No. 747,801. PATENTED DEC. 22, 1903.

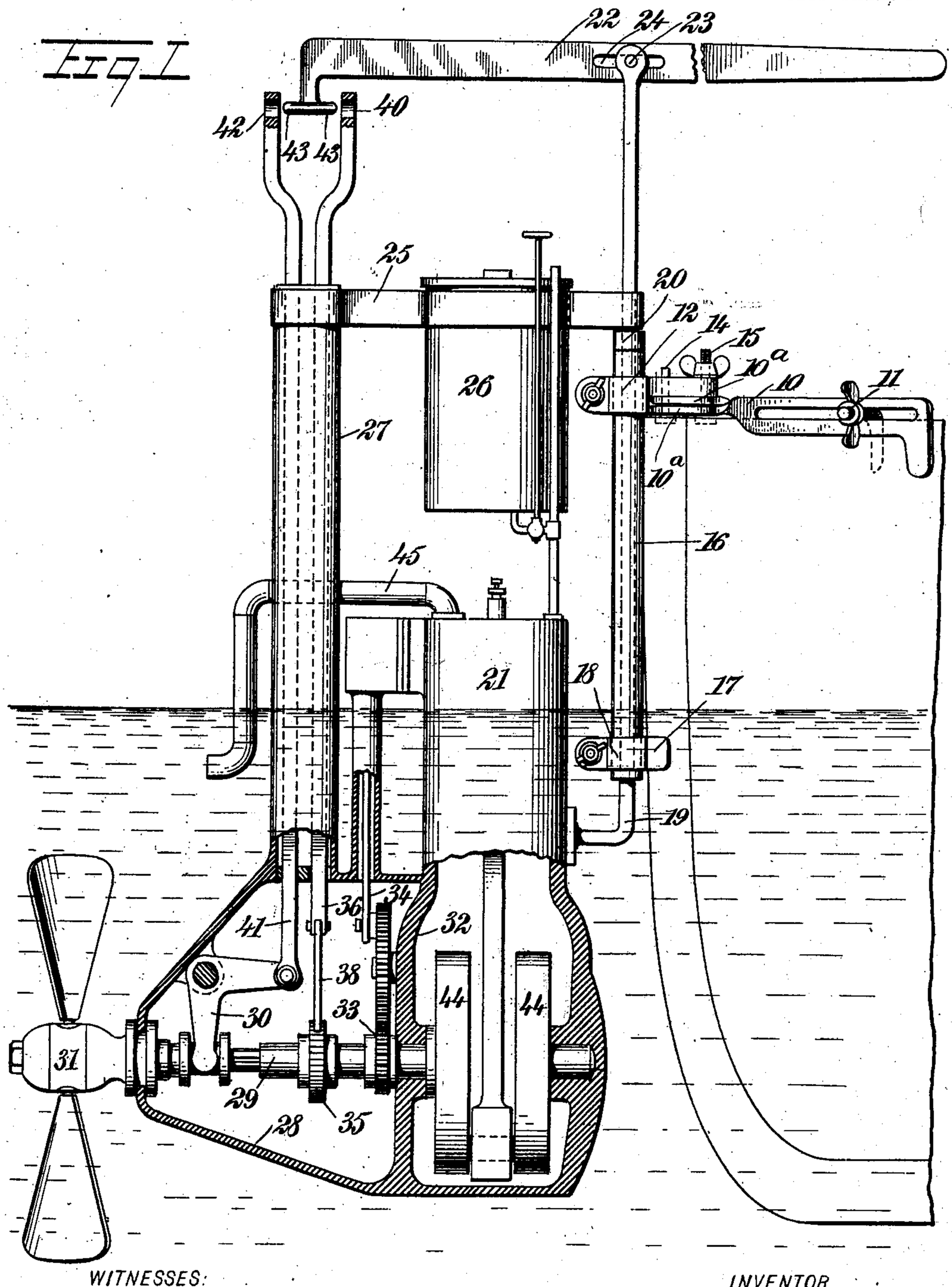
H. W. STURGES.

BOAT PROPELLER.

APPLICATION FILED APR. 3, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1



WITNESSES:

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NO MODEL. 2 SHEETS—SHEET 2.

