

No. 643,966.

Patented Feb. 20, 1900.

J. LICHETTI.
RECIPROCATING PROPELLER.

(Application filed Aug. 30, 1899.)

(No Model.)

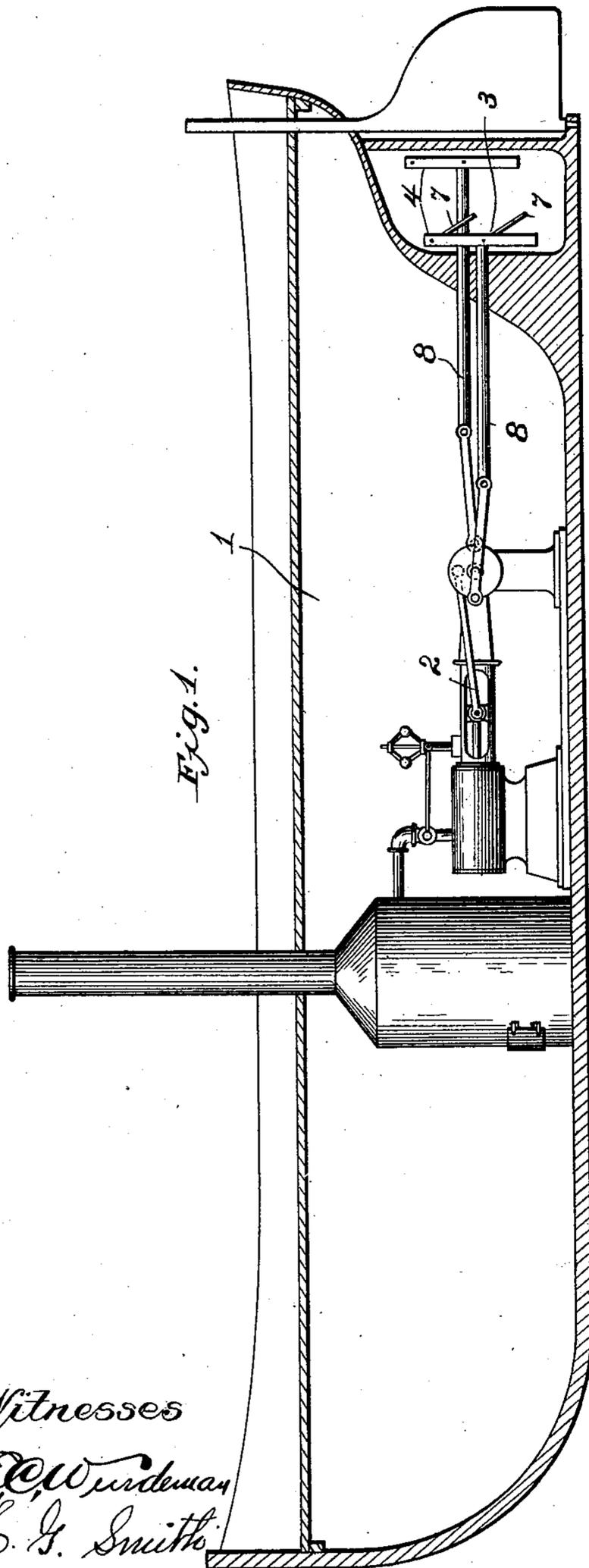


Fig. 1.

