No. 653,979. Patented July 17, 1900.

J. B. ALTMAN.

SCREW PROPELLER.

(Application filed Mar. 10, 1900.)

(No Model.)

Fig. 1.

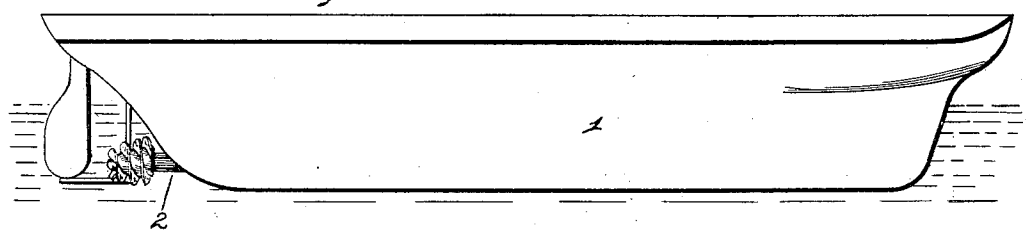


Fig. 2.

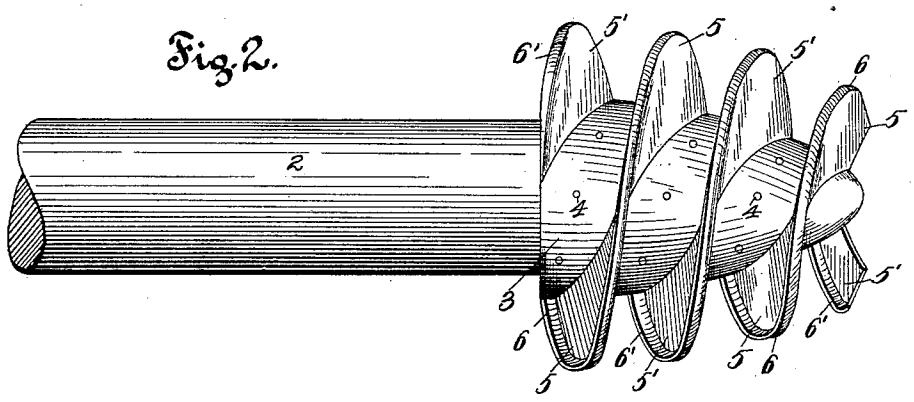


Fig. 3

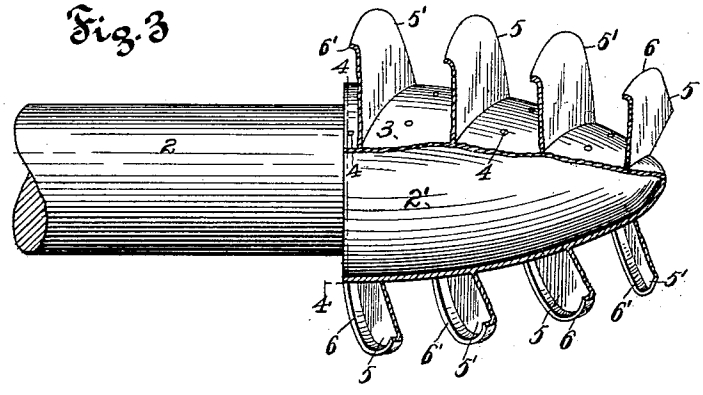
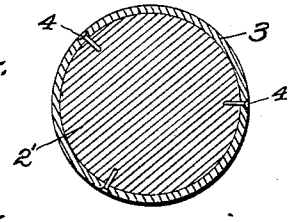


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN B. ALTMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO CHARLES W. TREFNY, OF SAME PLACE.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 653,979, dated July 17, 1900.

Application filed March 10, 1900. Serial No. 8,189. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ALTMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Screw-Propellers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in screw-propellers; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a ship, showing my invention applied thereto. Fig. 2 is a side elevation of the propeller. Fig. 3 is a similar view, with a portion of the blades and the elliptical shell broken away, and Fig. 4 is a section on line 4 4 of Fig. 3.

The object of my invention is to construct a screw-propeller which will develop a maximum amount of efficiency and at the same time permit the free passage of the water over the edges of the blades thereof, thereby preventing eddying of the water, but insuring a maximum contact between the water and the outer surface of the blades.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents a section of a ship, 2 the shaft thereof, and 2′ the terminal semi-elliptical head thereof. Adapted to be passed over said head is a hollow shell 3, secured to the head 2′ by rivets 4. The shell 3 (as well as the head 2′) is substantially of the form of the half of a prolate ellipsoid, the periphery of the shell being provided with spiral blades 5 5′ of uniform width, whereby the outer edges thereof follow the contour of the ellipse, being provided with forwardly-deflected flanges 6 6′, respectively, whereby during the rotation of the propeller the water slips or flows over said flanges without eddying, and hence insuring close contact between the water and the blades at all times.

By making the longitudinal section of the propeller-body elliptical the latter penetrates the water in direct proportion to the resistance offered to its rotation, the area of the gradually-increasing wrap of each blade increasing with the said resistance. There is thus presented to the entire exposed surface of the blades a wall of water with which every portion of said surface comes in contact. This area contact, too, is further insured by the peculiar disposition of the blades about the shell, it being observed that the outer cutting edges of the blades are disposed diametrically opposite to one another at the apex of the ellipse, the respective blades thence embracing the shell in such manner that the wraps of one blade on one side of the shell intersect the corresponding wraps of the other blade on the opposite side of the shell, the ends of the blades terminating at the base of the shell, also at the points diametrically opposite to one another.

Having described my invention, what I claim is—

1. A screw-propeller comprising a body portion substantially of the form of half a prolate ellipsoid, and blades of substantially-uniform width disposed about said body portion, and having their outer edges following the contour of the surface of the body portion, the said outer edges being provided with forwardly-deflected flanges, substantially as set forth.

2. A screw-propeller comprising a shaft, a terminal head for said shaft, a shell passed over said head, and being substantially of the form of a section of a prolate ellipsoid, and blades disposed about said shell and having their outer edges following the contour of said shell, substantially as set forth.

3. A screw-propeller comprising a body portion of the form of a section of a prolate ellipsoid, two sets of blades of substantially-uniform width disposed about the periphery of the body portion, the front cutting edges of the blades being disposed in diametrically-opposite directions, and the blades thence encircling the body portion in such manner that the wrap of one blade on one side of the body portion intersects the direction in which the corresponding wrap of the other blade is disposed on the opposite side of the body portion, the rear ends of the wraps terminating at the base of the body portion at points diametrically opposite one another, and for-

wardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

4. A screw-propeller comprising a body portion of the form of a section of a prolate ellipsoid, two sets of blades disposed about the periphery thereof, the front cutting edges of the blades being disposed in diametrically-opposite directions at the apex of the ellipsoid, the blades thence encircling the body portion in such manner that the wrap of one blade on one side of the body portion intersects the direction in which the corresponding wrap of the other blade is disposed on the opposite side of said body portion, the rear ends of the blades terminating at the base of the body portion at points diametrically opposite to one another, and forwardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

5. A screw-propeller comprising a body portion substantially of the form of a prolate ellipsoid, blades disposed about said body portion, and forwardly-deflected flanges formed along the outer edges of the blades, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. ALTMAN.

Witnesses:

EMIL STAREK,

G. L. BELFRY.