

(Model.)

W. N. CHANDLER.

PROPELLER.

No. 378,660.

Patented Feb. 28, 1888.

Fig. 1.

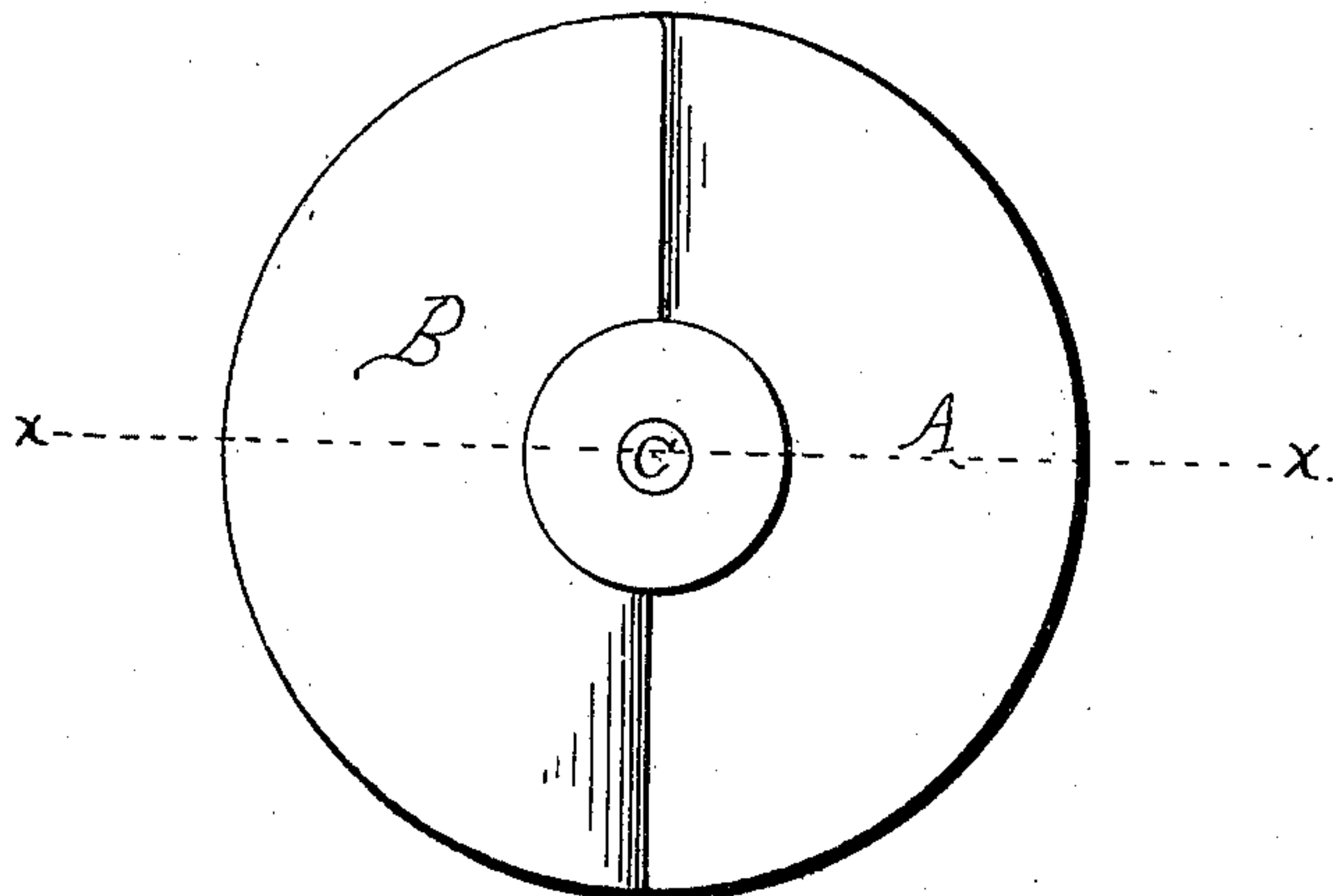


Fig. 2.

