T. RUIZ DE ESPARZA.

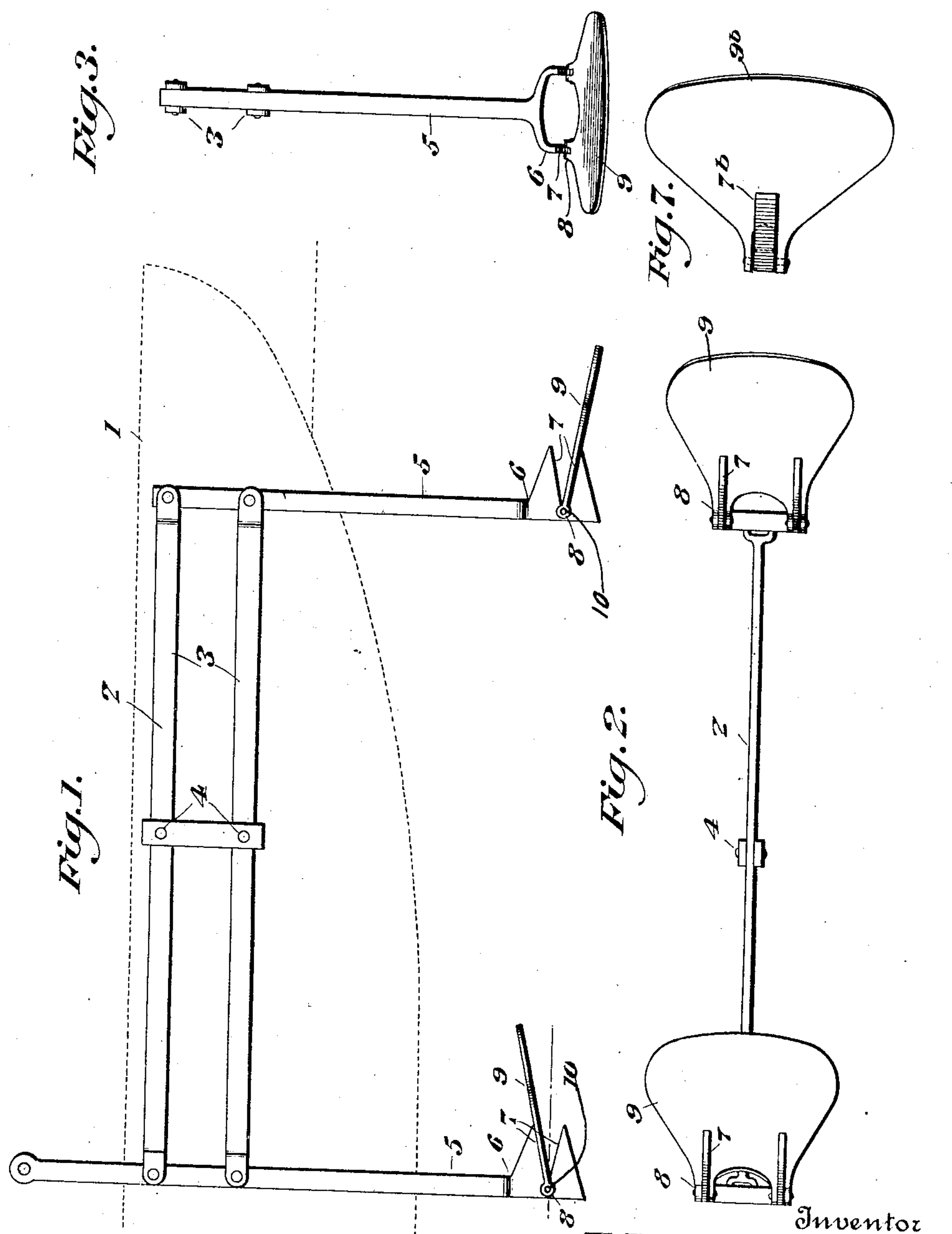
MARINE PROPULSION.

APPLICATION FILED MAR. 25, 1919.

1,329,228.

Patented Jan. 27, 1920.

