D. Fitzgerald.
Paddle Wheel.

No. 2,292. Patented Oct. 9, 1841.

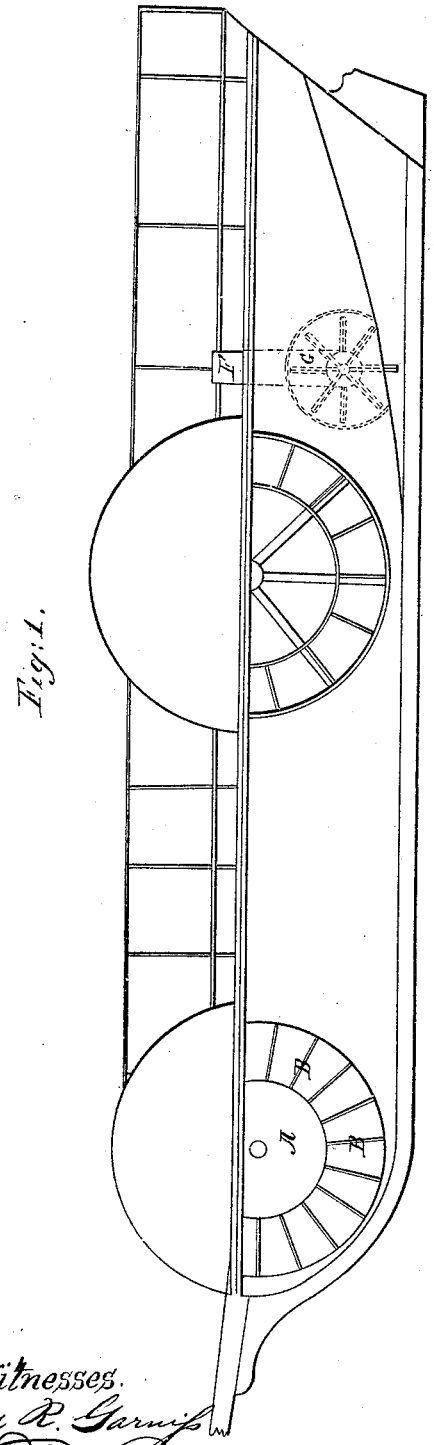

Fig: 1.

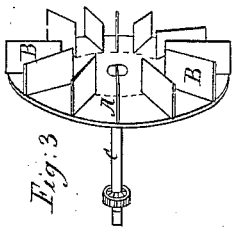

Fig: 3

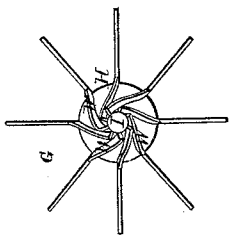

Fig: 5.

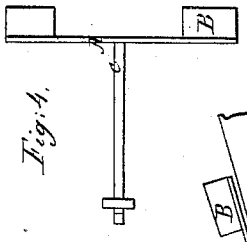

Fig: 4.

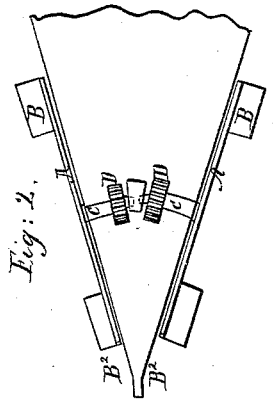

Fig: 2.

Witnesses.
David R. Garnish
James R. Garnish

Inventor.
Daniel Fitzgerald

UNITED STATES PATENT OFFICE.

DANIEL FITZGERALD, OF NEW YORK, N. Y.

IMPROVEMENT IN PROPELLING BOATS, VESSELS, &c.

Specification forming part of Letters Patent No. **2,292**, dated October 9, 1841.

To all whom it may concern:

Be it known that I, DANIEL FITZGERALD, of the city, county, and State of New York, have invented a new and useful Improvement in Propelling Vessels, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of a vessel. Fig. 2 is a plan of a fragment of a vessel, showing the bow and revolving disks. Fig. 3 is a perspective view of one of the disks. Fig. 4 is an edge view of the same. Fig. 5 is a side elevation of one of the rear paddle-wheels, showing the spiral wings on the conical hub for drawing in air.

The nature of this invention and improvement in propelling vessels consists in the employment of two revolving circular disks placed on the bow of the vessel with their edges nearly touching in front of the cut-water for the purpose of dividing the water with the least resistance and preventing the vessel impinging against the fluid while moving swiftly through it, thus lessening the friction and transferring it from the prow of the vessel to the axles of the said revolving disks; also, in introducing air to the air-tight case in which the submerged wheel revolves through tubes leading from the deck to the center of the wheel by means of said tubes and spiral and other wings, hereinafter described, to supply the partial vacuum created by the rapid movement of the wheel in the air-tight case.

The revolving disks A are placed at the bow of the vessel, turned by the friction of the water against their surfaces, which may be smooth or ridged or furnished with wings to act on the water or be themselves acted on by the water, thus transferring the friction from the bows to the axles of said wheels. These disks may be made to act as propellers by applying power to their axles by any suitable gearing connected with the gearing of the ordinary wheels. These disks are arranged at an angle corresponding with the shape of the bow of the vessel, so that their peripheries will nearly touch in front of the cut-water at the water-line, as seen at B^2, Fig. 2. Their axles pass through the bow of the vessel to the interior thereof, turning in suitable boxes having the requisite gearing D.

The tubes F for conveying air to the submerged case *a*, in which the wheel revolves, to supply the place of that which is driven out by the wheel as it revolves, are placed at the sides of the case leading down from the deck into the center opening in which the axle turns, the air passing in and around the axle to the paddles of the wheel, which drive it round in the case and out again into the water, keeping up a constant supply in the case, which will prevent the case becoming filled with water, which would obstruct the movement of the wheel.

In order to increase the draft of air to the case, spiral wings *w* are constructed around the surface of the conical hub formed on the axle of the water-wheel, which revolves in the opening in which the shaft revolves. The supply of air may be still further increased by force-pumps and revolving fans, if necessary.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

1. The application of revolving circular disks to the bow of the vessel for diminishing the resistance in passing through the water by separating the particles of the fluid and turning them aside to prevent the bow impinging on them in sailing with great velocity.

2. The introducing of air to the submerged wheel, in the manner and for the purpose set forth.

DANIEL FITZGERALD.

Witnesses:

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CLEMT. T. COOTE.