A. N. THOMPSON AND A. P. KNAUBER.

MOTOR PROPELLER FOR BOATS.

APPLICATION FILED AUG. 7, 1920.

1,389,712.

Patented Sept. 6, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

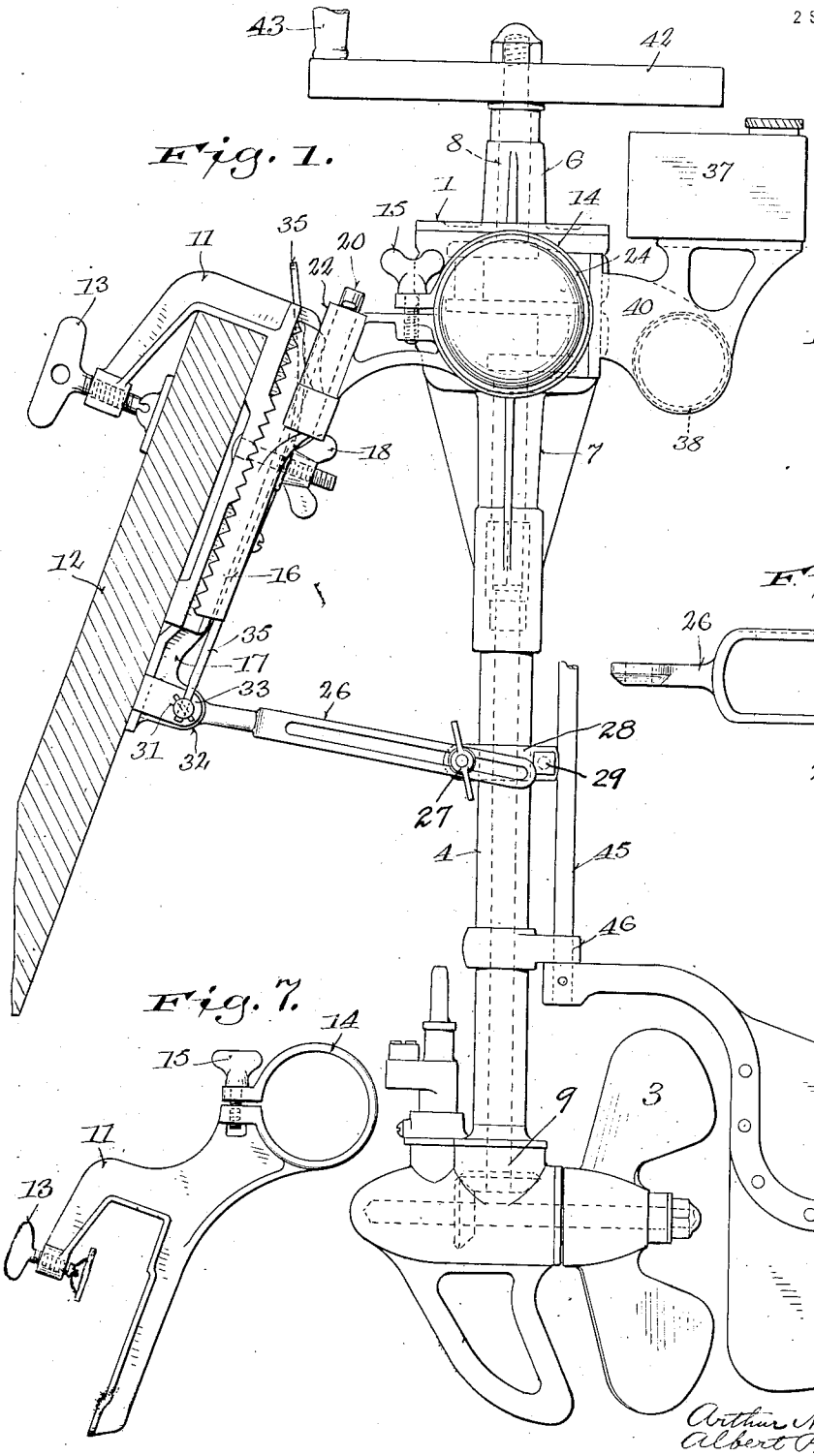


Fig. 6.

