

H. Link.

Vibrating Propeller.

N^o 12,823.

Patented May 8, 1855.

Fig. 1.

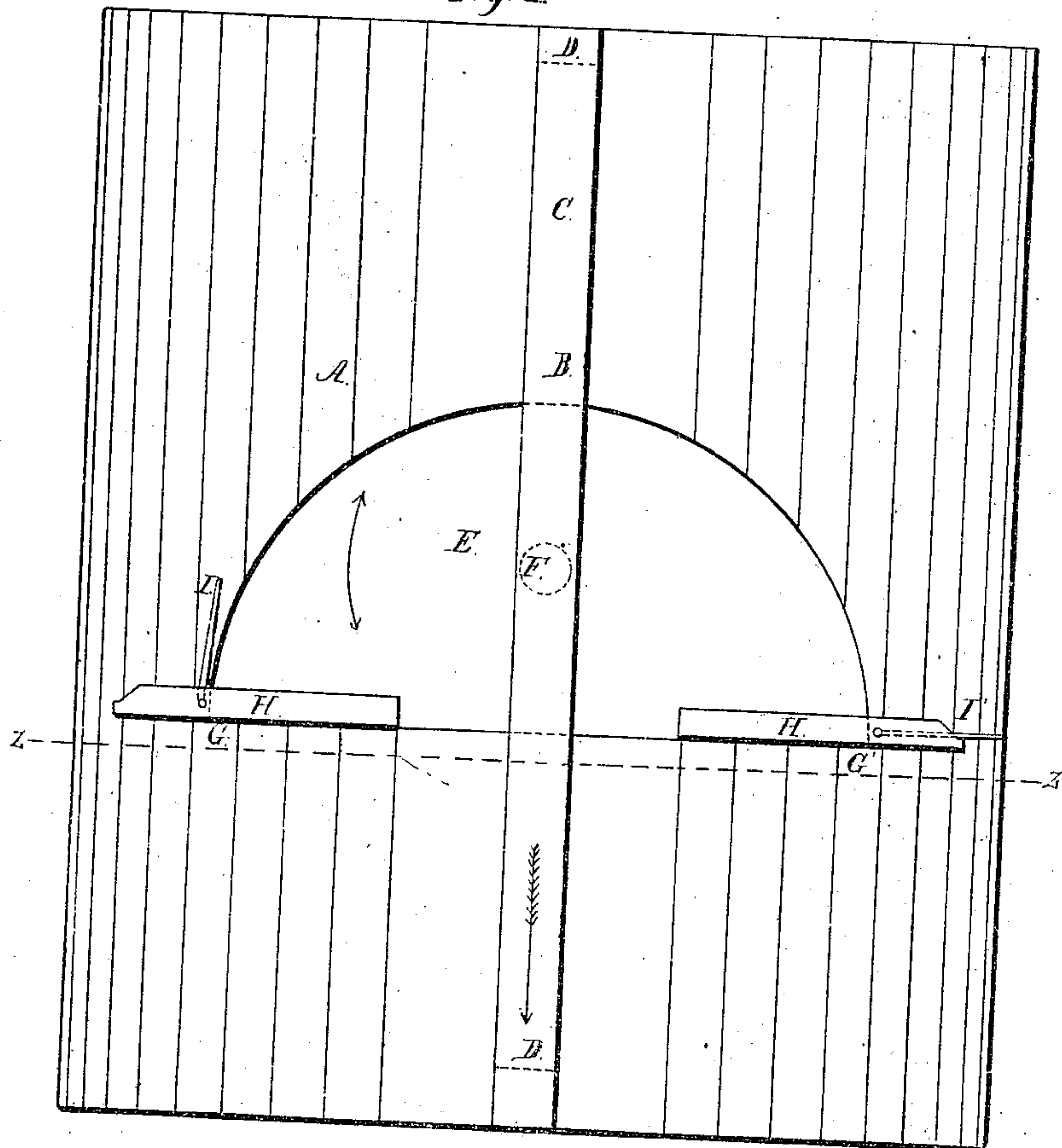
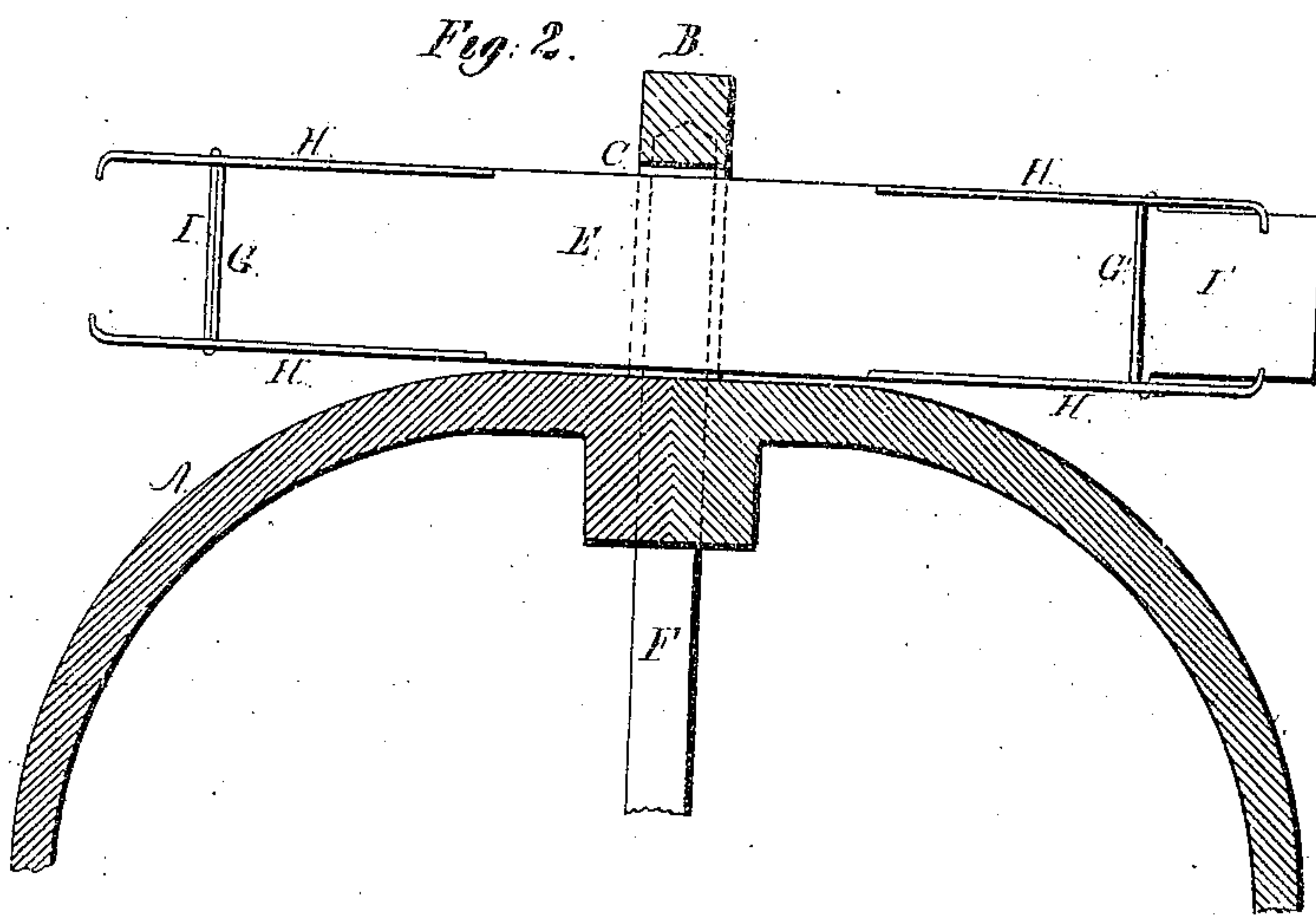


