(Model.)

F. WITTRAM.

PROPELLER.

No. 573,562. Patented Dec. 22, 1896.

Fig. 1.

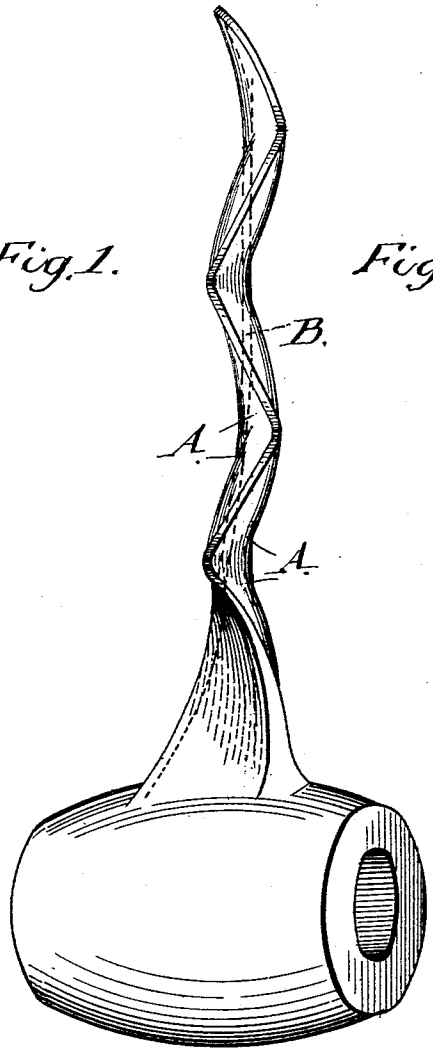
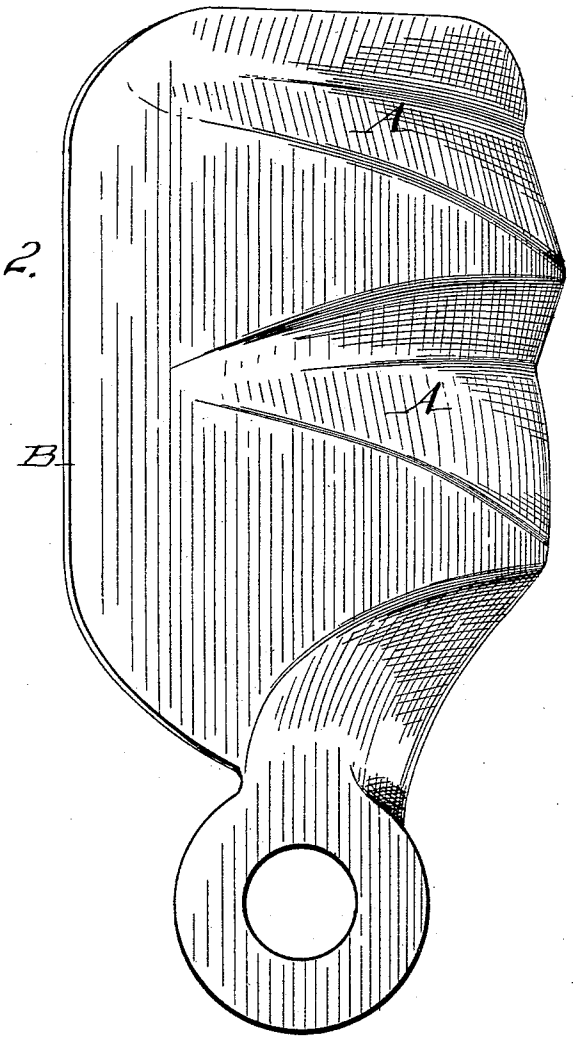


Fig. 2.



WITNESSES

Chapman N. Fowler

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UNITED STATES PATENT OFFICE.

FREDERICK WITTRAM, OF SAN FRANCISCO, CALIFORNIA.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 573,562, dated December 22, 1896.

Application filed July 23, 1896. Serial No. 600,283. (Model.)

To all whom it may concern:

Be it known that I, FREDERICK WITTRAM, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Propellers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements to be applied to propellers for vessels and other similar purposes.

It consists in a novel construction of the propeller-blade having corrugations decreasing in depth transversely from the front to the rear edge of the blade.

Referring to the accompanying drawings, Figure 1 is an edge view showing the hub and one of the blades. Fig. 2 is a side view of the same.

The object of my invention is to provide a propeller with blades the fronts of which are corrugated or formed in planes having such an angle or curvature with each other as to form a greater surface than the actual length to impinge against the water through which the blade is traveling, said corrugations or inclines decreasing in depth, so that the rear of the blade is less corrugated or irregular, or it may be straight in a radial line from the hub, thus concentrating the water as it passes over the blade from front to rear edge in the manner of a converging trough and greatly strengthening the blade.

My propeller-blade is formed with surfaces A inclining alternately to and from each other, so that the front edge of the blade presents a form of inclined planes united to form a zigzag or corrugated line from the hub to the outer end of the blade. From this front edge these inclines become shallower transversely and approach more nearly to a straight line, so that the rear edge B of the blade may be nearly straight. This construction gives, first, great stiffness to the propeller-blade by reason of the bracing which each of the angular inclined faces receives from the other, in conjunction with the diagonal or transverse decrease in the angle from front to rear. The channels or valleys thus formed in the blades also decrease and converge from front to rear, so that the body of water which engages the front portion of the blade during its revolution will be discharged more rapidly through the converging transverse channel. It will be understood that these blades may be of any suitable or well-known outline, either converging from the hub toward the outer end or diverging to any desired degree, and the pitch or angle of the blades may be also determined to suit the conditions under which the propeller is to be used.

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

1. A propeller consisting of radial blades, the front edges of which are composed of inclined planes meeting each other at an angle to form a zigzag line, said planes decreasing in depth transversely so that the rear edge of the blade is less irregular.

2. In a propeller, blades extending radially from the hubs with an appropriate pitch, the rear edges of said blades being slightly irregular and the front edges forming zigzag lines caused by the meeting of oppositely-inclined planes whereby transverse valleys are formed, decreasing in depth from the front to the rear of the blade.

In witness whereof I have hereunto set my hand.

FREDERICK WITTRAM.

Witnesses:

GEO. H. STRONG,

S. H. NOURSE.