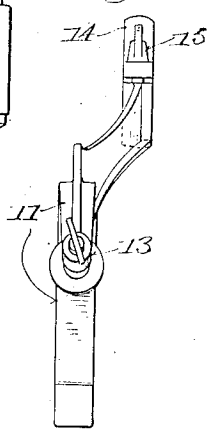


Fig. 5.

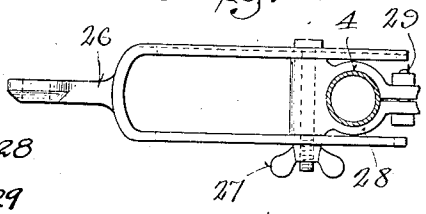


Fig. 7.

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2 SHEETS—SHEET 2.

Fig. 2.

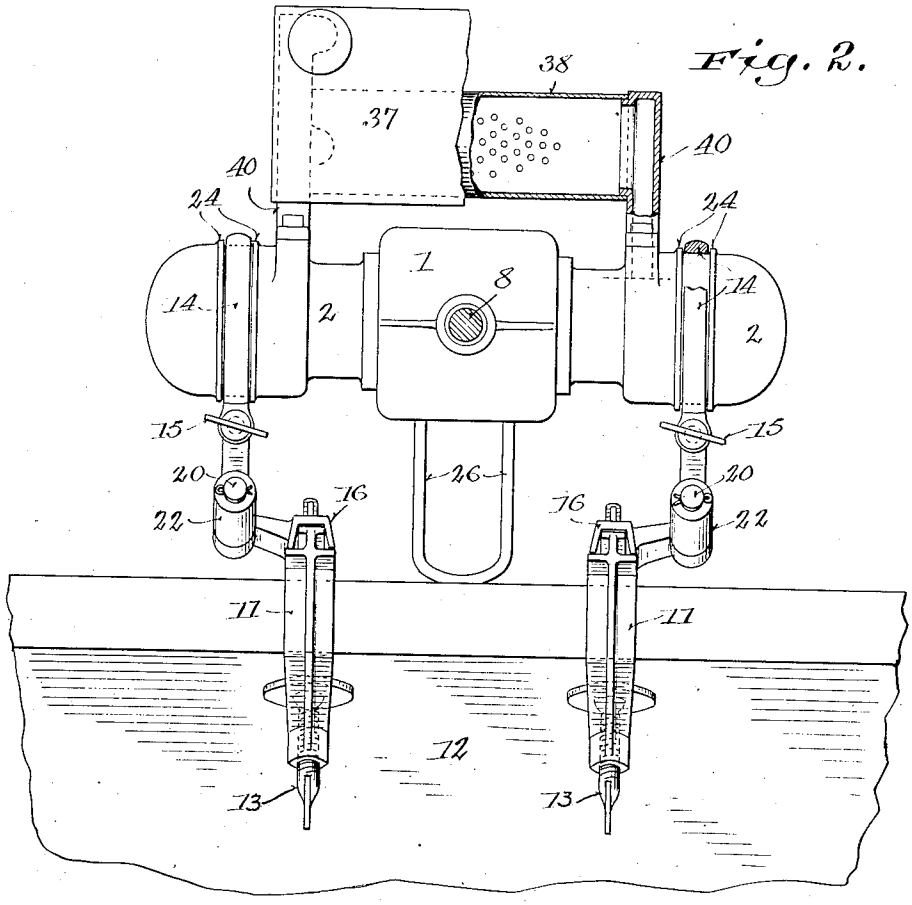


Fig. 3.

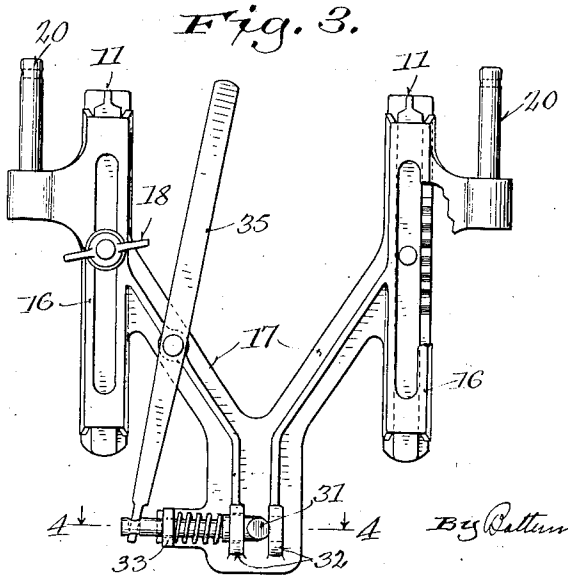
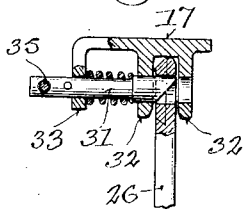


Fig. 4.



