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A. F. ANDERSON
SHIP PROPELLING DEVICE

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Fig. I.

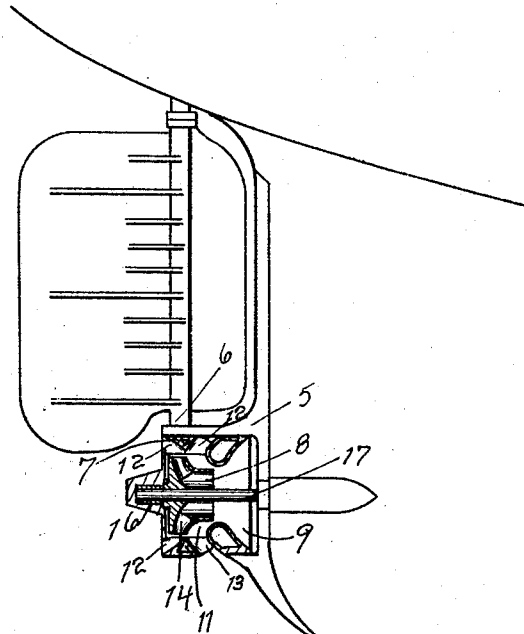


Fig. II.

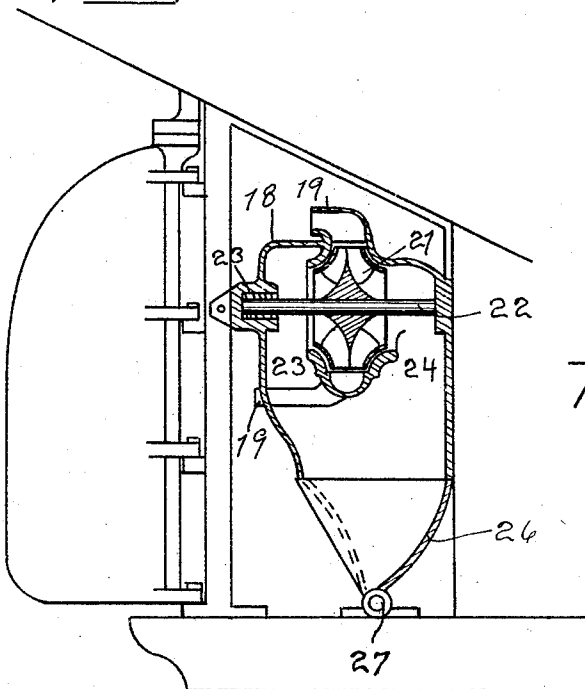
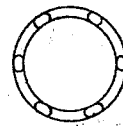


Fig. III.

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SHIP-PROPELLING DEVICE.

Application filed January 16, 1925. Serial No. 2,930.

To all whom it may concern:

Be it known that I, ALBERT FRANCIS ANDERSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Ship-Propelling Devices, of which the following is a specification.

This invention relates to improvements in ship propelling devices.

The principal object of this invention is to position at a point outside the hull of a ship, a propelling device capable of directing a jet of water in such a manner as to propel the ship to which the device is attached.

Another object is to produce a device of this character which may be attached to the ship without altering the construction of the same.

A further object is to produce a device wherein the high speed of the turbine or like propelling device may be employed without the necessity of reducing gears.

A still further object is to provide a device of this character wherein the propulsive effort may be reversed without reversing the direction of rotation of the engine, or in any manner decreasing the speed of the engine.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure I is a fragmentary view showing the stern of a ship having my device attached thereto,

Figure II is a view similar to Figure I showing a modified form of my device as applied to a towing vessel, and

Figure III is a diagrammatic rear view showing the positioning of the various nozzles.

Applicant is aware of the fact that jet propulsion of ships has been employed wherein the propeller was positioned within a tube extending through the ship, resulting in severe losses due to skin friction and at the same time necessitating the re-construction of portions of the ship.

This difficulty has been entirely overcome by employing a casting 5 secured to the stern of the ship, which casting may be of any convenient form and serves to position the

lower end of the rudder as shown at 6, and further serves to position the housing 7 within which a rotor 8 is adapted to revolve. This housing is provided with a bell-shaped portion 9, a chamber 11 and passage-ways 12 and 13. A rotor 8 is positioned within the chamber 11 and has veins 14 adapted to discharge into either of the passage-ways 12 or 13, as will be later described.

A bearing 16 serves to position the end of the propeller shaft 17, which propeller shaft extends into the ship and is connected to the driving mechanism in any approved manner.

By viewing Figure II it will be noted that I have provided a casting 18 having a plurality of nozzles 19 within which casting is positioned a rotor 21 mounted upon a shaft 22, which shaft is journaled as at 23 and has its opposite end extending into the ship where it is connected to suitable driving mechanism. The rotor 21 is adapted to take in fluid through the channels 23 and 24 so as to discharge through the nozzles 19.

At 26, I have shown a vane which is adapted to be attached as at 27, which vane may be moved from its full line position to the dotted line position. This form of device is adapted to be employed in towing where the movement of the ship is comparatively slow and therefore a suitable weight does not have to be figured with.

By viewing Figure III, it will be noted that I have diagrammatically illustrated a series of nozzles, which figure may be considered as applying to either of the forms shown in Figures I and II.

The operation of my device is as follows:—

Referring to Figure I and assuming that the parts are in the position shown in this figure, rotation of the shaft 17 will cause fluid to be thrown from the blades 14 outwardly, which fluid will encounter the passage-ways 12, thus directing a stream of water rearwardly. As this water is thrown out, more water will enter through the bell-shaped member 9 with the result that considerable propulsive force will be gained by this device. When it is desired to reverse the direction of the ship, the shaft 17 is moved to the right of the drawing with the result that the stream is thrown from the blades 14 into the passage-ways 13, thus directing the flow toward the forward part of the ship, or in a reverse direction from that previously discharged, and thus effect-

ing a quick stopping of the boat, and a reversing of the movement if desired.

In the form shown in Figure II reversing of the ship may be accomplished in any convenient manner, as by employing auxiliary propellers or separate vanes adapted to reverse the direction of discharge from the nozzles 19. In this device it is particularly adapted for discharging water into a relatively quiet medium, and therefore it is designed to handle the condition of this character.

It is to be understood that the form of my invention, herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the

spirit of the invention, or the scope of the subjoined claim.

Having thus described my invention, I claim:—

In a device of the character described, an impeller mounted at a point outside the hull of a ship, means for moving said impeller longitudinally with respect to the keel of the ship, a casting surrounding said impeller, a plurality of passage-ways formed in said casting, and adapted to discharge fluid received from said impeller in a rearward direction, a second series of passage-ways formed in said casting and adapted to discharge fluid from said impeller when said impeller is moved longitudinally.

In testimony whereof I affix my signature.

ALBERT FRANCIS ANDERSON.