Fig 2

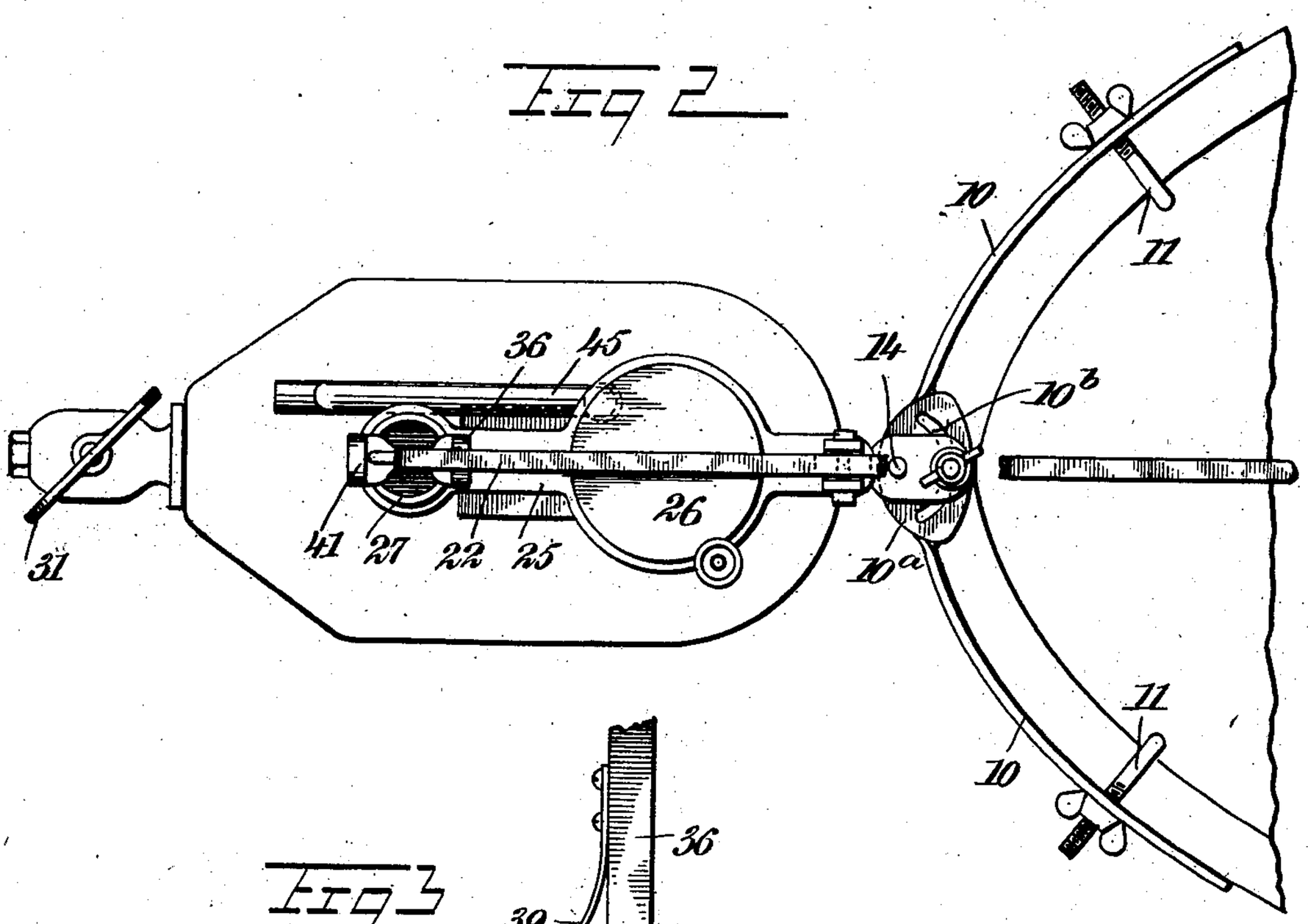


Fig 3

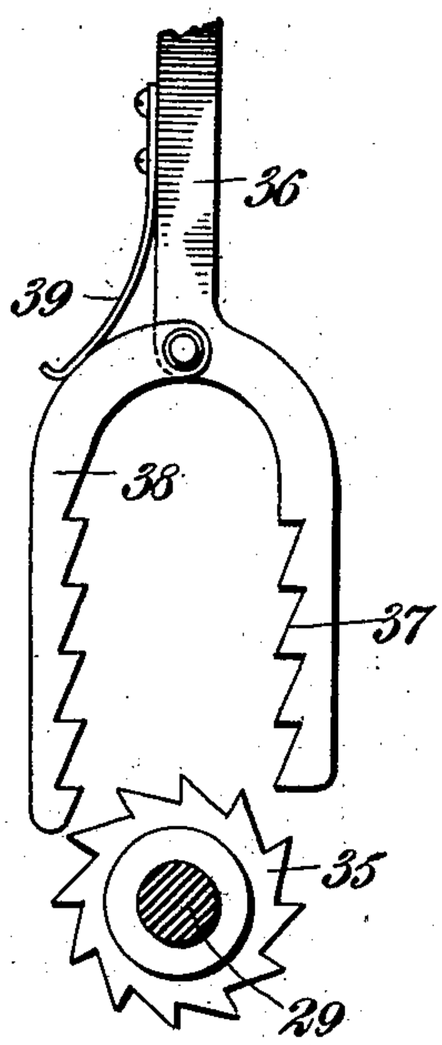
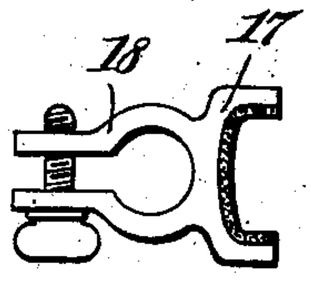


Fig 4



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UNITED STATES PATENT OFFICE.

HARRY WILTON STURGES, OF WILTON, CONNECTICUT.

BOAT-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 747,801, dated December 22, 1903.

Application filed April 3, 1903. Serial No. 150,865. (No model.)

To all whom it may concern:

Be it known that I, HARRY WILTON STURGES, a citizen of the United States, and a resident of Wilton, in the county of Fairfield and State of Connecticut, have invented a new and Improved Boat-Propeller, of which the following is a full, clear, and exact description.

This invention relates to a motor and propeller attachment designed especially for small boats, the apparatus having means for removably connecting it with the stern of the boat, so that it may be applied or removed at will. It is particularly advantageous for boats used in shallow water and those employed in landing in a surf or heavy wash, in which cases, under the ordinary practice, propellers are frequently destroyed.

Preferably I employ a motor of the internal-combustion type, and one of the principal features of the invention lies in the arrangement of the motor so that the cylinder is cooled by the water in which the boat is floating. This avoids the necessity of a water-jacket and circulating-pump. I also employ a tiller which is arranged to turn the propeller at different positions, so as to steer the boat, and which may be employed to actuate the reversing-gear of the propeller or to actuate the devices for "turning over" the engine preparatory to starting the same.

Various other features of major or minor importance are involved, and all will be fully described hereinafter.

This specification is an exact description of one example of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the invention with parts broken away and showing it applied to a boat having a sharp stern. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of the device for turning over the engine, and Fig. 4 is a detail view of the fork for engaging the stern-post of the boat to steady the apparatus.

