

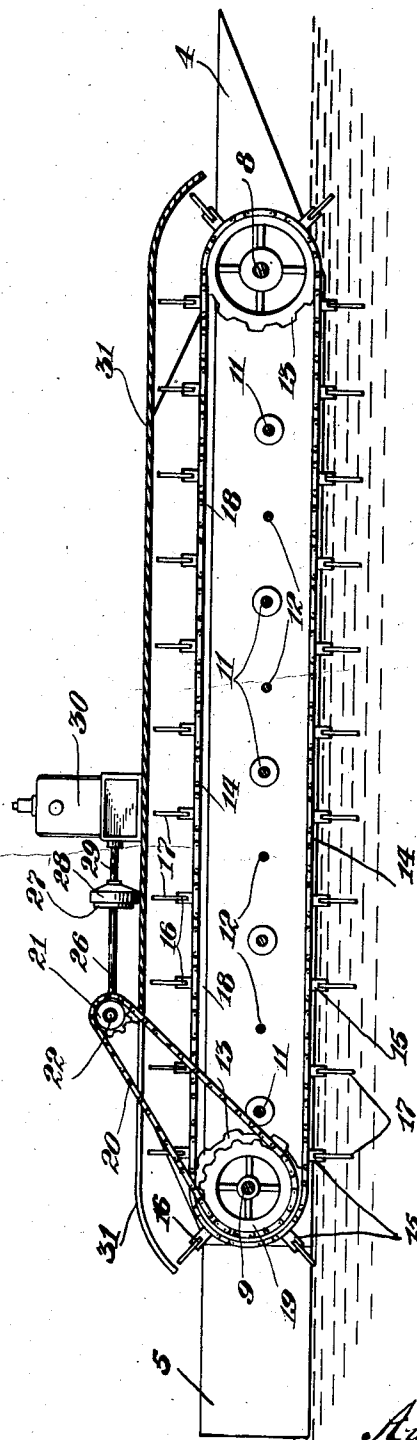
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MARINE VESSEL.
APPLICATION FILED MAR. 9, 1912.

1,047,758.

Patented Dec. 17, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



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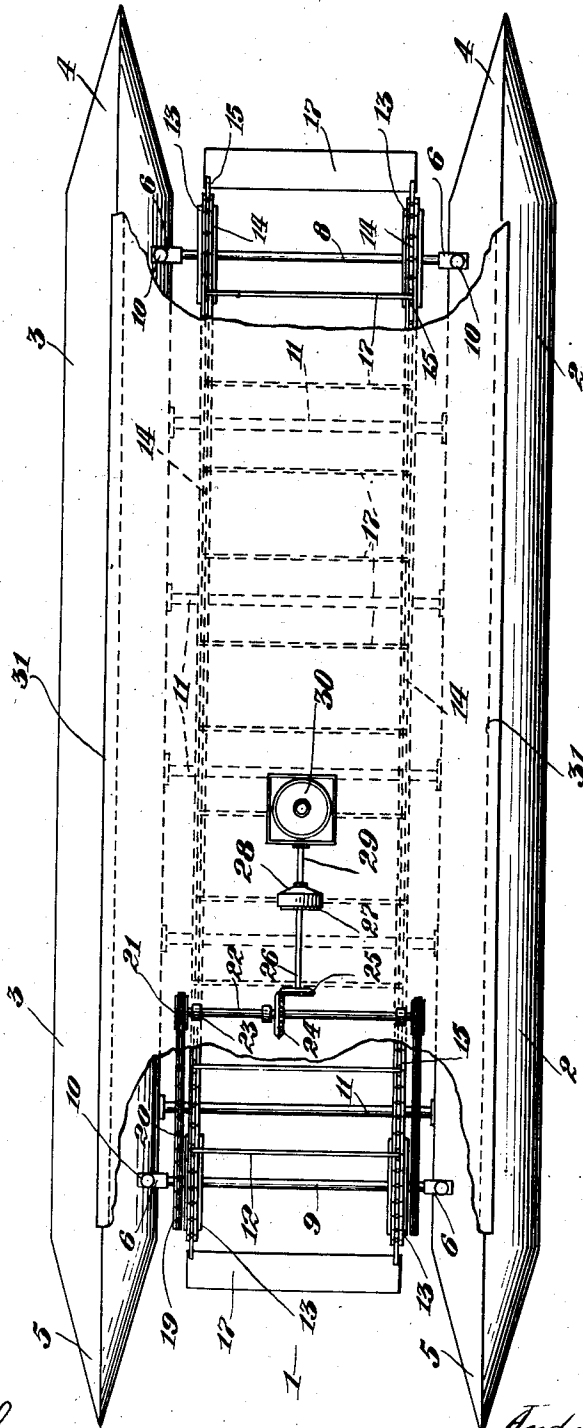
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Fig. 2.