2 SHEETS—SHEET 1.



Inventor

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Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

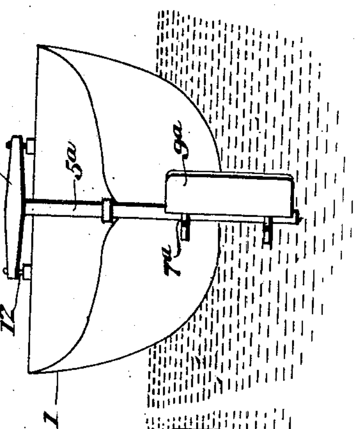


Fig. 4.

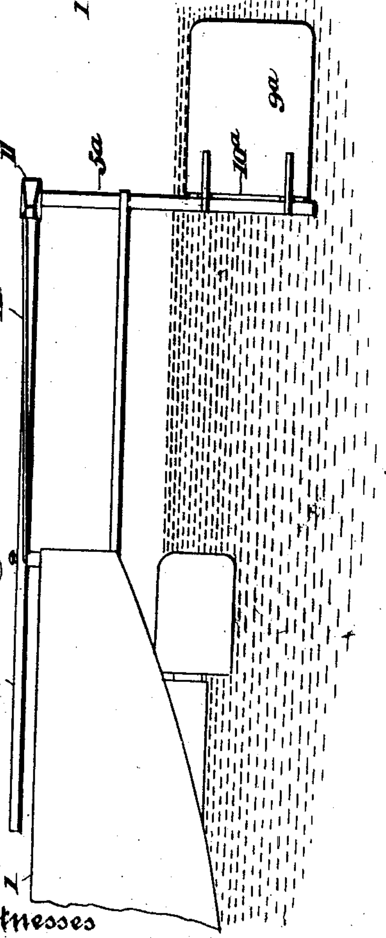
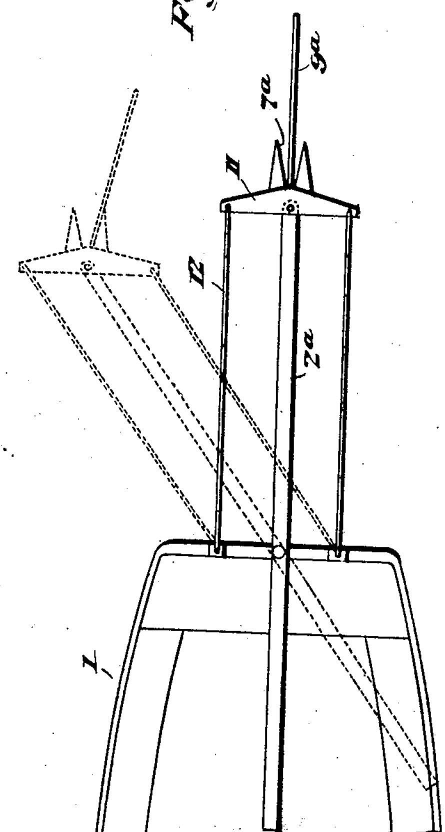


Fig. 5.



Witnesses

[signatures]

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UNITED STATES PATENT OFFICE.

TIMOTEO RUIZ DE ESPARZA, OF CALEXICO, CALIFORNIA, ASSIGNOR OF TWO-FIFTHS TO PETER BARNES AND ONE-TENTH TO FRED DEFOY, BOTH OF CALEXICO, CALIFORNIA.

MARINE PROPULSION.

1,329,228. Specification of Letters Patent. Patented Jan. 27, 1920.

Application filed March 25, 1919. Serial No. 284,985.

To all whom it may concern:

Be it known that I, TIMOTEO RUIZ DE ESPARZA, a citizen of Mexico, residing at Calexico, in the county of Imperial and State of California, have invented new and useful Improvements in Marine Propulsion, of which the following is a specification.

My present invention pertains to marine propulsion, and consists in the peculiar and advantageous propeller construction hereinafter described and claimed.

In the accompanying drawings, hereby made a part hereof:

Figure 1 is a view partly in dotted lines and partly in full lines showing a portion of a vessel hull equipped with the vertical arrangement of my invention.

Fig. 2 is a projected detail view of certain parts comprised in Fig. 1.

Fig. 3 is a detail view taken at right angles to Fig. 1.

