

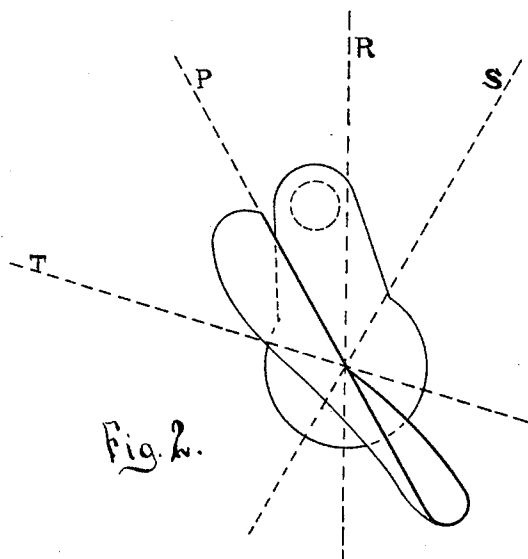
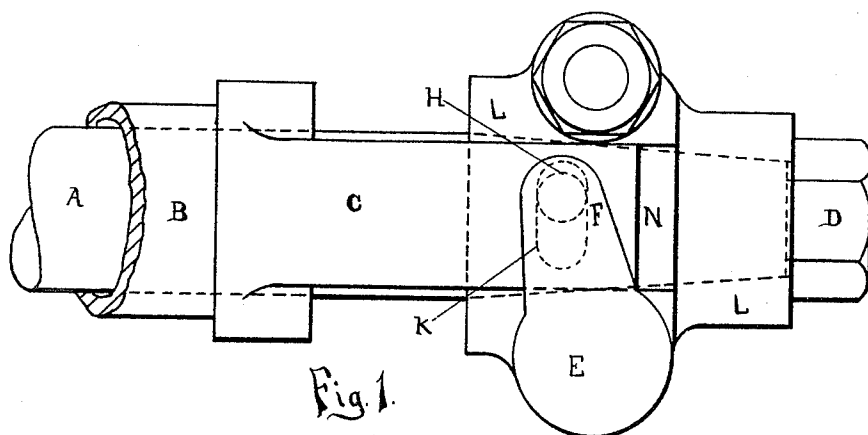
(Model.)

2 Sheets—Sheet 1.

C. SINTZ.
PROPELLER WHEEL.

No. 581,625.

Patented Apr. 27, 1897.



G. Hondelink
Ambrose R. Hendeman

Clare Sintz
By Edward Jaggard
His Attorney

(Model.)

2 Sheets—Sheet 2.

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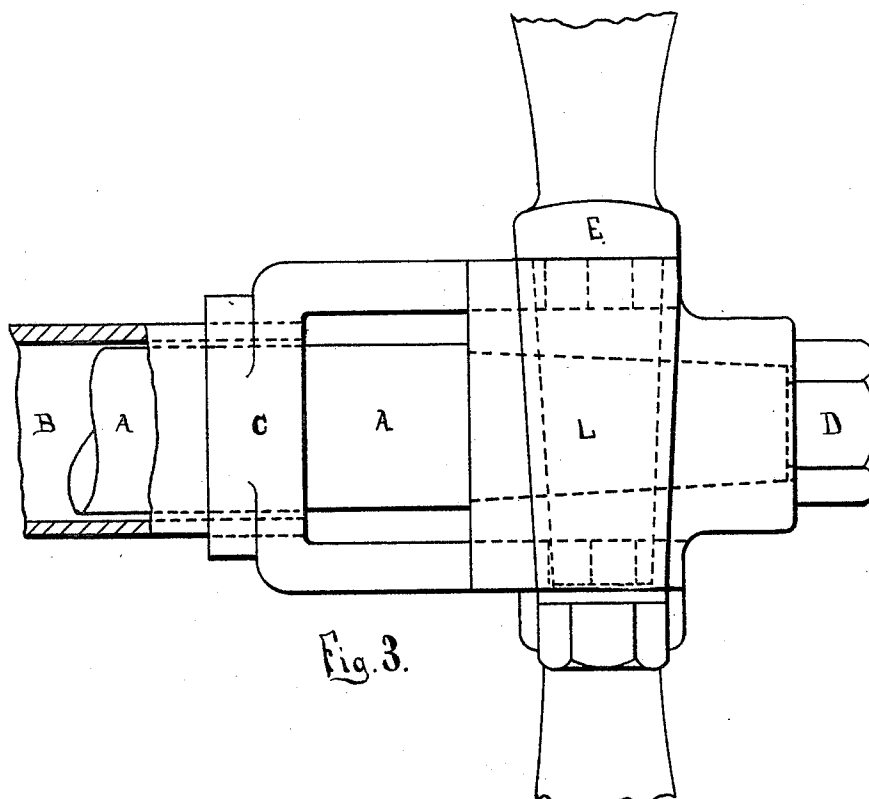


Fig. 3.

