No. 655,958.

Patented Aug. 14, 1900.

J. CARLSSON.

SCREW PROPELLER.

(Application filed Feb. 7, 1899.)

(No Model.)

Fig. 1.

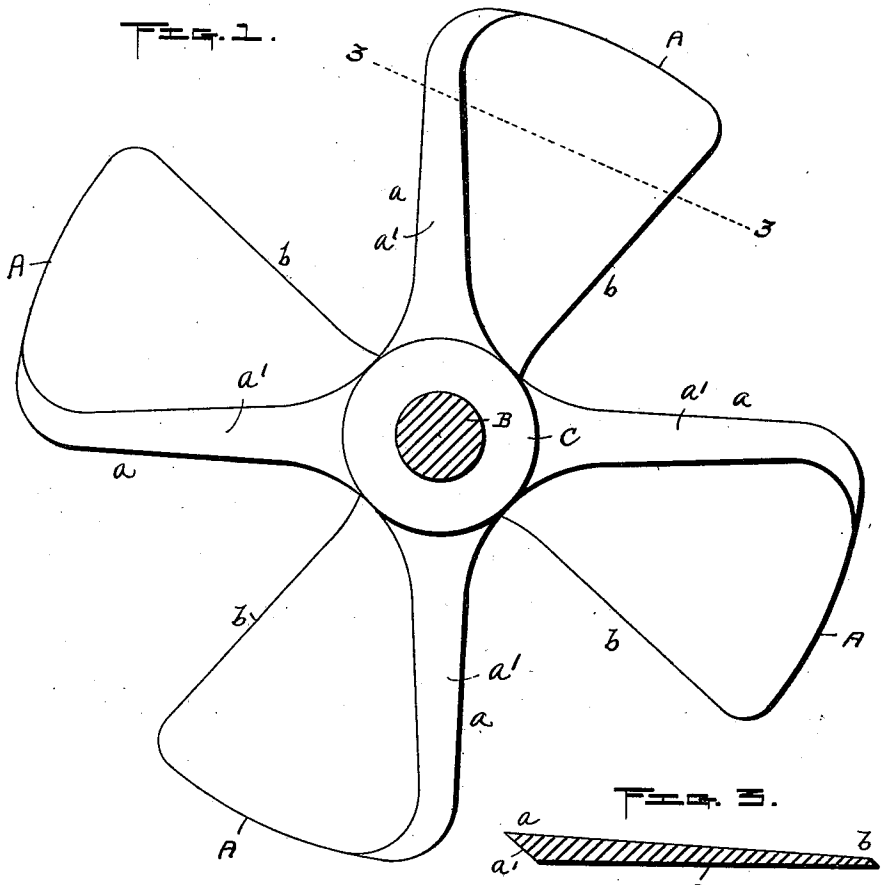
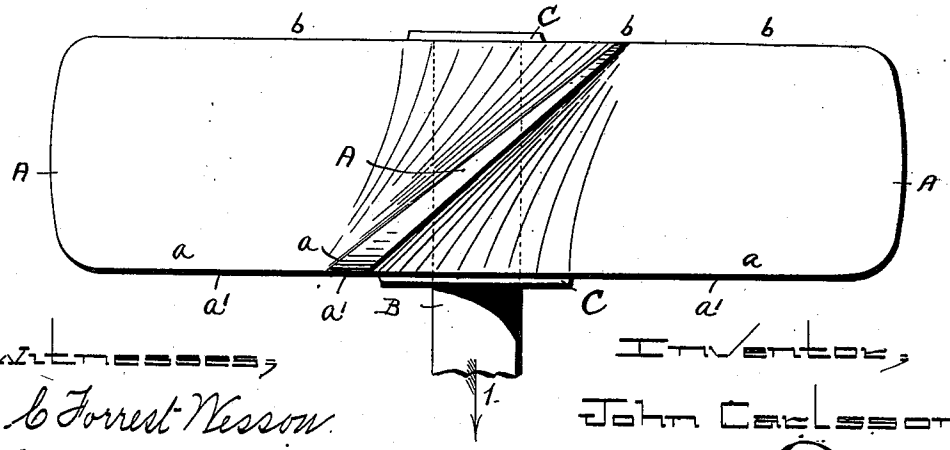


Fig. 3.

Fig. 2.



Witnesses;

C. Forrest Nesson.

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By Rufus B. Fowler Atty.

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UNITED STATES PATENT OFFICE.

JOHN CARLSSON, OF WORCESTER, MASSACHUSETTS.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 655,958, dated August 14, 1900.

Application filed February 7, 1899. Serial No. 704,814. (No model.)

To all whom it may concern:

Be it known that I, JOHN CARLSSON, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Screw-Propellers, of which the following is a specification, accompanied by drawings forming a part of the same, and in which—

Figure 1 represents a front elevation of a screw-propeller embodying my invention. Fig. 2 is a side elevation of the same; and Fig. 3 is a sectional view on line 3 3, Fig. 1.

Similar reference-letters refer to similar parts in the different views.

My invention relates to screw-propellers for vessels, having for its object to increase the efficiency of the propeller; and it consists in the conformation of the propeller-blade, as hereinafter described, and set forth in the annexed claim.

Referring to the drawings, Figure 1 represents a screw-propeller having in the present instance four blades A, although the number of blades may be increased or diminished, if desired. B denotes the rear end of the propeller-shaft, to which a hub C is attached, having the propeller-blades extending radially therefrom, with the plane of the blades placed at any suitable inclination or pitch to the plane of the axis of the shaft. In Fig. 2 the arrow 1 represents the direction of motion of the propeller-blades as they are carried through the water by the forward movement of the ship, said motion being parallel to the axis of the propeller-shaft B. As the ship moves through the water the edges *a* of the propeller-blades are the front or advancing edges and the edges *b* are the rear edges. Each of the blades is wedge-shaped in cross-section, as shown in sectional view in Fig. 3, with the front edge of the blade thicker than the rear edge.

The front edges *a* of the blades present surfaces *a'*, lying in planes at right angles to the axis of the propeller-shaft B. From the front edge *a* the blade is gradually reduced in thickness toward the rear edge *b*, so that as the blade travels in a forward line, due to the forward motion of the vessel and indicated by the arrow 1, the thick front edge *a* is presented to the water and the resistance of the water against the edge of the blade is received upon the surface *a'*, which lies in a plane at right angles to the forward line of motion of the blade, causing an immediate separation of the water greater than the thickness of the blade at the rear of the edge *a*, so that as the blade passes through the water the pressure required to separate the water is removed from the sides of the blade and the friction thereon is consequently reduced. The separation of the water at the front edge of the blade is in a line at right angles with the axis of the propeller-shaft instead of at an oblique angle thereto, as would be the case if the front edge of the blade were rounded or beveled. Friction is thereby reduced upon the front edge of the blade, and counter currents between the surfaces of the blades are avoided.

I do not confine myself to any particular angle or pitch at which the blades stand relatively to their plane of rotation nor to the shape of the impinging surface of the blade as it rotates through the water; but I have shown in the accompanying drawings one embodiment of my invention.

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

A screw-propeller, as described, having blades placed at an angle to their plane of rotation, the front edges of said blades presenting surfaces to the impact of the water, as the propeller is moved forward, which are at right angles to its axis of rotation, said blades being gradually reduced in thickness from their front to their rear edges, substantially as described.

Dated this 4th day of February, 1899.

JOHN CARLSSON.

Witnesses:

RUFUS B. FOWLER,

HENRY W. FOWLER.