Figs. 4, 5 and 6 are views illustrative of the horizontal arrangement of the improved propelling mechanism.

Fig. 7 is a detail of a slight modification in the mounting of the planes shown in Figs. 1–3.

Referring by numeral to said drawings, and more particularly to Figs. 1 to 3 thereof:

1 is a vessel hull which is not of my invention and may therefore be of any type compatible with the application and operation of the improved propelling mechanism.

In furtherance of the vertical arrangement of my invention I employ a walking beam 2 which is preferably made up of two parallel bars 3, fulcrumed at intermediate points in their lengths as indicated by 4. Connected to and depending from the bars 3 at the ends thereof are uprights 5; one of the said uprights being extended above the uppermost bar 3 for the application of power which may be transmitted from a suitable motor to the extended portion of the upright through the medium of any appropriate driving connection. The lower portion of each upright 5 is bifurcated as indicated by 6, and the arms of the bifurcations are provided each with two spaced abutments 7, which are, by preferance, relatively arranged as best shown in Fig. 1.

Pivoted to the arms of the bifurcated portions 6 are projections 8 on the propeller planes 9 which may be shaped as shown in Figs. 2 and 3 or may be of any other configuration compatible with the purpose of my invention.

In the practical operation of my propeller means, the walking beam 2 is rocked in a vertical plane, and the uprights 5 are moved upwardly and downwardly, as will be readily appreciated. Incidental to the downward movement of each upright 5 its complementary plane 9 will bring up and bear against the upper abutments 7, as will be readily understood by reference to the left hand portion of Fig. 1. On the upward movement of each upright 5 its complementary plane 9 will bring up against the lower abutments 7. The centers of movement of the planes 9 are indicated by 10, and it will be manifest that each plane 9 has a play of about 5 degrees at each side of a horizontal plane passing through the said centers of movement. From this it follows that when the propeller planes are forced upwardly and downwardly through the water the vessel will be efficiently propelled. It will also be manifest that in order to reverse the propelling planes 9 it is simply necessary to extend the said planes forwardly instead of rearwardly from the said centers of movement 10.

In the horizontal arrangement shown in Figs. 4 to 6, the walking beam 2^a is mounted upon the hull 1 to swing in a horizontal plane, and the abutments 7^a on the upright 5^a are disposed horizontally and in pairs, with one pair spaced above the other as clearly appears in Figs. 4 and 6. The propelling plane 9^a is pivotally mounted at 10^a and has its inner portion movable between the abutments 7^a of the two pairs. It will also be noted that a T-head 11 is provided upon the upper portion of the upright 5^a and is connected with the vessel hull through the medium of braces 12. I would also have it understood at this point that either movement of my invention may be single or double—*i. e.* may have one or two propelling planes, in the discretion of the manufacturer of the invention.

It will be apparent from the foregoing that I have provided propelling means that is at once simple, inexpensive, and susceptible of ready application to vessels or boats of various descriptions; and it will also be apparent that through the medium of my novel mechanism power may be exerted to

advantage against the water with a view to propelling a vessel.

The constructions herein illustrated and described constitute the best practical embodiments of my invention that I have as yet devised. I would have it understood, however, that I do not limit myself to the specific construction and relative arrangement of parts, since in the practice of the invention various changes in form and arrangement may be resorted to without involving departure from the scope of my appended claims. For instance the propeller planes may be made of the shape of the plane 9^b, Fig. 7—*i. e.*, may be wide adjacent to their rear edges and hinged adjacent to the center at their forward ends and at opposite sides of the spaced abutments 7^b.

Having thus described the invention, what I desire to secure by Letters Patent is:—

1. In vessel propelling means, the combination of movable carrying means, said means equipped with spaced abutments, and a propelling plane mounted to swing on the carrying means and movable between and adapted to bring up against the abutments.

2. In propelling means for vessels, the combination of movable carrying means having spaced abutments the opposed faces of which converge, and a swinging propeling plane movable between the abutments and carried by the carrying means and having its center of movement adjacent the apex of the angle formed by the abutments.

In testimony whereof I affix my signature.

TIMOTEO RUIZ DE ESPARZA.