Dec. 2, 1930. E. H. FAHRNEY 1,783,331

PROPELLING MECHANISM FOR BOATS

Filed Nov. 15, 1929

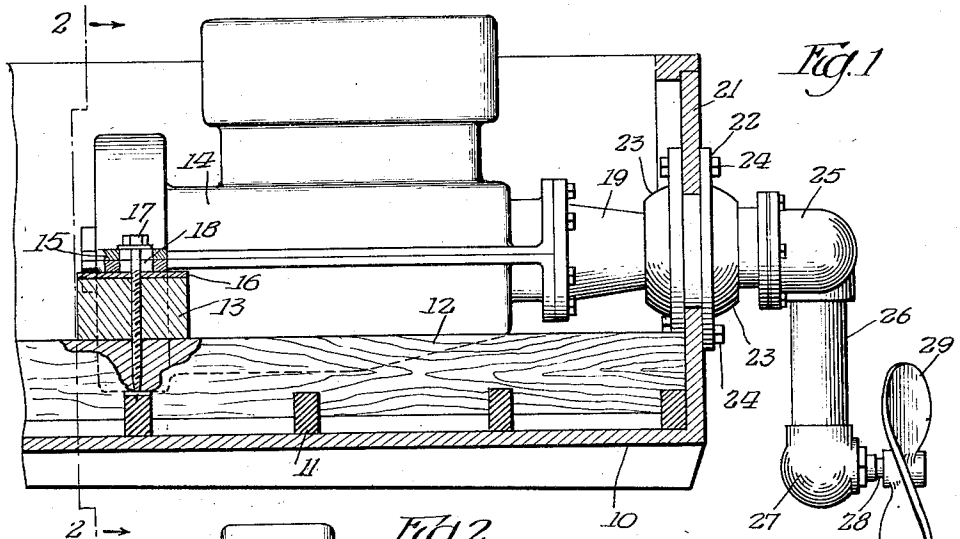


Fig. 1

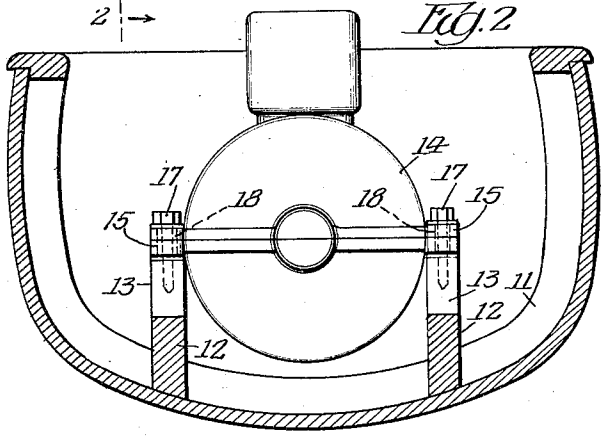


Fig. 2

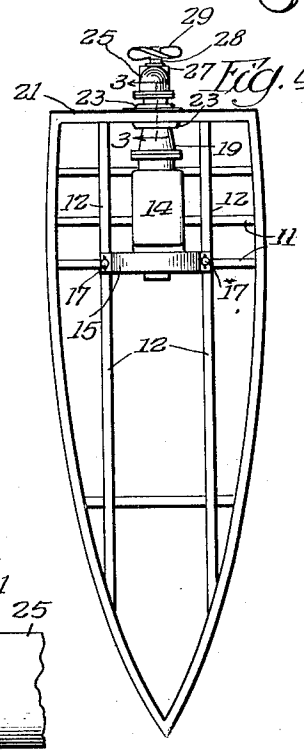


Fig. 4

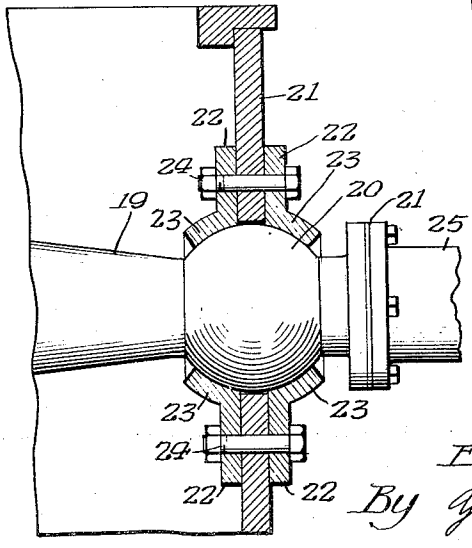


Fig. 3

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UNITED STATES PATENT OFFICE

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PROPELLING MECHANISM FOR BOATS

Application filed November 15, 1929. Serial No. 407,450.

This invention relates to improvements in propelling mechanism for boats, and one of the objects of the invention is to provide improved propelling mechanism of this character so constructed and arranged as to possess all of the attributes of both an outboard and an inboard motor, at the same time providing a low center of gravity.

A further object is to provide an improved mounting for the motor and propelling mechanism, whereby the force from the reaction of the water as well as the vibration from the motor will be transferred directly to the framework of the boat, and at the same time provide a three-point suspension for the motor, which will allow for expansion thereof.

A further object is to provide in an improved structure of this character a slide connection between the motor casing and the backboard of the boat, which will dispense with packing and will produce a water tight joint.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention, and in which

Figure 1 is a view partly in longitudinal section, partly in elevation and partly broken away, of the rear portion of the boat having propelling mechanism constructed in accordance with the principles of this invention applied thereto.

Figure 2 is a sectional view taken on line 2—2, Figure 1, with parts omitted.

Figure 3 is an enlarged detail sectional view taken on line 3—3, Figure 4.

Figure 4 is a top plan view of a boat equipped with this improved propelling mechanism.

