G. Hibsch,

Screw Propeller.

No. 17,276. Patented May 12, 1857.

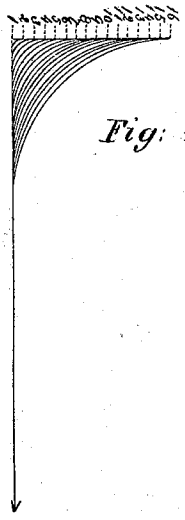


Fig: 4.

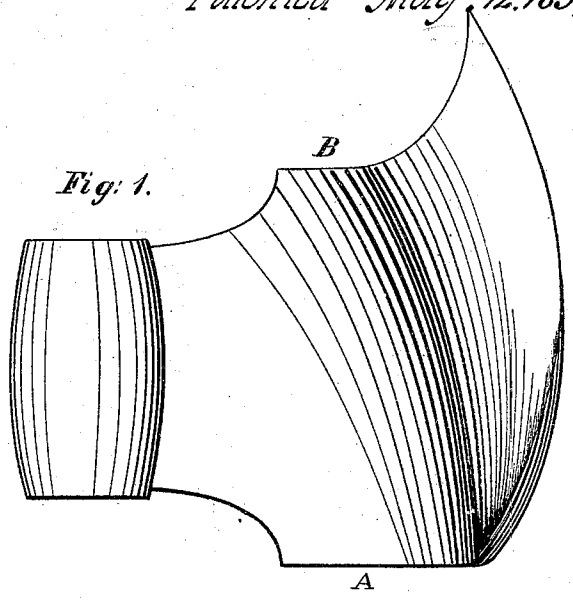


Fig: 1.

Fig: 3.

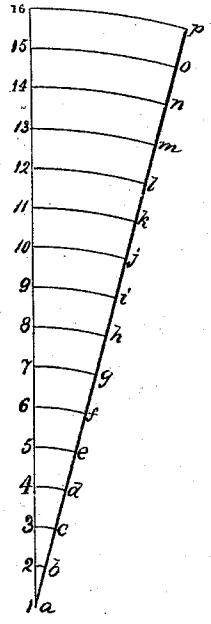
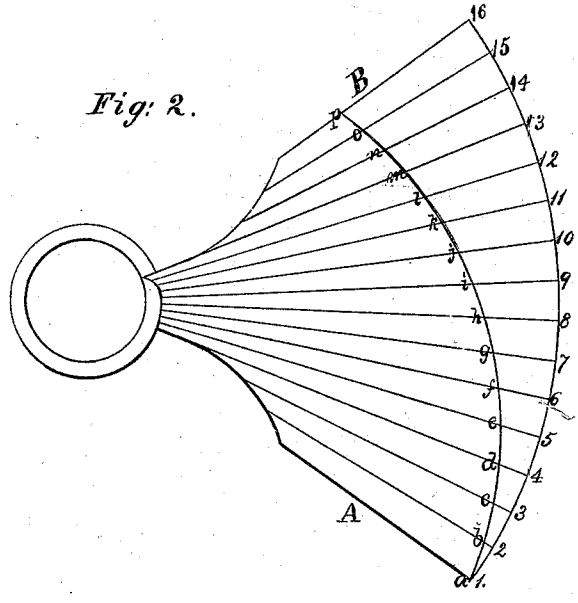


Fig: 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE HIBSCH, OF BUFFALO, NEW YORK.

PROPELLER-BLADE.

Specification of Letters Patent No. 17,276, dated May 12, 1857.

To all whom it may concern:

Be it known that I, GEORGE HIBSCH, of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Propeller-Wheels; and I hereby declare the following to be a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an elevation of the hub and one of the blades of the wheel; Fig. 2, a plan of the same; Fig. 3, a diagram for obtaining the radii for the curves at the outer edge of the blade; and Fig. 4, the radial surface lines for each division of the blade as herein laid down.

The nature of my invention consists in making the blades of propeller wheels of peculiar form and shape having radial lines of a combination of straight and curved lines; the front or entering edge, (A,) of the blade being a perfectly straight line perpendicular to the axis of the wheel; from the point (1,) of the front edge of the blade to the back edge (B,) the outer edge of the blade from 1^a to 16^p, has a regularly increasing curved surface, thereby presenting in its action upon the water a constantly changing form of blade whereby the efficiency of the wheel is greatly increased.

In constructing my wheel I use the following formula for obtaining the curves for the blades; the diameter of the wheel and the length of the arc of the blade being given, I take the length of this arc as a radius, and with a distance equal to from one eighth to one sixth of the diameter of the wheel, (varying this proportion to the work the wheel is designed for.) I draw the sector $1–16^p$, Fig. 3, and divide one of its radial lines into the same number of equal parts as are drawn in the arc of the blade, and with the point 1 as a common center I draw arcs from each division to meet the other radial line, then the chords of the arcs $2^b—3^c—4^d—5^e$, etc., will be the radii for the curves for the corresponding divisions of the blades as shown in Fig. 2, in which the portion of the blade contained within the lines $1–16^p$, shows the curved surface of the blade, the remaining portion thereof being a section of the thread of a true screw.

In laying down the diagram for obtaining the radii, I do not confine myself to the proportion herein given for obtaining the radius for the greatest curve at the back edge of the blade as the same may be increased or diminished as circumstances may require, the other radii being altered in a corresponding ratio thereto.

Among the advantages I claim for my wheel over those in common use, is an increased hold upon the water by reason of its varying surface, thereby lessening the loss of effect from "slip"; and by means of its curved surface confining the water deflected from the center of the wheel thereby receiving the benefit of the force of the centrifugal discharge, which is lost in the common forms of screw propellers.

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

Constructing propeller wheels having blades formed substantially as herein described and for the purposes set forth.

GEORGE HIBSCH.

Witnesses:

MICHAEL HIBSCH,

B. F. PRIMROSE.