(No Model.)

I. G. HOWELL.

VIBRATING PROPELLER.

No. 386,586. Patented July 24, 1888.

Fig. 1.

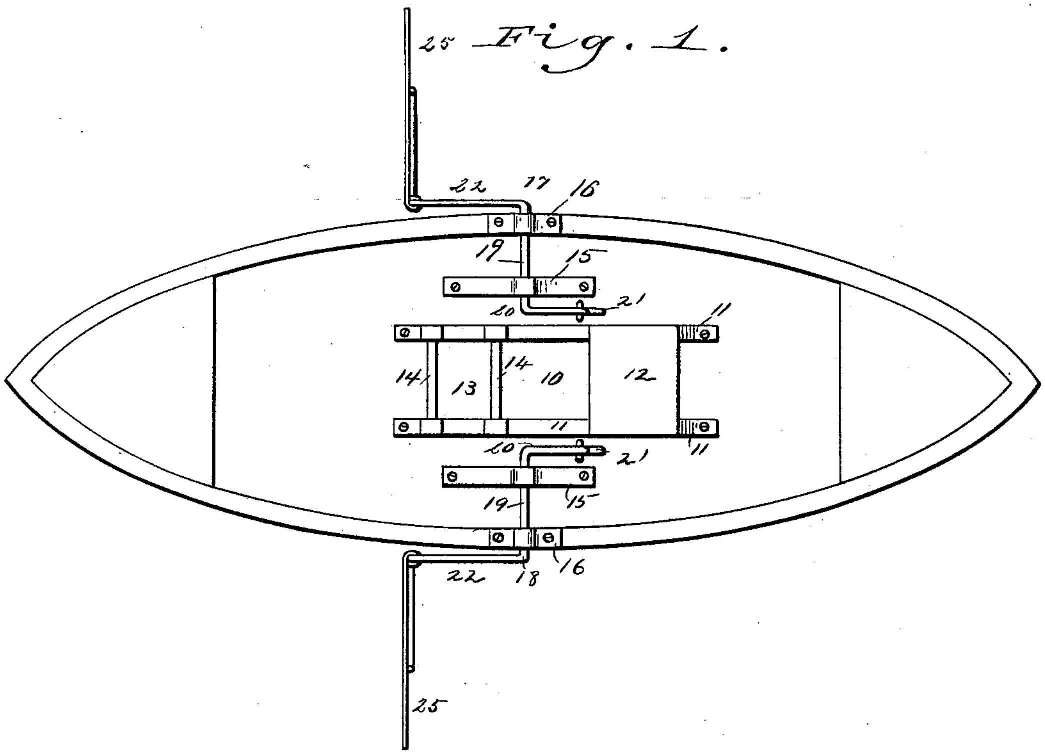


Fig. 2.

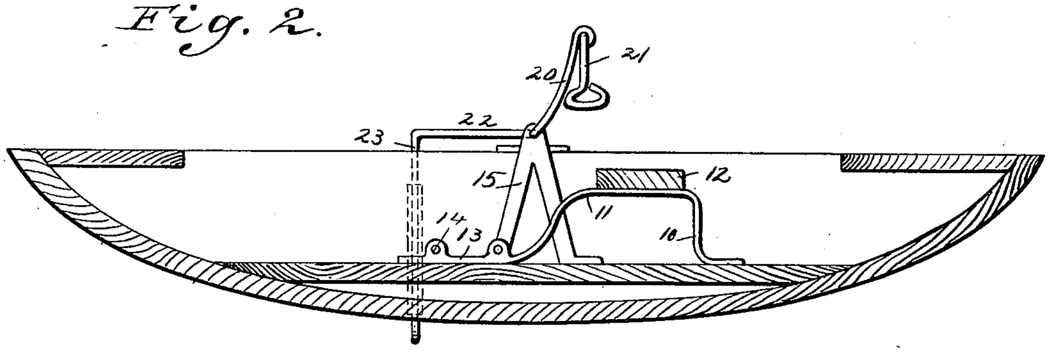
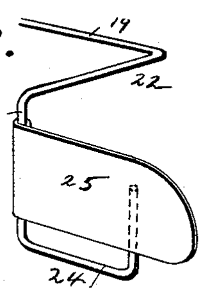


Fig. 3.



