Dec. 1, 1931. A. J. MERICKLE 1,834,068

OUTBOARD MOTOR FOR BOATS

Filed July 7, 1930 2 Sheets-Sheet 1

Fig. 1.

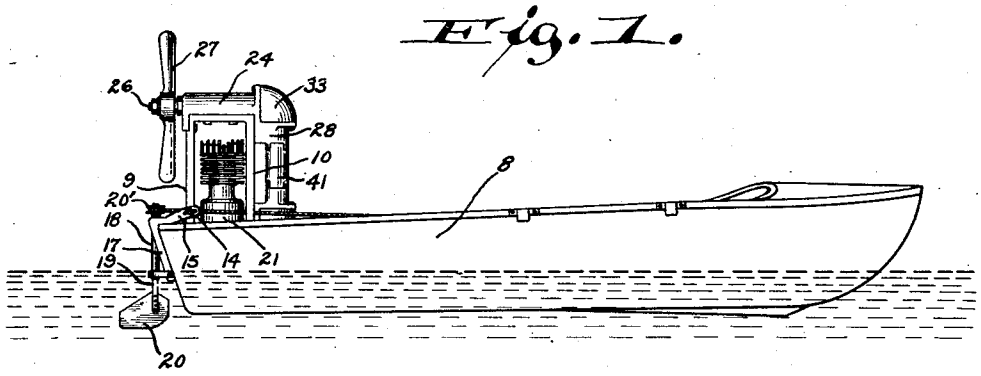
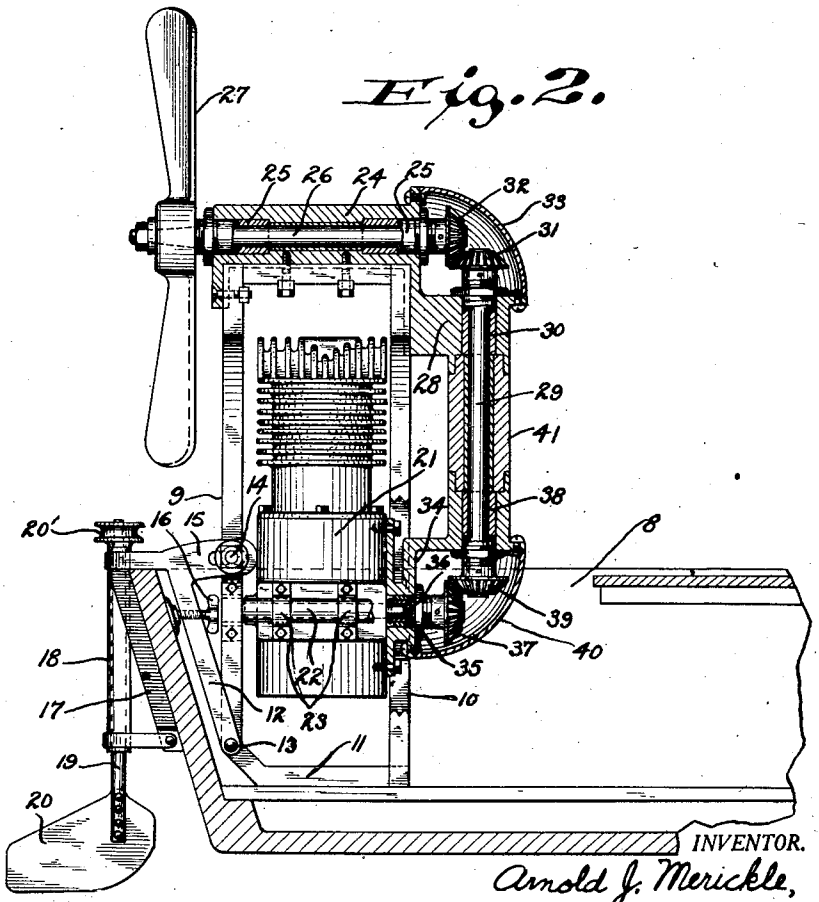


Fig. 2.



