

No. 678,193.

Patented July 9, 1901.

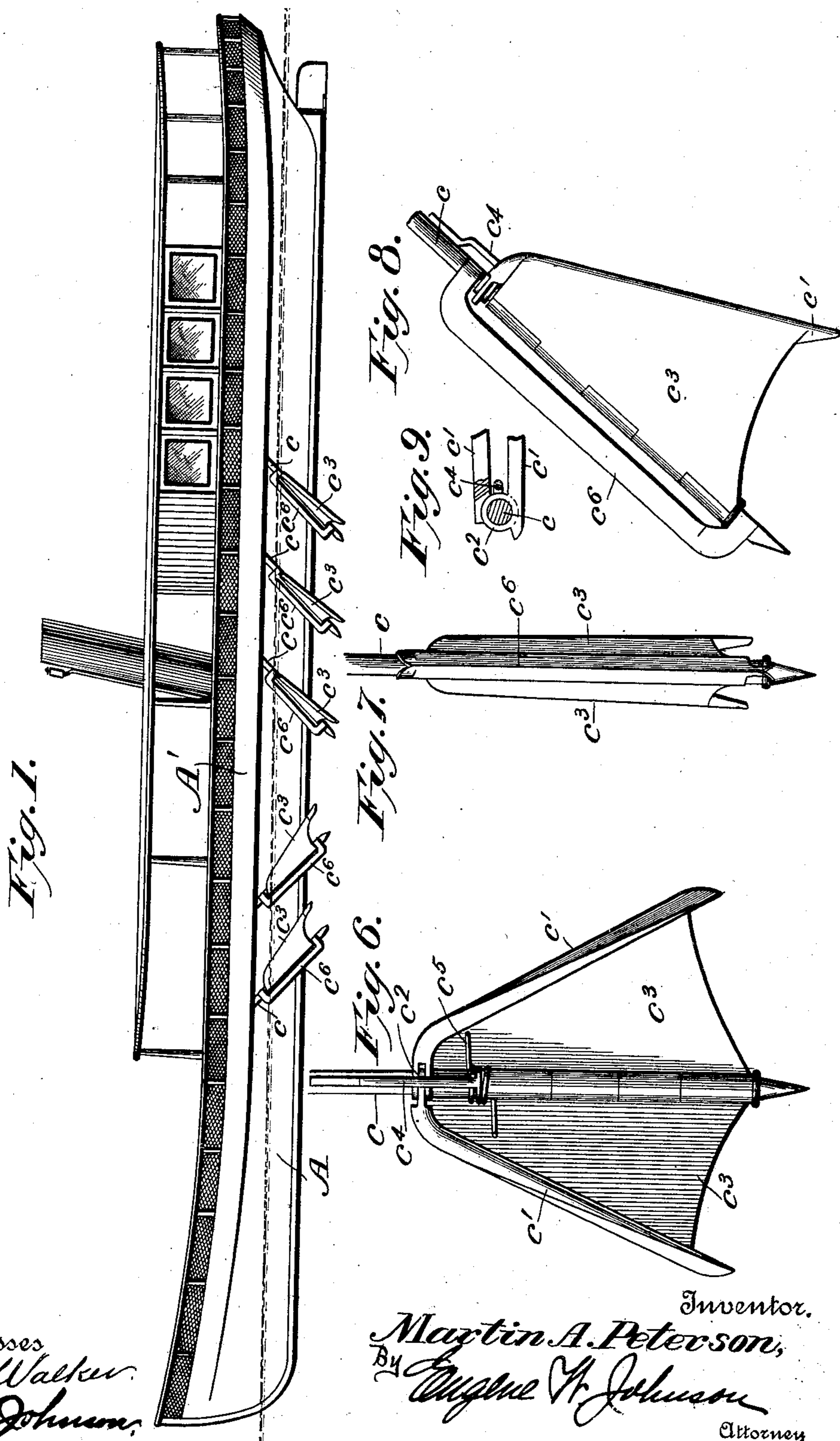
M. A. PETERSON.

PROPELLING MECHANISM FOR VESSELS.

(Application filed Apr. 30, 1901.)

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2 Sheets—Sheet 1.



Witnesses
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H. H. Johnson.

