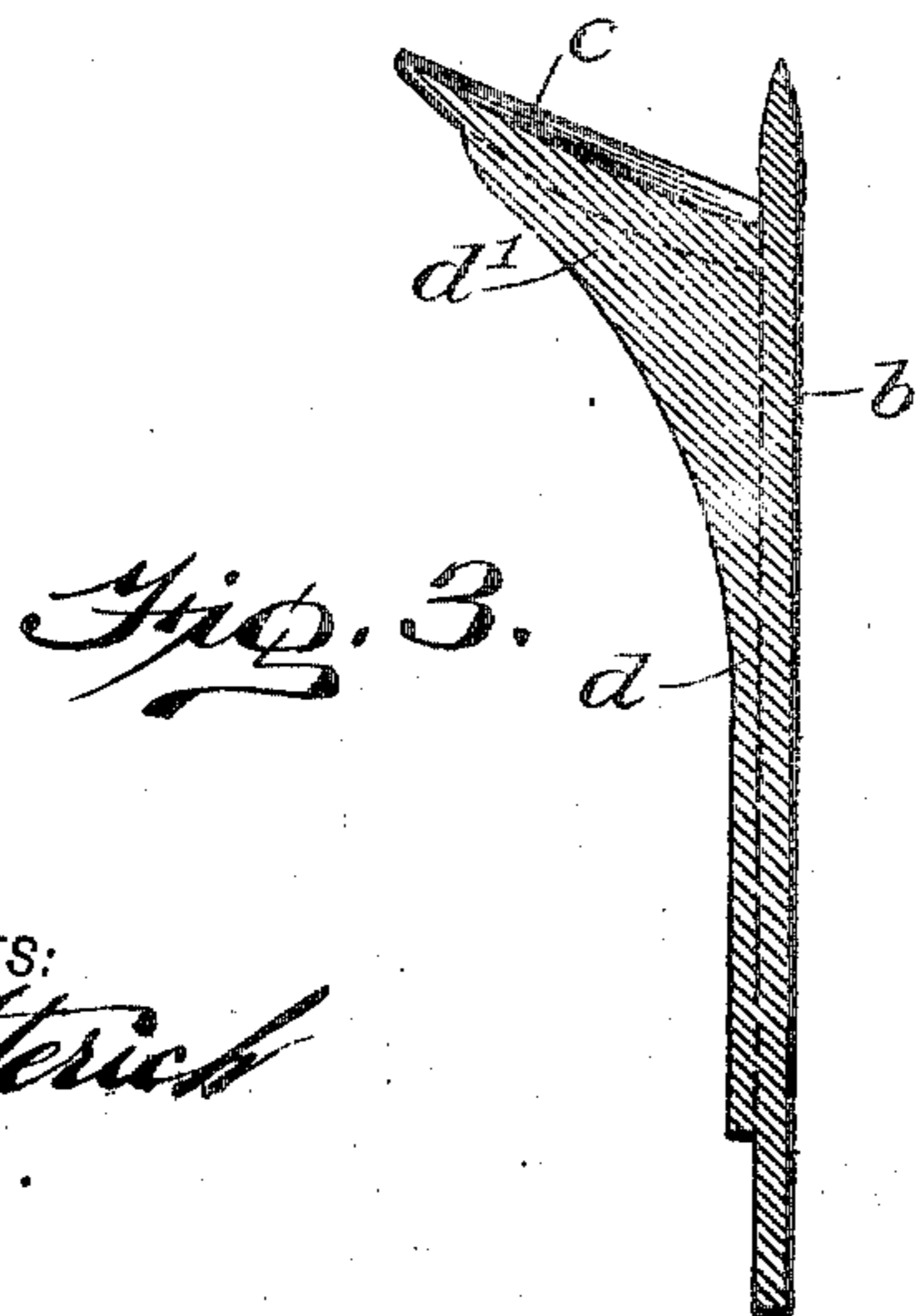
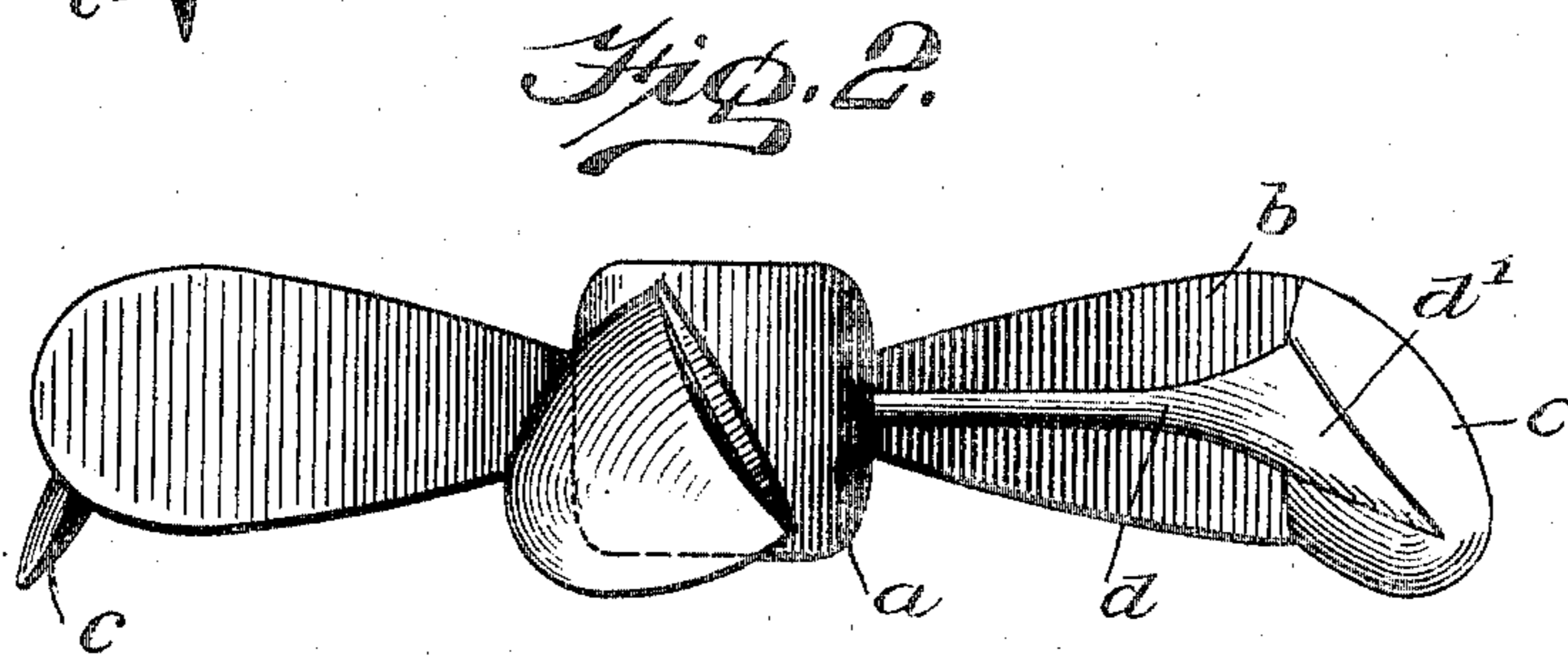