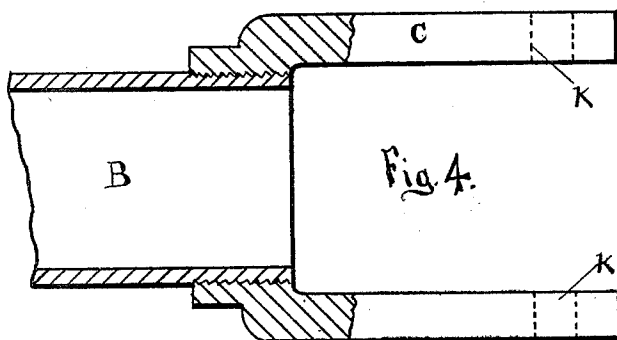


Fig. 4.

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UNITED STATES PATENT OFFICE.

CLARK SINTZ, OF GRAND RAPIDS, MICHIGAN.

PROPELLER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 581,625, dated April 27, 1897.

Application filed July 25, 1895. Serial No. 557,130. (Model.)

To all whom it may concern:

Be it known that I, CLARK SINTZ, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a certain new and useful Propeller-Wheel, of which the following is a specification.

This invention relates to a new and improved propeller screw or wheel in which the blades may be shifted or turned at pleasure, so as to propel the boat to which the same is attached either forward or backward, or may be shifted into position so as to give the least possible resistance to the water when the boat is propelled by sails; and the objects of the invention are, first, to furnish easy and ready means for shifting the blades of the propeller wheel or screw for the purpose named without reversing the engine, so that the boat can be readily moved backward and forward and controlled through the turning of the blades alone; second, to connect the shifting mechanism by a novel means, so that it can be operated from the inside of the boat, as hereinafter described. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a plan view of the reversing mechanism, showing the shank and lever or lug attachment of one of the propeller-blades. Fig. 2 is a plan view of a propeller-blade, the dotted lines showing the different positions which the end of the blade occupies in shifting for the various purposes hereinafter named. Fig. 3 is a side elevation of the shifting mechanism with a portion of the blades in position. Fig. 4 is a detail view showing the reversing-sleeve and the longitudinally-moving shifting mechanism which engages with and turns the blades to the required position.

Similar letters refer to similar parts throughout the several views.

A represents the propeller-shaft.

B represents a sleeve surrounding the propeller-shaft, which extends into the boat, so that the whole shifting mechanism can be operated from the inside, the shaft A turning with the sleeve B. Within the boat is placed a lever or any other suitable means for giving the longitudinal movement to the sleeve B and the shifting mechanism without mov-

ing or changing the propeller-shaft. This shifting mechanism within the boat is not shown, as I make no claim for any particular construction or device for that purpose, but any of the well-known means may be used.

C is a sleeve or hub provided, in the example of my invention shown in the drawings, with two arms, each arm being provided with a slot K, which slots K engage with pins, as hereinafter described, for the purpose of turning the propeller-blade. The sleeve or hub C is provided with an internal screw-thread which engages with the screw-thread on the sleeve B, the connection being fully illustrated in Fig. 4.

D is a nut which secures the propeller-shaft and the hub L in place. The shaft is made tapering, preferably, and the hub is slipped upon the shaft and secured by means of the nut D.

E represents the shanks of the propeller-blades, and F is a lever or arm, preferably made integral with the blade and also provided with a pin H, which pin H extends from the lever or arm F and engages with the slot K of the projecting arm of C, in the example of my invention shown in the drawings C having two projecting arms, one on either side of the shaft. Each arm is provided with a slot, as shown by K, and with which slot engages the pin H.

L is the main hub or propeller-support, and the same is securely attached to the propeller-shaft. The hub is provided with guides or ways, preferably formed in the shape of grooves extending longitudinally, which receive the arms of C, so that as C is moved longitudinally it is securely held in position by means of these guides or ways, C being securely attached to B and B extending into the boat. By moving B and C longitudinally the pin on F engages with the slot K of the arms of C and shifts or turns the shank E of the propeller-blade, and thereby the propeller-blade, the range of movement being such that the propeller-blade may be set in position to move the boat forward, in position to move it backward, in position to have the least possible resistance in moving the boat through the water, and in position to have the greatest resistance in the movement of the boat through the water.

In order to illustrate the various positions of the propeller-blade, I have shown in Fig. 2 by P the position of the blade when the same is set for moving the boat forward. S in said Fig. 2 shows the position of the blade in moving the boat backward.

R shows the position of the blade when the propeller is set in position to give the greatest resistance to the movement of the boat, and T shows what is called the "feather" position of the blade—that is, the blade is set so as to give the least possible resistance to the movement of the boat. By this construction the blade is merely turned, the shank connection acting as a pivotal connection between the blade and the hub. This turning of the hub and blade is produced by the longitudinal movement of the sleeve B and hub C, and inasmuch as the propeller-shaft is entirely inclosed within the sleeve B and the sleeve B passes into the boat the whole is operated

from the inside of the boat, there being a packing to prevent leakage where the sleeve passes through the boat.

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

The combination with a propeller-shaft, a hub or support therefor and a plurality of propeller-blades fitted in said hub or support, of a hub longitudinally movable upon the propeller-shaft and provided with slotted arms, levers extending from the propeller-blades, and pins carried by said levers and engaging the slots of the arms of the longitudinally-movable hub, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

CLARK SINTZ. [L. S.]

Witnesses:

EDWARD TAGGART,

CHRISTOPHER HONDELINK.