Oct. 2, 1928. 1,685,881

M. C. NIXON

PROPELLER BLADE

Filed Nov. 1, 1926

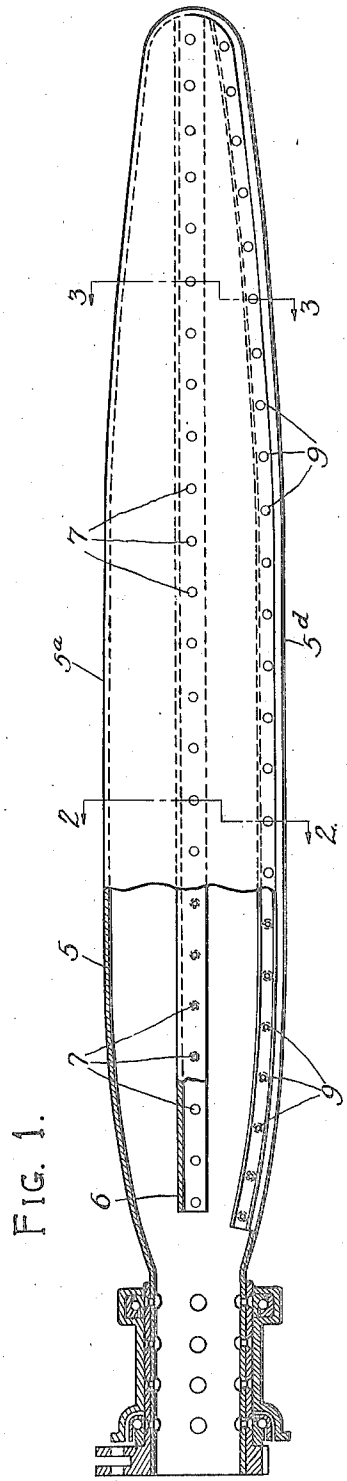



FIG. 1.

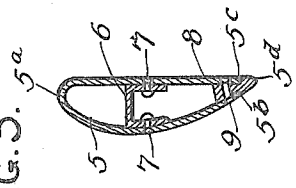



FIG. 3.

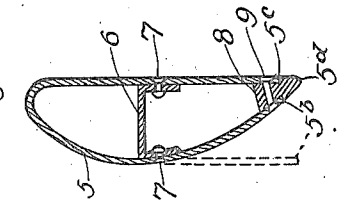



FIG. 2.

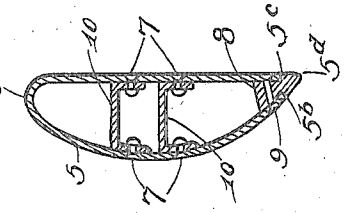



FIG. 4.

INVENTOR.

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Patented Oct. 2, 1928. 1,685,881

# UNITED STATES PATENT OFFICE.

MOSES C. NIXON, OF CHICAGO, ILLINOIS.

## PROPELLER BLADE.

Application filed November 1, 1926. Serial No. 145,571.

The objects of my invention are to provide a hollow blade of simple, strong and durable construction, reinforced so as to retain its true form and pitch under varying conditions, and such other objects as may hereinafter appear, and consists, preferably, in the construction herein described and illustrated, which may be varied without departing from the spirit of my invention:

In the drawings Figure 1 is a side elevational view of a propeller blade embodying the principles of my invention, certain parts thereof being broken out to show the internal construction; Figs. 2 and 3 are transverse sectional views on lines 2—2 and 3—3 respectively of Fig. 1, and Fig. 4 is a transverse sectional view of a propeller blade of slightly modified construction.

Referring first to Figs. 1 to 3 of the drawings it will be noted that the propeller blade therein shown is constructed wholly of metal, comprising a sheet of metal 5 which is bent or folded longitudinally and forms the edge $5^a$ of the blade, the free edges $5^b$ and $5^c$ of said sheet being secured together, as will be presently described, to form the opposite edge $5^d$ of the blade. A reinforcement 6, preferably in the form of a channel-like member, extends longitudinally within the blade from its butt end to the tip and has its flanges secured in any preferred manner, as by rivets 7 to the opposite sides of the sheet 5. The reinforcement is inserted within the blade before the edges $5^b$ and $5^c$ are secured together, the edge $5^b$ occupying a position substantially as shown in dotted lines in Fig. 2. The edges $5^b$ and $5^c$ may be brought into direct contact with each other and riveted or welded together but they are preferably disposed in suitable grooves or recesses formed in an edge reinforcement member 8 and are secured to the member 8 in any desired manner, for example, by rivets 9. The blade may be constructed so that either edge may serve as the leading edge but the blade is preferably constructed so that the two edges $5^b$ and $5^c$ form the trailing edge of the blade thus presenting an integral unbroken sheet of material at the leading edge of the blade.

The propeller blade may be fastened at its butt end to the driving mechanism in any preferred manner, in the present case the butt of the blade being adapted to be mounted on apparatus such as is described in my parent application Serial No. 106,431.

The blade construction shown in Fig. 4 is similar to that heretofore described except a plurality of channel-like bars 10 are employed for reinforcing the blades. Where a plurality of reinforcing members are employed they may be relatively lighter in weight and placed in the blade so that their weight is distributed more uniformly throughout the blade thus affording an improved construction.

In both constructions it will be noted that channel-like members are employed and are disposed so that their flanges project toward the edges $5^b$ and $5^c$ of the enclosing sheet forming a blade. The disposition of the channel-like members in this manner is necessary in order to rivet or otherwise secure their flanges to the sides of the blades.

While the preferred form of my invention, with one modification is shown, it is obvious that other modifications may be made without departing from the spirit of my invention and I do not, therefore, limit myself to the details of construction herein shown:

What I claim is:

1. A propeller blade comprising a sheet of metal, a channel-like member extending substantially the length of the blade, said sheet of metal being folded longitudinally so as to bring its sides against the flanges of said channel member, said channel member being so disposed that its flanges project toward the free edges of said sheet of metal, means for securing the sides of said sheet of metal to said flanges, and means for securing said free edges of the sheet of metal together.

2. A propeller blade comprising a sheet of metal bent longitudinally so as to form a hollow blade like structure with adjacent free edges, a centrally disposed body reinforcing member within said structure, means for securing said member to the opposite sides of said structure, an edge reinforcing member interposed between the adjacent free edges of said sheet, and means for securing said free edges of the sheet to said edge reinforcing member.

MOSES C. NIXON.