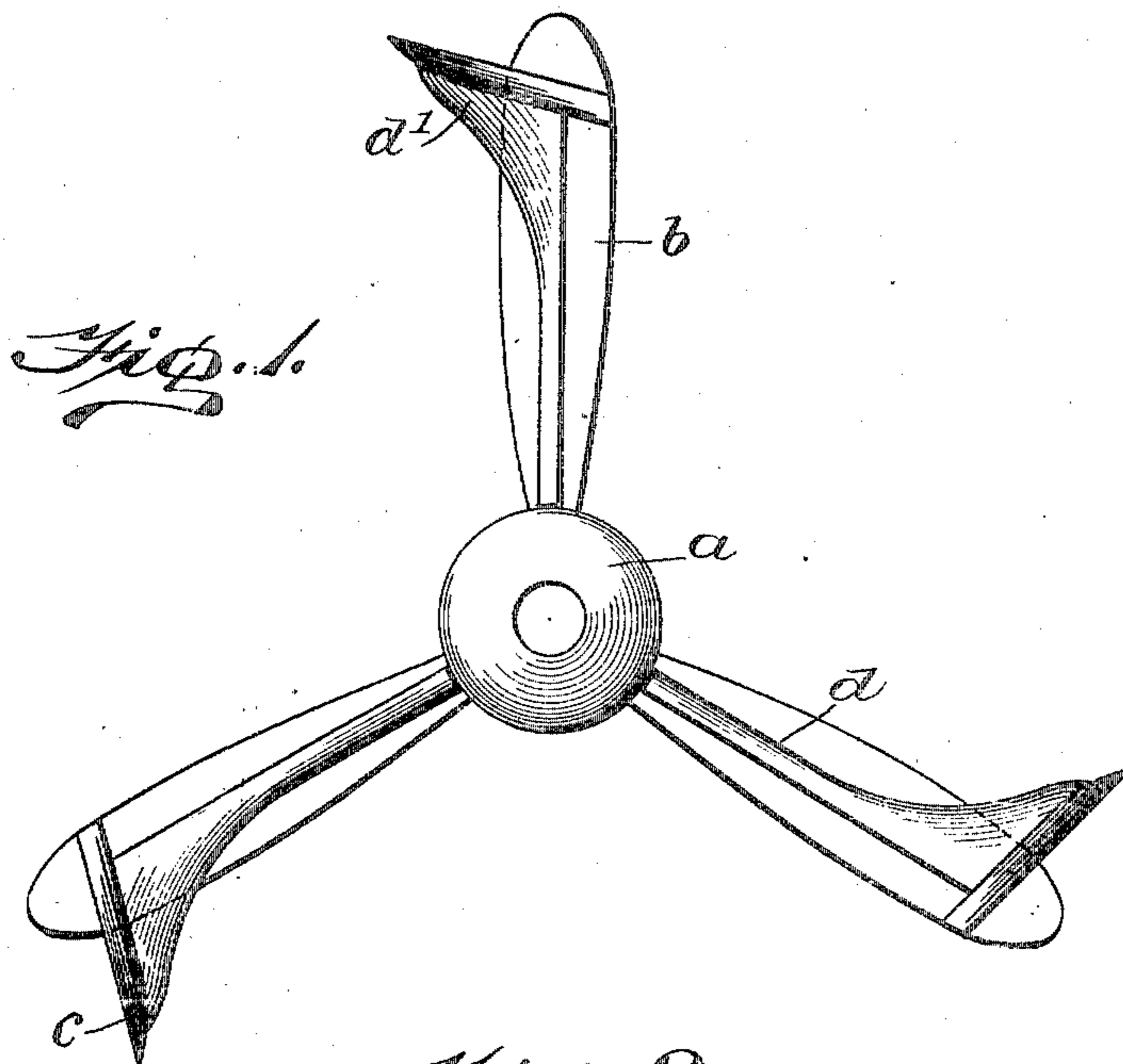


