

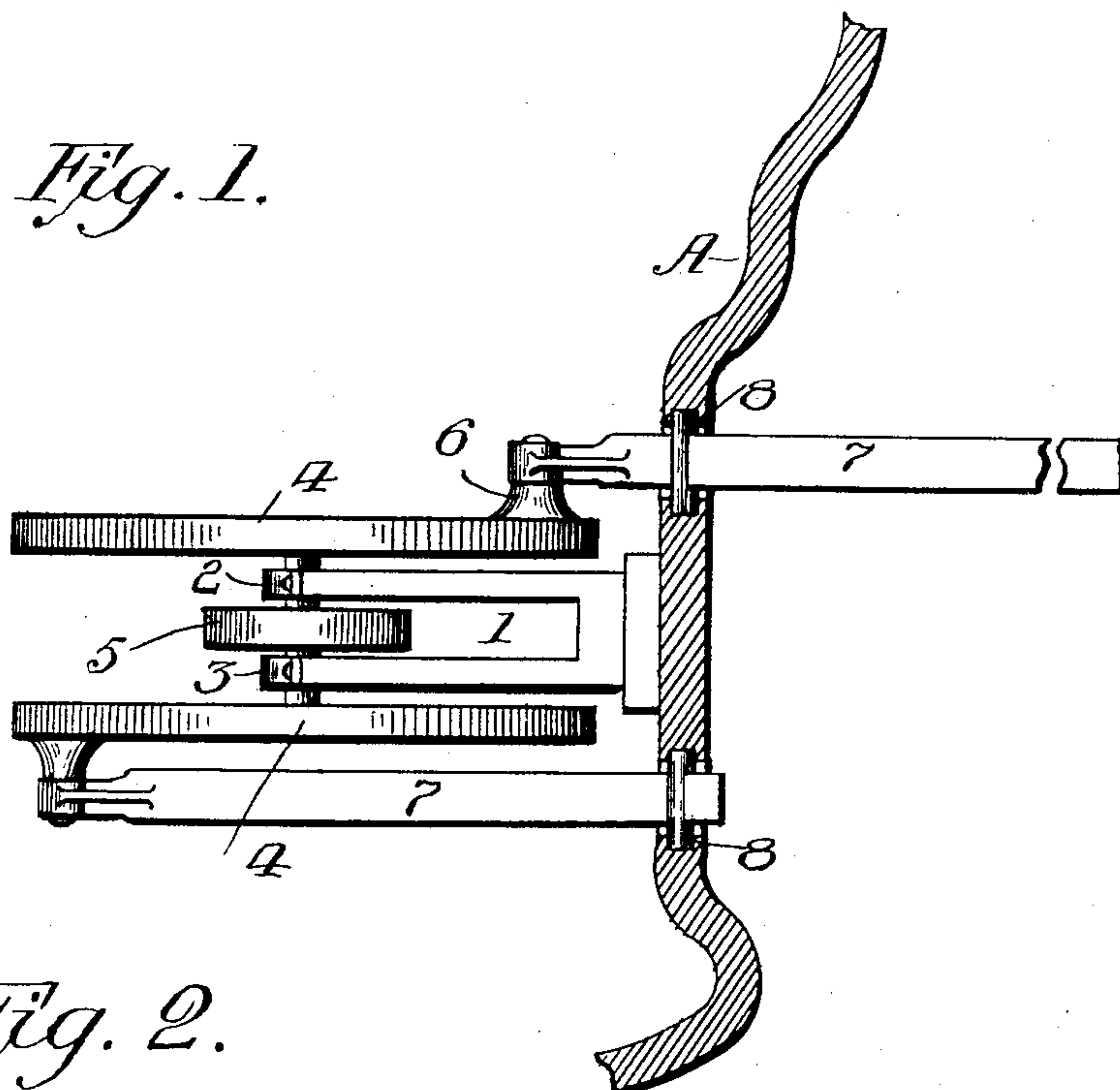
No. 750,638.

PATENTED JAN. 26, 1904.

