

No. 847,222.

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A. L. & B. S. AMES.

PROPELLER.

APPLICATION FILED SEPT. 21, 1905.

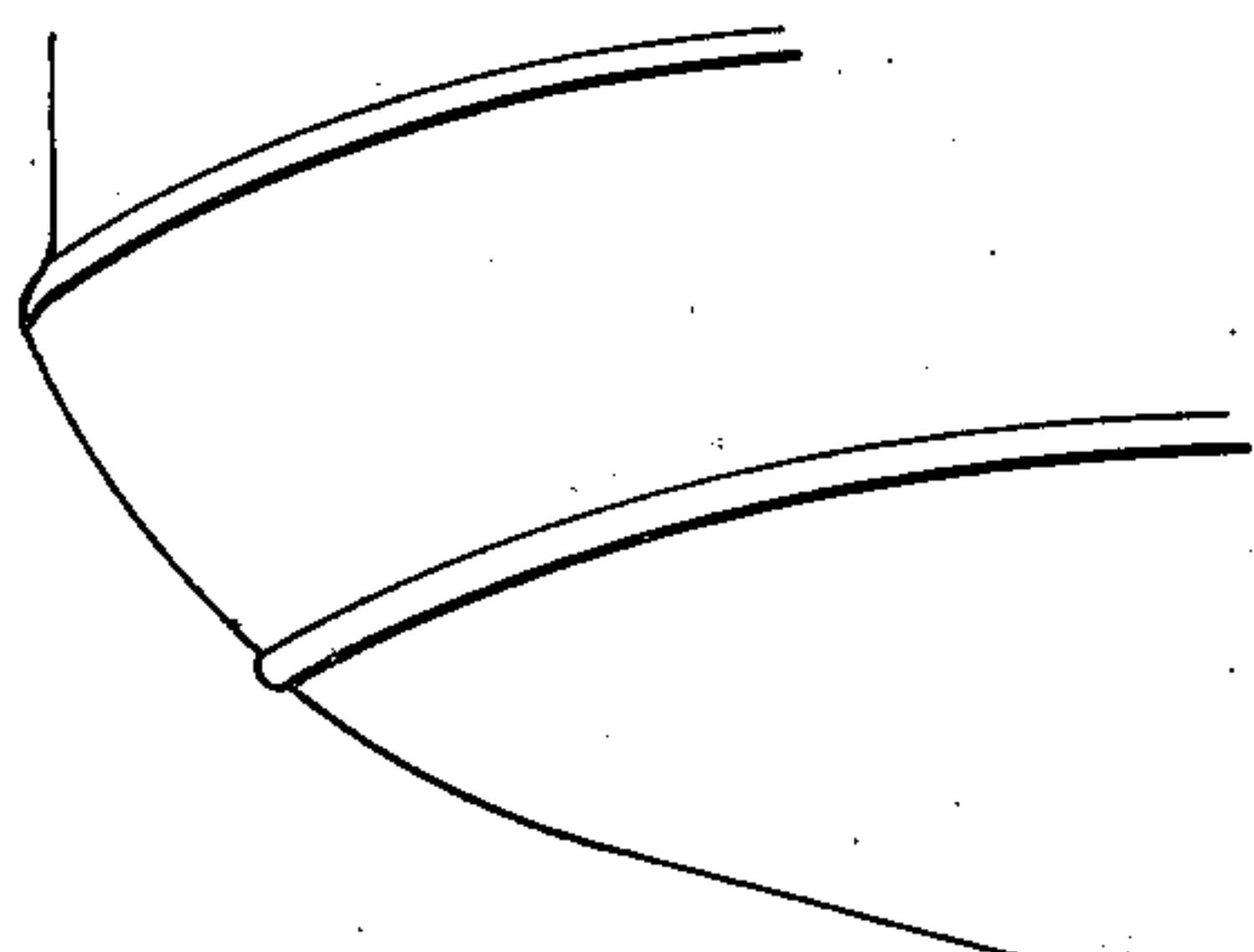


Fig. 1.

