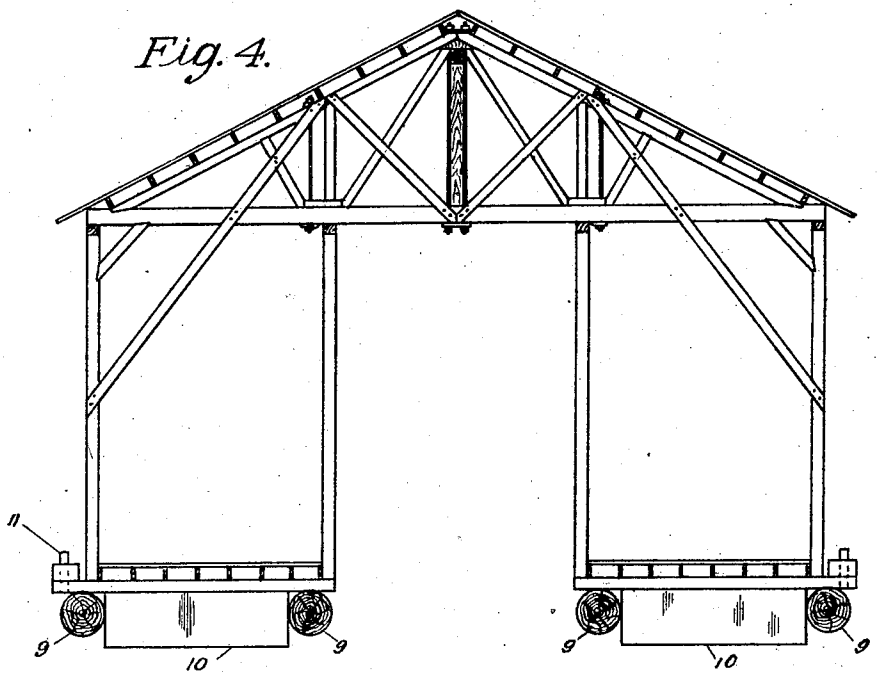
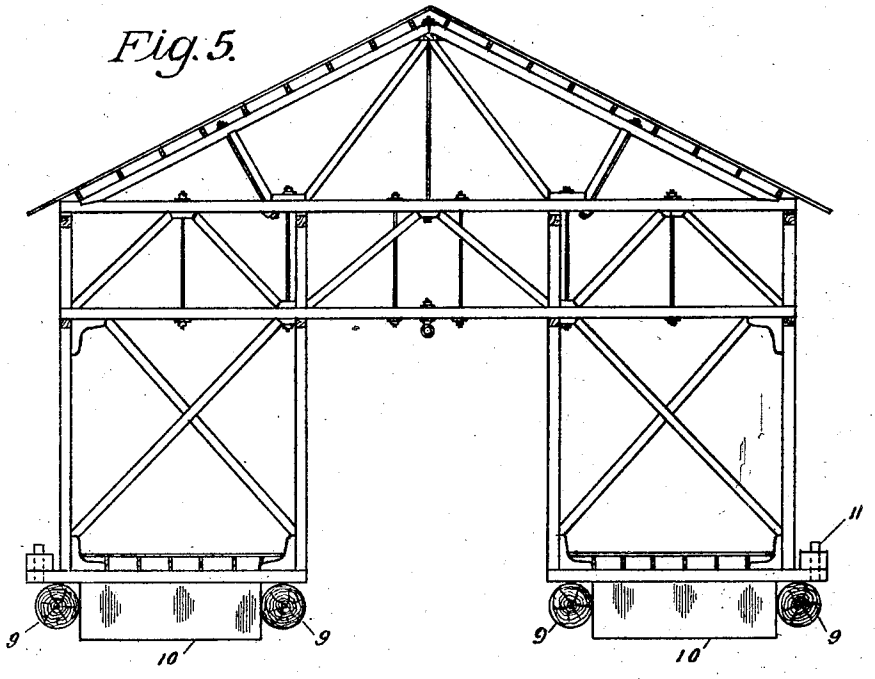


Fig. 5.



