

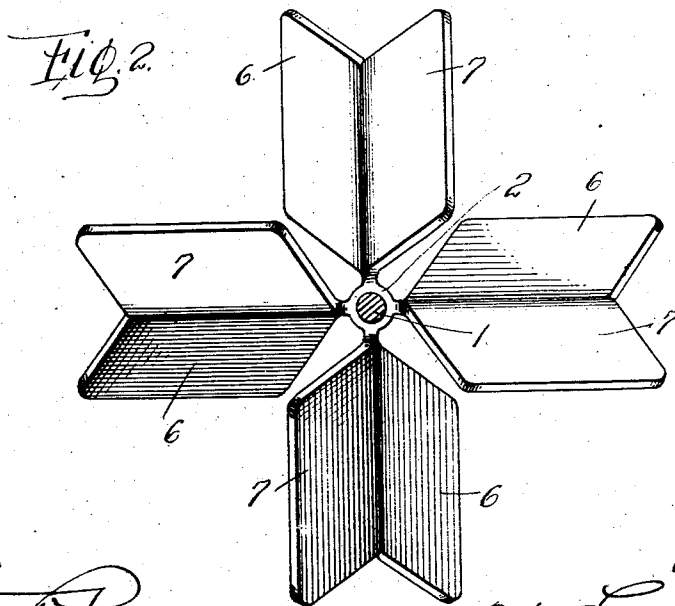
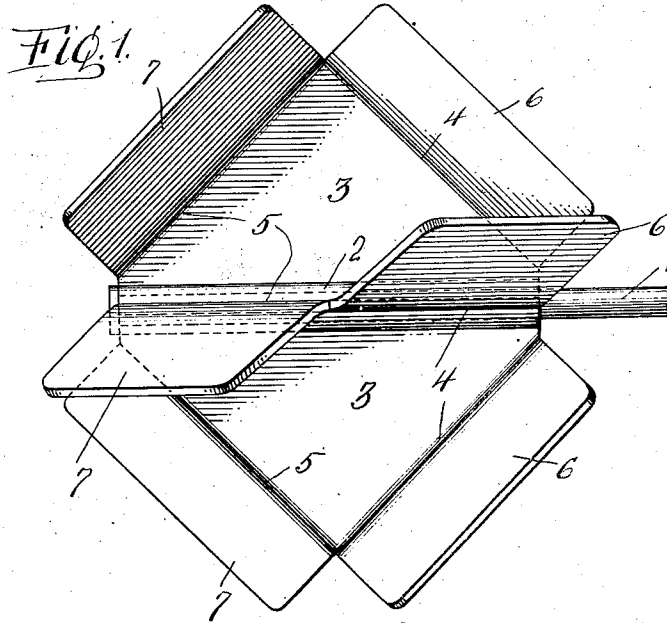
J. & A. WOLL.

PROPELLER.

APPLICATION FILED AUG. 18, 1908.

929,529.

Patented July 27, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH WOLL AND ADAM WOLL, OF DUQUESNE, PENNSYLVANIA.

## PROPELLER.

No. 929,529.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 18, 1908. Serial No. 449,111.

*To all whom it may concern:*

Be it known that we, JOSEPH WOLL and ADAM WOLL, citizens of the United States of America, residing at Duquesne, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Propellers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to propellers, and the object of our invention is to provide a novel propeller that will be highly efficient for driving bodies, as boats, air ships, aerial planes and vessels of various types.

Our invention aims to provide a simple and inexpensive propeller having a low resistance and a high degree of propelling power. The propeller is constructed whereby the air or water will be deflected in a direct line with the body being propelled, and in an opposite direction. Each blade of the propeller is of such a contour as to aid in this respect, the assemblage of the blades being such as to provide a positive coöperation between all of the blades, as a driving medium.

The detail construction entering into our invention will be presently described and then specifically claimed.

In the drawings:—Figure 1 is a side elevation of our propeller, and Fig. 2 is an end view of the same.

In the accompanying drawings, 1 designates a shaft adapted to be driven by our propeller. Mounted upon the shaft is a hub 2 having four right angularly disposed triangular blades 3, each blade in plan corresponding to an isosceles triangle or two right angular triangles having a common altitude or perpendicular.

Considering each blade as two right angular triangles, with their bases at the hub 2, the hypotenuses 4 and 5 of said triangles are provided with auxiliary blades 6 and 7. The auxiliary blades 6 and 7 are rectangular in plan, and are disposed at right angles to the hypotenuse 4 and 5. The auxiliary blade 6 is arranged at one side of the blade 3 and the auxiliary blade 7 at the opposite side, as best shown in Fig. 2 of the drawings.

Each one of the blades 3 is identical in construction, and the angularity and pitch of the auxiliary blades 6 and 7 are adapted to provide a four-sided passage between two of the blades 3, the contour of such passage being such as to deflect water or air with considerable force in the opposite direction from that in which a body is propelled. It will thus be observed that a large water and air impinging surface is provided in connection with a propeller that will cause a large displacement of water or air, either at a slow or high speed. It is in view of this fact, that we obtain a high degree of propelling power with a minimum expenditure of fuel, consequently, our propeller is highly efficient for motor boats and similar craft.

The propeller is constructed of strong and durable metal and suitable means, as set screws and nuts, (not shown) can be employed for securing the same upon the shaft.

Having now described our invention what we claim as new, is:—

1. A propeller comprising a hub, a plurality of blades disposed at right angles with respect thereto, each blade comprising an isosceles triangle having its base at said hub and auxiliary blades angularly disposed with respect to said first mentioned blades, said auxiliary blades arranged upon the opposite sides of said isosceles triangle.

2. A propeller comprising a hub, a plurality of blades carried thereby, each blade comprising an isosceles triangle having its base at said hub, and auxiliary blades carried by the sides of said triangle.

3. A propeller comprising a hub, a plurality of isosceles triangular blades carried thereby and each of said blades having its face at the hub, and angularly disposed auxiliary blades carried by the sides of each triangular blade.

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

JOSEPH WOLL.  
ADAM WOLL.

Witnesses:

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