H. F. PARDEY.

MEANS FOR PROPELLING VESSELS

No. 185,454. Patented Dec. 19, 1876.

Fig. 1.

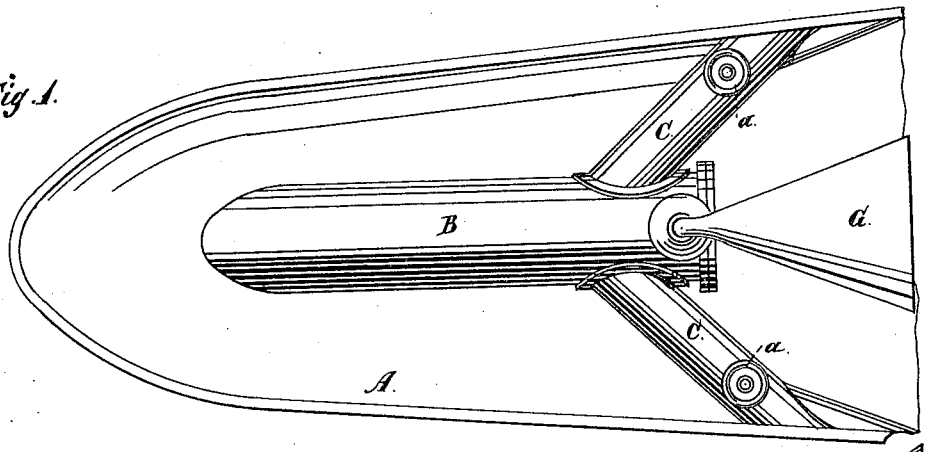
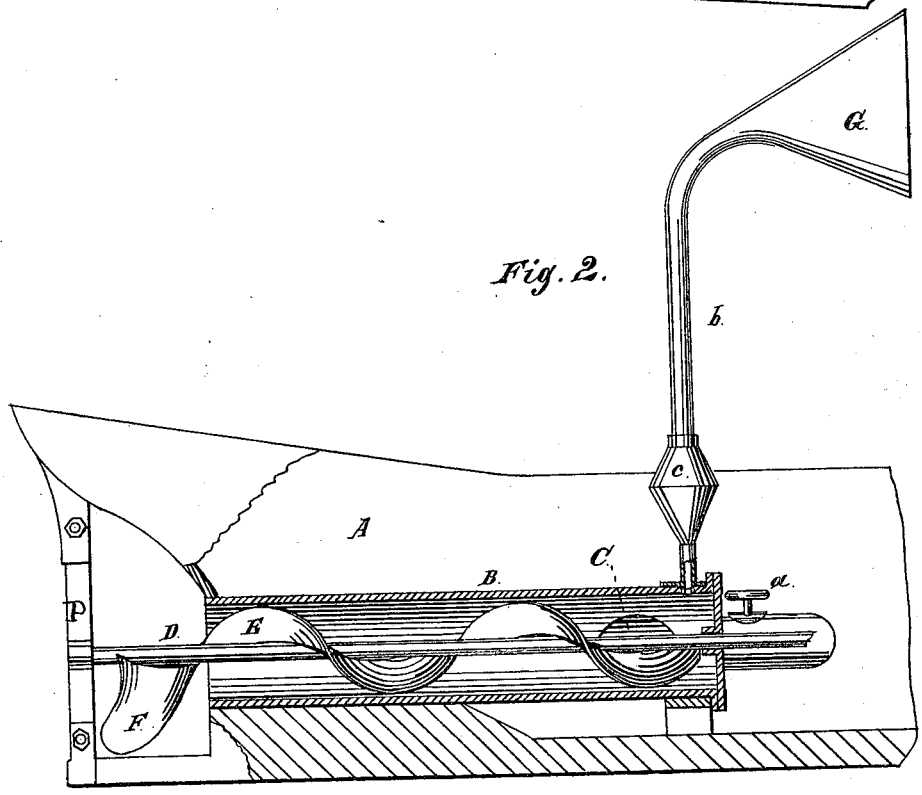


Fig. 2.



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UNITED STATES PATENT OFFICE.

HERBERT F. PARDEY, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MEANS FOR PROPELLING VESSELS.

Specification forming part of Letters Patent No. **185,454**, dated December 19, 1876; application filed October 20, 1876.

To all whom it may concern:

Be it known that I, HERBERT F. PARDEY, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Devices for Propelling Boats, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view; Fig. 2, a vertical longitudinal section.

This invention relates to the new and novel devices used in propelling boats; and consists in the construction and combination of parts, which will be hereinafter more fully described, and pointed out by the claims.

In the drawings, A represents a portion of the hull of a boat. B is a chamber, located within the hull, at the stern of the boat, and sufficiently below the water-line. This chamber B is open at its outer end, but closed at the other end. C C are two tubes or passages, extending one from each side of the chamber B to an opening in the side of the boat. D is a shaft, supported in suitable bearings. E is a continuous spiral wing, properly secured to the shaft D, forming a screw. F is an enlarged extension of the wing E, located upon that portion of the shaft D which is outside of the chamber B. *a* are valves, one in each tube C. G is a funnel, from which extends a tube, *b*, the lower end of which opens into the chamber B at its inner end. Between the funnel and the chamber B is a small air-chamber, *c*, and the tube which passes from *c* to the chamber B is considerably smaller than the tube *b*.

In use, the shaft D is to be rotated by any suitable means. By the action of the screw E the water in the chamber B will be thrown out therefrom with more or less force, depending upon the speed with which it revolves, giving forward motion to the boat, which motion will be accelerated by the action of the enlargement F in the water at the rear of the boat. Water to supply the place of that thrown from the chamber B by the screw E will flow in through the tubes C, keeping the chamber B filled. The movement of the screw is in comparatively still water, and there is no large body of water in the chamber B.

By closing one of the valves *a*, water will be excluded from one side of the chamber B, which exclusion will aid in steering the boat. I have not shown the devices for operating these valves; but any suitable devices may be used for that purpose. These valves *a* are not designed to take the place of the ordinary rudder, which must be used, though if the rudder should be disabled the boat could be steered by the use of the valves.

Under ordinary circumstances air will be caught by the funnel G, and a current will be forced down the tube *b* into the chamber *c*, and thence into the chamber B, and the pressure of the air upon the water will aid in propelling the boat.

The openings in the sides of the boat are to be so formed as to facilitate the passage of water into the tubes C C.

The construction shown relieves the boat from considerable strain, and adds to its strength.

The enlargement F of the screw, and forming a part thereof, receives the water as it is forced from the chamber, which materially aids in the efficiency of propelling the boat, while the funnel G receives considerable air, which, when ejected into the chamber with the water, has the same efficiency and power as the water in assisting to propel the boat, while the standard P allows the shaft D to have a rear bearing at its rear end.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The shaft D, provided with the screw or spiral wing E and the enlarged portion F, extending outside of the boat and chamber, substantially as and for the purpose set forth.

2. The chamber B and spiral wing E, in combination with the funnel G and tube *b*, leading into the chamber, substantially as and for the purpose set forth.

3. The funnel G and tube *b*, provided with air-chamber *c*, in combination with the chamber B and spiral wing E, substantially as and for the purpose set forth.

HERBERT F. PARDEY.

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