No. 722,958. PATENTED MAR. 17, 1903.

T. EDGINGTON.

PROPELLER.

APPLICATION FILED OCT. 28, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

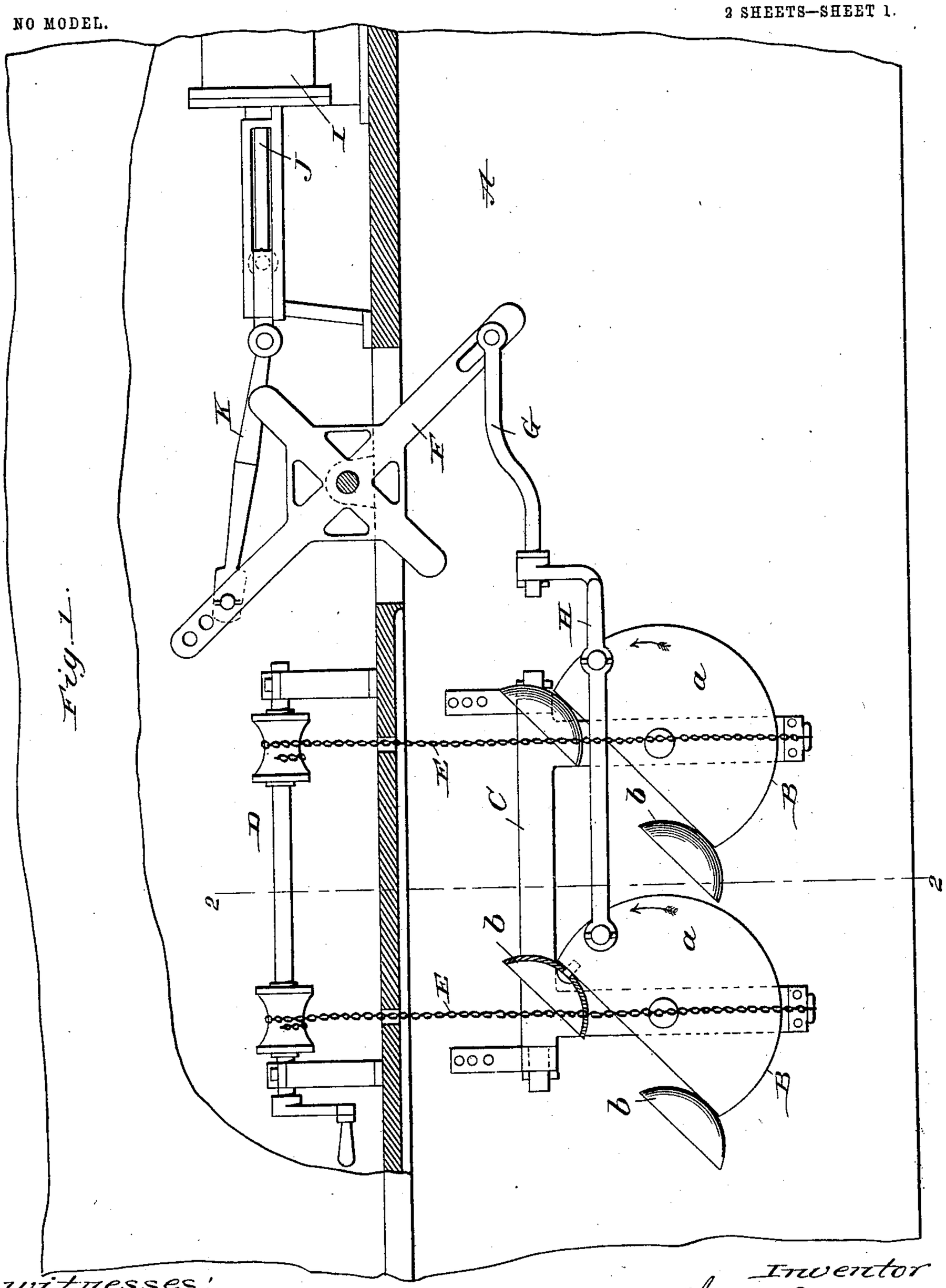

Fig. 1.

