

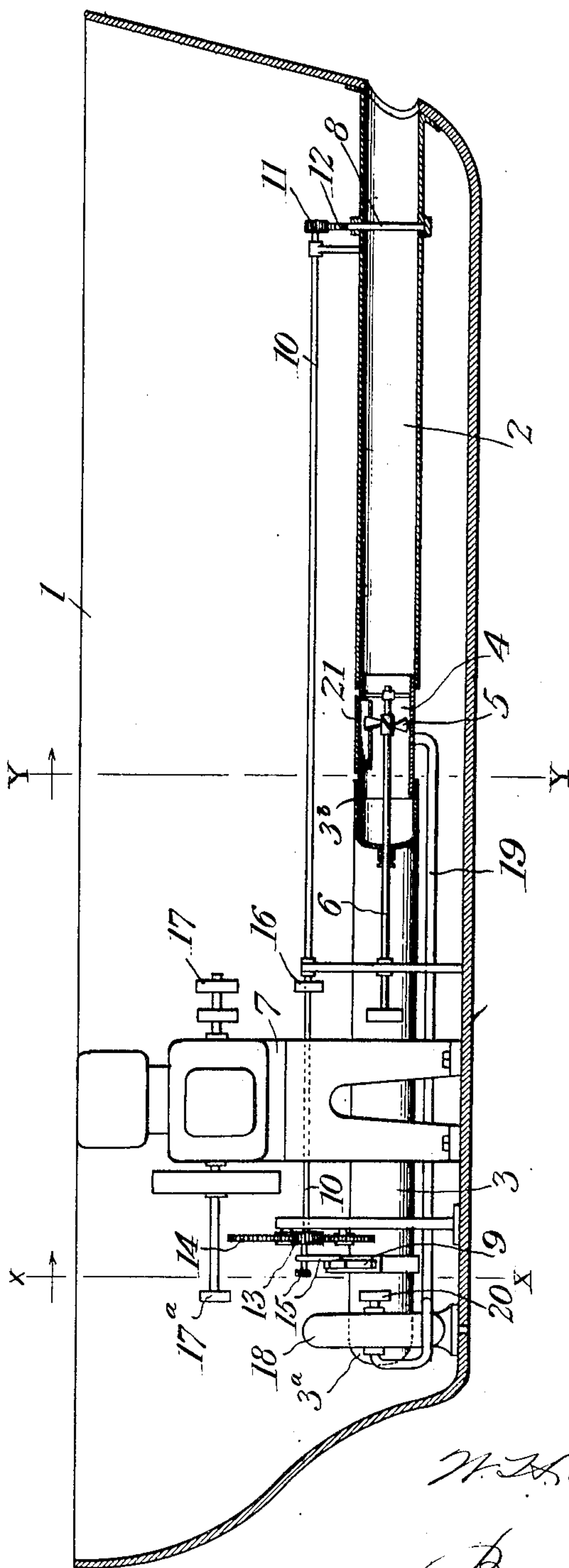
906,697.

W. H. ENGLE.
PROPELLING MEANS FOR BOATS.
APPLICATION FILED AUG. 13, 1908.

Patented Dec. 15, 1908.

2 SHEETS—SHEET 1.

Fig. 1.



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Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