Fig. 2.



UNITED STATES PATENT OFFICE.

HENRY LINK, OF LITTLE FALLS, NEW YORK.

PROPELLER.

Specification of Letters Patent No. 12,823, dated May 8, 1855.

To all whom it may concern:

Be it known that I, HENRY LINK, of Little Falls, in the county of Herkimer and State of New York, have invented a new and useful Propeller for Propelling Vessels; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a representation of a portion of the bottom of a vessel with one of my propellers applied to it. Fig. 2, is a cross section of Fig. 1, cut through the line $z z$.

The nature of my invention consists in making a propeller in a semicircular form and arranging it under the vessel to be propelled, and operating it with a vibrating motion, and using it either with or without hinged paddles.

In the accompanying drawings a portion of the bottom of a vessel is represented at A.

B is the keel which should be made deep enough to allow an opening C, to be made through it between the dotted lines D, D, for the propeller E to vibrate in without interfering with the sides of the opening.

The propeller E is made in the form of a semi-circle, of such materials as may be desirable and of such a size as will adapt it to the size of the vessel and the amount of power to be applied to operate it, and its thickness should be equal to one fifth or more of the diameter of the circle from which it is made; and its thickness may be increased to render it more powerful. The propeller E is securely fastened to the perpendicular shaft F, which extends up through the bottom of the vessel and should be provided with a stuffing box to keep out the water, and it may be made to extend down below the propeller and stepped in a box fastened to the keel if desirable. A crank, wheel or other device may be applied to the shaft F, and connected with the moving power to operate the shaft and vibrate the propeller about one sixth or from one sixth to one fifth the way around in each direction the

straight side of the propeller being placed toward the fore part of the vessel and the circular part toward the stern.

The best position for the shaft F in the propeller E, is halfway between the center and the circumference of the semi-circle, and equidistant from the corners G G' as represented in the drawing, but the shaft may be set either farther back or forward if preferred.

This propeller is found to be very efficient in propelling a boat when constructed as above described; but in order to make it more efficient and powerful, I fasten two arms H H to project beyond the corners G G' as represented in the drawing. These arms are perforated to receive the pivots of the paddles I, I', which are fitted to vibrate freely in the arms H H, so that as the corner G is moved forward, the paddle I assumes the position represented in the drawing; and as the corner G' is moved backward at the same time the paddle I' swings against the ends of the arms H H, which are bent toward each other at their outer ends, so as to retain the paddle in the position represented, to propel the vessel with the greatest force.

The opening through the keel should be made long enough to allow the propeller to be reversed, and operated so as to move the vessel backward.

Although I have described my propeller as being made semicircular I contemplate that it may be made more or less elliptical if that form should be found preferable, and that hinged paddles may be applied to such other parts as may be desirable. Also that more than one propeller may be applied to the same vessel, or such number as may be desirable and that they may be placed on perpendicular shafts as above described, or that the shafts may be arranged at such angle as may be desirable diagonally between a horizontal and a perpendicular, so as to place the propellers in such positions on the bottom and sides of the vessel as may be desirable.

My propeller when arranged under the bottom of a vessel is peculiarly suited to vessel of war, as the machinery to operate it

as well as the propeller can be arranged so low, as not to be affected by the shot of an enemy.

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

A semicircular propeller constructed and operated substantially as described, for the

purposes set forth: whether the same is used with, or without hinged paddles.

HENRY LINK.

Witnesses:

B. K. MORSELL,

I. DENNIS, Jr.