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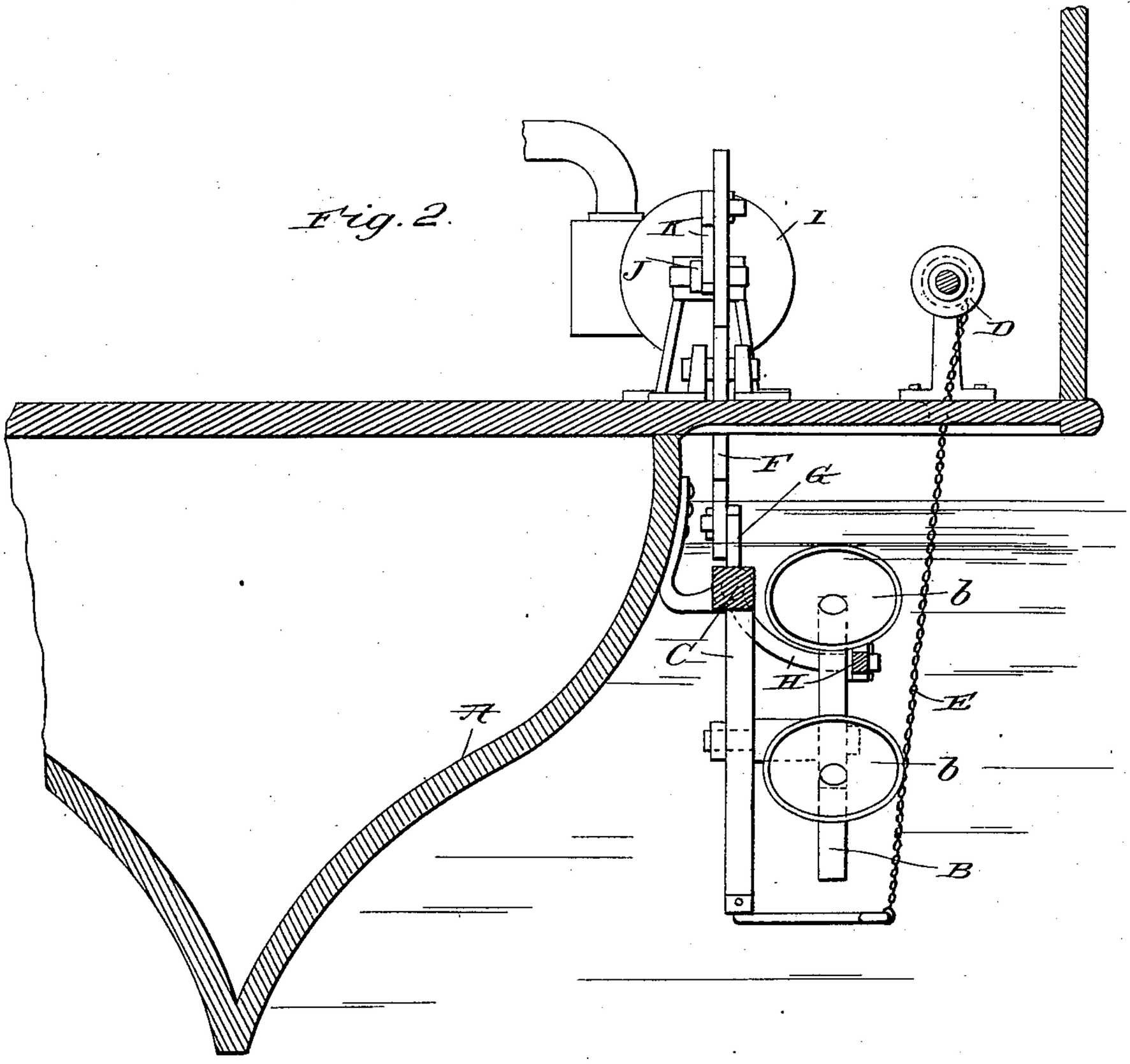
NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS EDGINGTON, OF BARBOURSVILLE, WEST VIRGINIA.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 722,958, dated March 17, 1903.

Application filed October 28, 1902. Serial No. 129,154. (No model.)

To all whom it may concern:

Be it known that I, THOMAS EDGINGTON, a citizen of the United States, residing at Barboursville, in the county of Cabell and State of West Virginia, have invented new and useful Improvements in Propellers, of which the following is a specification.

My invention relates to marine propulsion; and it has for its general object to provide an oscillatory propeller for surface and submarine vessels, the propelling force of which never ceases while the motor employed to actuate the same is in operation.