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Fig. 3.

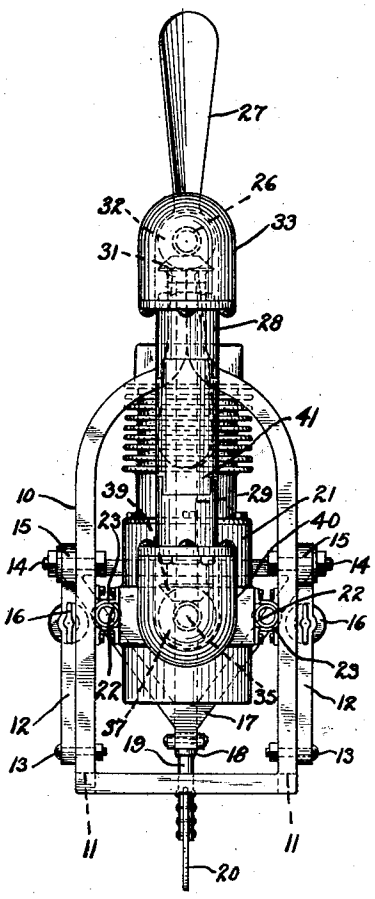
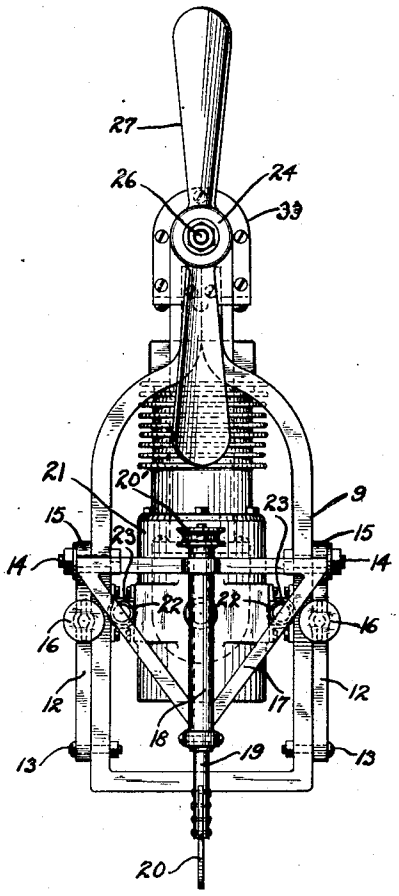


Fig. 4.



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UNITED STATES PATENT OFFICE

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OUTBOARD MOTOR FOR BOATS

Application filed July 7, 1930. Serial No. 465,952.

This invention relates to improvements in outboard motors for boats, and more particularly to an air propeller boat motor.

Heretofore, air propeller motors for boats have been provided but said motors have been very cumbersome in construction due to the fact that it is essential that the propeller be elevated a considerable distance above the boat, and to attain the proper propeller elevation in the prior constructions, it was necessary that the motor, for driving the propeller be elevated above the boat, resulting in a top heavy, objectionable arrangement.

It is one of the objects of the present invention to overcome the afore-mentioned objections by providing an air propeller boat motor which can be mounted in a relatively low position within a boat, maintaining the essential elevation for the propeller, but eliminating a raised position of the motor proper which would render the device top heavy when mounted in a boat and cumbersome.

A further object of the invention is to provide an air propeller, outboard boat motor, of unitary construction and having a novel driving arrangement between a relatively low mounted motor and an elevated propeller.

A further object of the invention is to provide an air propeller boat motor which is of the outboard type and which is relatively small and light, and portable, being adapted for quick mounting in the stern portion of a row boat or the like.

A further object of the invention is to provide an air propeller outboard boat motor, which is of very simple construction, is strong and durable, is inexpensive to manufacture, and is well adapted for the purposes described.