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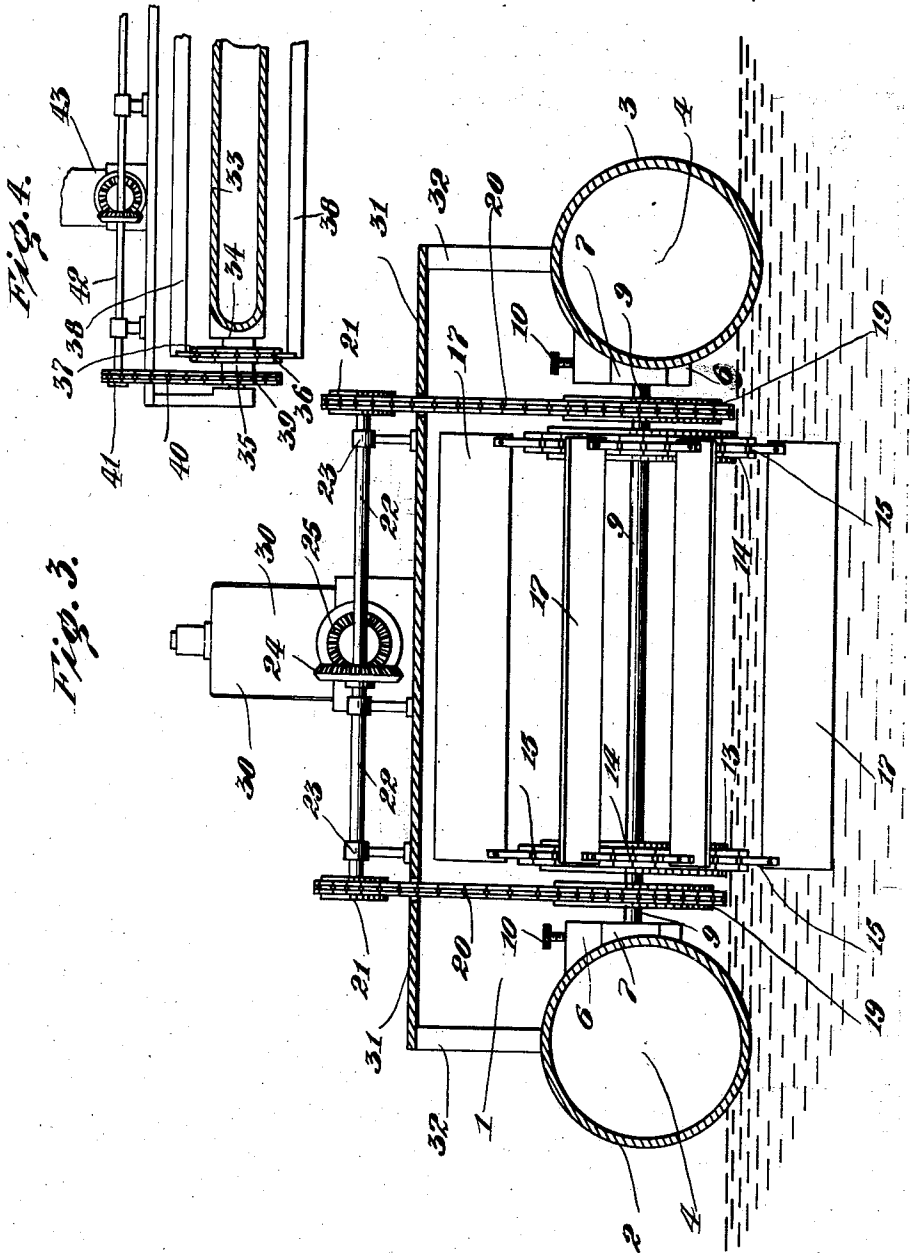
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Patented Dec. 17, 1912.