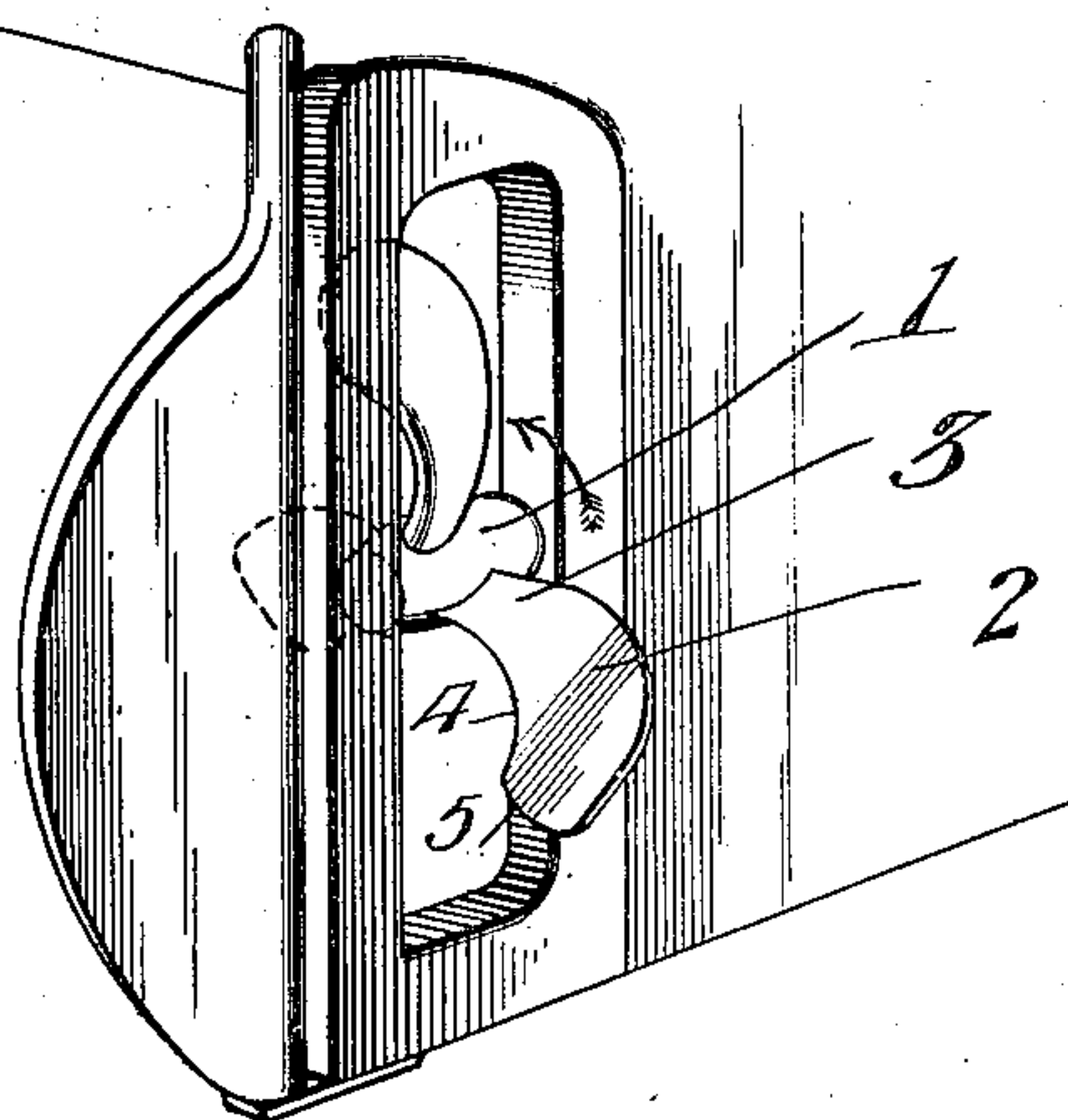


Fig. 2.