With the above and other objects in view the invention consists of the improved air propeller boat motor, and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawings in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a side view of a boat having the improved air propeller, outboard motor mounted therein;

Fig. 2 is an enlarged fragmentary vertical sectional view of the rear portion of a boat showing the improved motor mounted therein, the motor being shown in vertical section;

Fig. 3 is a front view of the motor; and

Fig. 4 is a rear view thereof.

Referring now more particularly to the drawings it will appear that the numeral 8 indicates a small boat of the row boat type, in the stern of which the improved air propeller motor is detachably mounted.

The frame for the motor includes a pair of spaced apart, vertically positioned frame members 9 and 10 and the major portion of each of said members is rectangular in outline, with their upper portions curved and converging. The lower portions of the frame members 9 and 10 are joined by bars 11 which are adapted to seat on the bottom or floor of the boat, as shown. A pair of tiller brackets 12 are pivotally secured at their lower inner ends to the lower ends of the upright portions of the frame member 9, as at 13. The upper portions of said tiller brackets are formed with integral, forwardly extending, curved slotted arms 15, which portions are releasably adjustably secured to the frame member 9 by bolts 14. With the frame bars 11 resting on the floor of the boat, the tiller brackets may be clamped to the rear of the boat by turn bolts 16. The arms 15 are arranged to project horizontally rearwardly over the rear portion of the boat and said arms have secured thereto a triangular tiller support 17. A tiller shaft housing 18 is carried vertically by the tiller support and revolubly mounted in said housing is a tiller shaft 19 having a tiller 20 fixed to its lower end portion. A steering pulley 20′ is secured to the upper end portion of the tiller shaft.

The apparatus further includes a one-cylinder internal combustion engine and the cylinder block 21 is hung between the frame members 9 and 10 in a relatively low position and not far removed from the floor of the boat. The mounting of the cylinder block is accomplished by means of a pair of side tubular supports 22 which are extended between lower portions of the frame members

9 and 10. Opposed flattened side portions of the cylinder block have U-brackets 23 bolted thereto, which brackets embrace the supports 22 and thereby secure the cylinder block thereto.

Spanning the top portions of the frame members 9 and 10 and secured thereto is a propeller shaft housing 24 in which is journaled in bronze bushings 25, a propeller shaft 26. The outwardly projecting rear end portion of said propeller shaft has secured thereon a two-bladed air propeller 27, which propeller is disposed in an adequately elevated position over the stern of the boat.

The propeller shaft housing is formed with an integral forwardly projecting and downwardly offset subhousing portion 28 which extends forwardly of the front frame member 10. The upper end portion of a vertical shaft 29 is journaled in a bronze bushing 30 in said sub-housing and the upper, outer end portion of said shaft 29 carries a bevel gear 31 meshing with a similar bevel gear 32 on the forward outer end portion of the propeller shaft 26. A curved, aluminum casing 33, secured to the housings 24 and 28, covers the ends of the shafts 26 and 29 and the gears thereon.

A lower gear housing 34 has its inner end portion secured to a lower front portion of said cylinder block 21 and said housing extends forwardly between the uprights of the frame member 10 and then upwardly. An end portion of the crank shaft 35 of the engine is journaled in a portion of the housing 34, and said portion of said crank shaft has pinned thereto the sleeve portion 36 of a bevel gear 37. An upper vertical portion of the housing 34 is formed as a bearing containing a bushing 38 through which is journaled the lower portion of the vertical shaft 29. The lower extremity of said shaft carries a bevel gear 39 which is engaged by the bevel gear 37. An aluminum casing 40 is secured to portions of the housing 34 and covers the ends of the shafts 29 and 36 as well as the gears thereon. Also, a housing tube 41 interposed between the sub-housing 28 and the upper portion of the housing 34, covers the intermediate portion of the vertical shaft 29.