3 SHEETS-SHEET 3.



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1,047,758.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed March 9, 1912. Serial No. 682,564.

To all whom it may concern:

Be it known that I, ANDREW C. DAM, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Marine Vessels, of which the following is a specification.

The invention relates to improvements in hydro planes and has particular reference to that type of water surface vessel employing the combined use of multiple pontoons or floating bodies, having associated therewith means for obviating the greater lines of resistance and overcoming all excess skin friction during its projection through the water, and also means embodied therein for propelling said plane.

The object of the invention is the providing of a primary structure in the form of multiple pontoons or hulls so shaped as to reduce the water line resistance and skin friction to a minimum, having associated therewith a super-supporting structure arranged to join said primary structure into a unit or single hydro plane, said super-structure carrying an auxiliary super-supporting structure suitably decked and carrying means mounted intermediate of said multiple pontoons a means of propulsion provided with a projectile operating surface or multiplicity of blades in which the propelling powers are increased to a maximum, and means for actuating said means of propulsion.

In the following is described in connection with the accompanying drawings, one embodiment of the invention the features thereof being more particularly pointed out hereinafter in the claims.

In the drawings,—Figure 1 is a longitudinal sectional view of the apparatus; Fig. 2 is a plan view thereof showing the deck of the structure broken away to more clearly illustrate the essential features of the invention. Fig. 3 is a vertical transverse sectional view of the plane; and Fig. 4 is a modified type of the plane showing the application of a single pontoon or hull and the means of propelling the same.

Similar numerals of reference indicate similar parts throughout the several views.

In the drawings 1 indicates the plane or vessel as a whole comprising hermetically sealed pontoons or hulls 2 and 3 each thereof being provided with deflector apical

bows 4 and converging stern ends 5, the under surfaces of which are so shaped as to provide water engaging surfaces that will obviate a maximum of skin friction and also surfaces that will readily take the natural 60 formation of water lines, the object being to provide projectile bodies capable of being propelled rapidly over bodies of water under any and all conditions. Said pontoons 2 and 3 may be made of any desired trans- 65 verse shape and form in order to more readily conform to the scientific lines of projectile bodies capable of being propelled through water by means of an associated motive power actuating means. Hulls of 70 pontoons 2 and 3 have mounted thereon and rigidly attached thereto plates or bearings 6 arranged fore and aft of their respective bodies carrying bearings 7 having mounted therein rotative shafts 8 and 9 and capable 75 of vertical adjustment therein by means of set screws or like means 10. Shafts 8 and 9 act as means of holding pontoons 2 and 3 rigidly as a unit but in order to further insure the rigidity of the structure when as- 80 sembled a plurality of transverse struts or beams 11 are provided as well as a series of bars 12.

Rotative shafts 8 and 9 have mounted thereon and adapted for rotation therewith 85 sprockets 13 arranged adjacent to the inner walls of said hulls 2 and 3, carrying chains 14 having mounted in every third or fourth link thereof supporting arms 15 provided with reception slots 16 adapted to receive the 90 respective ends of a plurality of blades 17. Said blades 17 span the entire space between the chains 14 and further extend longitudinally approximately the length of the plane as a whole so as to provide the maximum of 95 propelling surface. Chains 14 may be so arranged as to travel over a longitudinal beam 18 to support same and the plurality of blades and to obviate the depending sagging of the same during any position of the 100 motive power propelling means.

