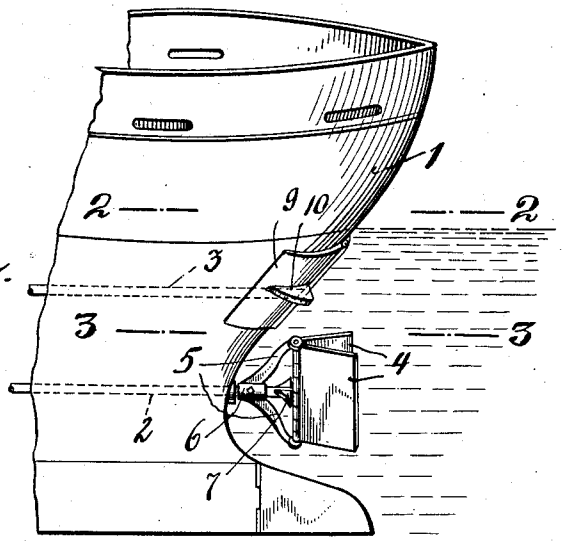
K. O. MÜLLER & P. FUEGMANN.

VESSEL PROPELLER.

APPLICATION FILED FEB. 17, 1911.

1,009,333. Patented Nov. 21, 1911.

Fig. 1.



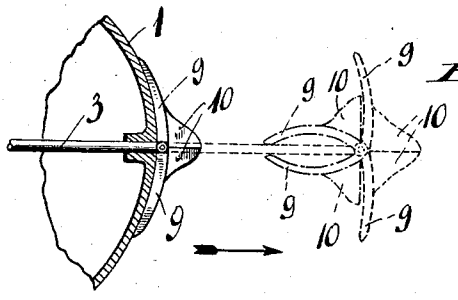


Fig. 2.

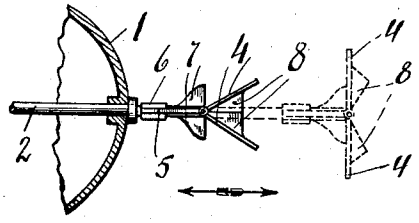


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

KARL OSKAR MÜLLER, OF WEST HOBOKEN, AND PAUL FUEGMANN, OF UNION HILL, NEW JERSEY.

VESSEL-PROPELLER.

1,009,333. Specification of Letters Patent. **Patented Nov. 21, 1911.**

Application filed February 17, 1911. Serial No. 609,094.

To all whom it may concern:

Be it known that we, KARL OSKAR MÜLLER and PAUL FUEGMANN, both citizens of the United States of America, the former residing at West Hoboken, in the county of Hudson, and the latter residing at Union Hill, in the county of Hudson, both in the State of New Jersey, have invented certain new and useful Improvements in Vessel-Propellers, of which the following is a specification.

The object of our invention is to provide a new means for propelling vessels, that will be of greater efficiency and less expense than the hitherto used screw propellers.

With this and other objects in view, our new propeller consists of suitably formed swinging flaps or wings carried by reciprocatory rods adapted to be operated from a suitable power source within the vessel, which flaps or wings act as pistons or buffers against the water in propelling the vessel forward during their outward or rearward stroke and retard or propel the vessel rearward during their inward or forward stroke.

In the present example, we have shown flaps or wings for the forward and rearward propulsion of the vessel, adapted to be operated separately. This construction, however, may be easily modified to allow of their being operated by a common means. Furthermore, the flaps or wings may be modified in their construction to serve for the propulsion of the vessel in either direction. These modifications may be made by those skilled in the art without departing from the principle of our invention, and we, therefore, do not wish to be understood as restricting ourselves to the particular construction described and shown.

In the drawing, which forms a part of this specification, similar reference letters denote corresponding parts, and Figure 1 is a side elevation of the aft of a vessel, to which our new propeller is applied and Figs. 2 and 3 are respectively cross sections on lines 2—2 and 3—3 of Fig. 1 illustrating the operation of the propeller.

Referring to the drawing, 1 denotes the body of the vessel, 2, 3 reciprocatory rods extending longitudinally within the vessel and adapted to be operated from a suitable power source therein. The outwardly and rearwardly projecting end of the rod 2 carries a pair of collapsible flaps or wings 4 which are submerged in water and are adapted in their expanded or open position during their rearward stroke to propel the vessel. The flaps or wings 4 are hinged or otherwise rotatively secured to arms 5, which are fixed by means of a sleeve 6 to the rear end of the rod 2. The flaps are limited in their swinging motion at the front by blocks 7 or the like, fixed to the outer end of the rod 2, and at the rear by similar means 8 fixed to said flaps. The front blocks allow of the flaps or wings to swing into a position in which the same are at an angle of about 180° relative to one another, (see dotted line, Fig. 3) and serve to offer the necessary resistance to the water pressure. The rear blocks 8 are merely to prevent the flaps or wings from closing altogether during the inward or forward stroke.

The flaps or wings 9 for the retardation or retraction of the vessel (Fig. 2) which in the present example we have shown as arranged on a separate reciprocatory rod 3, just above the rod 2, are curved so that when out of operation, they may bear around the curved surface of the body of the vessel, and during their rearward stroke will offer small resistance to the water pressure. These flaps are also capable of swinging and their swinging movement in the rearward direction is limited by blocks 10 secured thereto. During their rearward stroke, these wings or flaps are caused to close as indicated by dotted lines in Fig. 2, and during their forward stroke, to open, and thereby retard or retract the vessel. In the present example, the flaps are shown as arranged in the center, but it is understood that two or more pairs of flaps for the forward and rearward propulsion may be provided in order to increase the efficiency thereof.

What we claim and desire to secure by Letters Patent is:

1. In combination with a vessel, a propeller, comprising a reciprocatory rod projecting outward through the stern of the vessel, flaps pivoted to said rod and adapted to swing transversely thereto, projections on the outer surfaces of said flaps coöperating with one another to limit the swinging mo-

tion of said flaps in one direction and projections on the rod to limit the swinging movement of said flaps in the opposite direction.

2. In combination with a vessel, two pairs of reciprocatory collapsible members of which one pair is adapted during its rearward stroke to open forwardly and the other is adapted during its forward stroke to open rearwardly, projections on the said members to limit the swinging movement in one direction and projections for the members of one pair to limit the swinging movement thereof in the opposite direction.

3. In combination with a vessel, a propeller, comprising a reciprocatory rod projecting outward through the stern of the vessel, and collapsible flaps pivoted to said rod and curved so as to offer the least resistance during the outward stroke thereof and to embrace the body of the vessel when out of operation.

4. In combination with a vessel, a propeller, comprising a reciprocatory rod projecting outward through the stern of the vessel, collapsible flaps pivoted to said rod and curved so as to offer the least resistance during the outward stroke thereof and to embrace the body of the vessel when out of operation, and projections on said members to limit the swinging movement thereof in one direction.

In testimony whereof we affix our signatures in presence of two witnesses.

KARL OSKAR MÜLLER.
PAUL FUEGMANN.

Witnesses:
JOHN T. CARMODY,
MAX D. ORDMANN.