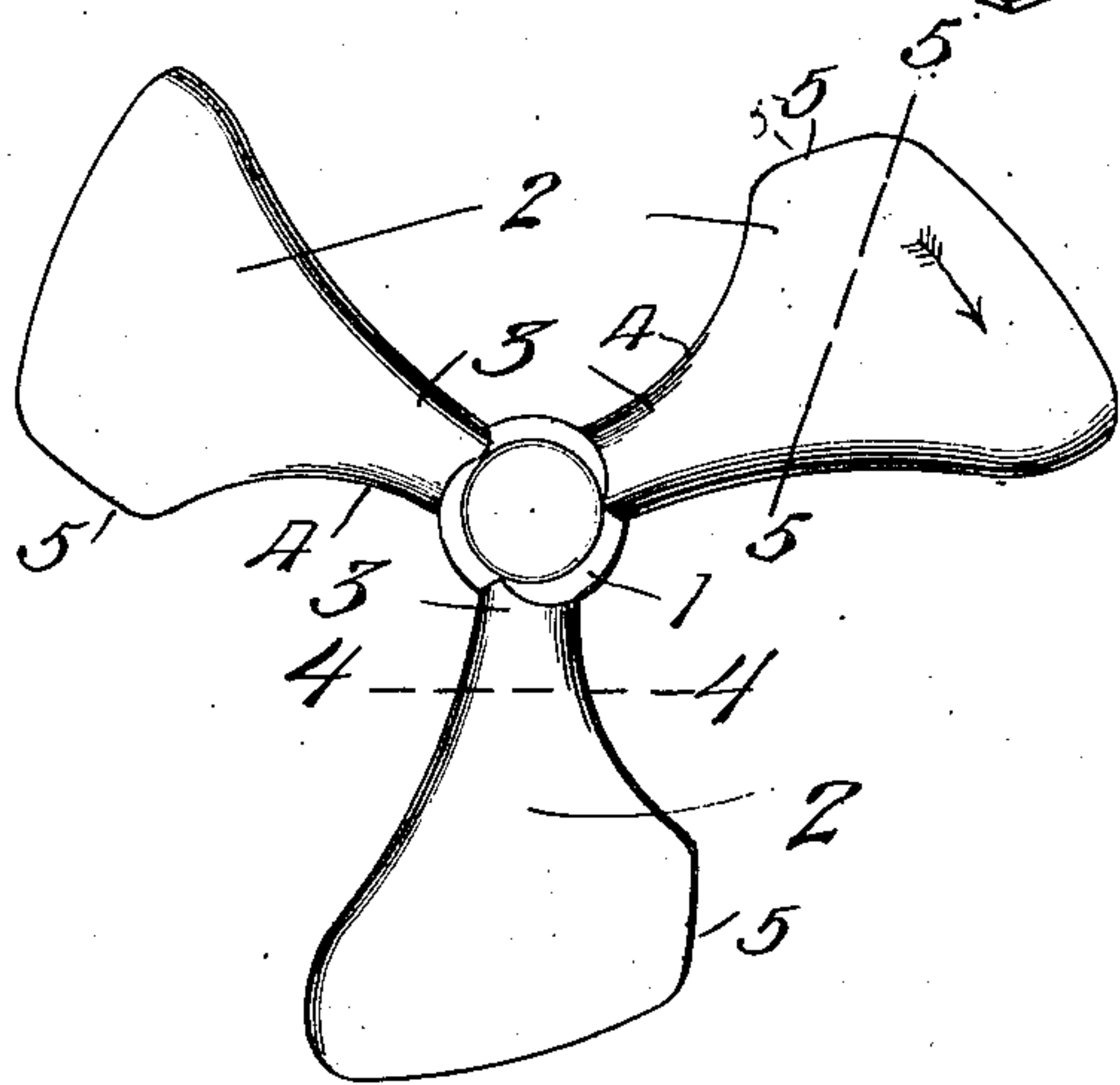


Fig. 3.