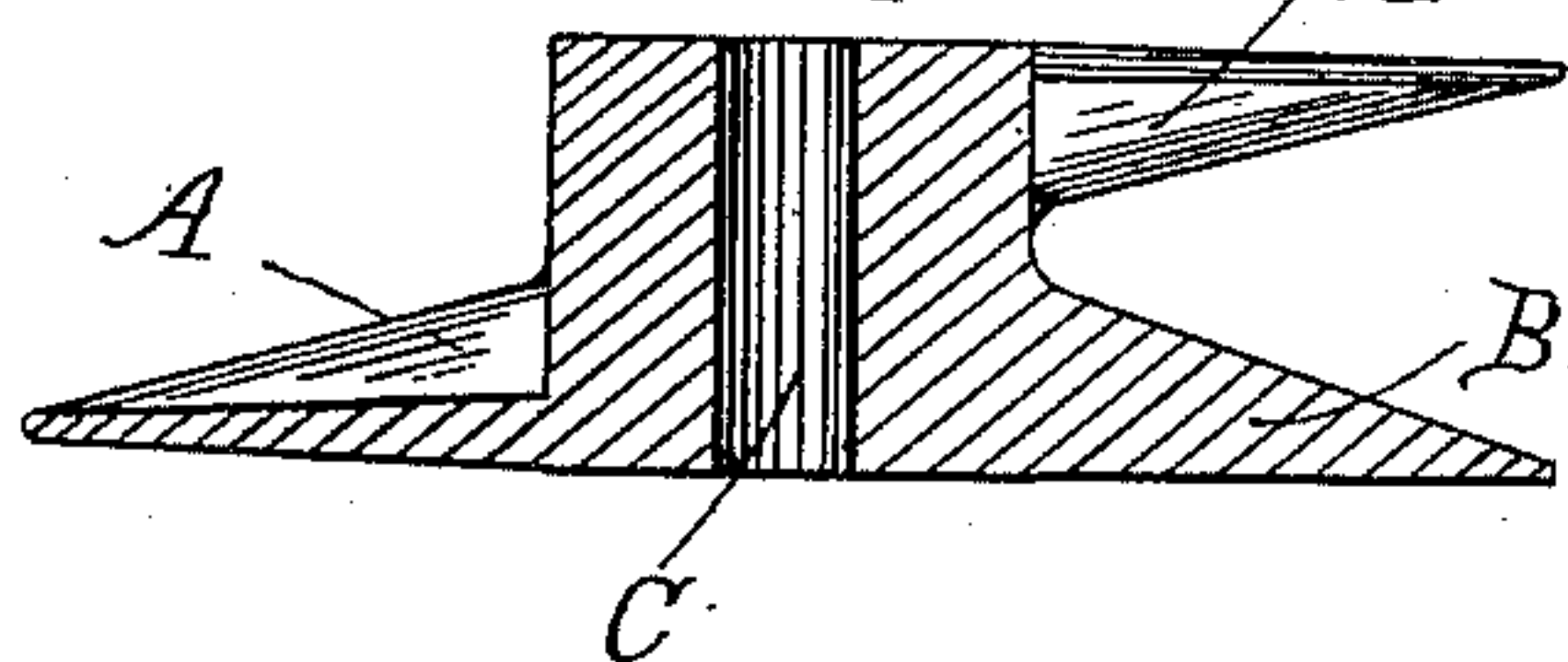


Fig. 3.

