No. 800,918.

PATENTED OCT. 3, 1905.

F. G. HOBART.

ADJUSTABLE PROPELLER.

APPLICATION FILED OCT. 24, 1903.

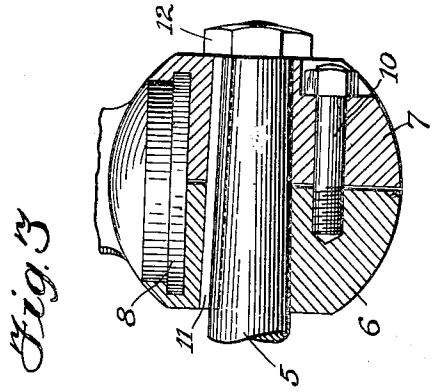


Fig. 3

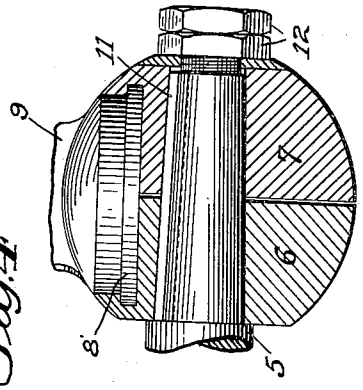


Fig. 4

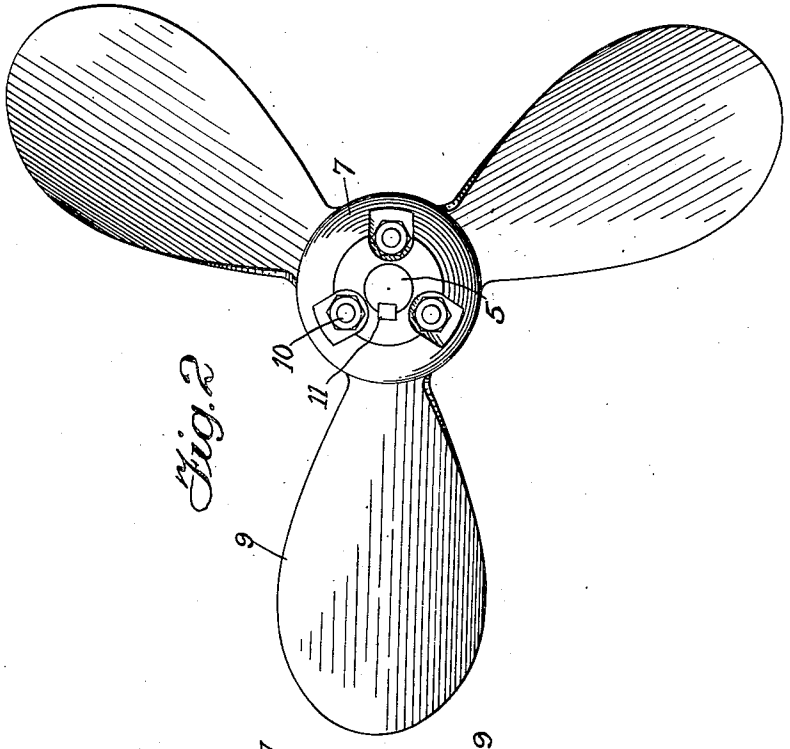


Fig. 2

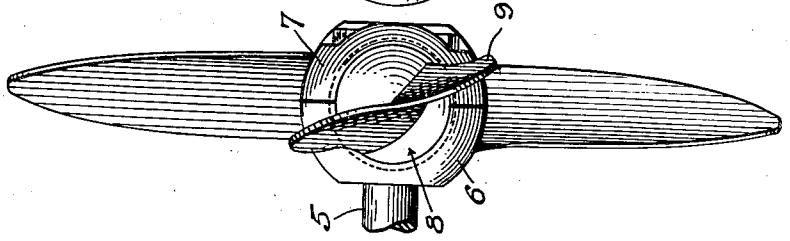


Fig. 1

Witness:
Chas. H. Ebert
Hermann Zschuer

Inventor:
Franklin G. Hobart.
By Paul Symmestedt &c
Att'y.