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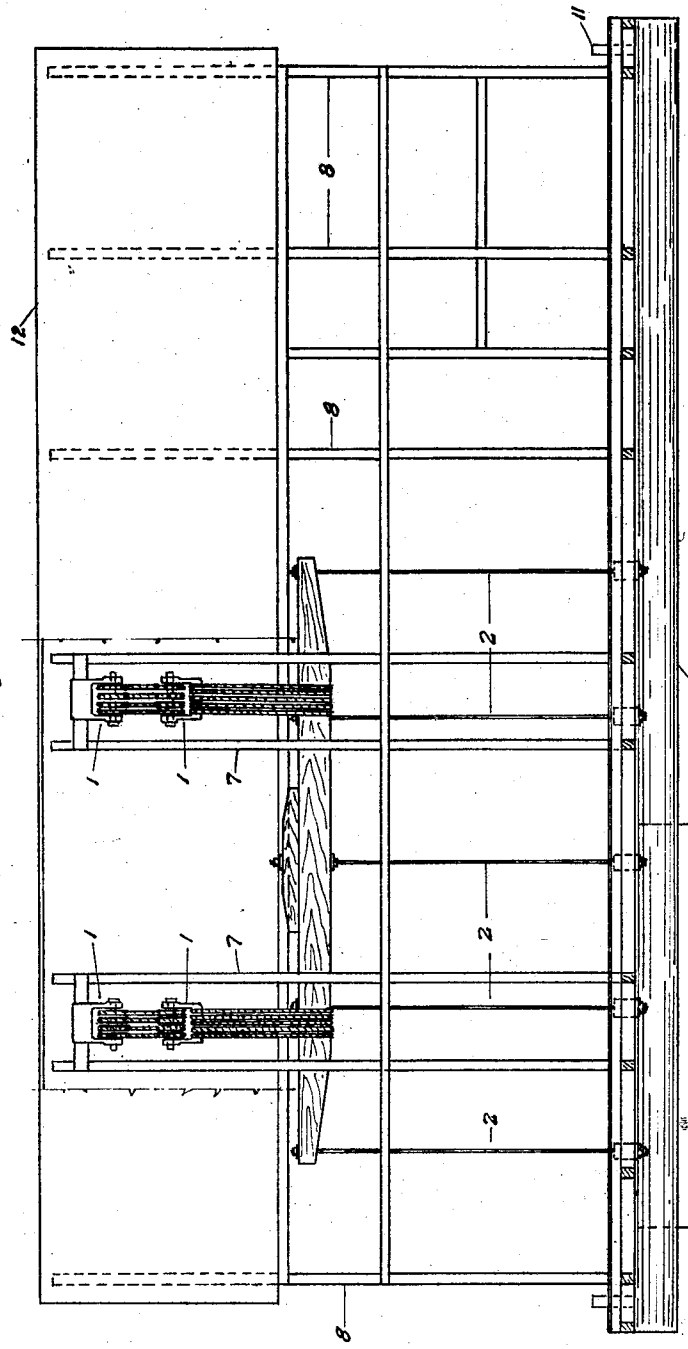


Fig. 6.

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Patented May 12, 1931 1,804,667

UNITED STATES PATENT OFFICE

FRED BITTE, OF PORTLAND, OREGON

FLOATING MARINE WAY

Application filed May 12, 1930. Serial No. 451,620.

My invention relates more particularly to a means for dry-docking boats.

The objects of my invention are: to provide a suitable means of buoyancy through logs and pontoons; to substantially bind said logs and said pontoons together by means of appropriate framework and bracings; to construct a carriage capable of withstanding the dead weight of a boat; to provide a means of suspension for said carriage through two sets of two derrick frames mounted on the bracings holding the logs and pontoons together; to provide a means of raising and lowering the carriage through an arrangement of two block and tackle sets; to construct a suitable work room, quarters for crew and office; to shelter the whole structure with a roof; and to provide a means for mooring the structure.

I obtained these objects in the manner illustrated in the accompanying drawings and set forth in the specifications following:

Figure 1 is a plan view of the carriage. Figure 2 is a side elevation of the carriage. Figure 3 is an end elevation of the carriage. Figure 4 is an end elevation of one of the four derrick frames. Figure 5 is an end elevation of one of the four strengthening frames. Figure 6 is a side elevation of the whole structure with a portion of the roof shown removed.

Similar numbers of reference refer to similar parts throughout the several views:

Numbers 1 and 3 are the block and tackle arrangement used in raising or lowering the carriage; number 2 iron rod threaded at both ends used in holding upper and lower portions of carriage together; number 4 cable clamp for binding the several bights of cable on the upper portion of the carriage together; number 5 angle iron stringer for holding iron rods 2 in parallel with one another; number 6 slide for bilge blocks; number 7 derrick frame for bearing weight of the carriage; number 8 strengthening frame for reinforcing the whole structure; number 9 log for supplying buoyancy and foundation for superstructure; number 10 pontoon for supplying buoyancy; number 11 mooring bit for facilitating the mooring of the craft; and number 12 roof for providing shelter.

