No. 885,250. PATENTED APR. 21, 1908.

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PROPELLER.

APPLICATION FILED AUG. 19, 1907.

FIG. 1.

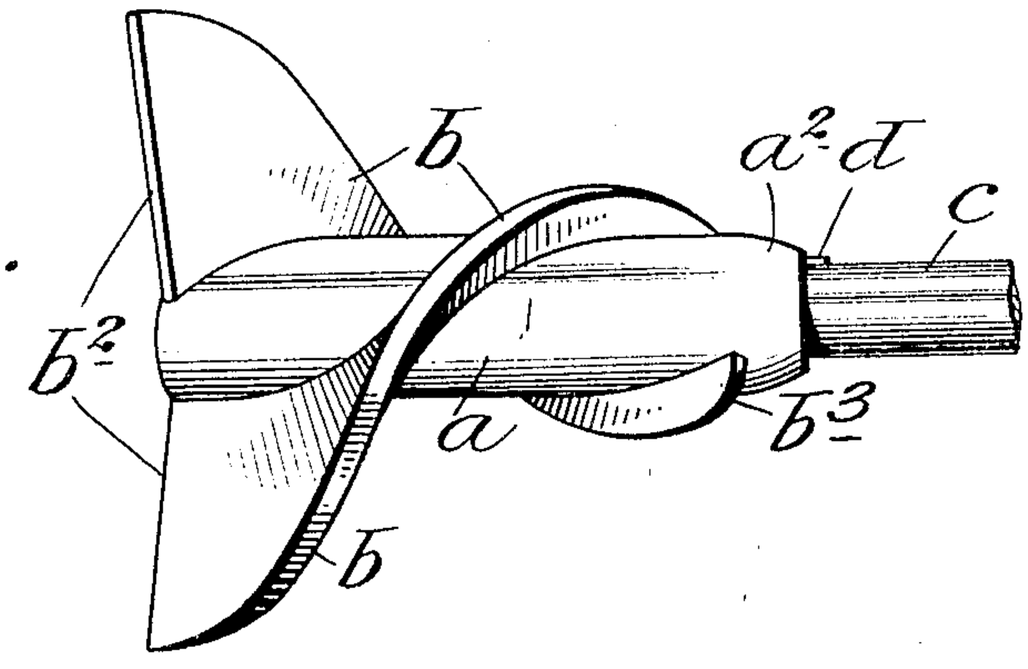
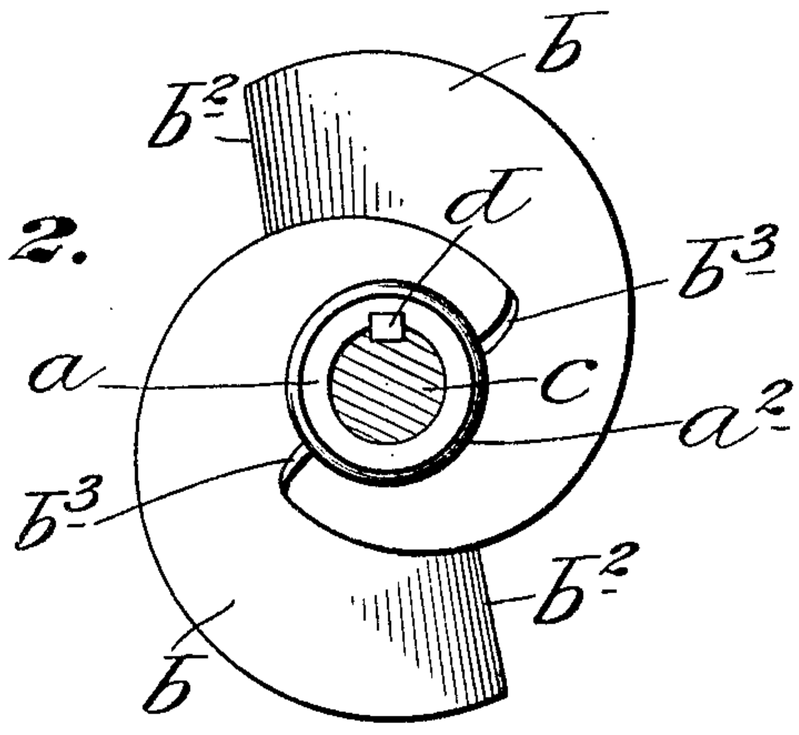


FIG. 2.



WITNESSES

A. R. Appleman

C. E. Mulreany

INVENTOR,

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BY Edgar Tate & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE W. HOPKINS, OF BROOKLYN, NEW YORK; MARTHA HOPKINS ADMINISTRATRIX OF SAID GEORGE W. HOPKINS, DECEASED.

PROPELLER.

No. 885,250. Specification of Letters Patent. Patented April 21, 1908.

Application filed August 19, 1907. Serial No. 389,104.

To all whom it may concern:

Be it known that I, GEORGE W. HOPKINS, a citizen of the United States, and residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Propellers, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved propeller, the form and construction of which is such as to reduce "churning" to a minimum and also such as to give the greatest possible power to the propeller in proportion to the size or dimensions thereof.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 a side view of my improved propeller, and Fig. 2 a front end view thereof.

In the practice of my invention, I provide a propeller comprising a hub *a* and spirally arranged blades *b*, two of which are employed, and the blades *b* taper from the rear ends thereof forwardly as clearly shown in the drawing. The comparative dimensions of the parts of my propeller are as follows: the length of the hub *a* ten inches; diameter of said hub two and a half inches; width of the blades *b*, at their rear ends b^3 thereof, four inches; width of said blades, at the front ends b^3 thereof, one-half inch. It will therefore be seen that the taper of the blades *b* is very abrupt though gradual and the rear ends or edges b^3 of the blades are tangential to the periphery of the hub of the propeller, and this construction gives to said blades at their rear ends great power and also reduces the tendency to "churn."

It will also be seen that the separate spiral blades *b* do not extend entirely around the hub *a*, and the taper thereof is made comparatively great so as to give to the rear end portions of said blades the required width and power, and the curve of the spiral of said blades is less than it would be, if said blades were carried entirely around the hub, and the friction caused by the operation of the propeller is decreased and at the same time the power thereof is increased. The rear outer corners of the blades *b* also project slightly beyond the rear end of the hub *a* which also adds to the power of said blades, and the power of said blades in propelling a vessel forwardly increases in proportion to the transverse width thereof from the forward ends thereof nearly to the extreme rear ends thereof. The front end of the hub *a* is also preferably tapered as shown at a^2, and I have also shown the ordinary propeller shaft *c* to which the propeller is keyed as shown at *d*.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

A propeller comprising a central hub which is cylindrical in form in cross section and provided with two spiral blades which do not extend entirely around the hub, and the width of which increases rapidly from the front end thereof to the rear end thereof and the radial width of which is greatest at the rear end where they terminate in straight lines which are oblique to the axis of the hub and approximately tangential to the periphery thereof.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 17th day of August 1907.

GEORGE W. HOPKINS.

Witnesses:

C. E. MULREANY,

LAWRENCE QUINN.