It is obvious that reciprocations of the piston within the cylinder cause the crank shaft 35 to be turned and through the meshing bevel gears 37 and 39 the vertical shaft 29 is turned, which shaft, through the gears 31 and 32, rotates the propeller shaft, whereby the propeller is driven.

The entire air propeller motor is of a unitary construction and is comparatively light, rendering it readily portable. Also it may be easily, detachably mounted in the stern portion of a boat in a very stable position. The motor block is positioned relatively low, partially within the confines of the boat, whereby the boat is not rendered top heavy but the air propeller is elevated a substantial distance, and motion is transmitted to it by the novel and simple drive arrangement between the motor and the propeller.

From the foregoing description it will be seen that the improved air propeller boat motor is of very simple construction, and is well adapted for the purposes described.

What I claim as my invention is:

1. A unitary, portable, air propeller motor device for boats, comprising a frame, a motor mounted in a relatively low position therewithin, said motor having a crank shaft, a propeller shaft mounted on the upper portion of said frame, a propeller carried by an end portion of said shaft, and motion transmitting means carried by said frame and extending between the motor crank shaft and said elevated propeller shaft.

2. A unitary, portable, air propeller motor device for boats, comprising a frame, a motor mounted in a relatively low position therewithin, said motor having a crank shaft, a propeller shaft mounted on the upper portion of said frame, a propeller carried by an end portion of said shaft, motion transmitting means carried by said frame and extending between the motor crank shaft and said elevated propeller shaft, and rigidly mounted housings enclosing said propeller shaft and said motion transmitting means.

3. A unitary, portable, air propeller motor device for boats, comprising a frame positionable within a rear lower portion of a boat and detachably securable to portions of the boat, a motor mounted in a relatively low position therewithin, said motor having a crank shaft, a propeller shaft mounted on the upper portion of said frame, a propeller carried by an end portion of said shaft, and motion transmitting means carried by said frame and extending between the motor crank shaft and said elevated propeller shaft.

4. A unitary, portable, air propeller motor device for boats, comprising a frame positionable within a rear lower portion of a boat and detachably securable to portions of the boat, said frame including an adjustable tiller frame and a tiller carried thereby, a motor mounted in a relatively low position therewithin, said motor having a crank shaft, a propeller shaft mounted on the upper portion of said frame, a propeller carried by an end portion of said shaft, and motion transmitting means carried by said frame and extending between the motor crank shaft and said elevated propeller shaft.

5. An air propeller motor unit for boats, comprising a vertical motor having a lower crank shaft, a substantially horizontal propeller shaft mounted in a relatively elevated position over said motor, and a transmission between the crank shaft and the propeller shaft mounted compactly adjacent a side of

said motor, all of said parts being joined and arranged to provide a portable, unitary device.

6. A portable air propeller unit for boats, comprising a supporting and mounting frame having boat clamping means, a motor mounted vertically within said frame in a relatively low position, said motor having a lower crank shaft, a propeller shaft housing mounted on the top of said frame, a propeller shaft therewithin, a propeller on an outer end of said propeller shaft, a transmission housing mounted on a side of said frame and extending vertically between the other end of the propeller shaft and the crank shaft, and transmission elements within said housing, said transmission elements comprising, a bevel gear mounted on said crank shaft, a vertical shaft, bevel gears mounted on both ends of said vertical shaft, one of which is engaged with said crank shaft bevel gear, and a bevel gear on an end of said propeller shaft engaged with the other vertical shaft bevel gear.

7. In the combination of a motor and an air propeller with a boat, a unitary assembly comprising said motor, means for detachably mounting said motor in a relatively low position within the stern of said boat, a propeller shaft mounted over the motor and above the stern portion of the boat, an enclosed transmission between a lower portion of the motor and said propeller shaft, and an air propeller mounted on said propeller shaft in an elevated position over the stern of the boat and above and rearwardly of said motor.

In testimony whereof I affix my signature.

ARNOLD J. MERICKLE.