The apparatus is attached to the boat by means of arms 10, which may, if desired, be curved to conform to the curvature of the gunwale of the boat and which are provided with suitable clamping devices 11, by which they are rigidly attached to the gunwale, as shown. These arms 10 have flattened rear ends 10^a, and on such flattened portions a clamp 12 is mounted by means of a pin 14, passing through the clamp and through the flattened portions 10^a of the clamping-arms pivotally to mount the clamp 12. Said clamp 12 is also provided with a pin or bolt 15, which plays in arc-shaped slots 10^b in the ends 10^a of the arms 10. This allows the clamp to swing freely around the center of the pin 14. Said clamp 12 is securely engaged with a tube 16, which extends vertically along the stern-post of the boat and which supports the motor and propelling devices. By this construction it is easy to ship or unship the propeller.

The lower end of the tube 16 is provided with a fork 17, which is fastened to the tube by a clamp 18, the fork 17 being, if desired, suitably padded to prevent marring the boat and being arranged to straddle the stern-post, as illustrated in Fig. 1. Extending loosely through the tube 16 is a rod 19, which has a collar 20 fast thereto and engaging the upper end of the tube to hold the rod at the desired elevation. The lower end of the rod is fastened rigidly to the cylinder 21 of the engine, and the upper end has the tiller 22 mounted thereon by means of a pin 23, which plays in a longitudinally-disposed slot 24, formed in the tiller. Projecting rearward from the rod 19 at a point above the collar 20 is an arm 25, which carries the tank 26, containing the fuel by which the engine is operated, and the outer end of this arm is also fastened securely to a tubular stanchion 27, rising from a case 28, which incloses the engine-shaft 29 and the propeller-reversing devices 30.

31 indicates the propeller, this being preferably of a reversing type, as above mentioned.