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UNITED STATES PATENT OFFICE.

ARTHUR N. THOMPSON, OF MILWAUKEE, AND ALBERT P. KNAUBER, OF WAUWATOSA, WISCONSIN, ASSIGNORS TO THE NECEDAH MANUFACTURING CORPORATION, OF NECEDAH, WISCONSIN.

MOTOR-PROPELLER FOR BOATS.

1,389,712. Specification of Letters Patent. Patented Sept. 6, 1921.

Application filed August 7, 1920. Serial No. 401,875.

To all whom it may concern:

Be it known that we, ARTHUR N. THOMPSON and ALBERT P. KNAUBER, citizens of the United States, residing, respectively, at Milwaukee and Wauwatosa, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Motor-Propellers for Boats, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates more particularly to demountable outboard motor propellers for small boats, such as row boats.

The main objects of the invention are to facilitate the application and removal of such motor propellers, comprising internal combustion engines, to and from boats of different kinds and their angular adjustment relative thereto, and to simplify and improve the construction of the engine and its mounting with the propeller on a boat.

It consists in the construction, arrangement and combination of parts as hereinafter particularly described and pointed out in the claims.

In the accompanying drawing like characters designate the same parts in the several figures.

Figure 1 is a side elevation of a motor propeller embodying the invention as mounted on a boat the stern board of which is shown in vertical section; Fig. 2 is a plan view of the same; parts being broken away and shown in horizontal section; Fig. 3 is a rear elevation of parts of mounting brackets or devices for supporting the motor propeller in outboard position on a boat; Fig. 4 is a section on the line 4—4, Fig. 3, of the detachable connection of the thrust brace with a member of the mounting brackets; Fig. 5 is a plan view of the thrust brace and its adjustable connection with the propeller suspending post, which is shown in cross section; Fig. 6 is a front elevation; and Fig. 7 is a side elevation of a mounting bracket of modified construction.

Referring to Figs. 1, 2 and 3, the motor propeller comprises an internal combustion engine having a crank case 1, and two horizontal cylinders 2, extending from opposite sides thereof in approximate axial alinement with each other, a propeller wheel 3, suspended from the crank case of the engine by a tubular post 4, and mounting brackets for attaching the engine to a boat.

The crank case 1 is provided with upper and lower vertically alined bearings 6 and 7, for the crank shaft 8 of the engine, and the propeller wheel is operatively connected with the engine by an extension of the crank shaft passing downwardly through and housed in the post 4, and gears inclosed in a case 9 fastened to the lower end of the post in the usual or any suitable manner, which will be clearly understood by those familiar with the art to which this invention pertains.

The supporting and driving connections between the propeller wheel and engine may be of fixed length or of variable length, according to well known practice in this art. For larger and heavier engines and propellers, the mounting brackets may be made in sections, as shown in Figs. 1, 2 and 3, so as to provide for vertical adjustment of the engine and propeller and the easy and quick removal thereof from a boat without removing the clamps or members which are fastened to the stern-board or gun-wale of the boat.

As shown, the brackets comprise two clamps or fastening members 11, adapted to pass over the upper edge of the stern-board 12 or gun-wale of a boat to be secured thereto by thumbscrews 13, and clamping collars 14, in which the engine cylinders 2 are mounted and are angularly adjustable for adjusting the propeller post 4 to a vertical position according to varying inclination of the stern-boards or gun-wales to which the clamps 11 are fastened, and for turning the propeller wheel backward and upward to permit the boat to be beached or run in shoal water, or to pass over obstructions.

The collars 14 are split and provided with thumb screws 15 for clamping them in adjusted position on the cylinders 2. These collars are detachably and adjustably connected with the clamps or fastening members 11 by means of bars 16 guided and vertically adjustable on the outer limbs of the clamps 11. The bars 16 are preferably connected with each other, as shown in Fig. 3, by a depending Y-shaped cross piece 17, forming therewith a frame member, so that both the bars must be adjusted together and alike.