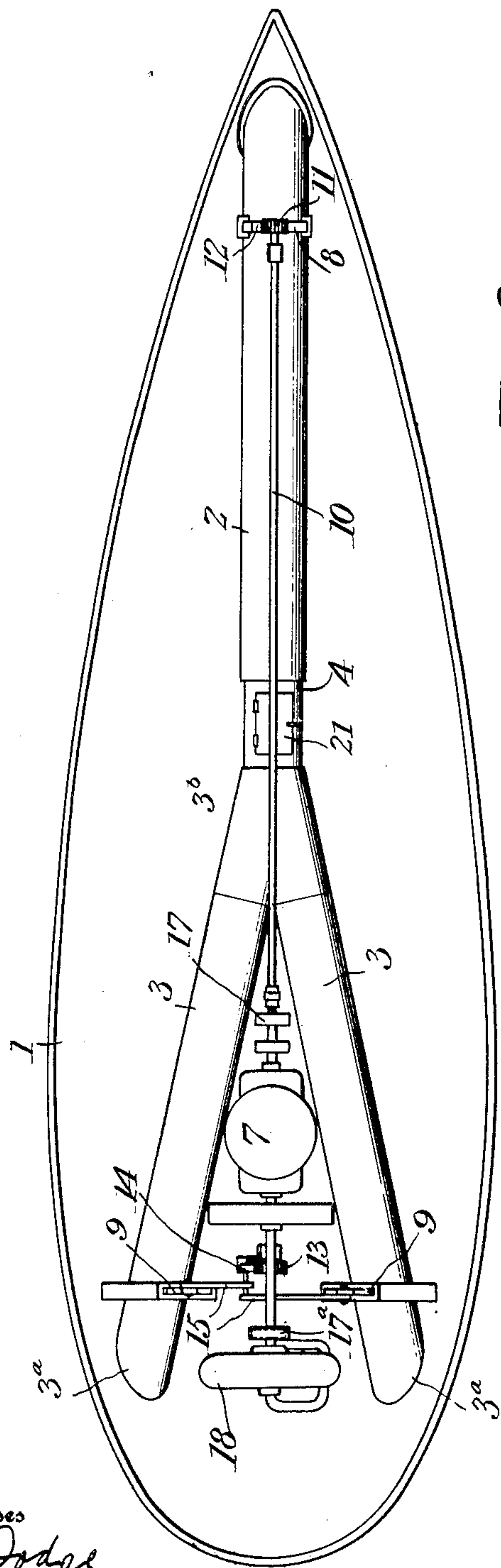


Fig. 3.