No. 817,494.

PATENTED APR. 10, 1906.

A. H. LITTLE.
PROPELLER WHEEL.
APPLICATION FILED JULY 29, 1905.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALBERT HENRY LITTLE, OF NEW YORK, N. Y.

PROPELLER-WHEEL.

No. 817,494.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed July 29, 1905. Serial No. 271,782.

To all whom it may concern:

Be it known that I, ALBERT HENRY LITTLE, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Propeller-Wheel, of which the following is a full, clear, and exact description.

My invention relates to a screw or similar propeller; and the principal object thereof is to provide means on the blades for acting upon the water after the main part of the blade has passed through it, so as to recover some of the power that is lost by the speedy rotation of the blades and cause the boat to attain a greater speed and in general give more satisfactory results.

With this and other subsidiary objects in view my invention includes the application of a scoop to the blades of a propeller, the scoops extending from the blades at an angle.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a propeller, showing my invention. Fig. 2 is a side elevation of the same, and Fig. 3 is a longitudinal central sectional view of one of the blades of the propeller.

The hub *a* of the wheel may be of the usual or any desired construction, and it is provided with a plurality of blades *b*, as usual, these blades preferably being angularly disposed, so as to form what is called a "screw-propeller." On the rear of each blade near its outer end I place a concave projection or scoop *c*. This scoop preferably extends at an angle of about forty-five degrees from the side of the blade and slopes obliquely therefrom in a plane transverse to the plane of the blade. The top of the scoop is therefore about the same distance away from the hub as the end of the blade; but it may conveniently extend farther than this. The scoop is preferably made of solid steel, and in proportions is designed according to the proportions of the propeller-blade itself. As considerable pressure is applied to the scoop in the rotation of the wheel in the water I provide a strengthening device in the form of a rigid brace or rib *d*. This rib is pro-

vided with an angular shoulder at its inner end, which rests against the circumference of the hub, and is provided with a projection *d'* at its outer end, having an upper surface corresponding to the lower surface of the scoop, which rests upon it. Although this rib is either secured to the propeller-blade or integrally mounted thereon it will be seen that on account of the shape of the two ends of the rib the pressure directed against the scoop will be transmitted to the hub through the rib without exerting any additional force upon the blade itself. The rib is preferably small at the hub, growing gradually larger as it extends outward. In addition to transmitting strain from the scoop directly to the hub it adds to the strength of the blade itself. The surface of the rib directly under the scoop is formed in such a manner as to give a maximum sustaining force to the scoop and the blade, and, as will be seen, it is substantially in the shape of the bow of an ordinary boat.

A propeller constructed in accordance with the principle of my invention, whether in the form shown in the drawings or not, is capable of exerting more power, and consequently of propelling a boat at a greater speed, than a propeller constructed in the old way.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A propeller-blade having a scoop provided with a concave outer face projecting from its rear surface.

2. A propeller-wheel having a series of blades provided with scoops projecting therefrom, and means located adjacent to the blades for transmitting strains from the scoops directly to the hub of the wheel.

3. A propeller-wheel having a series of blades, each being provided with a rib on the rear surface thereof, said rib gradually increasing in thickness from the hub out, and a scoop resting on the end of said rib and near the end of the blade.

4. A propeller-wheel having a blade provided with a rib on the rear surface thereof extending longitudinally with respect to the blade, and a scoop resting on the end of said rib and near the end of the blade, whereby any pressure on the scoop will be transmitted to the hub of the wheel through said rib.

5. A propeller-wheel having a hub, a blade projecting therefrom, and a scoop mounted at a distance from the end of said blade, said scoop projecting in an angular direction and
5 terminating at substantially the same distance from the hub as the end of said blade.
In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

ALBERT HENRY LITTLE.

Witnesses:

ARTHUR HALLAM,

MARY E. BUTTGENBACK