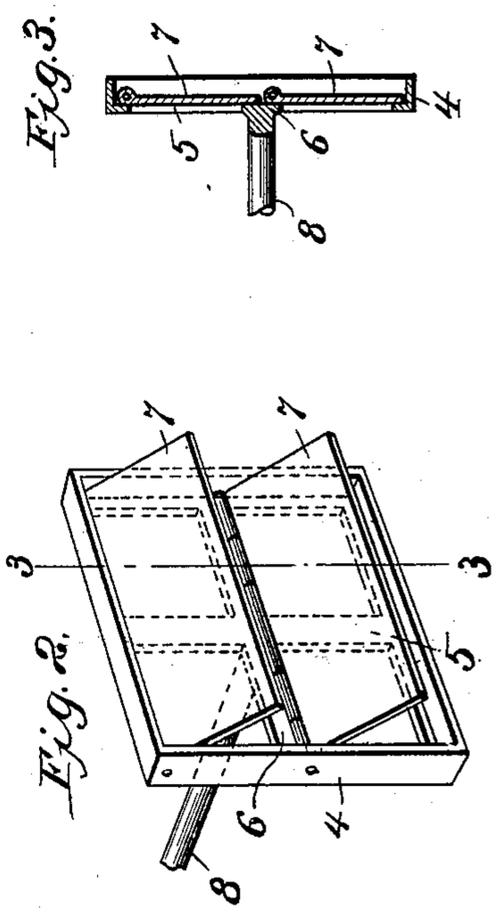


Fig. 3.

Fig. 2.

Witnesses
E. W. Widdeman
H. S. Smith

Inventor
James Lichetti
By John A. Kenzie
his Atty

UNITED STATES PATENT OFFICE.

JAMES LICHETTI, OF PHILADELPHIA, PENNSYLVANIA.

RECIPROCATING PROPELLER.

SPECIFICATION forming part of Letters Patent No. 643,966, dated February 20, 1900.

Application filed August 30, 1899. Serial No. 728,972. (No model.)

To all whom it may concern:

Be it known that I, JAMES LICHETTI, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Propellers for Steamships and Similar Vessels, of which the following is a specification.

My invention relates to an improved construction of propellers for steamships and similar vessels, the same being arranged to move in a horizontal plane, so that the rearward thrust of the propellers will move the vessel forward, while the forward thrust will move the propellers themselves to assume a position wherein they will cut through the water without any resistance being offered.

My invention consists of a plurality of wings pivotally supported at the rear of the vessel and adapted to move in a horizontal or substantially-horizontal plane beneath the surface of the water, so that they will open and close as they are moved forward and backward.

My invention further consists of the novel features of construction and arrangement of parts, all of which will be hereinafter fully described, and particularly pointed out in the appended claim.

Figure 1 represents a central longitudinal section of a vessel having my invention applied thereto. Fig. 2 represents a perspective view of one of the propellers removed, showing the wings or blades partially opened. Fig. 3 represents a vertical section taken on the line 3 3 of Fig. 2, with the wings or blades in a closed position.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

Referring to said drawings, 1 designates the hull of the vessel, 2 the engine therein, which may be of any desired or usual construction, and 3 are the propellers, which occupy proximately the same position with relation to the vessel as the ordinary screw-propeller.

The propellers 3 are composed of a square, rectangular, or other desired frame 4, having vertical and lateral ribs 5 and 6, respectively,

to give greater strength thereto, and the wings or blades 7 are pivotally secured to said frame, as clearly shown.

8 designates rods which are fastened to the frame 4 in any desired or convenient manner, their opposite ends being connected to the engine, as shown in Fig. 1, so that said rods are moved back and forth in a horizontal or substantially-horizontal plane, the arrangement being such that when one of the rods 8 is thrust rearwardly the other rod will be brought forward. In this movement the blades in the frame which is being thrust rearwardly will close, so as to present their entire area against the water, and thus propel the vessel forward, while the blades in the frame 4 which is being moved forward will open and pass through the water without offering any resistance thereto. Thus by this continued movement of the frames back and forth the vessel will be propelled at a very rapid rate of speed.

While I have shown the blades 7 as arranged horizontally with relation to the frame 4, it will be understood that they may be arranged vertically or in any desired manner.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

The herein-described vibrating propeller comprising an open frame having an inturned ledge or flange, vertical and horizontal strengthening cross-bars for said frame which intersect each other substantially at the center of the frame, a power rod or shaft connected to said cross-bars, an upper blade or vane hinged at its upper edge to the frame and abutting the inturned flange at the top of the frame and having its lower end positioned to close against the horizontal cross-bar, and a lower blade or vane hinged to the frame and abutting the horizontal cross-bar below the upper vane, and having its lower free portion positioned to close against the inturned flange in the lower part of the frame.

JAMES LICHETTI.

Witnesses:

J. A. RENNIE,
EDWARD J. MOORE, Jr.