Inventor.
Martin A. Peterson,
By Eugene W. Johnson
Attorney

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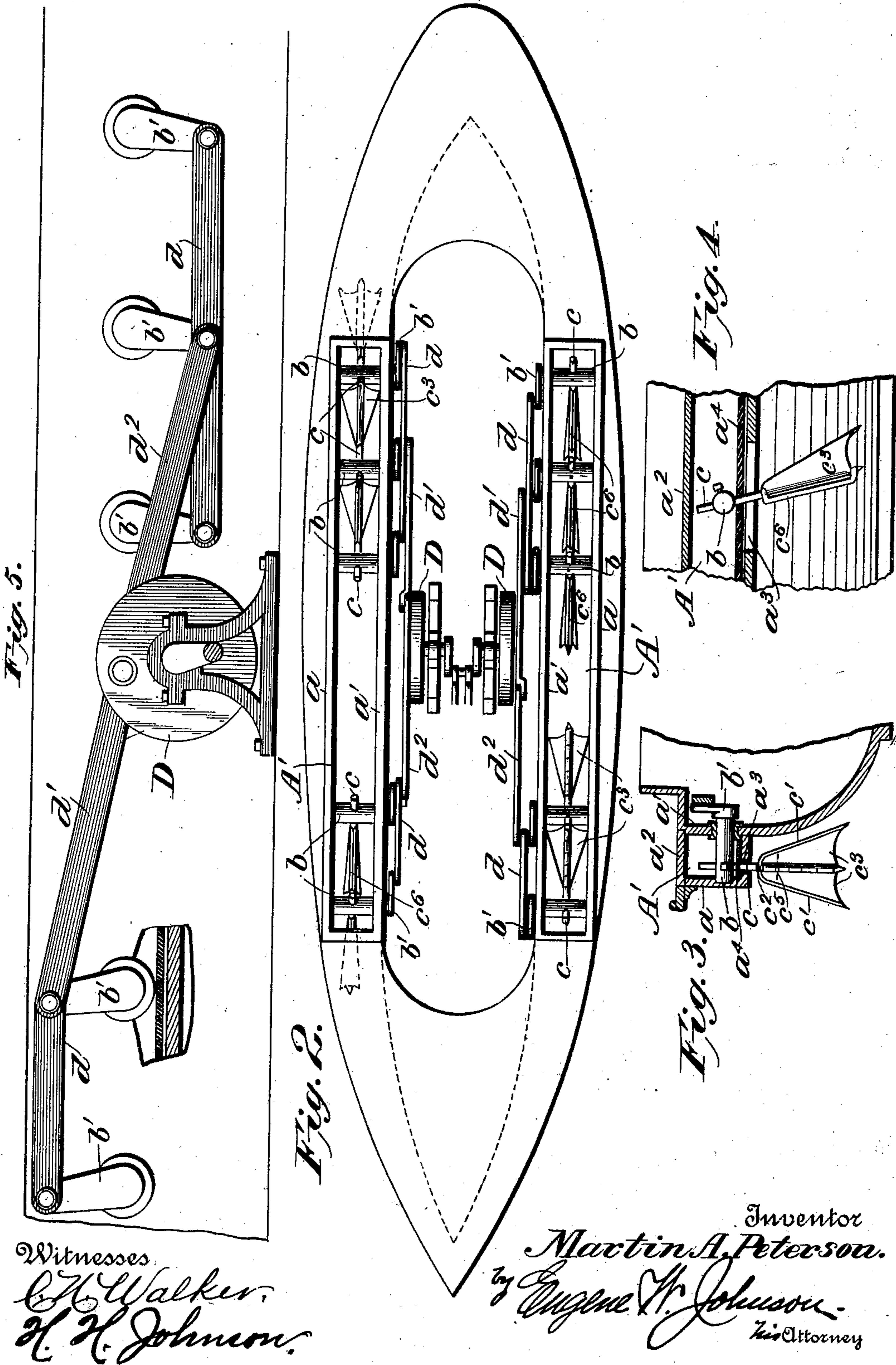
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

MARTIN A. PETERSON, OF SIOUX CITY, IOWA.

PROPELLING MECHANISM FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 678,193, dated July 9, 1901.

Application filed April 30, 1901. Serial No. 58,211. (No model.)

To all whom it may concern:

Be it known that I, MARTIN A. PETERSON, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Propelling Mechanism for Vessels, of which the following is a specification.

This invention relates to certain new and useful improvements in oscillating propellers for vessels; and it consists in the construction and arrangement of the parts, as will be hereinafter set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation showing the application of my invention to a vessel. Fig. 2 is a plan view, the boxes through which the rock-shafts pass having the top and bottom removed. Fig. 3 is a detail transverse sectional view. Fig. 4 is a detail longitudinal section. Fig. 5 is a side elevation of the mechanism for operating the rock-shafts. Figs. 6, 7, and 8 are detail views of the propellers, and Fig. 9 is a detail sectional view.

