

(No Model.)

M. GLEASON.
SCREW PROPELLER.

No. 541,480.

Patented June 25, 1895.

FIG. 1.

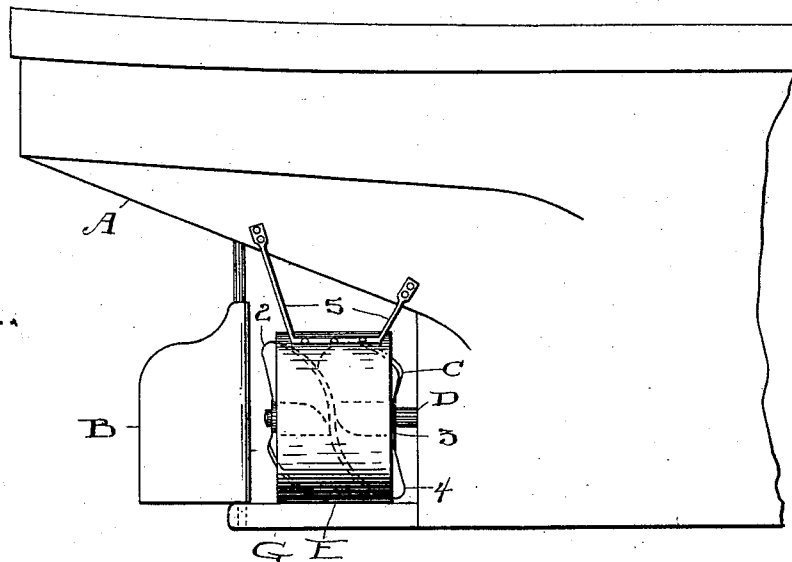


FIG. 2.

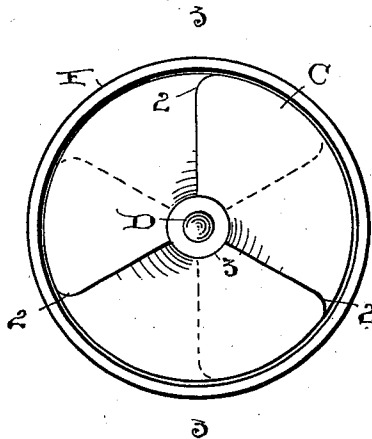
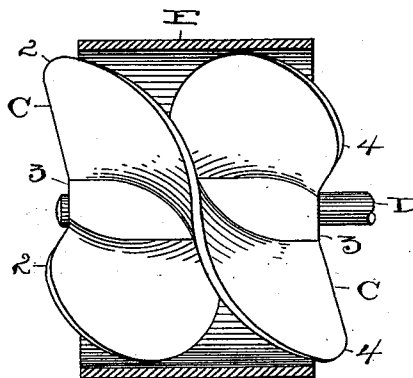


FIG. 3.



ATTEST

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By

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MELVIN GLEASON, OF CLEVELAND, OHIO, ASSIGNOR OF THREE-FOURTHS TO HENRY STEINHAEUER, CHRISTIAN STOCKE, AND THEODORE WIEBELT, OF SAME PLACE.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 541,480, dated June 25, 1895.

Application filed February 25, 1895. Serial No. 539,575. (No model.)

To all whom it may concern:

Be it known that I, MELVIN GLEASON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Screw-Propellers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in screw propellers, and the invention consists in the construction, combination and arrangement of parts substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is an elevation of the rear end of a boat or vessel in which my improvement is shown as it appears when in use. Fig. 2 is an end elevation of my improved form of screw and the inclosing-casing therefor. Fig. 3 is a side elevation of my improved screw and a longitudinal section of the casing inclosing the same on a line corresponding to 3 3, Fig. 2.

The object of the foregoing construction is to so improve the propelling mechanism coming directly in contact with the water as to produce and obtain greater propelling power than hitherto in screw propellers of a corresponding size or grade; or, to state the matter differently, to obtain greater propelling power by reason of the improved mechanism from a given amount of power applied through the drive shaft. This result is secured by reason, first, of the difference in the construction of the screw blades, and, secondly, by reason of the inclosure or confinement of the blades by means of casing forming a jacket therefor but open at its ends, substantially as herein-after described.

Thus, A represents the stern of a boat or vessel, large or small, as the case may be, and B a suitable rudder.

C, Fig. 3, shows the outlines of my novel screw blades, and two or more of these blades may be used according to the size of the boat or vessel.

It will be noticed that each blade has a twist or curve its entire length and breadth, corresponding in construction and appearance sub-

stantially to the worm of an auger, and that it is continuous and spiral from point 2 to point 4, as seen in Fig. 3, and all of the blades are made alike in these particulars and are affixed to or constitute a part of a common hub 3 secured on the shaft D. This shaft D is the power shaft of the propelling screw and is actuated by any suitable power connection.

In my experiments and demonstrations of the utility of my construction of blade, I have found that to economize the power and to make the blade as efficient as can be, and thereby greatly facilitate the speed of the boat, it is necessary to confine the blades or wings about their sides, and thereby make the thrust of the screw in the line of the direction of travel rather than to permit it to waste its power by churning the water at its sides and taking in and casting the water out sidewise, which is almost a total loss of power in so far as this occurs. I have, therefore, confined the propeller blades within a cylinder E, which is suitably supported independent of the screw, in this instance on the keel bar G and by stays 5 from above, or their equivalent. This cylinder or inclosing case is of a size in cross section to allow free rotation of the screw, and of somewhat less length than the screw in order that the screw may project beyond the cylinder at each end and thereby make the construction self protecting. Thus, having the blades to extend beyond the casing as shown, they will strike any obstruction that may be incurred, such as a floating piece of timber or the like, and knock it away before it can project itself into the casing and possibly produce fatal damage. This I have found to be exceedingly important as a precaution against accident. However, the dip of the blade in respect to the cylinder remains such that the water it reaches will be thrown inward and be forced through the cylinder.

It will be noticed that the blade projects beyond the cylinder at both ends, so that they will operate alike whether the boat be going forward or backward, and at the same time the casing is of sufficient depth lengthwise to serve the purpose for which it is intended.

I am, of course, aware that others have made spiral propeller blades and that they have used inclosing cylinders with wings of a cer-

tain kind, and such I do not broadly claim. I do, however, claim the particular construction of blade used by me to be both novel and exceptionally powerful, especially in combination with a casing which incloses the blade
5 between its ends and causes the volume of water coming within reach of the blade to be thrown wholly to the rearward, thus producing a density and force out of which the
10 special and particular form of screw I use emerges with phenomenal speed.

What I claim is—

The combination of the boat, the cylinder open at both ends and fixed rigidly to the
15 stern thereof, the power shaft extending

through said cylinder into the boat and two propeller blades on said shaft having the shape of the worm of an auger and both their ends projecting beyond the ends of the cylinder, whereby a dip of the blades is effected in the
20 body of the water outside the cylinder whether the vessel is going backward or forward, substantially as set forth.

Witness my hand to the foregoing specification this 12th day of February, 1895.

MELVIN GLEASON.

Witnesses:

H. T. FISHER,

M. G. NORTON.