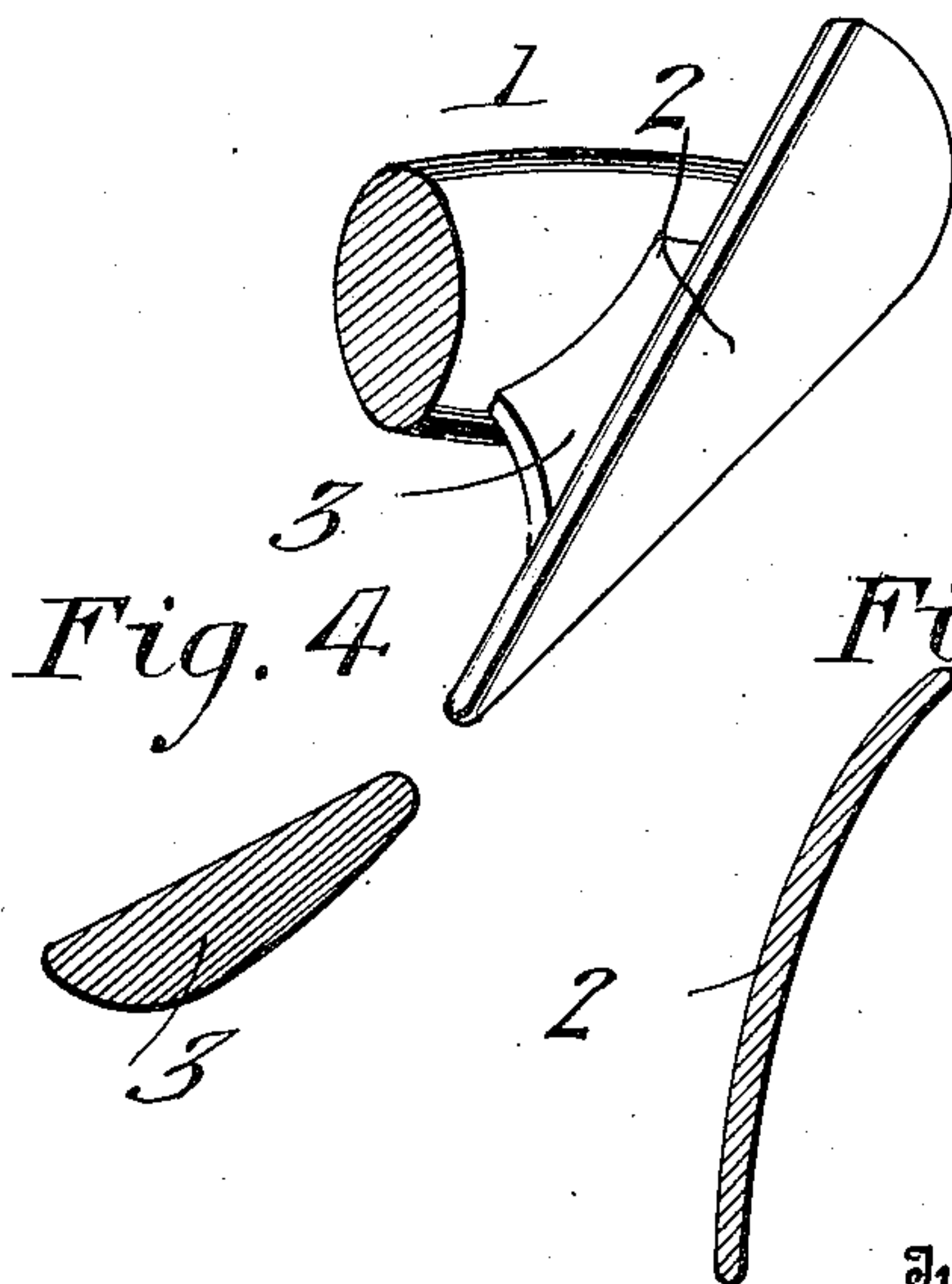


Fig. 4.

