Feb. 27, 1951 J. NAPOLI 2,543,253

PROPULSION MEANS FOR SPEEDBOATS

Original Filed Nov. 13, 1945

Fig. 1.

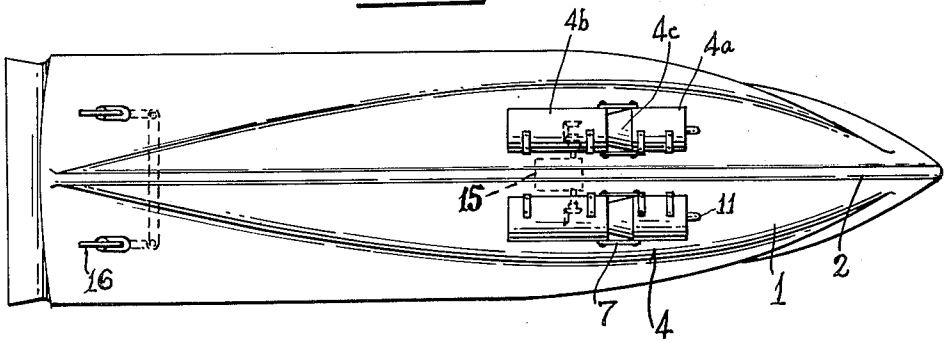


Fig. 2.

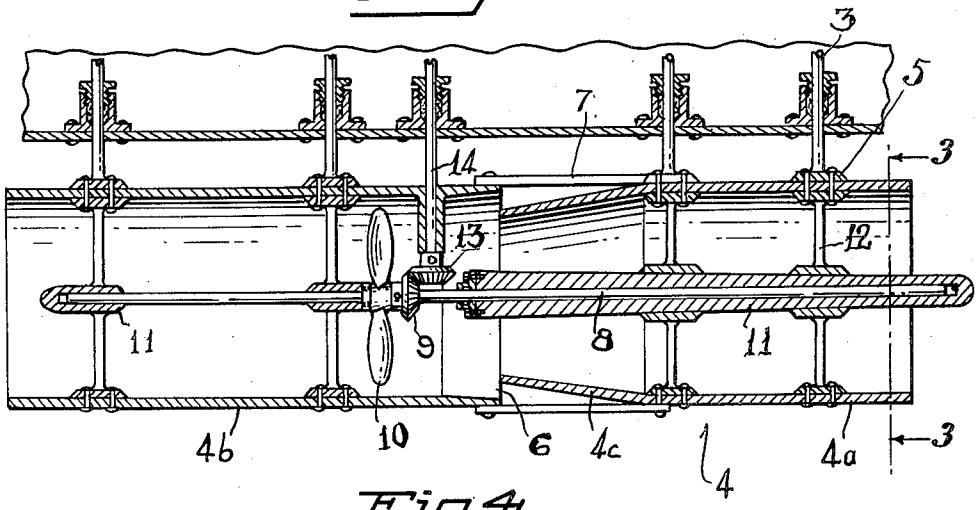


Fig. 4.

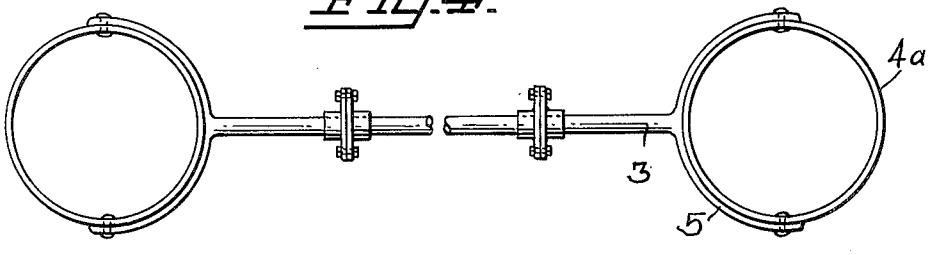
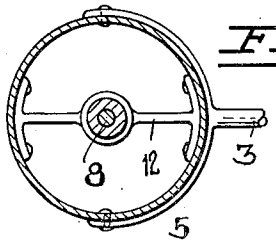


Fig. 3.



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PROPULSION MEANS FOR SPEEDBOATS

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2 Claims. (Cl. 115—16)

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This invention relates to propulsion means for speed boats.

The propulsion means embodying the present invention comprises duplex units mounted on the hull of a boat at opposite sides of the keel. The two units each comprise aligned propeller tubes within which a propeller shaft and a propeller are rotatably supported. Water inlet and outlet means at ends of the tubes make it possible for water to flow freely through the tubes as the propellers are rotated.

The present invention provides novel duplex propulsion means for speed boats or the like, having identical propulsion units of the kind characterized which are arranged in opposed relation beneath a boat hull.

Other objects or advantages of the present invention will be pointed out hereinafter, indicated in the appended claims, or will be obvious to one skilled in the art upon an understanding of the present disclosure. For the purpose of this application I have elected to show herein certain forms and details of propulsion means for speed boats embodying my invention. It is to be understood, however, that the embodiment of my invention herein shown and described is for illustration purposes only, and that therefore it is not to be regarded as exhaustive of the variations of the invention.

