(No Model.)

R. RHETT.

MARINE PROPULSION.

No. 553,423. Patented Jan. 21, 1896.

Fig. 2.

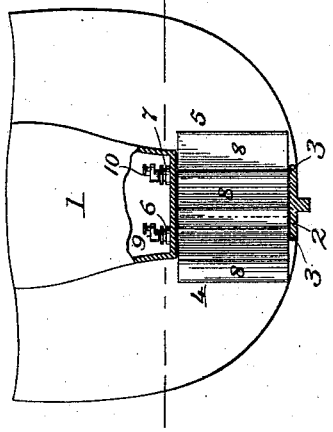


Fig. 4.

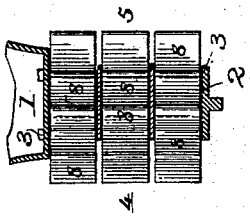


Fig. 1.

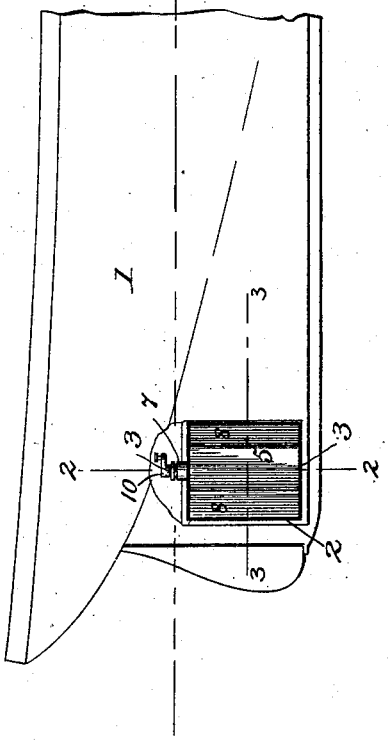
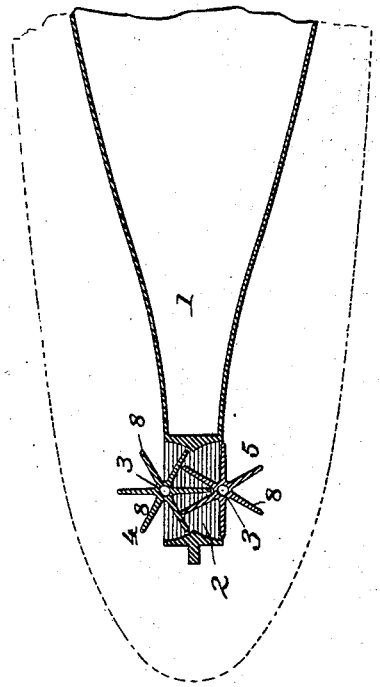


Fig. 3.



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UNITED STATES PATENT OFFICE.

ROLAND RHETT, OF NEW YORK, N. Y.

MARINE PROPULSION.

SPECIFICATION forming part of Letters Patent No. 553,423, dated January 21, 1896.

Application filed July 3, 1895. Serial No. 554,866. (No model.)

To all whom it may concern:

Be it known that I, ROLAND RHETT, of New York, in the county and State of New York, have invented certain new and useful Improvements in Marine Propulsion, of which the following is a specification, reference being had to the accompanying drawings, and to the numerals of reference marked thereon.

This invention relates more particularly to propellers in which two paddle-wheels mounted on vertical axes parallel to each other and placed on opposite sides of the keel of a boat interlock their paddles or blades within a housing-case or wheel-house, leaving the outer paddles free to effect the propulsion. In the propulsion of a vessel by this form of propeller there is free and unobstructed movement of the outer blades, and, as far as possible, the reverse action of those blades which move forward or in the direction in which the boat is moving is nullified. These results are accomplished by using a common wheel-house for both propellers, which are journaled thereon in such a position that the forward or reactive movement of the blades occurs wholly within the wheel-house.

Referring to the drawings, Figure 1 is a side elevation of the stern of a boat with the propeller in place. Fig. 2 is a cross-section on the line 2 2, looking forward. Fig. 3 is a horizontal section on the line 3 3, looking downward. Fig. 4 is a modification.

1 represents the stern of a boat into which is built a wheel-house 2. To the sides of the wheel-house are journaled, in a vertical or slightly-inclined position, shafts 3 carrying paddle-wheels 4 5, the blades of which interlock within the wheel-house for the purpose hereinafter described. The paddle-wheels 4 5 are duplicates of each other and are journaled in suitable bearings 6 7, one on each side of the wheel-house, and extend from the load water-line to near the keel, being thus entirely submerged. Each wheel consists of a shaft 3 and paddles or blades 8. In large wheels the shafts will be cast or made hollow and water-tight to lessen the weight. The blades may be cast to the shaft or attached to it in any suitable way.

The wheel-house 2 used in common by both paddle-wheels is open at the sides, but closed at the top and bottom, as also at the front and rear ends, thus leaving an opening through the boat from side to side.

The distance between the paddle-wheels and the width of the wheel-house bear such relation to each other that the blades 8 of the two paddle-wheels shall interlock within the wheel-house, while the blades outside are free to act upon the water on both sides of the boat. The inner faces of the front and rear walls of the wheel-house are curved, as shown in Fig. 3, to conform to the peripheries of the blades of the paddle-wheels.

Cranks 9 10 on the upper ends of the shafts and within the boat afford means for attaching the driving devices, such as a steam-engine, electric motor, &c.

The operation is as follows: When the wheels are in action, the outside blades are the propelling medium, and it is to be observed that each blade leaves the wheel-house as soon as it has passed across the center line or "dead-center," beginning immediately to act on the water to propel the boat forward, and that it continues in action until it has made a half-revolution and is about to react on the water. At this moment the blade enters the wheel-house and meets the current generated by the opposite wheel. The object of using a wheel-house common to both wheels is to shut off or exclude as much as possible the blades passing through it from all contact with the water outside. In the reverse movement the water carried into the wheel-house from both sides meets in opposing currents and is returned, and in most part expelled by the interlocking blades, which form valves at various angles within the case, thus nullifying the reverse or reactive power of the wheels and leaving the outside blades to do their work.

Instead of employing a single cast or built-up wheel, when of large size, the wheels may each be made in sections, one above the other, each having its own separate wheel-house, as shown in Fig. 4.

I claim as my invention—

1. In combination with a boat, a casing or wheel-house, two paddle wheels rotating partly therein, the blades of which interlock while passing through the wheel-house, substantially as set forth.

2. In combination in a boat, a casing or

wheel-house formed therein, paddle wheels mounted to rotate on vertical or slightly inclined shafts journaled on opposite sides of the wheel-house, the opposing blades of each wheel interlocking with one another within the wheel-house, substantially as set forth.

3. In combination with a boat, a case or wheel-house formed in the stern thereof, and opened through the boat from side to side, interlocking, submerged paddle wheels journaled to the sides of the wheel-house in a substantially vertical position, the blades of which interlock within the wheel-house, and means for driving the wheels in opposite directions, substantially as set forth.

4. The combination, in a boat, of a series of independent wheel-houses, formed on the stern thereof and opened from side to side, a vertical shaft journaled on each side of the series, paddle wheels secured to the shafts, the blades of each pair interlocking within a wheel-house, and means, such as described, for driving the wheels, substantially as set forth.

In testimony whereof I hereto set my hand and seal.

ROLAND RHETT. [L. S.]

Witnesses:
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