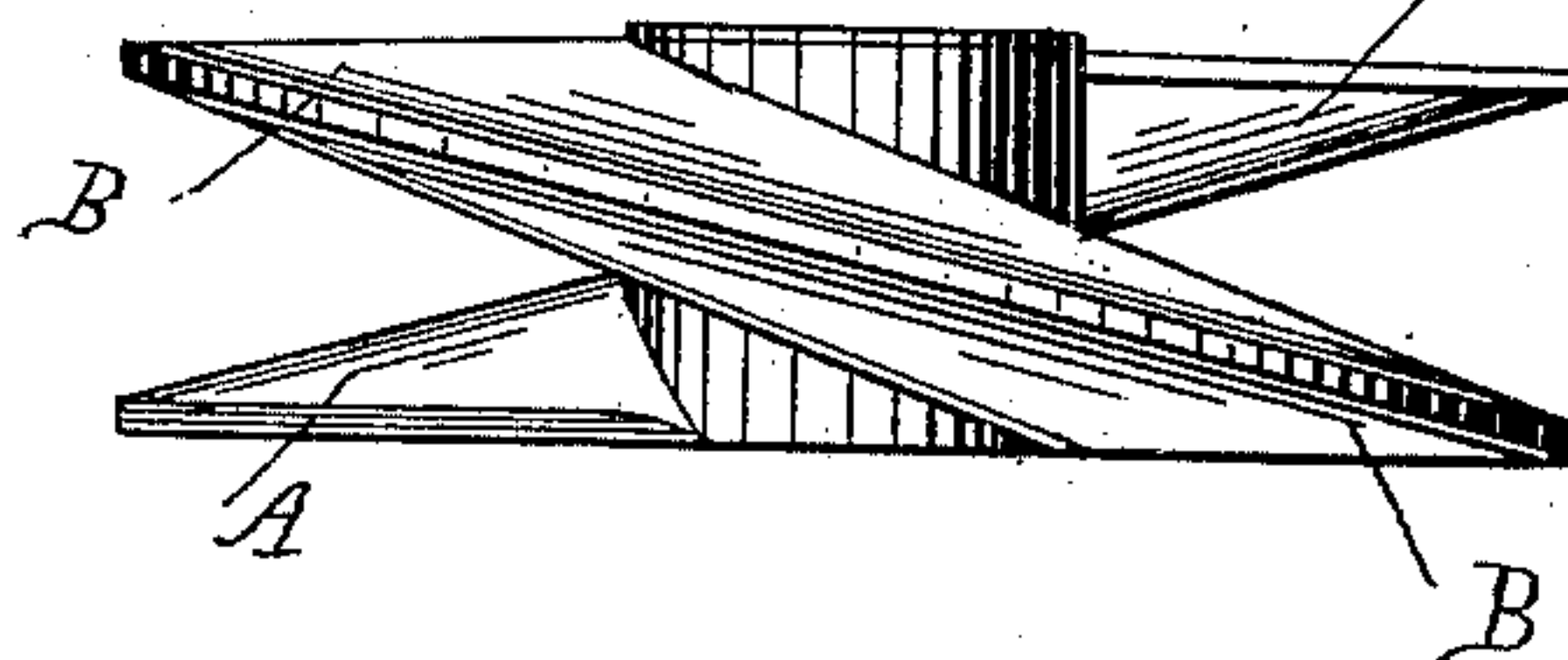
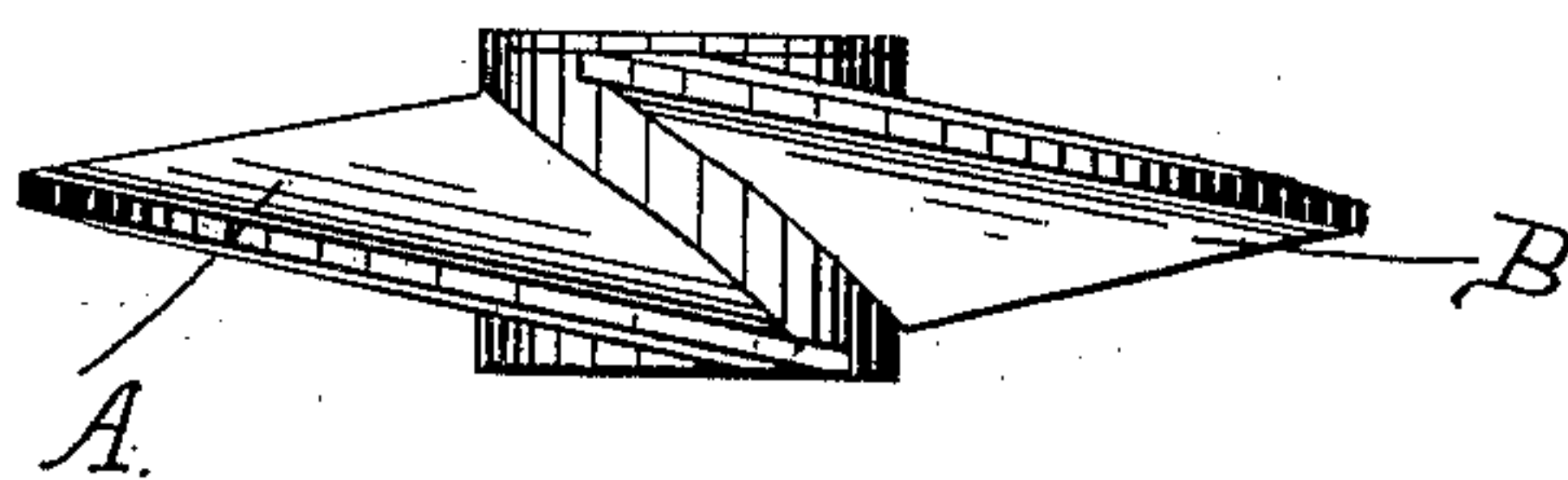


