

J. Black.
Pneumatic Propeller.
N^o 850. *Patented July 14, 1838.*

Fig. 2.



Fig. 1.

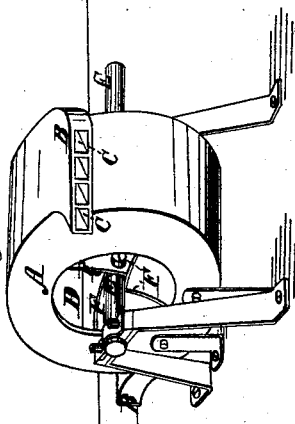
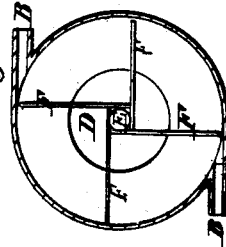


Fig. 3.



UNITED STATES PATENT OFFICE.

JAMES BLACK, OF ORANGEVILLE, PENNSYLVANIA.

APPARATUS FOR PROPELLING BOATS BY THE ACTION OF AIR.

Specification of Letters Patent No. 850, dated July 24, 1838.

To all whom it may concern:

Be it known that I, JAMES BLACK, of Orangeville, in the county of Columbia and State of Pennsylvania, have invented a new
5 and useful Machine for Propelling Boats on Canals and other Places by the Action and Pressure of the Air, called "Black's Pneumatic Engine for Propelling Boats," which is described as follows, reference be-
10 ing had to the annexed drawings of the same, making part of this specification.

This machine consists of a circular case or chamber A, Figures 1 and 3 with one, two, or three outlets in the circumference
15 thereof surrounded by spouts B in lines the tangents to the curve of the circular case and turned back toward the stern of the boat having a number of curved buckets C, Fig. 2, planes in each of said tubes or outlets
20 curving or inclining toward the stern of the boat. Likewise in having an inlet D at each end of the case similar to those in a wheat fan in diameter about one half that of the chamber and having likewise in the center
25 of said chamber a shaft E with wings F at right angles forming a fan which turns close to the inside of the chamber but not touching it. When the boat or vessel is to

be propelled this fan is turned with great velocity by means of a steam engine geared 30 to it by bands and pulleys which fan drives the air admitted at the ends of the case out at the tangential tubes in the periphery thereof over the inclined or curved buckets causing the vessel to move in a contrary di- 35 rection to that at which the air escapes which is in the direction of the stern. As fast as the air is forced by the revolving fan out at the tangential tubes from the circular chamber or case the space that it occupies 40 is instantly filled by fresh air admitted through the openings in the ends thereof.

The invention claimed consists in the before described peculiar construction of the tangential outlets in the circumference of 45 the circular case with the inclined or curved buckets therein for directing the air, put in motion by the revolving fan, and directed toward the stern of the boat while the boat is propelled in a contrary direction to said 50 escape of the air.

JAMES BLACK.

Witnesses:

WM. P. ELLIOT,
J. B. WOOD.