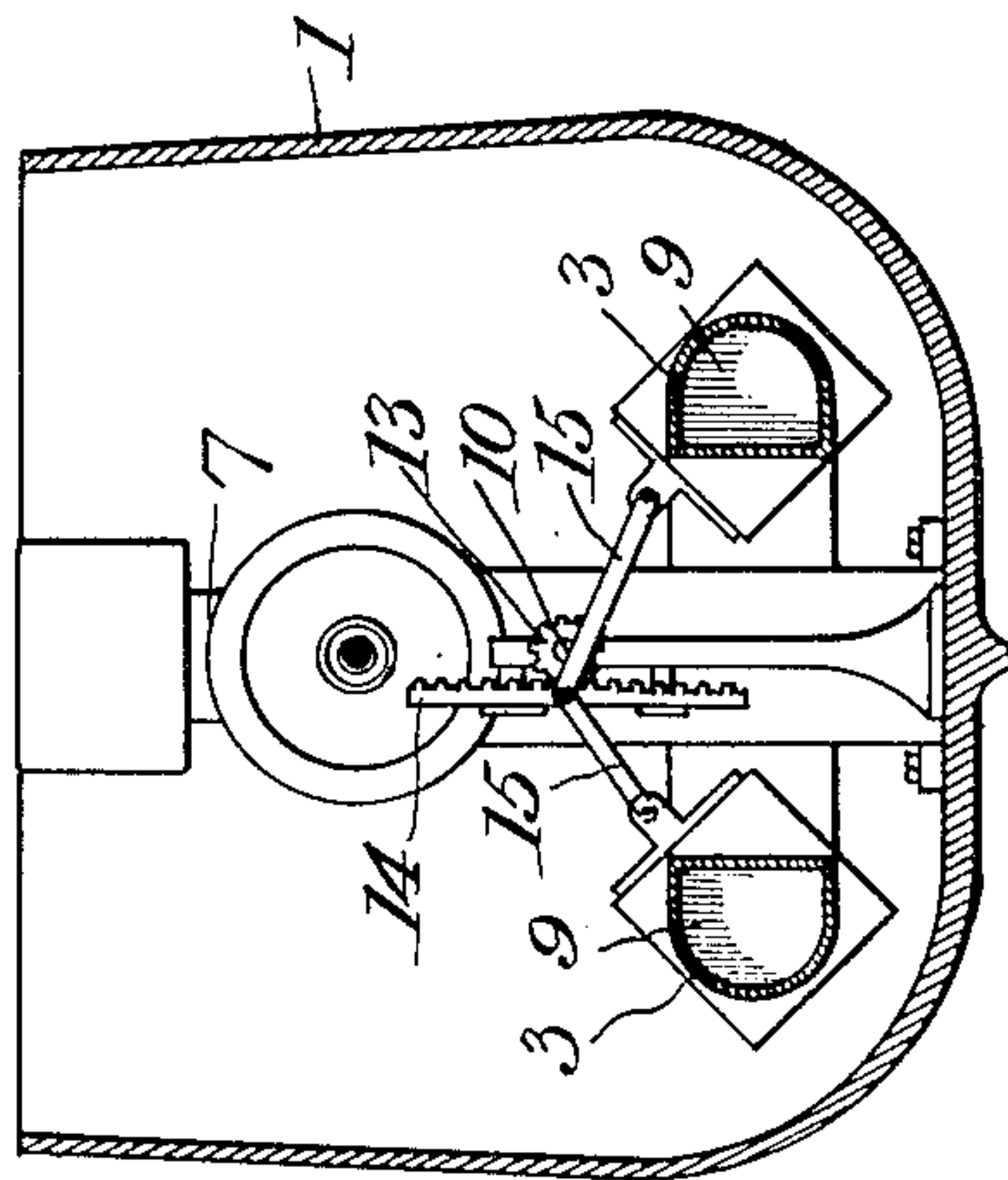
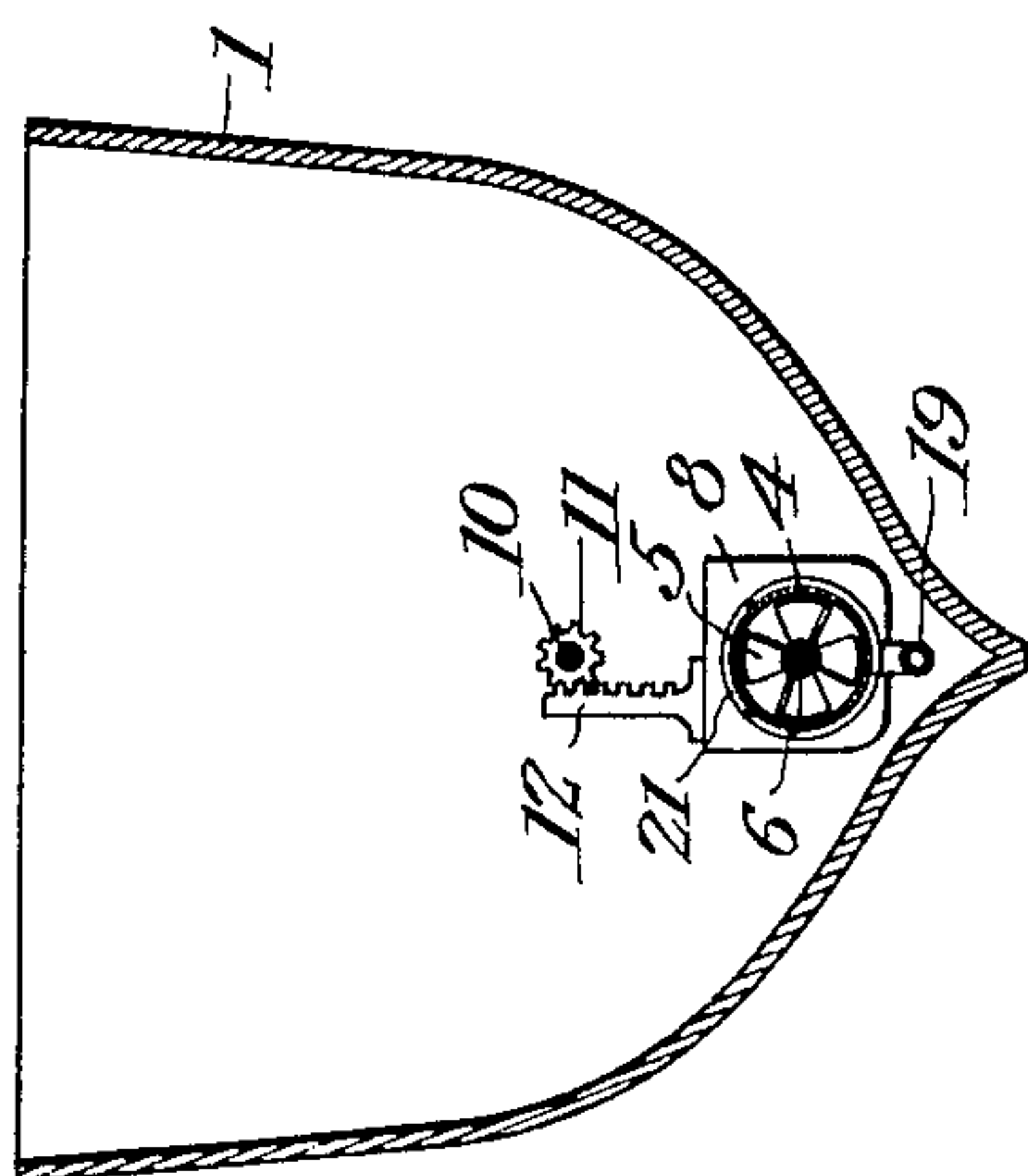