The hull of the vessel A is provided on each side above the water-line with boxes or frames A', consisting of longitudinal and vertically-disposed side pieces a' . In practice the inner side pieces a' may be a part of the hull. The bottom pieces of the boxes have at intervals slots a^3 , and above the bottom pieces are secured strips of flexible waterproof material a^4 , through which the bars which carry the propellers pass. The strips a^4 may be of rubber, waterproof canvas, or rigid slides which will move in unison with the bars as they are oscillated, the object being to close the longitudinal slots and prevent water entering the boxes. The upper piece a^2 or covering for the boxes A' will be flush with the decks and can be readily removed to afford access to the boxes.

Rock-shafts b are journaled in the side pieces a' , said rock-shafts being seated in the outer side pieces and pass through the inner sides or hull of the vessel, the inner projecting ends being provided with cranks b' , which are rigidly attached thereto, the cranks being oscillated by mechanism which will be hereinafter described.

Rods c carry the folding or feathering pro-

pellers, and said rods pass through the slots a^3 in the bottom of the boxes A', then through the strips a^4 , they also passing through openings in the rock-shafts b , to which they are made fast by set-screws, so that the rods may be adjusted to vary the depth of the propellers. It will be noted that the boxes have considerable depth, and quite a range of adjustment of the shafts can be provided for.

To the rods c are secured diverging bars c' , the upper ends thereof being shaped to provide rule-hinges c^3 , and to these diverging bars c' are suitably connected metal plates or blades c^3 , the adjacent edges thereof being coiled about the rod c after the manner of a butt-hinge, the hinge connections coacting to prevent the blades swinging one beyond the other when they are open in driving the vessel forward. Adjacent to the hinge c^3 I provide a longitudinal loop c^4 , against which the diverging bars will abut in order to prevent the blades closing entirely one against the other, and the sides of the diverging bars may be cut away or beveled to provide, should they be brought close together, edges which diverge away from each other rearwardly, so that they will spread when moved aft. A spring c^5 is coiled about the bar c and through the loop c^4 , the ends of said spring bearing upon the rear surfaces of the blades, tending to exert a pressure against the upper portion of the blades to throw them apart. In front of the feathering-blades to the bar c there is attached a guard c^6 , made up of a piece of sheet metal which is bent so as to be V-shaped in cross-section, and this guard not only serves to protect the hinges, but also acts in use as a cut-water.

The propeller-blades constructed as shown, so as to feather when moved forward and open when moved aft, are arranged so that when the forward propellers are moving toward the bow those located aft on the opposite side will move in the same direction, or, in other words, those propellers which are located diagonally opposite move simultaneously in the same direction. As the forward propellers exert a greater tendency to move the vessel off its course than the rear ones, there is provided a larger number of propeller-blades aft, and said blades are so arranged that when those forward on one side—say on the port—are op-

erating to drive the vessel forward those aft on the starboard side are operating in the same manner, the larger number of paddles aft overcoming the tendency of the forward paddles to turn the vessel. Each set of paddles is connected by rods d , which are attached to cranks which are secured to the rock-shafts, and these rods d are also connected to pitmen d' d^2 , which engage the wrist-pins of wheels D, which are turned in any suitable manner, the connecting means being such that the forward rock-shafts are oscillated in a different direction from the aft ones.

It is within the scope of my invention to provide other means for gearing the driving-wheels to the rock-shaft; but in every instance the gearing should be such that the paddles on the same side of the vessel are oscillated simultaneously in opposite directions, and the engine should be so geared that when it is desired to turn the vessel the paddles on one side can be thrown out of gear or held stationary while those on the other side are operating.

By means of this device vessels of shallow draft may be driven at a high rate of speed, and should from any cause the propellers be damaged they may be readily replaced without placing the vessel on the dry-dock. The number of paddles on each side of the vessel may be increased and other changes may be made without departing from the spirit of my invention.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a vessel, having longitudinal boxes with slotted bottoms, of rock-shafts journaled in said boxes, feathering-paddles adjustably attached to the rock-shafts, and means for oscillating said rock-shafts, substantially as shown.

2. In combination with a vessel having longitudinal boxes, rock-shafts journaled in said boxes, of feathering-paddles carried by rods which are adjustably attached to the rock-shafts, cranks on the ends of the rock-shafts, rods connecting several rock-shafts together, and means for oscillating each series of rock-shafts and paddles attached thereto on the same side of the vessel in opposite directions, substantially as shown.

3. A feathering-paddle for propelling vessels consisting of a central rod, diverging side bars connected to the rod by a rule-hinge joint, plates attached to the diverging bars and to the central rod by being coiled about the same, a V-shaped guard carried by the central rod in advance of said rod and the paddles which are attached thereto, substantially as shown.

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

MARTIN A. PETERSON.

Witnesses:

BEN JENSEN,

CHRISTIAN E. PETERSON.