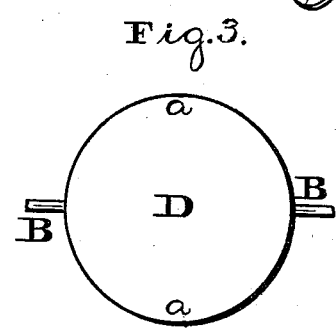
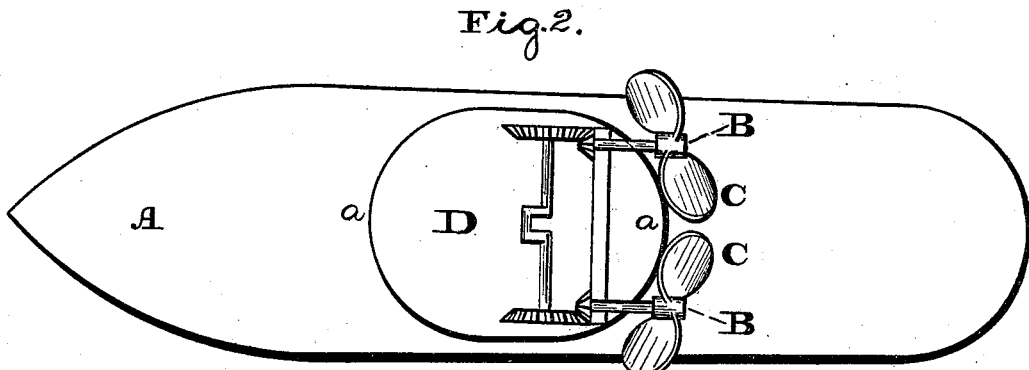
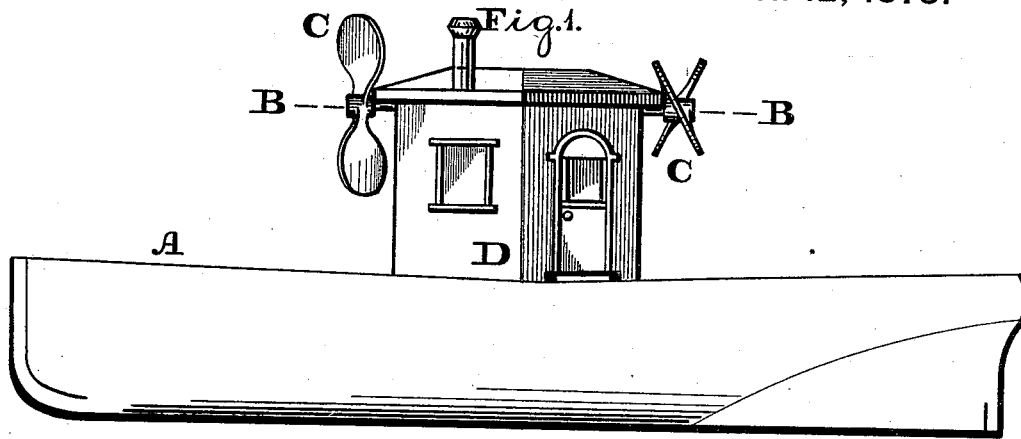


T. H. NEAL.
 Atmospheric Propeller for Vessels.

No. 201,119.

Patented March 12, 1878.



Witnesses:
 Lewis F. Brown,
 A. P. Grant.

Inventor:
 Thos H. Neal
 by *John A. Diederichs*
 atty.

UNITED STATES PATENT OFFICE.

THOMAS H. NEAL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO MARCUS F. RICHARDSON, OF SAME PLACE.

IMPROVEMENT IN ATMOSPHERIC PROPELLERS FOR VESSELS.

Specification forming part of Letters Patent No. 201,119, dated March 12, 1878; application filed February 8, 1876.

To all whom it may concern:

Be it known that I, THOMAS H. NEAL, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Atmospheric Boat-Propulsion; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of a boat having my invention applied thereto. Fig. 2 is a top or plan view thereof. Fig. 3 is a top view of a modification.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to the propulsion of boats by means of traction obtained upon the atmosphere. For this purpose I employ two atmospheric propellers, which, mounted upon the boat and operated by a small mechanical power thereon, transmit the created power to the boat, so as to uniformly and powerfully propel the same, and the tendency of the boat to deviate from its course is prevented.

Combined with the above is a pilot-house or engine-room, so constructed that the air will not be deflected from the rear propeller or propellers, and the pilot or engineer can have full observation at all points.

Referring to the drawings, A represents a boat, and B the shaft or shafts, which are mounted thereon, and receive power from an engine or other mechanical power located on the boat. On the ends of the shafts there are keyed or otherwise secured propellers or screws C. These propellers will be of uniform construction, and they are to be simultaneously operated in the atmosphere by means of the mechanical power located on the boat, and great

velocity or high rate of speed will be imparted to the said propellers, so as to obtain traction upon the atmosphere, the power created thereby being transmitted to the boat, thus causing the propulsion thereof.

It will be seen that, by the employment of two propellers of uniform construction, the boat maintains a uniform line of motion, and will not deviate from its course.

In the case of canal-boat propulsion, the tendency to wash the banks of the canal is entirely dispensed with.

D represents the pilot-house or engine-room, which rises from the boat, and supports the shaft B and the propellers C. The sides *a* of the house or room D are curved or angular, so as to permit air to pass freely to the propeller or propellers at the rear thereof, instead of being deflected therefrom, and thus the two propellers will act in harmony, combining their power, which is exerted uniformly on the boat, and producing a cheap medium of propulsion at the expense of a small mechanical power.

If desired, the propellers may be surrounded or inclosed by open-end tubes, the operation being similar to that stated.

The house or room D will be provided with windows on all sides, so that the pilot or engineer occupying the house or room can observe what occurs at all points.

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

The boat having a pilot-house or engine-room, D, formed with curved or angular sides *a a*, in combination with the air-propellers C C, mounted in said house, substantially as and for the purpose set forth.

THOMAS H. NEAL.

Witnesses:

JOHN A. WIEDERSHEIM,
H. E. HINDMARSH.