Referring more particularly to the drawing the numeral 10 designates generally the framework of the boat having bottom supporting beams 11 and longitudinally arranged spaced supporting beams 12.

Mounted upon the beams 12 are blocks 13, one of which is arranged on each side of the motor casing 14 adjacent the front thereof and portions of the flanges 15 of the motor casing at the forward end of the casing engage and rest upon the respective blocks 13. A protecting plate 16 may be provided between the motor flange and the blocks 13 to form a wear plate and the forward end of the motor casing is secured or anchored to the respective blocks 13 by means of fastening bolts 17 which pass through slots 18 in the flanges 15 and enter the blocks 13.

Projecting from the rear of the motor casing is an extension 19 which is provided with a formation 20 of a spherical configuration remote from the end 21 of the extension. This formation 20 passes through an opening in the backboard 21 of the boat and secured to the backboard on opposite sides thereof are bearing members 22, providing bearing surfaces 23 which conform to the contour of and contact with the bearing surface 20 on the extension 19 of the motor casing, the members 22 being secured in position by means of fastening devices 24 in the form of bolts and the like. The bearing surfaces 23 contacting with the surface of the formation 20 will form a water tight joint between the formation 20 and the backboard 21 of the boat, and the members 23 are so shaped as not to interfere with the oscillatory or rocking movement of the backboard 21 and the formation 20, one with respect to the other.

With this construction it will be manifest that there is provided a three-point suspension for the motor casing, two of the points being located at the forward end of the motor casing and the other point being formed

by the operation of the extension 19 which passes through the backboard 21, with the result that the motor casing will be suspended or supported directly by the framework of the boat. By thus mounting the motor all shock or reaction of the water and all vibrations of the motor will be conveyed directly to the framework of the boat.

By the provision of the slots 18 with the fastening devices 17 any expansion of the motor casing will be provided for and at the same time the fastening devices will under normal conditions hold the motor casing firmly in its proper position.

Connected with the extension 19 is another casing 25 having a depending tubular portion 26 connected with a gear box 27.

The motor shaft passes through the casing 19, formation 20 and into the casing 25 and connected with the motor shaft and disposed within the casing 26 and depending vertically from the motor shaft, is another shaft which in turn is connected through the medium of gears (not shown) in the gear box 27 with the propeller shaft 28, to which latter the propeller 29 is connected.

Any reaction of the water upon the propeller 29 will be conveyed to the motor casing and as the motor casing is connected with the backboard 21 through the medium of the ball and socket connection 20—23, it will be manifest that any tendency of the boat and motor casing to rock with respect to each other will be compensated for.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. Boat propelling mechanism of the outboard motor type, embodying a motor arranged adjacent the stern, means providing a three point suspension of the motor directly upon the framework of and within the boat, said suspension means embodying a ball and socket connection between the motor casing and the back board of the boat, a shaft extending from the motor through the back board of the boat, a vertical shaft depending from the motor shaft, and a propeller operatively connected with the vertical shaft.

2. Boat propelling mechanism of the outboard motor type embodying a motor arranged adjacent the stern, means forming a three point suspension for the motor directly upon the framework of the boat, two of said points being disposed at the front and on opposite sides of the motor casing, the other point of suspension being formed by a ball shaped portion connected with the engine frame and having a bearing in the back board of the boat, a shaft extending from the motor through the last said connection and beyond the back board of the boat, a vertical shaft depending from the motor shaft, and a propeller operatively connected with said vertical shaft.

3. Boat propelling mechanism of the outboard motor type embodying a motor arranged adjacent the stern, means forming a three point suspension for the motor, said means embodying supporting blocks mounted directly upon the framework of the boat and disposed adjacent one end and on opposite sides of the motor casing, securing means embodying fastening bolts passing through slots in the casing and into the respective said blocks, an extension on the motor casing extending through the back board of the boat, a ball formation on said extension, a bearing therefor forming a connection between said extension and the back board and consituting the third point of suspension for the motor, a shaft extending from the motor through said connection, a vertical depending shaft connected with the motor shaft, and a propeller connected with the vertical shaft.

4. Boat propelling mechanism of the outboard motor type embodying a motor arranged adjacent the stern, supporting blocks arranged adjacent one end of and on opposite sides of the motor and mounted directly upon the framework of the boat, and upon which blocks a portion of the motor casing rests, fastening devices passing through slots in the motor casing and into said blocks, an extension on the motor casing passing through the back board of the boat for supporting the rear end of the motor casing, means forming a water tight connection between the back board and said extension, but permitting relative movement of the motor casing and said back board, a motor shaft, a depending vertical shaft outside of the boat, and a propeller connected with said vertical shaft.

5. Boat propelling mechanism of the outboard motor type embodying a motor arranged adjacent the stern, means forming a three point suspension for the motor directly upon the framework of the boat, said means embodying supports adjacent and on opposite sides of the front end of the motor and a water tight jointed connection between the other end of the motor casing and the back board of the boat, a motor shaft passing through said jointed connection, a vertical depending shaft connected with the motor, and a propeller connected with said vertical shaft.

6. Boat propelling mechanism of the outboard motor type embodying a motor arranged adjacent the stern, means forming a three point suspension for the motor directly upon the framework of the boat, said means embodying supports adjacent and on opposite sides of the front end of the motor and a water tight jointed connection between the

other end of the motor casing and the back board of the boat, fastening bolts passing through slots in the motor casing and into said supports to permit a bodily movement of the motor casing upon said supports, a motor shaft passing through said jointed connection, a vertical depending shaft connected with the motor, and a propeller connected with said vertical shaft.

In testimony whereof, I have signed my name to this specification, on this 12th day of November, 1929.

EMERY H. FAHRNEY.