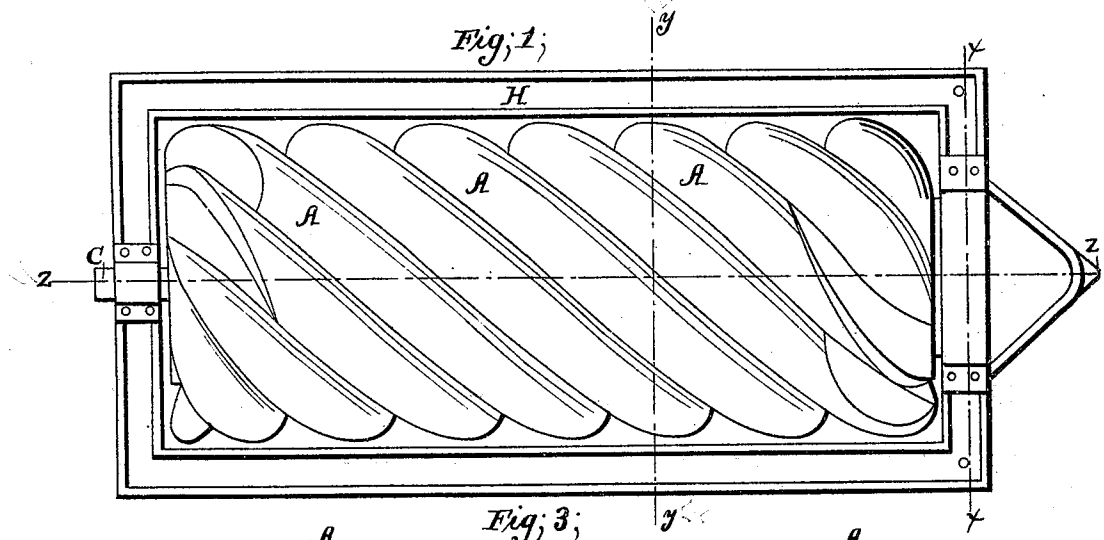
D. F. Masnata.

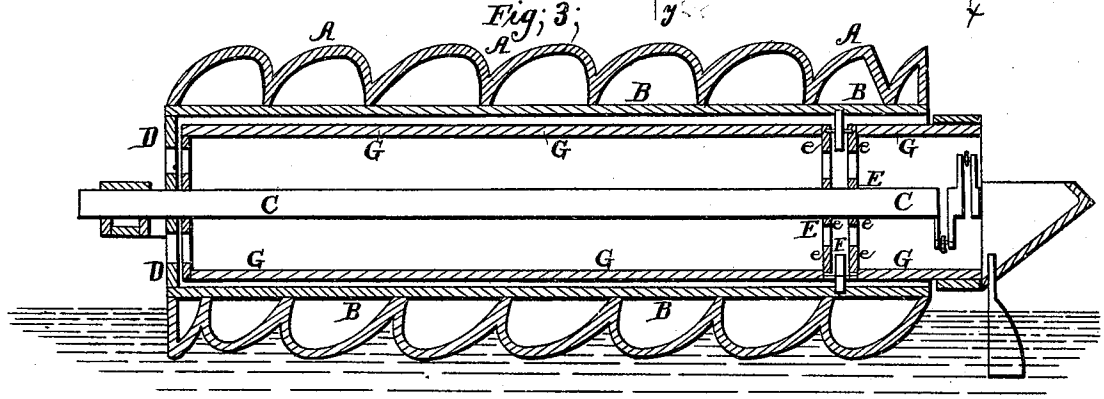
Buoyant Propeller.

No. 53,316. Patented Mar. 20, 1866.

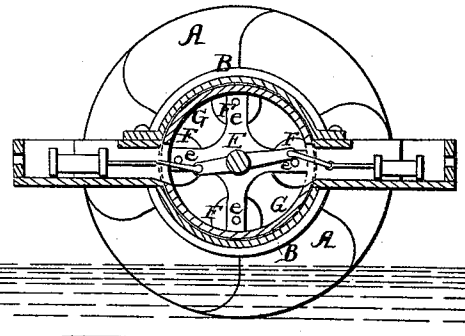
Fig; 1;



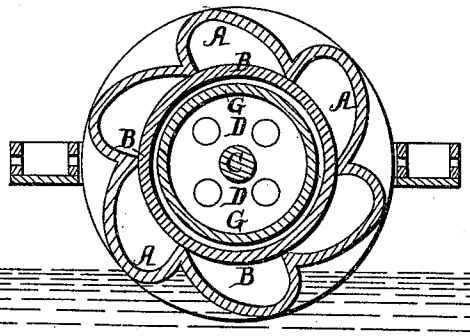
Fig; 3;



Fig; 2;



Fig; 4;



Witnesses;
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per Munn & Co
Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DAVID F. MASNATA, OF NEW YORK, N. Y.

