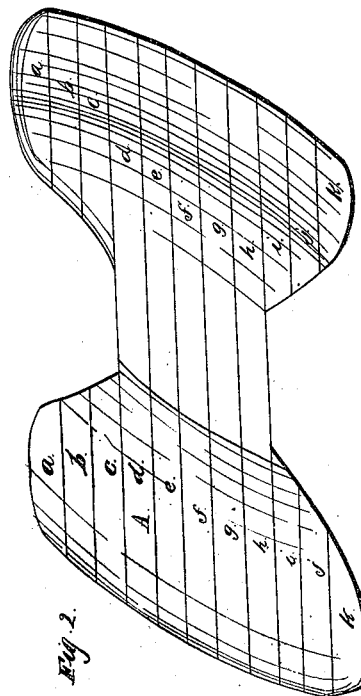
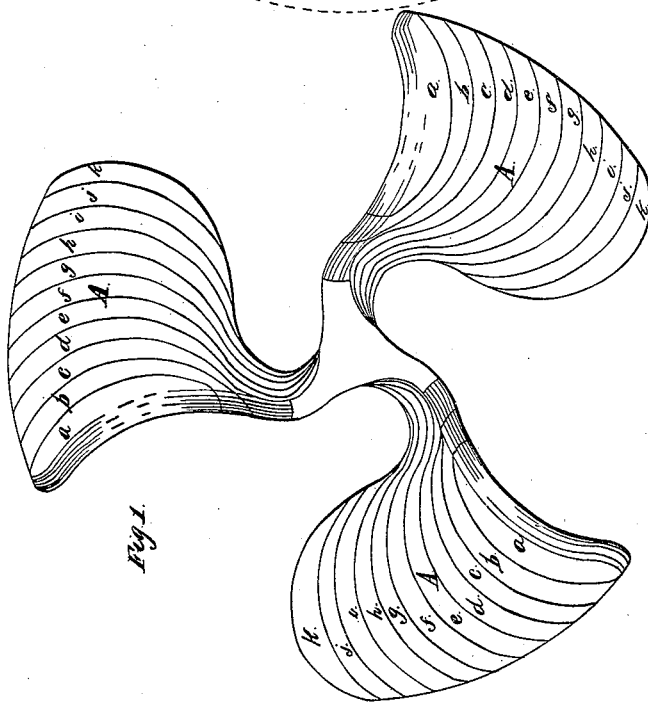
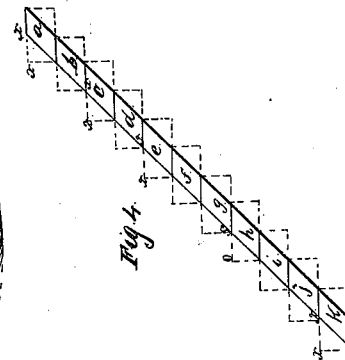
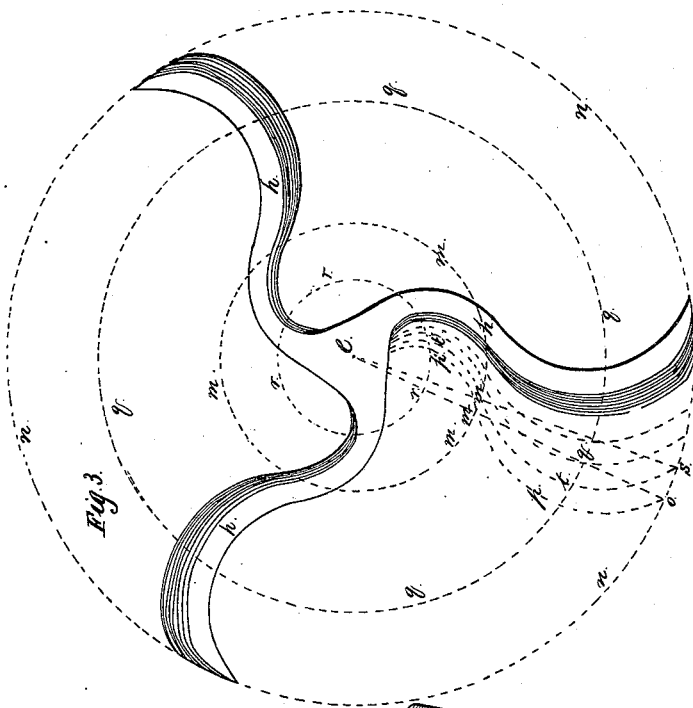


*T. Tripp.*  
*Screw Propeller.*  
*N<sup>o</sup> 53,902.*      *Patented Apr. 10, 1866*



*Witnesses*  
*W. E. Maus*  
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*Inventor*  
*Thomas Tripp.*

# UNITED STATES PATENT OFFICE.

THOMAS TRIPP, OF CHICAGO, ILLINOIS.

