(No Model.)

E. H. HALL.

SCREW PROPELLER.

No. 332,710. Patented Dec. 22, 1885.

Fig. 1.

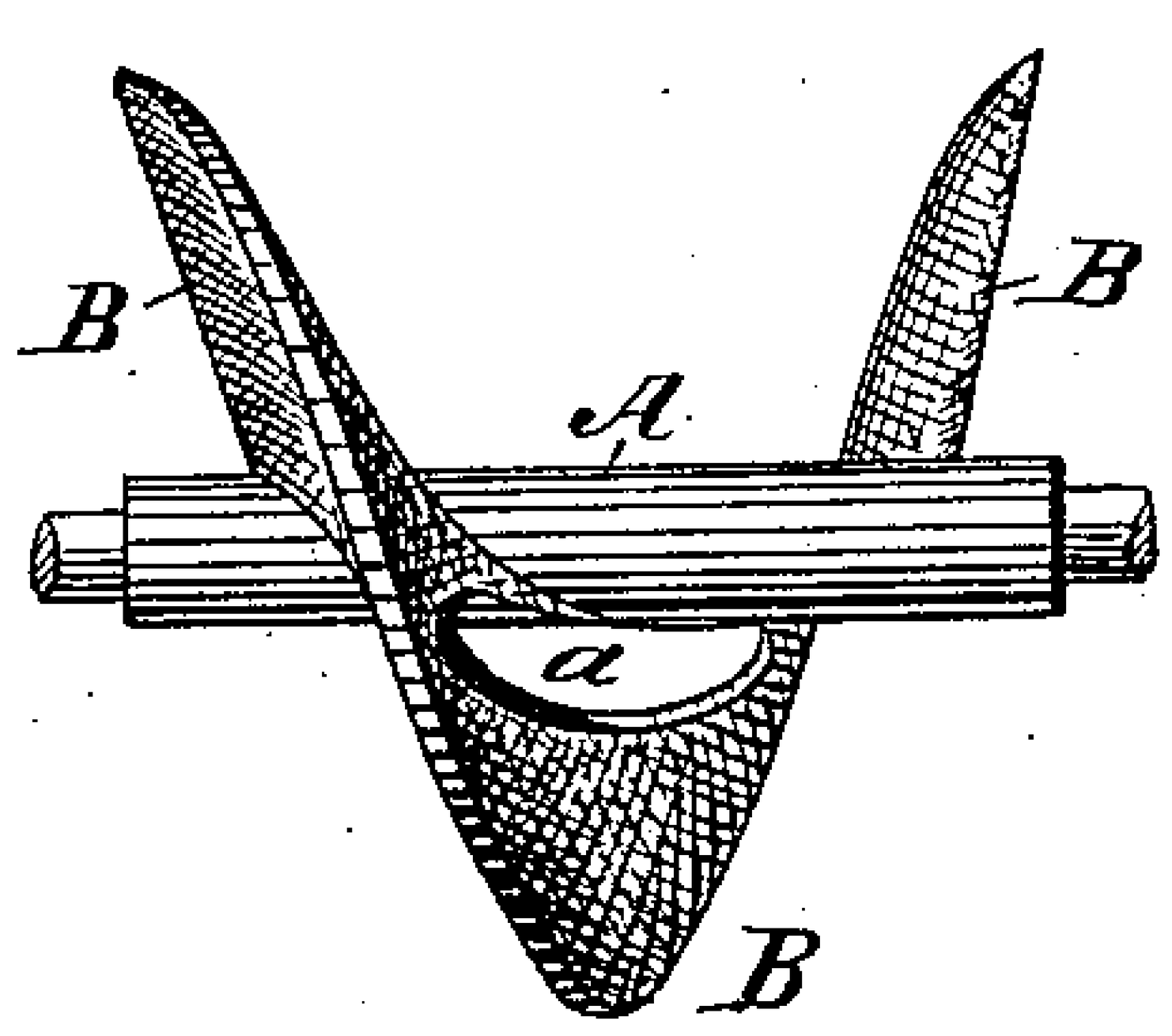
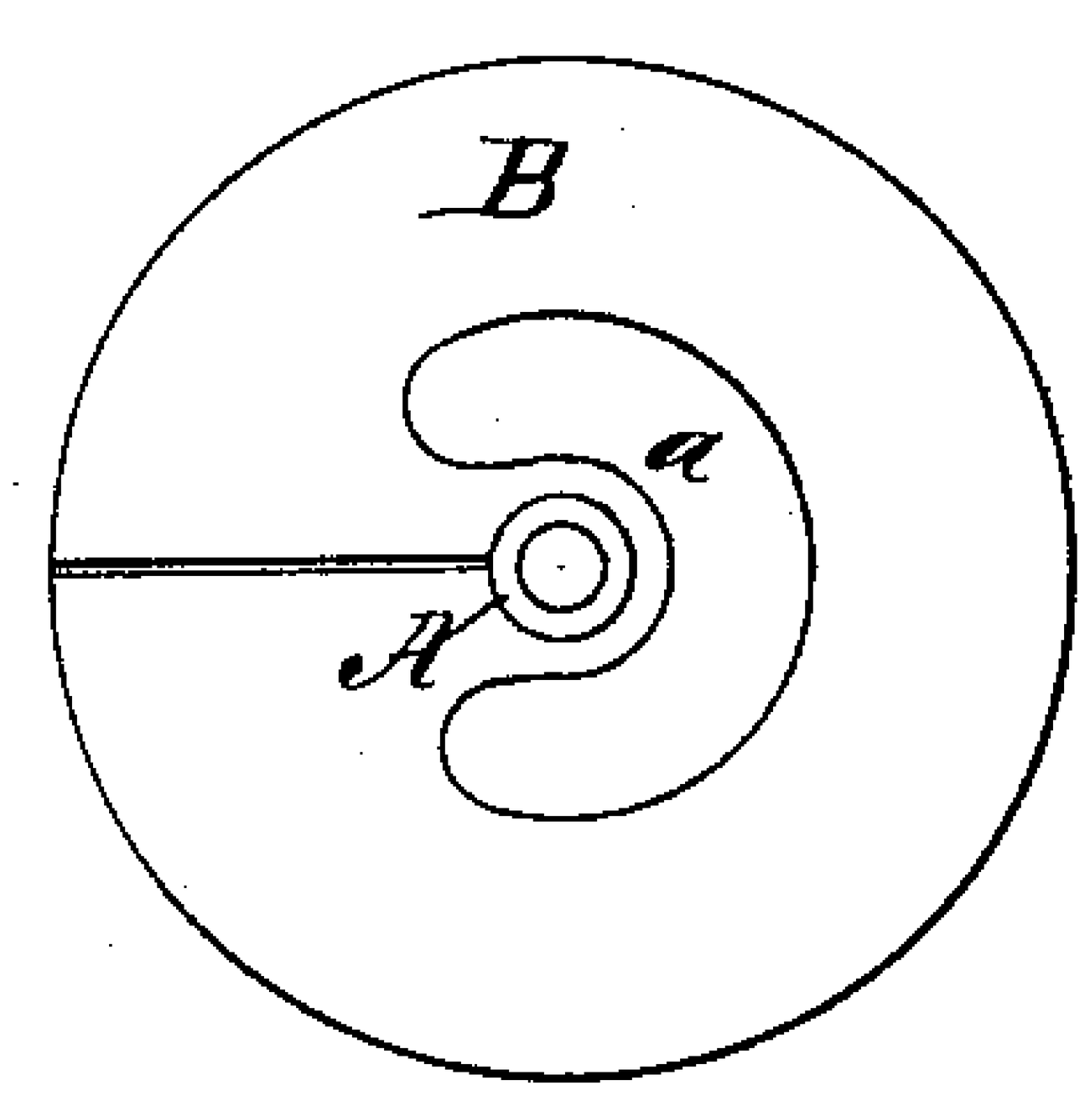