IMPROVED REVOLVING-SCREW STEAMSHIP.

Specification forming part of Letters Patent No. **53,316**, dated March 20, 1866.

To all whom it may concern:

Be it known that I, DAVID F. MASNATA, of the city, county, and State of New York, have invented a new and Improved Helicoidal or Revolving Screw Steamship; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan or top view of my improved steamship. Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a vertical longitudinal section of the same, taken through the line *y y*, Fig. 1. Fig. 4 is a vertical cross-section of the same, taken through the line *z z*, Fig. 1.

Similar letters of reference indicate like parts.

My invention has for its object to furnish a steamship by means of which the direct resistance of the water may be to a great degree eliminated and the water navigated at an equal or greater speed than the land is now traversed by railroad-trains; and it consists of a steamship constructed as hereinafter more fully described.

A is the large hollow spirals or threads winding around a cylinder, B, at such a curve as will give them one or one and a half revolutions in advancing the length of the ship. These spirals or threads are divided into numerous air-tight compartments by partitions, so as to render the ship unsinkable from accidental injury. The ends of the spirals or threads A are made sharp, as shown, so as to enter the water with very little resistance; and they are firmly attached to and revolve with the said cylinder B.

Motion is communicated to the cylinder B by the shaft C, which is connected to the said cylinder by the end or head D of the ship, which head is firmly attached to both the cylinder B and to the shaft C. Through this head D are formed numerous openings for ventilation, as seen in Figs. 3 and 4, or the head D may be replaced by radial arms and ventilation be obtained through the spaces between said arms. In the stern of the ship the end of the shaft C is supported by and revolves in bearings E, and these bearings in turn are supported by radial arms *e*, to the ends of which are attached friction-wheels F. These wheels run in a groove formed in or upon a female rail attached to the inner surface of the cylinder B.

The rooms for the passengers and for the storage of the cargo are constructed within the cylinder G. This cylinder does not revolve with the shaft C and cylinder B, but always remains in the same position, being kept from revolving by the center of gravity being located below the points of support. The stern of the ship is constructed with the cylinder G extending far enough beyond the cylinder B to allow a passage-way to and from the central part of the ship. To the projecting end of the cylinder G is rigidly attached the ends of the exterior gallery or promenade-deck H. This gallery passes entirely around the ship in a line with the shaft C, and is supported at the stern by being securely and rigidly connected with the cylinder G, as before described, and at the bow by being attached to the shaft C, the said shaft revolving in bearings in the said gallery, as shown in Figs. 1 and 3. A passage-way is formed from this gallery to the interior of the ship at the point where said gallery connects with the cylinder G, through which passengers may pass back and forth from the gallery to the interior of the ship. This gallery is designed to be always supported free from the water, as shown in Figs. 2 and 4. But should the interior cylinder, G, roll too much the side of the gallery would come in contact with the surface of the water and act as an outrigger to prevent the further revolution of the said cylinder G.

State-rooms may also be built upon the gallery H, if desired, the weight of the cargo in the lower part of the cylinder G being always sufficient to keep the said cylinder in its proper position. This position of the rooms for the accommodation of passengers will also remove them from any liability to injury from boiler explosions, said boilers being located in the lower part of the interior cylinder, as before described.

It may be observed that for attaining the greatest speed the spirals should be made of such a size as to keep the lowest part of the revolving cylinder B always above the water-line, thus wholly avoiding the direct resistance of the water.

It may also be observed that when the ves-

sel is used for traveling upon ice the spiral threads should have projecting crests or flanges throughout their entire lengths similar to skate-runners, and the said spirals may be heated with a system of pipes, bringing steam from the engines, to guard against the adhesion of the ice to the said spirals. These hollow supporting spirals or threads, as they are represented in the drawings, cause the ship to run longitudinally when put in motion; but by simply changing the direction of the said spirals upon the exterior cylinder, so as to have the half part of these running from left to right from one end of the said cylinder to its center, while the other half of the spirals will run from right to left, a counteracting longitudinal action of the two spirals will be obtained that will oblige the ship to proceed not longitudinally, as a common vessel, but laterally. This action may be still further varied by dividing the screw into four separate portions, the first and third being right-handed, and the second and fourth left-handed, screws. By this arrangement the ship may be made to go forward or backward to the right or left hand by the action of the sections, which are independently worked by separate cylinders.

I claim as new and desire to secure by Letters Patent—

An improved helicoidal or revolving screw steamship, consisting of an interior stationary cylinder, of an exterior revolving cylinder having hollow or chambered screw-threads formed on its exterior surface, and of an exterior gallery, the whole being constructed and combined substantially as herein described, and for the purposes set forth.

DAVID F. MASNATA.

Witnesses:

PETER COOKE,

JAMES T. GRAHAM.