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. ENGLE, OF TRACY, CALIFORNIA.

PROPELLING MEANS FOR BOATS.

No. 908,697.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed August 13, 1908. Serial No. 448,417.

To all whom it may concern:

Be it known that I, WILLIAM H. ENGLE, a citizen of the United States, residing at Tracy, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Propelling Means for Boats, of which the following is a specification.

This invention embodies novel improvements in boat propulsion means, the object of the invention being to provide means of the above class in which a maximum amount of speed may be secured by expending a comparatively small amount of power.

In the practical embodiment of the invention the boat will be provided with a longitudinal passage or tube in the hull thereof adapted to receive water at its front end and deliver the water from its rear end, the propeller being located in this passage and deriving its propelling force by pumping or forcing the water from the front end of the boat or vessel to the rear end.

The invention involves specific improvements in construction, the advantages of which will appear more fully by reference to the following detail description and the accompanying drawings, in which

Figure 1 is a vertical longitudinal sectional view of a vessel embodying the invention; Fig. 2 is a horizontal sectional view; Fig. 3 is a section on the line $x-x$ of Fig. 1; Fig. 4 is a section on the line $y-y$ of Fig. 1.

Specifically describing the invention the numeral 1 denotes the hull of the vessel and the numeral 2 a tube extending from the bow of the vessel to a point intermediate of the same and being joined with branch pipes 3 the rear ends of which are provided with discharge openings 3^a. The front end of the tube 2 is open so as to receive water as the boat is being propelled, and the receiving tube 2 is connected with the delivery or discharge tubes 3 by means of an intermediate tube 4 the ends of which are received in the rear end of the tube 2 and in the thimble 3^b joining the front ends of the tubes 3, and of substantially the same diameter as the tube 2. In the tube 4 is located the propeller 5, said propeller being preferably of the four-bladed type and being operated by a propeller shaft 6 connected with the engine 7, the latter being of any suitable type of construction adapted for marine use. The discharge tubes 3 which merge into or are connected with the thimble 3^b, diverge slightly

though they afford in connection with the receiving tube 2 the discharge and intermediate tubes 3 and 4 respectively a continuous passage through the vessel. The propeller shaft 6 passes through a stuffing box located about where the discharge tubes 3 join and thence to the point of connection thereof with the engine 7.

It will be apparent that by the provision of the passage way in the hull of the vessel less resistance will be offered to the progress of the vessel through the water, the propeller 5 drawing water into the front end of the tube 2 and discharging it forcibly from the rear ends of the tubes 3. A large quantity of water is always located at the bow of the vessel and hence the propeller 5 is situated so that there is always a supply of water upon which it may operate while propelling the boat, the invention thus possessing advantages especially in this regard when compared with the ordinary type of vessel wherein the propeller is located at the stern of the boat.