## PROPELLER-WHEEL.

Specification forming part of Letters Patent No. 53,902, dated April 10, 1866.

*To all whom it may concern:*

Be it known that I, THOMAS TRIPP, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Propeller-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

The nature of my said invention consists in so projecting and constructing the blade of a propeller-screw that the water cannot glide off therefrom tangentially or parallel to their propelling-surfaces, the peculiar curvature and confirmation of the flukes preventing and rendering their pressure against the water continuous until it passes out and escapes at the tail of the wheel.

To enable those skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents an end view of my invention. Fig. 2 represents a side elevation of the same. Fig. 3 is a plan view of a transverse section, representing one of the series of layers composing the wheel, and Fig. 4 is an edgewise view of one of the blades.

Similar letters of reference in the different figures denote corresponding parts of my invention.

As the propeller-wheel is designed to be of cast-iron, the subjoined description has more particular reference to the mode of constructing the pattern for forming the mold in which the wheel is cast.

A A A represent the three blades of the wheel, which, however, may be of any other suitable number, the whole wheel being laid up in a succession of layers, as indicated by the letters *a b c d e f g h i j k*, whose configuration, respectively, is determined by the peculiar curvatures hereinafter described and illustrated in Fig. 3, while the configuration and form of the blades is determined by the gradual and uniform recession or laying off of the consecutive layers, as shown in Fig. 4, and hereinafter described. After all the layers are all arranged, the three at the front and rear ends of the wheel may be cut down, as shown, so

as to render the hub of the wheel of a suitable length, while the extreme layers, *a b c* and *i j k*, add greatly to the power of the wheel; or, if preferred, the said layers last mentioned may be cut to the proper shape and length before being attached to the wheel.

To lay up and construct the pattern of my improved wheel I proceed as follows, making reference to Fig. 3: From a center, *l*, which corresponds to the center of the wheel, I describe the circumference, *n*, which is to circumscribe the outer dimensions of the wheel. With a radius equal to three-eighths of the radius of the circle *n*, and from the same center *l*, I then describe the circle *m*. The line *l o* is then drawn, and taking *o s*, equal to *x x*, in Fig. 4, the distance which each succeeding layer is laid back in giving the desired inclination to the flukes, the line *l s* is drawn with a radius equal to *l m*. I then find a center from which a circumference may be drawn, cutting the circumferences *m n* at the points of intersection with the line *l o*. From the center *l*, I then describe a circumference which passes through the center last found. (Marked *q*.) Taking *m r*, equal to three-eighths of *o q*, the circumference *r* is drawn, and with a radius, *l r*, I find a center from which a circumference may be drawn, cutting the circumference *m* at its intersection with *l o* and passing through the center *l*, said arc *m p' l* being drawn in the reverse direction from the arc *o p m*, previously described. The line *o p m p' l* determines the form and configuration of the first layer, *h*. The end view of the sections, as they are laid up, being indicated by the dotted lines in Fig. 4. Taking *o s*, equal to the distance for laying off each successive layer, the line *l s* is drawn, and with the same radii the arcs *s t m'* and *m' t' l* are drawn as before, the curved line *s t m' t' l* determining the face and configuration of the layer *g*, and so on until the whole is laid up.

The relative lengths of the radii *l m* and *l o* may be varied from the proportions before stated, and the angle of inclination, as seen in Fig. 4, may also be varied, if desired. The opposite sides of the blades are cut down so as to lie parallel to the faces determined as aforesaid, as indicated by the full inclined lines in Fig. 4.

The main point in my invention consists in

having the outer curve of the blades coincide with an arc of the circumference  $n$  circumscribing the wheel, while the inner curve of said blades lying in the reverse direction coincides with an arc drawn upon a radius equal to one-half the radius of said outer circle,  $n$ .

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

Constructing the blades of a propeller-screw with two reversed curves, which shall be arcs of the two circles last-above described, as and for the purposes specified and shown.

THOMAS TRIPP.

Witnesses:

W. E. MARRS,

GEO. B. NICHOLS.