It will be observed that the combination of the above parts, assembled according to the accompanying drawings, forms a means of completely removing from the water any boat of any size up to the maximum capacity of the carriage for any purposes necessary whatsoever.

It will also be observed that inasmuch as the device is not necessarily fixed to any stationary body, it may be easily removed to any desired place.

The logs 9 are held in place by timbers placed across and securely fastened to them under the decking. The pontoons 10 between them are so placed in relation to longitudinal position that the resultant of their force of buoyancy and the force of buoyancy of those portions of the four logs which bear the least weight will be in the middle of the carriage. The two separate rafts thus formed, that is, the two logs running parallel with a pontoon between them, the three parts being held together as described above, are held parallel and comparatively rigid with respect to one another by means of the strengthening frames 8 and the derrick frames 7. The strengthening frames 8 are so designed and so secured to the logs and pontoons that they will offer the greatest resistance to any strains that would tend to break the structure apart. The derrick frames 7 are mounted in pairs with a timber of proper dimensions across their peaks to support the upper block of the block and tackle set and in such a position that said block will be directly above the block secured to the carriage. The cables 3 are the connection between the carriage and the timber across the derrick frames. The cable clamps 4 serve to bind the several bights of cable together. The roof 12 is laid on rafters running from one frame to the next. The mooring bits 11 are firmly secured to the logs proper. The lower part of the carriage is held rigid by the two angle iron stringers 5 and the bilge block slides 6. These stringers are held to the iron rods 2 with U bolts. The top of the carriage is substantially

braced by timbers to prevent its collapsing from the strains imposed upon it by the supporting cables.

Having fully described my invention, I claim and desire to protect by Letters Patent:

1. In a floating marine ways, a carriage consisting of the combination of two timbers, of rectangular cross section, separated by six bracing timbers, two of which run directly between the timbers and four of which run diagonally between said timbers, and from each of which five iron rods, equally spaced along the length of each of said timbers, are dropped to five timbers directly below and running at right angles to said timbers, the lower timbers being held in position by two bilge block slides and by two lengths of angle iron, each length fixed to the iron rods by means of U bolts.

2. In a floating marine ways, a derrick frame consisting of a combination of four timbers of equal lengths, mounted upright and in the same plane, across the tops of which runs another timber upon which in turn are set two rafters with their lower extremities in depressions in said cross-timber, the whole being spiked and bolted together and substantially braced by means of thirteen bracing timbers, two of which run from the midpoints of the two extreme upright timbers to the two midpoints of the two rafters, two of which run from the midpoints of said rafters to the midpoint of the cross-timber upon which the rafters are set, two of which run from the peak formed by the rafters to the cross-timber at an angle of sixty degrees to said timber, two of which run vertically from the midpoints of the rafters to the cross-timber, and four of which serve as corner bracings, and by three iron rods, one of which runs from the peak formed by the rafter vertically to the cross timber, and two of which run vertically from the midpoints of said rafters to said timber.

3. In a floating marine ways, a strengthening frame consisting of a combination of four timbers, mounted upright and in the same plane, the outside timbers of which are braced by means of three ship's knees and two diagonal bracings each and across the tops of which runs a timber upon which in turn are mounted continuations of the four uprights across the tops of which continuations runs another timber which supports the rafters, the whole being spiked and bolted together and subtsantially braced by means of six bracings running zig-zag between the two cross-timbers, by two bracings running from the peak of the rafters to the cross-timber upon which the rafters are set and forming an angle of sixty degrees with said timber, and by two bracings running perpendicularly from the rafters to the cross-timber, and by seven iron rods, four of which run between the two cross-timbers and three of which run between the rafters and the upper cross-timber, all rods running through the timbers and being fitted with washers and nuts at their extremities.

4. In a floating marine ways, a structure consisting of a combination of a carriage, four derrick-frames, and four strengthening frames, two pairs of logs lying parallel with pontoons attached to and between each pair of logs, the logs and pontoons being held together and in position by means of timbers running across them, said timbers being securely affixed with spikes and bolts, and by the four strengthening and four derrick-frames, the whole combination being firmly secured to said timbers and the whole structure being arranged in such a way that one strengthening frame will be at one end of the logs, the four derrick-frames, arranged in pairs with a heavy timber across the peaks of the extreme pairs for suspending the carriage, with respect to its longitudinal position, near the end strengthening-frame, and the other three frames equally spaced between the derrick-frames and the opposite end of the logs.

In witness whereof, I have hereunto set my hand.

FRED BITTE.