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD H. HALL, OF BROOKLYN, NEW YORK.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 332,710, dated December 22, 1885.

Application filed December 19, 1884. Serial No. 150,732. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. HALL, of the city of Brooklyn, in the county of Kings and State of New York, and a citizen of the United States of America, have invented a new and useful Improvement in Screw-Propellers, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same, in which—

Figure 1 is a side view of a screw propeller containing my invention, and Fig. 2 is an end view of the same.

My invention consists in a screw-propeller, the blade of which is composed of a body and two wings, and which extends entirely once around the shaft on which it is mounted, and adapted and intended to be wholly submerged, and having an elliptical opening in the body of the blade in the portion thereof immediately adjacent to the shaft, said opening being concentric in curve to the shaft and the outer rim of the blade-body, and extending into the wings of the blade on each side to about one-third the length of the wings from the axial line of the shaft to the edge or extremity of the wings, as hereinafter described and claimed.

A is the shaft, and B is the propeller-screw, composed of the body and wings shown, and forming a continuous blade extending once entirely round the shaft with the appropriate pitch. The said screw is formed on or attached directly to the shaft. In the body of the blade is formed the opening *a*, the said opening being elliptical in form or outline, and having a curve longitudinally, which is coincident to the circle or curve of the shaft and that of the rim of the blade. The opening *a* is furthermore located in that portion of the blade which is immediately adjacent to the shaft, but having a portion of the blade continuous around and in contact with the shaft. The said opening *a* extends into each wing of the blade to about one-third of the length of the wing, measuring from the axial line of the shaft to the rim or extremity of the wing, as shown in Fig 2.

The screw-propeller thus constructed is adapted and intended to be wholly submerged when it is operated as a propeller, and the full advantages of its peculiar coustruction are only obtained when it is thus submerged.

I am aware that screw-propellers have been heretofore constructed with openings in their blades, and hence I do not claim such form and construction, broadly.

I intend to limit my claim hereunder to a screw-propeller composed of a single blade extending entirely once around the shaft, and adapted and arranged to be operated when wholly submerged, having the opening *a* in the body and wings of the blade, and located and formed as herein particularly set forth, whereby in the operation of a blade of this specific description the "dead-water" will be effectively cleared from the blade through the said opening, and the lifting of such dead-water and consequent loss of propelling-power be avoided.

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

A screw-propeller adapted to be wholly submerged in operation, consisting of an axial shaft, A, and a blade, B, extending helically entirely once around the said shaft, and having the elliptical opening *a* in that portion of the body of the blade which is immediately adjacent to the shaft, and extending, in a curve which is concentric to that of the shaft and the blade-rim, into each wing of the blade about one-third of the distance from the axial line of the shaft to the extremity of the wing, as and for the purpose specified.

EDWARD H. HALL.

Witnesses:

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