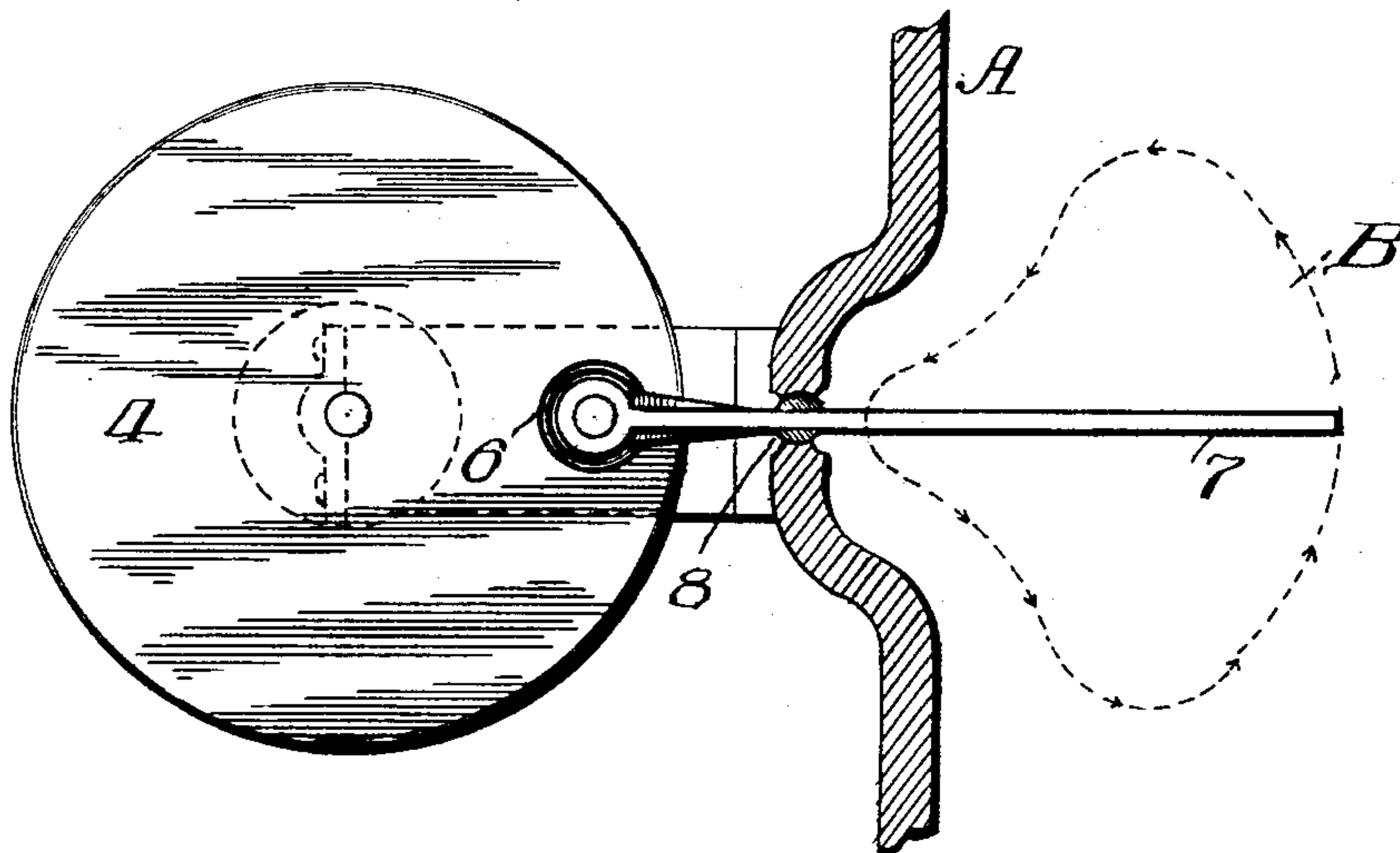
D. L. GRAHAM.  
PROPELLING MECHANISM.  
APPLICATION FILED JULY 15, 1903.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

DAVID L. GRAHAM, OF WILKINSBURG, PENNSYLVANIA.

## PROPELLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 750,638, dated January 26, 1904.

Application filed July 15, 1903. Serial No. 165,551. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID L. GRAHAM, a citizen of the United States of America, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Propelling Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in propelling mechanism, and is adapted for use on boats of various descriptions.

The object of the present invention is to provide a novel and effective propelling mechanism embodying one or more propelling-blades to which a circuitous movement is imparted whereby to force the blade into the water in such a manner as to offer comparatively slight resistance and cause the blade in its travel to act against the water in such a manner as to propel the boat.

A further object of the invention is to construct a device which may be readily attached to a boat either at the side or sides of the same, at the rear of the boat, or within the boat, in which latter position the blades will operate underneath the boat, and a still further object of the invention is to construct the device of this character which may be readily reversed, whereby to move the boat in either direction.

My invention consists in mounting propeller or sculling blades and operating the same whereby to produce by the stroke the action and power of an oar when rowing or that of a paddle or blade while sculling.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout both views, in which—

Figure 1 is a cross-sectional view of a part of a boat, showing the application of my improved propelling mechanism thereto. Fig. 2 is a horizontal sectional view of the same.

In the accompanying drawings, A indicates the vessel-wall, and where the propelling mechanism is adapted to be applied to the side or sides of a vessel the propeller or sculling blades will be disposed and operate one

above the other through the side wall of the vessel. If, however, the propelling mechanism is to be applied to the stern of the vessel, then the propelling-blades would operate in a manner as the paddle or blade when sculling. The mechanism involves in its construction the housings or standards 1, which are adapted to be securely fastened to the wall of the vessel, to the stern thereof, or to the bottom of the vessel, according to the manner in which it is desired to use the propeller. These standards at their free ends carry suitable bearings 2, and journaled in these bearings is a shaft 3, on the respective ends of which the fly-wheels 4 are mounted. Motion is communicated to the fly-wheels by means of a belt (not shown) or other connection which operates on the pulley 5, carried by the shaft 3 between the standards 1, the belt or other connection being driven through the medium of the engine or other motive power. Each of the fly-wheels 4 carries a crank or wrist pin 6, to which is connected the ends of the propeller or sculling blades 7. These propeller or sculling blades operate through slotted stub-shafts 8, forming a swiveled joint, which turn in their journals so as to allow the sweep or movement that is imparted to the propeller or sculling blades. As movement is imparted to the fly-wheels 4 through the action therewith with the motive power the propeller or sculling blades are caused to describe a circuitous path, as indicated by dotted lines B in Fig. 2 of the drawings. It is to be noted that if the propelling mechanism is so located that the propelling-blades enter the water at an angle to the vertical the action against the water as they describe their path of travel is the same as that obtained by the blade or paddle during the action of sculling, and if the propelling mechanism is so located as to cause the propeller-blades to enter the water at an angle to the straight transverse lines of the vessel then the action of the blades against the water is the same as that obtained by the oar when rowing. The swivel-joint through which the propeller-blades extend excludes the water from entering into the vessel, the blades operating neatly through the joint. It will of course be evident that the propelling mechanism may be



driven in any suitable manner, and for exceedingly small craft, such as a skiff or the like, the fly-wheels might be operated, as will be observed, by hand, though it is the purpose to generally drive by the aid of steam or  
5    gasolene engines or by electric power.

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

10    A propelling apparatus of the type set forth comprising a standard having outwardly-extending parallel arms, secured to the wall of a vessel, a shaft mounted in said arms, a wheel carried thereby between the arms and adapt-

ed to rotate said shaft, fly-wheels mounted 15 without the arms upon the ends of said shaft, wrist-pins carried by each of said wheels, rotatable means mounted in the walls of the vessel at each side of the standard, and propeller or sculling blades extending through said ro- 20 tatable means and pivotally connected with the said wrist-pins, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

DAVID L. GRAHAM.

Witnesses:

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