The bars 16 are longitudinally slotted and adjustably fastened to the clamps 11 by bolts passing through the slots in the bars and provided with thumb nuts 18. To avoid the necessity of unduly tightening the nuts 18, and to securely hold the bars 16 in adjusted position on the clamps 11 the outer limbs of the clamps and the bars are formed with interfitting teeth, as shown in Figs. 1 and 3.

The bars 16, which are preferably of channeled form to fit over and engage with ribs on the clamps 11, are formed adjacent their upper ends with laterally projecting lugs, which are provided with upwardly projecting pins or studs 20.

The clamping collars 14 are formed with sleeves or sockets 22, which are removably fitted on the pins or studs 20, and may be fastened thereon by cotters or pins, as shown in Figs. 1 and 2. To confine the collars 14 in place on the cylinders 2 and to prevent axial displacement of the one relative to the other, the cylinders are preferably formed as shown in Fig. 2, with circumferential ribs 24.

To relieve the mounting brackets of undue strain and to firmly hold the post 4 in a vertical position against the thrust of the propeller wheel, an adjustable brace 26 is provided between the post and the boat, to transmit the thrust of the propeller wheel directly or indirectly to the boat below the clamps 11. The thrust brace is forked, as shown in Fig. 5, and its forked arms are longitudinally slotted and adjustably fastened by a bolt and thumb nut 27 to a split collar 28, adjustably clamped by a bolt and nut 29 on the post 4.

With mounting brackets of the construction shown in Figs. 1 and 2, the end of the thrust brace 26 opposite the post 4 is beveled and formed with a hole to automatically engage with a spring actuated beveled latch pin 31, guided in ears 32 and 33 on the lower end of the cross piece 17, as shown in Figs. 3 and 4.

For conveniently withdrawing the latch pin and releasing the thrust brace so that the post 4 with the propeller wheel can be turned backward and upward, a lever 35, fulcrumed on the cross piece 17, extends upwardly from the latch pin between the mounting brackets, to a point within easy reach of a person in the boat.

To support an oil tank or reservoir 37 and a muffler 38, as essential parts of the equipment of the internal combustion engine, in proper and fixed relation thereto so as to be adjustable and removable therewith and out of the way of occupants of the boat on which the motor propeller is mounted, the cylinders 2 are provided with rearwardly extending hollow or recessed brackets 40, which are bolted or attached thereto, as shown in Fig. 2, in communication with the exhaust ports of the cylinders, as indicated by dotted lines at the right in Fig. 2. These brackets are formed on their inner sides with flanges on which the ends of the muffler tube or drum are fitted and held, the walls of the brackets within the flanges being formed with openings, and the lower side of the tube or drum with a group or number of small holes for the discharge of the products of combustion from the engine into the atmosphere astern the boat at a point where they will not be offensive or objectionable. The oil or gasolene tank 37 is mounted on and fastened to the upper sides of the brackets above the muffler in accessible position for filling and in position for supplying fuel to the engine by gravity.

As parts of the equipment of the motor propeller, a fly-wheel 42, provided with a crank handle 43, for starting the engine, is mounted on the upper end of the crank shaft, and on the lower end of a stem 45, supported by bearings 46 (one of which is shown), parallel with the post 4, a rudder 47 is fastened, extending downwardly therefrom behind the propeller wheel, as shown in Fig 1.

The engine cylinders 2 serve as trunnions for pivotally connecting the motor propeller with the mounting brackets and with the clamping collars 14 provide adjustable friction pivot connections between the motor propeller and a boat whereby the propeller wheel and the post 4 by which it is suspended from the engine is permitted to yieldingly swing rearward and upward to clear obstructions that would or might otherwise break or injure the machine, the brace 26 in such case being left unfastened at its front end to the boat.

For engines and propellers of smaller size and less weight, mounting brackets having clamping collars 14 formed in one piece with clamps 11, as shown in Figs. 6 and 7, may be and are preferably substituted for the sectional and adjustable brackets shown in Figs. 1 and 2, for engines and propellers of larger size and greater weight.

When the one-piece brackets are used, they are removed in their entirety with the motor propeller from a boat, and with such brackets, the thrust brace 26 may be formed at its front end with an extended bearing for direct engagement with the back or stern board of a boat.

