

Aug. 2, 1938.

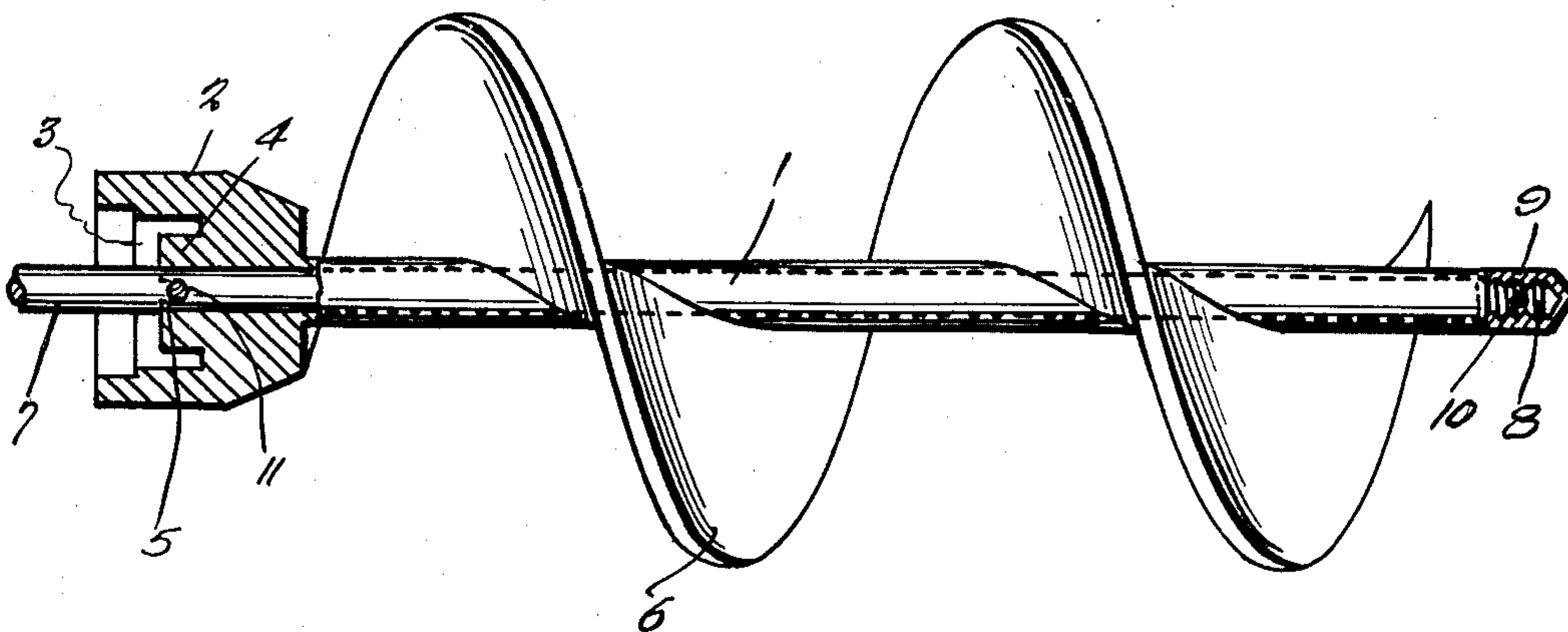
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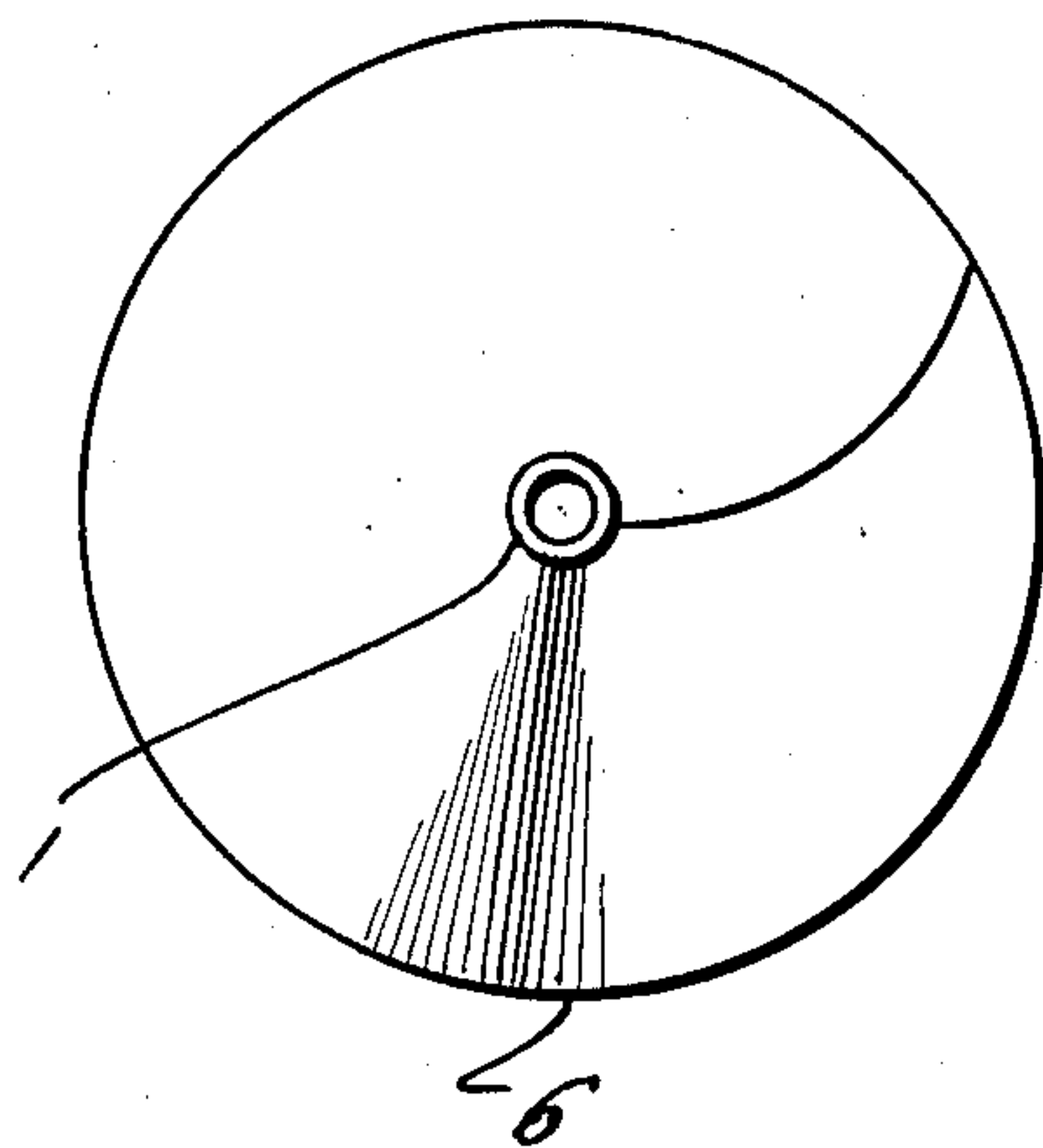
PROPELLER