Fig. 5.

Witnesses

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ALONZO L. AMES AND BYRON S. AMES, OF NEWBERRY, PENNSYLVANIA.

PROPELLER.

No. 847,222.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed September 21, 1905. Serial No. 279,482.

To all whom it may concern:

Be it known that we, ALONZO L. AMES and BYRON S. AMES, citizens of the United States, residing at Newberry, in the county of Lycoming and State of Pennsylvania, have invented new and useful Improvements in Propellers, of which the following is a specification.

This invention relates to propellers, and has for its objects to produce a simple efficient device of this character by which a greatly-increased driving force from a given amount of power is attained, one wherein the blades will in passing through the water draw the latter toward and consolidate it at the center of their circle of rotation, one which in action creates a suction in advance of the propeller, and, owing to the consolidation of the water by the blades, a high pressure in rear of the latter, and, one whereby churning of the water, even during maximum speed of the propeller, is wholly obviated.

To these ends the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of a propeller embodying the invention and showing the same applied. Fig. 2 is a front elevation of the propeller. Fig. 3 is a detail perspective view looking toward the outer end of one of the blades. Fig. 4 is a transverse section taken on the line 4 4 of Fig. 2. Fig. 5 is a transverse section taken diagonally through one of the blades on the line 5 5 of Fig. 2.

Referring to the drawings, it will be seen that the propeller, which in practice rotates from right to left, as indicated by the arrow in Fig. 1, comprises a hub 1 and a plurality of radiating blades 2, having reduced portions or stems 3 suitably joined to the hub, these parts, except as hereinafter explained, being of any preferred construction and material. In accordance with this invention and as distinguished from prior devices of this type, the blades 2, which as a whole include the stems 3, are curved longitudinally from front to rear, each throughout its entire length, and are further given a slight spiral twist from their inner toward their outer ends, each blade being also pitched at a forward and rearward transverse inclination on a line

oblique to the longitudinal axis of the hub 1. Each blade has its rear edge cut away or recessed, as at 4, thus forming at a point adjacent the outer end of the blade a reduced rearward extension 5, presenting a restricted point at which the water is discharged in a direct line rearwardly from the blade and at the same time producing a strong suction in advance of the latter, whereby the driving power of the propeller is measurably increased.

In practice, owing to the blades being of the peculiar formation described, the water will during the operation of the propeller be drawn inward toward the center of the circle of rotation of the blades and concentrated or massed by the latter and thence discharged directly rearward from the propeller at the restricted discharge-point 5, while at the same time a powerful suction will be created in advance of the latter, thus measurably increasing the driving power of the propeller relative to a given expenditure of energy and augmenting its effectiveness in propelling the vessel; also, owing to the mode of operation of the propeller and the improved form of its blades churning of water by the propeller is wholly obviated and the constant action of the latter on unbroken water is consequently insured.

From the foregoing it is apparent that we produce a simple device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A propeller comprising a hub and a blade, the latter being curved longitudinally from front to rear and having at its rear edge a reduced rearward extension disposed adjacent its outer end and presenting a restricted point at which the water is discharged rearwardly from the blade, said blade being also pitched at a transverse inclination on a line oblique to the axial line of the hub.

2. A propeller comprising a plurality of blades curved throughout their length from front to rear and spirally twisted from end to end, said blades being pitched at a trans-

verse inclination on a line oblique to the axial line of the propeller and having their rear edges recessed to form reduced rearward extensions, said extensions being disposed
5 adjacent the outer ends of the blades and presenting restricted points at which the water is discharged rearwardly from the blades.

In testimony whereof we affix our signatures in presence of two witnesses.

ALONZO L. AMES.
BYRON S. AMES.

Witnesses:

JOHN H. BERRY,
WM. H. WURSTER.