With the foregoing in mind the invention will be fully understood from the following description and claims when taken in connection with the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a portion of a surface vessel equipped with my improved propellers; and Fig. 2 is a detail transverse section of the same, taken in the plane indicated by the broken line 2 2 of Fig. 1.

Similar letters of reference designate corresponding parts in both views of the drawings, referring to which—

A is the hull of a surface vessel—*i. e.*, a vessel constructed to travel on the surface of a body of water—and B B are my improved oscillatory propellers, of which any desired number may be employed. The propellers may be arranged at any point relative to the hull of a vessel without involving a departure from the scope of my invention. I prefer, however, to arrange the propellers at opposite sides of a vessel-hull, and as the construction at one side of the hull is similar to that at the other side I have deemed it sufficient to illustrate the construction at but one side.

The propellers respectively comprise a body *a* and cup-shaped or concavo-convex blades or paddles *b*, connected to the body and arranged with their concave sides rearwardly with reference to the direction in which the vessel is to be propelled. Each of the bodies *a* is pivotally mounted or fulcrumed at a point midway between its blades on a support C, and consequently it will be observed that when the propellers are oscillated the upper blades or paddles will operate to force the vessel forwardly incident to the movement of the propellers in the direction indicated by arrow, Fig. 1, and the lower blades or paddles will operate to force the vessel forwardly incident to the movement of the propellers in the direction opposite to that indicated by arrow. It will also be observed that immediately upon the completion of the rearward movement of the upper blades the rearward movement of the lower blades commences, and vice versa, and from this it follows that the propellers will unceasingly operate to propel the vessel forwardly so long as the motor employed to actuate the propellers is in motion, which is an important desideratum.

In the present embodiment of my invention the support C, on which the propellers are pivoted or fulcrumed, is connected in a hinged manner to the side of the vessel-hull and may in consequence be raised and lowered, this in order that the propellers may be disposed vertically, as shown, or at an angle of inclination or horizontally, as desired.

D is a windlass mounted in suitable bearings on the deck of the vessel, and E E are cables connected at one end to the free portion of the support C and also connected to and adapted to be wound on the windlass. In virtue of this construction it will be observed that a person standing on the deck of the vessel is enabled to quickly and easily raise or lower the support C and propellers B, as necessity demands.

F is a vertically-disposed walking-beam fulcrumed on the vessel; G, a rod connected to the lower arm of the walking-beam; H, a rod pivotally connected to the bodies *a* of the propellers B and connected to and journaled on the rod G at a point coincident with the hinge of the support C, so as to adapt it to swing with said support; I, a steam-engine cylinder; J, a piston movable in said cylinder, and K a pitman connecting the piston and the upper arm of the walking-beam. In virtue of this construction it will be observed that when the piston of the engine is in motion the beam F will be rocked and the propellers oscillated.

The connection between the pitman K and the upper arm of the walking-beam is preferably an adjustable one, as shown in Fig. 1,

this in order that the stroke of the walking-beam and the propellers may be increased, as when it is desired to have the blades *b* exert a downward pressure on the water with a view of assisting the vessel over or off shoals and other obstructions.

I prefer to employ a steam-engine for operating the propellers when the same are applied to a surface vessel; but when the propellers are applied to a submarine vessel an electric or other suitable motor may be employed.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

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

1. The combination of a vessel-hull, a support carried thereby, propellers arranged one in front of the other, and each comprising a body pivotally mounted on the support, and blades arranged on the body, equidistant from the pivotal point thereof, a walking-beam fulcrumed on the vessel-hull, means connected with one arm of said beam for rocking the same, a rod pivotally connected to the propeller body or bodies and movable fore and aft, and a connection between said rod and the other arm of the walking-beam.

2. The combination of a vessel-hull, a support connected in a hinged manner thereto, means for raising and lowering said support, one or more propellers, each comprising a body pivotally mounted on the support, and blades arranged on the body, equidistant from the pivotal point thereof, a walking-beam fulcrumed on the vessel-hull, means for rocking said beam, a rod G connected to the walking-beam, and a rod H pivotally connected to the propeller body or bodies, and connected to and journaled on the rod G at a point coincident with the hinge-point of the support.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS EDGINGTON.

Witnesses:
J. O. MAYBERRY,
L. R. MAYBERRY.