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*Fig. 1.*



*Fig. 2.*



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## UNITED STATES PATENT OFFICE

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## PROPELLER

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Application May 7, 1937, Serial No. 141,341

## 1 Claim. (Cl. 170—156)

My invention relates to improvements in propellers, particularly marine propellers, and the primary object thereof is the provision of a propeller adapted to reduce to a minimum so-called slippage and designed for increased efficiency as compared with present day propellers having the same blade pitch.

Another object of my invention is to provide for reducing the diameter of propellers, while at the same time increasing the efficiency thereof.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawing, set forth in detail in the following description, and defined in the claims appended hereto.

In said drawing:

Figure 1 is a view partly in side elevation and partly in longitudinal section illustrating a propeller embodying my improvements, and

Figure 2 is a view in rear elevation.

Referring to the drawing by numerals, the propeller of my invention, in the illustrated embodiment thereof, comprises a sleeve-like elongated hub member 1 open at both ends and embodying at its front end an enlarged circular coupling head 2 concentric to the remainder of the member 1 and having an annular front end 2' of stepped formation for fitting over a correspondingly shaped coupling member, not shown, on the rear or stern of the vessel, for instance, on the stern bearing, to provide a water-tight connection between the hub member 1 and said stern bearing. The described front end of the coupling head 2 provides a chamber 3 therein at the rear end of which said head is formed with a circular boss concentric thereto and having formed in the front face thereof a diametrical groove 5 for a purpose presently explained.

Extending substantially throughout the length of the hub member 1 is a worm-like, or spiral blade, structure 6 comprising at least two complete convolutions of the same diameter and pitch throughout the structure.

The described hub member 1 and head 2 are designed to telescope over the rear end of a propeller shaft 7 provided with a reduced threaded

rear extremity 8 for receiving a cap nut 9 locked in position by a pin 10 passing therethrough and through said threaded extremity. Within the chamber 3 the propeller shaft 7 is provided with a diametrically extending pin 11 adapted to seat in the aforementioned groove 5 of the boss 4. As will be obvious, the pin 11 keys the propeller coupling head 2 to the propeller shaft 7 and together with the cap nut 9 locks the propeller on the shaft 7 against endwise movement in either direction. It is to be noted that the pin 11 is completely housed in the head 2 against exposure to water and against accidental displacement from the propeller shaft 7.

A particular advantage of the described blade structure is that it provides for reducing the diameter thereby lessening resistance to the water, the added length giving it more traction. Another advantage is that it provides for a propeller of small diameter for use in shallow water and for increasing the propelling efficiency without increasing the pitch of the blades.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation, but it is to be understood that the invention as described, is susceptible of modification without departing from the inventive concept and that right is herein reserved to such modifications of details described as fall within the scope of the claim appended hereto.

What I claim is:

In a propeller assembly, a propeller shaft having a reduced threaded rear extremity and a pin extending diametrically through the shaft at a point remote from and forwardly of said extremity, and a propeller including an elongated tubular hub member telescoping over said shaft and provided with an enlarged head at the front end thereof having a stepped chamber therein through which said shaft extends and an annular boss at the back of said chamber surrounding said shaft and provided with a front face having a diametrical groove therein for seating the above mentioned pin, and a nut threaded onto said extremity of the shaft and locked thereto.

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