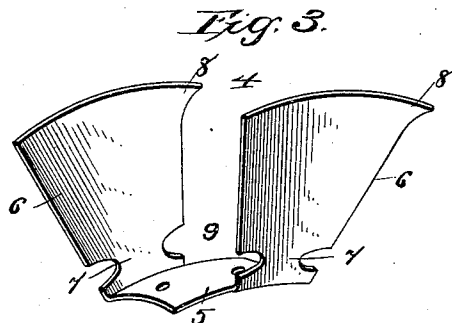
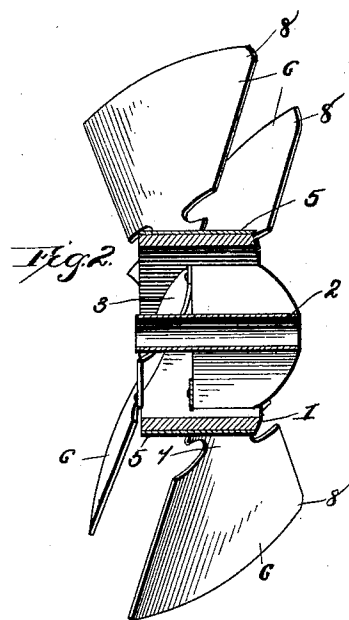
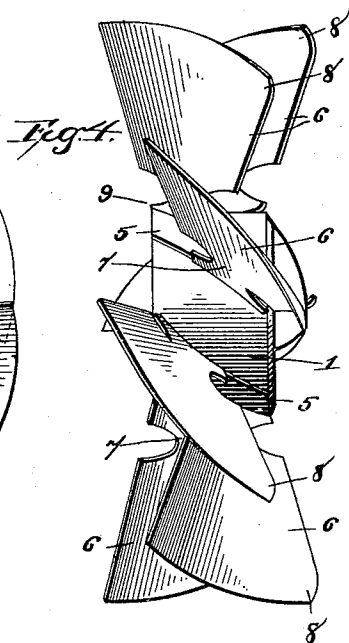
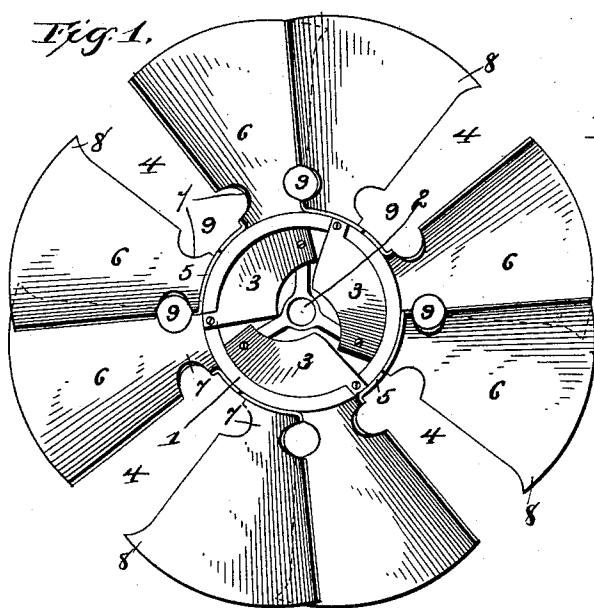


(No Model.)

J. Q. ADAMS.
PROPELLER.

No. 484,511.

Patented Oct. 18, 1892.



Witnesses

E. C. Sturdevant
Chas. B. Hyer

Inventor

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UNITED STATES PATENT OFFICE.

JOHN Q. ADAMS, OF JAMAICA, VERMONT.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 484,511, dated October 18, 1892.

Application filed May 19, 1892. Serial No. 433,581. (No model.)

To all whom it may concern:

Be it known that I, JOHN Q. ADAMS, a citizen of the United States, residing at Jamaica, in the county of Windham and State of Vermont, have invented a new and useful Propeller, of which the following is a specification.

This invention relates to propellers; and it consists in the construction and arrangement of the parts thereof, as will be more fully hereinafter described and claimed.

The object of this invention is to provide a propeller of increased efficiency and simplicity of form, which is adapted to materially increase the momentum or speed of a vessel to which the same is applied and by means of which the central resistance at the hub is relieved and reduced to a minimum by the employment of centrally-located blades and a hollow hub.

In the drawings, Figure 1 is a front elevation of the improved propeller. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a detail perspective view of one of the blade-sections removed. Fig. 4 is a side elevation of the propeller.

Similar numerals of reference indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates the hub, which is hollow and has openings extending through the same and provided with a spindle 2 for attaching the hub to the end of the propeller-shaft, as in ordinary cases. To the interior portion of the said hub are secured a series of inclined blades 3, whose outer ends are wider than the inner ends of the same and are flared, the said blades forming buckets at the central portion of the propeller, and owing to their arrangement and construction providing a screw at this point. On the outer side of the hub are secured blade-sections 4, comprising a base-strip 5, having blades 6 rising from the opposite ends thereof in reverse position and at right angles. The said blades are formed with necks 7, near the point where they extend from the plates 5, and from said necks they flare outwardly and have their upper ends deflected or curved, as at 8, to firmly take into the water, as will be readily understood. The inner edge of each pair of blades slightly extends beyond or overlaps

the other, and the reduced portions formed at the bottom of the several blades by the necks 7 produce throats 9 at the hub or adjacent to the hub to relieve the back-pressure at this point. The said plates 5 are secured to the hub 1 in diagonal planes, thereby positioning each pair of blades carried by a single plate in diagonal planes across the hub from end to end thereof and virtually providing a continuous blade with the additional advantage of lightness of structure, strength, and durability, and readiness with which the blades may be constructed. The plates 5 are readily attachable and detachable from the hub 1, and if either one of the pair of blades carried by each plate 5 becomes broken or injured the said plate may be removed and another substituted in its place, thereby avoiding the necessity of wholly dispensing with the use of a propeller entire by reason of a portion of the same becoming broken or injured.

The hub is about one-third the size of the whole diameter of the wheel, which will give a surface for the back action of the water when the vessel carrying the propeller is running at the rate of ten miles and a fraction per hour under a depth of eight feet of water.

By means of the construction set forth the pressure of the water is removed from the eye or hub of the propeller through the medium of the blades centrally located thereat and forming buckets which force the water through the hub and outward at the end thereof. The outer flared construction of the blades, arranged in overlapping pairs as set forth, provides for an increased contacting-surface without a corresponding increase in actual resistance by virtue of the throats or ways formed between each pair of blades, as will be readily understood. It will be seen by this construction that an increase in speed for a less amount of exerted power will readily result.

Having thus described the invention, what is claimed as new is—

1. In a propeller, the combination of a hub and blades arranged in integral pairs and removably attached thereto, substantially as described.

2. In a propeller, the combination of a hub

having blades secured against the interior surface thereof and exterior diagonally-arranged removable blades constructed in integral pairs, substantially as described.

5 3. In a propeller, the combination of the hub, blades diagonally arranged thereon and constructed in integral pairs having throats between the lower portions thereof, substantially as described.

10 4. In a propeller, the combination of a hub, exterior removable diagonally-arranged blades constructed in integral pairs having throats between the lower portions thereof and the outer parts of the same flared out-

wardly from said throats, substantially as described. 15

5. A blade-section for a propeller, consisting of an attaching-plate having blades vertically rising from opposite sides thereof near the ends of the same and at right angles thereto, substantially as described. 20

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN Q. ADAMS.

Witnesses:

EDWARD S. ROBINSON,
LUCY ROBINSON.