At the front end of the tube 2 is located a valve or gate 8 adapted when operated to close said tube at this point. In like manner, at the rear ends of the tubes 3 are located gate valves 9 which normally occupy positions between the tubes 3, being adapted by horizontal sliding movement to enter the tubes and close the same at the rear extremities. It is contemplated that the gate valves 8 and 9 may be operated by hand, or any suitable power mechanism. In large vessels, however, it will be apparent that power mechanism would have to be employed by reason of the size of the valves 8 and 9 and such mechanism is illustrated in the drawings. An operating shaft 10 extends longitudinally of the tube 2 and at its front end is a gear 11 in mesh with teeth on a rack 12 connected with the valve 8 which moves vertically. At its rear end the shaft 10 is located in the plane intermediate of the discharge ends of the tubes 3 and has a gear 13 at such rear end meshing with teeth on a rack 14, the latter being connected by toggle links 15 with the oppositely slidable gate valves 9 which are adapted to close the discharge ends of the tubes 3. The pulley 16 on the shaft 10 is adapted to be connected with the pulley 17 on the engine shaft of the engine 7 and thus power may be applied to the shaft 10 so as to adjust the gate valves 8 and 9 when-

ever desired, and for purposes now to be described.

The object in providing the valves 8 and 9 is to admit of closing the opposite ends of the passage through the vessel whenever it is desired to have access to the propeller 5, or any parts housed in the tubes 2, 3, and 4, for purposes of adjustment, repairing, or removal. Under such conditions 10 the gate valves may be readily operated to close the portions of the passage adjacent to which they are located, after which the device will be pumped free of water. To pump the water from the tubes it is contemplated to provide a pump 18 connected 15 by a drain pipe 19 with the bottom portion of the tube 4. The conventional type of centrifugal pump 18 is illustrated in the drawings and is adapted to be operated by 20 a belt connection from the pulley 17^a of the engine 7 to the pulley 20 on the pump shaft. To permit of ready access to the interior of the tubes 2, 3, and 4, it is contemplated to provide a door 21 in the top of the tube 4, 25 though said door may be located in any of the tubes, as will be readily understood.

The combined cross sectional area of the tubes 3 will be about the same as the area of the tube 2 so that the tubes 3 will be capable 30 of delivering or discharging from the stern of the vessel the volume of water which is received at the bow. It may be observed that the provision of the closing gate valves 8 and 9 is of important advantage also in 35 that when said valves are closed, and the tubes 2, 3, and 4 forming the passage way in the vessel are pumped free of water, if the door 21 is kept closed the passage way will form an air chamber adapted to buoy 40 up the vessel should the same meet with some accident whereby the provision of a buoyant chamber of this nature would be of advantage. In the case of collision, for instance where the vessel is damaged considerably and in danger of sinking, the use 45

of the passage way comprised by the tubes 2, 3, and 4, as a buoyant chamber would be of great value and advantage.

It is contemplated that the details of construction of the invention may be modified in accordance with the spirit of the invention. 50

Having thus described the invention, what is claimed as new, is:

1. In propelling means for vessels, the combination with a vessel embodying a longitudinal passage way through its hull, said passage way having discharge means at its rear end located at the stern of the vessel and being open at the bow of the vessel, of gate valves for closing the front or receiving and discharge ends of the passage way, a propeller in said passage way, a motor connected with said propeller for driving the same, means for operating the gate valves from said motor, and a pump 65 arranged for operation by the motor and connected with the passage way to drain the same of water on closing of the gate valves. 70

2. In propelling means for vessels, the combination with a vessel provided with a passage way extending from about the stern and having its front end open to receive water and its rear end provided with discharge means for said water, of a propeller in the length of said passage way, an engine for driving said propeller, gate valves for closing the receiving and discharge ends of the passage way, operating means for simultaneously closing or opening said gate valves and operable from the engine, and a pump for draining the passage way when its gate valves are closed. 75 80

In testimony whereof I affix my signature in presence of two witnesses. 85

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Witnesses:

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