This is a divisional application of my now pending application entitled "Speed Boats," Serial No. 628,023, filed November 13, 1945, now U. S. Patent No. 2,530,718 of November 21, 1950.

In the accompanying drawings:

Fig. 1 is a bottom view of a speed boat having my duplex propulsion means mounted thereon;

Fig. 2 is an enlarged horizontal sectional view taken centrally through one of the propulsion units;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2; and

Fig. 4 is a diagrammatic illustration showing the manner in which the propeller tubes are secured in place by bracket means.

In the drawings I have shown the two units of my duplex propulsion means mounted on the hull 1 of a suitable speed boat or the like at opposite sides of the keel 2. While my duplex propulsion means is particularly suitable for use with speed boats of the type shown in my aforesaid patent application it is also adapted for use with various other types of boats.

Supported at opposite sides of the keel 2 on the bottom of the boat's hull by means of suitable brackets 3 are two open propeller tubes 4. The

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brackets 3 each comprise semicircular end portions 5 which extend partially around the tubes 4 and are secured rigidly thereto by rivets, bolts or other suitable means. The brackets 3 preferably extend through the hull of the boat and are supported thereby.

The propeller tubes 4 are arranged in substantially parallel positions with each other and with respect to the boat's longitudinal center line. Each propeller tube 4 comprises aligned forward and rear sections 4a and 4b which are arranged end to end with the rear end of the forward section 4a tapered sufficiently as at 4c to form an annular water inlet opening 6 for the flow of water into the rear section 4b. The inlet opening 6 being in communication with the openings in the forward and rear sections 4a and 4b avoids any possible back pressure and at the same time provides means for admitting additional water into the rear section during the operation of the propeller therein. Suitable means such as a plurality of rigid straps or bars 7 bolted or riveted to the adjacent ends of the tubular sections 4a and 4b maintain the said sections in fixed relationship.

Axially arranged in the sections 4a and 4b of each tube 4 is a shaft 8 having a bevel gear 9 and a propeller 10 secured thereto. The propellers 10 are positioned in the forward ends of the rear sections 4b. Each shaft 8 is rotatably supported in streamline bearings 11 which are axially supported in their associated tubes by radial members 12. The elongated bearings 11 which are supported in the forward sections 4a are tapered. In mesh with the bevel gears 9 are similar gears 13 secured to shafts 14 which are connected in the usual manner to the boat's engine or power plant, shown at 15. A duplex rudder 16 for guiding the boat is operated in the usual manner by suitable means on or within the boat. During the normal operation of the boat the tubes 4 are at all times in submerged positions where surface waves will not vary the relative traction of the propellers 10. The tubes 4 prevent any side currents or a change in the direction of the boat's forward movement from varying the operating efficiency of the propellers. Thus the provision of tubular enclosures within which the propellers operate, makes it possible for such propellers to operate with uniform efficiency, irrespective of a change in the direction of the forward movement of the boat or the presence of side currents. The stability of the boat is considerably increased by providing a propulsion means of the type embodying the present invention. The forwardly tapered

forward bearings 11 are constructed and arranged to direct circular streams of water rearwardly into the rear section 4b as the boat moves ahead. The water flowing into the forward ends of the rear sections 4b from the forward sections 4a and through the inlet openings 6 assumes circular formations as it meets the propellers 10.

It will be noted that the duplex propulsion units embodying the present invention are so positioned with respect to the hull 1 of the boat that they are fully submerged in the water at all times, irrespective of whether or not storm conditions prevail. Such propeller units provide means which operate uniformly and with efficiency at all times, thereby avoiding such instability and erratic movements as ordinarily occur when in rough seas a boat's propeller is carried out of the water.

What I claim is:

1. In propeller means for speed boats or the like, a rear tubular propeller housing adapted to be mounted on a boat beneath the water line and having axial bearing means therein, a forward tubular housing axially aligned with the rear tubular housing and having a tapered rear end portion positioned adjacent the forward end of the first mentioned tubular housing, the said tapered rear end portion of the forward tubular housing being spaced from the rear tubular housing, an elongated tapered bearing member supported axially in the forward tubular housing with its pointed end pointed forwardly, a propeller shaft supported at its forward end in the tapered bearing member and at its rear end in bearing means of the rear housing, a propeller secured to the shaft, and gear means on the shaft.

2. In propeller means for speed boats or the like, an elongated tubular propeller housing adapted to be mounted on the hull of a boat beneath the water line, the said housing comprising axially aligned forward and rear tubular sections arranged end to end in spaced relation, the said forward section having a tapered rear end portion of smaller diameter than the forward end of the rear section, whereby an annular water inlet opening is provided between adjacent ends of the sections, tapered bearings secured in fixed axial positions in the forward and rear tubular sections, a rotatable propeller shaft journaled in the bearings, a propeller secured to the shaft and positioned in the rear section of the tubular housing, and means connecting the shaft to a source of power.

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