The crank-case 32 of the engine may be

formed on a part of the case 28. The engine-shaft has gearing 33 for driving the valve-rod 34, and it also has, as best shown in Fig. 3, a ratchet 35 fastened thereon. Coacting with this ratchet is a rod 36, the lower end of which is turned outward and downward and formed with ratchet-teeth 37 thereon. Pivoted to the lower portion of the arm 36 and extending downward in parallelism with the ratcheted extremity thereof is a short limb 38, having ratchet-teeth on its inner side disposed oppositely with respect to the ratchet-teeth 37. 39 indicates a spring of any suitable sort for pressing the limb 38 inward toward the lower extremity of the rod 36. The lower end of said rod and the limb 38 embrace the ratchet 35, and a reciprocal movement of the rod will impart a continuous rotary movement to the engine-shaft. This rod 36 extends upward through the hollow stanchion 27 and has its upper end formed with an opening 40, the purpose of which will hereinafter fully appear.

To the propeller-reversing devices 30 a rod 41 is connected, this rod also extending up through the stanchion 27 and having its upper end terminating at the same elevation as the upper end of the rod 36 and formed with an opening 42 in alinement with the opening 40. The rear end of the tiller 22 is turned downward and formed with forwardly and rearwardly projecting studs 43. By sliding the tiller 22 forward or backward on the pin 23 the studs 43 may be entered either into the eye 40 or the eye 42, as desired, and after the desired engagement has been effected by rocking the tiller vertically the rod 41 may be actuated to reverse the propeller or the rod 36 actuated to rotate the engine-shaft 29, thus turning over the engine. The cranks 44 of the engine may be made to serve as a fly-wheel. The structure of the engine may be of any approved type.

45 indicates the exhaust-pipe.

When the apparatus is assembled and mounted, as shown, by engaging the forward stud 43 with the rod 36 and vertically rocking the tiller the engine may be started. The propeller may be controlled at will by engaging the tiller with the rod 41, and to steer the boat it is only necessary to swing the tiller in the usual manner. The propeller then acts in the dual capacity of steering and driving. The cylinder of the engine is placed at such an elevation that it will be almost submerged in the water, thus keeping the cylinder-walls cool. It will also be noticed that the pitching of the boat and the spray or smother from the seas will keep the submerged portions of the cylinder continually wetted, and thus complete the cooling operation.

Various changes in the form, proprotions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the intent of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A boat-propelling device, comprising an internal-combustion motor, means for mounting the motor with a part of its cylinder submerged whereby to cool the cylinder, and a propeller in connection with the motor.

2. A boat-propelling device, comprising a clamping means, a tubular member fastened therein, a rod mounted to turn therein, a motor and propeller supported from the rod, and means in connection with the rod for turning the same to steer the boat.

3. The combination with a clamping device, of a tubular member carried thereby, a rod mounted to turn in the tubular member, a motor fastened to the lower end of the rod at an elevation sufficient to submerge the motor-cylinder, a propeller in connection with the motor, a fuel-tank carried from the upper portion of the rod, and means in connection with the rod, for turning the same to steer the boat.

4. A boat-propeller, comprising two clamping-arms adapted to be engaged with the gunwale of the boat, a clamp mounted to swing on said clamping device, a motor and propeller, and means for mounting the same on the clamp.

5. The combination of a motor, a propeller connected therewith, means for mounting the motor and propeller on the stern of a boat, outside thereof, and means for turning over the motor to facilitate starting the same, such means extending from a mobile part of the engine into proximity to the stern-sheets of the boat to permit operating them while the motor and propeller are in place.

6. The combination of a motor, a propeller, means for removably attaching the same to a boat, and reversing devices for the propeller-blades, said reversing devices extending from the propeller-shaft to permit reversing the propeller-blades while the motor and propeller are in place.

7. The combination of a motor, a propeller, means for mounting the motor and propeller on a boat, means for starting the motor, means for reversing the propeller-blades, and a tiller connected with the motor to turn the same to steer the boat and movable into engagement with either the means for starting the engine or for reversing the propeller-blades.

8. The combination of a motor, a propeller, means for mounting the same to swing, a tiller in connection with the motor, to turn the same to steer the boat, said tiller being longitudinally shiftable, means for starting the engine, and means for reversing the pro-

peller-blades, the means for starting the engine and reversing the propeller-blades extending into proximity with the tiller, whereby upon shifting the tiller it may be engaged with either of said means.

9. The combination of a motor, a propeller, means for mounting the same on a boat, a hollow stanchion rising from the motor-case, a controlling means extending upward through the hollow stanchion, and means acting with the upper portion of the controlling means, to operate the same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY WILTON STURGES.

Witnesses:
GEO. H. HOLMES,
WILLARD H. SPRAGUE.