The lateral rotative shaft 9 constitutes the driving shaft and has mounted thereon between sprockets 13 and the walls of pon- 105 toons 2 and 3, sprockets 19 carrying chains 20 which extend upwardly and engage sprockets 21 on transverse shaft 22 mounted in bearings 23, said shaft 22 having mounted thereon a beveled gear 24 engaging a 110 like gear 25 on the end of auxiliary shaft 26

carrying at its end a cone head 27 adapted for intermittent engagement with clutch head 28 on crank shaft 29 of internal combustion engine or motor 30. Motor 30 is
 5 mounted on a suitable supporting housing or decking 31 carried by super-structure 32 mounted in any suitable manner on hulls 2 and 3 and suitably reinforced by any type of structural framework adapted to the
 10 bodies of the nature as herein shown and described.

With reference to Fig. 4 of the drawings, the structure illustrated therein shows the utility of a single pontoon or hull 33 having
 15 rigidly mounted on its respective sides bearings 34 carrying rotative shafts 35 having mounted thereon sprockets 36, supporting chains 37 having mounted thereon a plurality of blades 38, the movement of which is
 20 over and beneath the floating hull 33. Shafts 35 also carry the driving sprockets 41 on driving or driven shaft 42 from motor 43 in a like manner as that as hereinabove set forth, the super-structure required
 25 being also supported by means of attachment to the main body at the respective sides of said pontoons 33.

It is obvious that the apparatus as herein shown and described may be varied in
 30 many ways without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A device of the character described
 35 comprising a floating supporting body of multiple pontoons, means for connecting said pontoons together, bearings mounted on said pontoons, rotative shafts mounted in said bearings, means for adjusting said
 40 shafts vertically in said bearings, sprockets carried by said shafts adjacent to the sides of said pontoons and adapted to rotate with said shafts, chains carried by said sprockets, a plurality of supporting arms carried by
 45 said chains, a plurality of propelling blades mounted in said arms, auxiliary sprockets carried by one of said rotative shafts, a super-structure mounted on said pontoons, a
 50 deck carried by said super-structure, a shaft mounted in bearings on said deck, sprockets carried by said shaft, chains carried by said auxiliary sprockets and engaging the

sprockets on said last mentioned shaft, a motive power actuating mechanism mounted on said deck, and a clutch mechanism associated with said motive power actuating
 55 means adapted to rotate said last mentioned shaft to actuate said chains carrying said plurality of propelling blades.

2. A device of the character described including a floating body of independent
 60 and separate hulls each thereof provided with water engaging surfaces, and a rigid supporting frame connecting said hulls together in a unit comprising a plurality of
 65 transverse beams, bearings mounted on said pontoons fore and aft thereof, rotative shafts mounted in said bearings and adjustable with relation thereto, sprockets mounted on said rotative shafts, chains carried by
 70 said sprockets, a plurality of supporting arms mounted on said chains provided with reception slots, a plurality of propelling blades mounted in said reception slots and fastened to said arms, auxiliary sprockets
 75 carried by one of said shafts, chains carried by said sprockets, a super-structure mounted on said hulls, a deck formed on said super-structure, bearings mounted thereon, a driven shaft mounted in said
 80 bearings, sprockets carried by said driven shaft engaging said chains carried by said auxiliary sprockets, motive power generating means supported on said super-structure, a drive shaft actuated by said power
 85 generating means, a clutch associated with said drive shaft for controlling the transmission of power from said motive power generating means, and an auxiliary drive shaft carrying means engaging said clutch
 90 and driven shaft for rotating the same to cause rotative power to be imparted to the sprockets on said first mentioned shafts and thereby impel and project said hulls in a forward or backward direction with rela-
 95 tion to a water surface.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANDREW C. DAM.

Witnesses:

L. M. BACON,
 C. S. ASHLEY.