By mounting the tank 37 on the brackets 40 over the muffler 38, the oil contained in the tank will be heated or kept warm by radiation from the hot muffler and by conduction of heat from the cylinders and hot exhaust gases through the brackets to the tank. This is of great advantage particularly in cold or cool weather.

Various changes in the details of construc-

tion and arrangement of parts of the apparatus other than those shown and specifically mentioned, may be made without departing from the principle and scope of the invention as defined in the following claims.

We claim:

1. In a motor-propeller for boats the combination of an engine and mounting brackets each comprising a clamp adapted to be detachably fastened to a boat and a member having a transverse pivot connection with the engine and a quickly detachable pin and socket connection with the clamp.

2. In a motor-propeller for boats the combination of an engine having transverse frictional pivot trunnions, a propeller wheel suspended from and operatively connected with the engine, and mounting brackets each comprising a clamp adapted to be detachably fastened to a boat and an adjustable clamping collar having a quickly detachable pin and socket connection with the clamp and fitted on one of said pivot trunnions.

3. In a motor-propeller for boats the combination of an engine having two transversely and oppositely extending cylinders, a propeller wheel suspended from and operatively connected with the engine, mounting brackets adapted for attachment to a boat and for angularly adjustable connection with the engine to permit the propeller wheel to be swung rearwardly and upwardly, hollow brackets attached to the cylinders in communication with the exhaust ports thereof, and a muffler drum supported by and communicating with the hollow brackets.

4. In a motor-propeller for boats the combination of an engine having transversely and oppositely extending cylinders, mounting brackets provided with means for attachment to a boat and with means for angularly adjustable connection with the engine cylinders to permit the propeller wheel to be swung rearwardly and upwardly, hollow brackets and exhaust conduits attached to and extending laterally from the engine cylinders in communication with the exhaust ports thereof, and an oil tank mounted on said laterally extending brackets.

5. In a motor-propeller for boats the combination of an engine having two transversely and oppositely extending cylinders, mounting brackets provided with means for attachment and for angularly adjustable connection with the engine to permit the propeller wheel to be swung rearwardly and upwardly, hollow brackets attached to the cylinders in communication with the exhaust ports thereof, a muffler carried by said brackets and connected thereby with the exhaust ports of the engine, and an oil tank mounted on said brackets above the muffler.

6. In a motor-propeller for boats the combination of an engine provided with transversely disposed pivot trunnions, a propeller wheel suspended from and operatively connected with the engine, and mounting brackets comprising clamps adapted to be detachably fastened to a boat, and adjustable clamping collars in which said trunnions are fitted and angularly adjustable to permit the propeller to be swung rearwardly and upwardly, one member of each bracket being provided with a stud and the other with a socket in which the stud is removably fitted.

7. In a motor-propeller for boats the combination of an engine having two horizontally and axially alined cylinders, and mounting brackets comprising clamps adapted to be detachably fastened on a boat, and collars in which the engine cylinders are mounted and angularly adjustable, one member of each bracket being provided with a stud and the other with a sleeve in which the stud is removably fitted.

8. In a motor-propeller for boats the combination of an engine having two horizontally and axially alined cylinders, a propeller wheel suspended from the engine by a tubular post, mounting brackets comprising a vertically adjustable member provided with means for attachment to a boat, collars in which the engine cylinders are mounted and angularly adjustable, said collars and vertically adjustable member having interfitting detachable connecting means, and a thrust brace adjustably connected with said post and adapted to bear at the opposite end against the boat.

9. In a motor-propeller for boats the combination of an engine having two horizontal cylinders in approximate axial alinement, a propeller wheel suspended from the engine by a tubular post, and mounting brackets comprising clamps adapted to be detachably fastened to a boat, a frame mounted and vertically adjustable on the outer limbs of the clamps and provided with upwardly projecting studs, and collars in which the engine cylinders are mounted and angularly adjustable having sleeves removably fitted on said studs.

10. In a motor-propeller for boats the combination of an engine having two horizontal cylinders in approximate axial alinement, a propeller wheel suspended from the engine by a tubular post, a vertically adjustable frame provided with means for attachment to a boat and with upwardly projecting studs, collars in which the engine cylinders are mounted and angularly adjustable removably fitted on said studs, and a thrust brace having a vertically and horizontally adjustable connection with said post and a detachable connection with said frame.

In witness whereof we hereto affix our signatures.

ARTHUR N. THOMPSON.
ALBERT P. KNAUBER.