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ISRAEL G. HOWELL, OF HOPEWELL, NEW JERSEY.

VIBRATING PROPELLER.

SPECIFICATION forming part of Letters Patent No. 386,586, dated July 24, 1888.

Application filed May 24, 1888. Serial No. 274,944. (No model.)

To all whom it may concern:

Be it known that I, ISRAEL G. HOWELL, of Hopewell, in the county of Mercer and State of New Jersey, have invented a new and Improved Means for Propelling Boats, of which the following is a full, clear, and exact description.

My invention relates to an improved means for propelling boats, and has for its object to provide a device specially adapted for attachment to pleasure-boats, whereby an inexperienced person may safely and conveniently urge the boat through the water with little exertion, and wherein also the device may be expeditiously shifted to clear the water when desired.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a boat having my device applied. Fig. 2 is a longitudinal vertical section of the same, and Fig. 3 is a perspective detail view of the propelling-blade.

In the bottom of the boat a suitable frame, 10, is secured, usually consisting of, essentially, U-shaped side bars, 11, adapted to support a seat, 12, one member of which side bars is horizontally extended at the base to form the foot-rest 13. To this end the extension is provided with spaced eyes adapted as sockets for the transverse rods or bars 14, as best shown in Figs. 1 and 2.

At each side of the frame 10, in front of the seat, vertical standards 15 are secured to the bottom of the boat. In the several standards 15 and in bearings 16, secured to the gunwales of the boat, crank-shafts 17 and 18 are journaled, one crank-shaft terminating inboard at each side of the seat.

The crank-shafts are provided with a horizontal body, 19, extending from the gunwale inside the standards, at which latter point the shafts are bent at right angles to form the arm 20. The said arms 20 preferably terminate in an eye adapted to interlock with a similar eye formed at one extremity of the handles 21.

At the gunwales the shafts are bent at right angles, essentially parallel with the axis of the boat, forming the intermediate arm, 22, and again vertically downward, producing a second intermediate arm, 23, adapted, when the device is in operation, to extend over the side of the boat and into the water. The outer extremities of the shafts are curved upward, as best illustrated at 24 in Fig. 3.

Upon the outer pendent arm, 23, a blade, 25, is hinged in any suitable manner, the unattached extremity of which blade is supported by the upwardly-curved outer extremity of the shafts, as best shown in Fig. 3.

In operation the operator, seated in the boat facing the device, simply reciprocates the rock-shafts by means of the attached handles, whereupon as the handles are drawn back the foot of the blade is pushed against the water, and the blade being held by the brace at right angles to the boat's side the resistance of the water upon the blade propels the boat forward. Upon the back-stroke the water at the rear of the blade forces the same parallel with the side of the boat, enabling it to be easily drawn through the water. When the blades are not in use, they may be elevated above the gunwale, and so held by pressing downward the inner arm of the shafts to an engagement at the extremity with the floor of the boat.

I do not confine myself to the construction of the frame illustrated and described; and, in general, I desire it to be understood that, although specific constructions have been set forth, other equivalent constructions may be employed.

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

1. A propelling device for boats, consisting of standards, a crank-shaft journaled in the same, provided with a body portion, an inboard arm at right angles to the body, an outboard right-angular arm, an upwardly-curved outer extremity, and a blade hinged to the

pendent member of the outer right-angular arm engaging the curved extremity, substantially as shown and described.

2. In a device for propelling boats, the combination, with standards, of crank-shafts journaled in said standards, consisting of the body portion 19, the inboard arm 20 and attached handle 21, the outboard arms 22 and 23, and the upwardly-curved outer extremity, 24, and a blade hinged upon the arm 23 and supported at the rear by the curved extremity 24, all combined to operate substantially as shown and described.

ISRAEL G. HOWELL.

Witnesses:
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