Fig. 4.



Witnesses

R. A. Balderson.
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UNITED STATES PATENT OFFICE.

WILLIE N. CHANDLER, OF NORWOOD, NEW YORK.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 378,660, dated February 28, 1888.

Application filed October 1, 1887. Serial No. 251,182. (Model.)

To all whom it may concern:

Be it known that I, WILLIE N. CHANDLER, a citizen of the United States of America, residing at Norwood, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Propellers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to propellers, and its objects will hereinafter more fully appear. I accomplish these ends by the means illustrated in the accompanying drawings, in which—

Figure 1 represents an end view of a propeller constructed according to the principles of my invention. Fig. 2 is a vertical section of the same taken on the line xx of Fig. 1. Fig. 3 is a side elevation thereof; and Fig. 4 is a side elevation of the same, taken perpendicularly to Fig. 3, so as to show the respective termini of the parallel spiral independent blades.

The same designations indicate corresponding parts in all the views.

Heretofore it has been customary to wind a continuous spiral blade around the shaft of a screw-propeller. Experience has shown that a continued submersion of a propeller-blade under a given section of water increases the power necessary to give a propulsive effect by at least fifty per centum over that required when the blade quickly enters and leaves the given section of water. If, therefore, a propeller can be constructed which will utilize the propulsive force generated in the water by the first half-revolution of the shaft, and which will not at all be liable to the reaction of the same section of water, the only effect on the vessel by the water will necessarily be propulsive, and no agency except the vessel's own friction will then in any manner diminish the propelling effect thus obtained. This constitutes the principle and aim of my invention. Instead, therefore, of constructing the propeller with one continuous spiral blade, I adopt a series of independent spiral semi-circumferential blades parallel with each other, formed either integrally with the shaft or inserted therein in any suitable manner.

A B represent two independent but similar

blades, spirally encircling the shaft C. The number of such blades will vary with the use required of the propeller.

In constructing my propeller I adopt the form of an ordinary screw having a continuous thread from which each alternate half-section is cut, whereby are produced a series of independent spiral semi-circumferential blades, parallel to each other and projecting equidistantly from said hub-surface, in which they are either integrally formed or the loose blades are inserted by grooves.

I am aware that heretofore a screw-propeller has been patented in which a curved hub is encircled by two or more spiral blades; but this I do not claim, for I have discovered that a straight unitary hub, every portion of whose surface is equidistant from the axis, is more economical and better adapted to the purposes of a propeller, because the blades will not be subjected to the disruptive strain common to other forms of construction. I am furthermore apprised that a sectional propeller-hub has been patented in which plane flat propeller-blades are inserted. I do not claim herein either of the constructions specified, because my invention contemplates a unitary hub having a spiral groove therein in which the blades, formed as illustrated and set forth, are either inserted or from which they integrally project.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

As a new article of manufacture, a propeller whose hub-surface is uniformly parallel to and concentric with its axis, and is encircled by two or more integral independent spiral semi-circumferential blades whose planes are approximately parallel to each other and project equidistantly from said hub-surface, as though each alternate half-section of a continuous screw-thread were removed from the hub, for the purpose and in the manner illustrated and set forth.

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

WILLIE N. CHANDLER.

Witnesses:

GEO. W. CAPRON,
KITTIE CHANDLER.