UNITED STATES PATENT OFFICE.

FRANKLIN G. HOBART, OF BELOIT, WISCONSIN, ASSIGNOR TO FAIRBANKS, MORSE & CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ADJUSTABLE PROPELLER.

No. 800,918. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed October 24, 1903. Serial No. 178,346.

To all whom it may concern:

Be it known that I, FRANKLIN G. HOBART, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Adjustable Propellers, of which the following is a specification.

My invention relates to the arrangement of screw propellers for marine engines for driving vessels, and particularly to means for securing and readily adjusting the angularity of the propeller blades. The objects of the invention are, to provide means by which the propeller may be adjusted to suit the speeds and power of the engine after the machinery is put in place; to provide a propeller blade that is securely held in place and may be changed at will in its angularity by means of a superior form of hub, and to generally improve the structure of propellers. To attain these objects and other advantages, which will hereinafter appear, I preferably construct the device as illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the complete propeller;

Figure 2 is a rear elevation of the same with the fastening nut on the shaft removed;

Figure 3 is a longitudinal section through the propeller hub, and

Figure 4 is a similar longitudinal section showing a different mode of securing the two halves of the propeller hub.

In supplying boats with marine engines it is found to be practically impossible to supply a solid propeller wheel to go with the engine which when put in place will be found to exactly suit the conditions of the boat and of the engine. It is very difficult to so arrange the angularity of the propeller blades that the rotation and power of the engine are suitable to the particular boat in which it is placed and the required speed thereof. It is very desirable to make it possible to arrange the pitch of the blades of the propeller after the outfit has been tested and adjusted and all the conditions of the boat and its engine have been taken into consideration. On the other hand a propeller which has adjustable blades must have some means for fixing them very firmly and immovably in place after they are once adjusted. In order to attain these advantages I form the hub with the superior clamping and adjusting means hereinafter described.

The engine shaft 5 may or may not be tapered, as desired, and any desired means may be used for fastening the hub thereon. It is shown in the accompanying drawings as a taper shaft provided with a key 11 and held on by means of a nut 12. The hub of the propeller is formed in two parts divided in a plane at right angles to the line of the shaft, the halves being indicated by the numerals 6 and 7. Between these two parts the shanks of the blade are to be clamped, and for this purpose the two halves of the hub are made with undercut grooves as shown in Figures 3 and 4 and the blade is supplied with a round head having a projecting annular flange 8, which is firmly clamped into the grooves in the halves of the hub when the same are tightened together. The halves of the hub may be held in any desired manner, such as by the screw bolt 10 in Figure 3, or merely by the pressure of the external nuts 12 as in Figure 4. In this latter case of course the shaft 5 will be provided with a shoulder in order that the desired pressure may be exerted by the screwing up of the nuts 12 against the half hub 7. The exact form of the flange 8 and the undercut grooves in the two halves of the propeller hub may of course be altered to suit conditions, but it will be observed that by this means the parts are held in frictional contact under heavy pressure around the entire circumference of the flange 8 and the blades 9 are therefore held very firmly against turning and are practically as fixed as in a solid propeller wheel. In this condition the engine may be tried in its particular place and under particular conditions of navigation desired and the blades may then be altered in angularity to suit such conditions, after which they are firmly seated in place. Many other advantages of the device will readily occur to those familiar with the practice in this art.

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

1. An adjustable propeller comprising a clamping hub composed of two parts divided transversely, a series of propeller blades provided with rotatable flanged shanks engaging undercut recesses in said hub, and means for tightening the two parts of the hub together to clamp said shanks in any desired position, substantially as described.

2. In a propeller the combination of the ta-

pered shaft 5, and divided hub composed of the parts 6 and 7 having recesses therein, the propeller blades provided with rotatable shanks having flanges 8, and the bolts 10 for clamping the propeller blades between the two halves of the hub and tightening means to hold the hub on the shaft, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

FRANKLIN G. HOBART.

Witnesses:
GEO. B. INGERSOLL,
J. D. PEET.