No. 622,343. Patented Apr. 4, 1899.

F. H. GLIDDEN.

STEERING PROPELLER.

(Application filed Nov. 10, 1898.)

(No Model.)

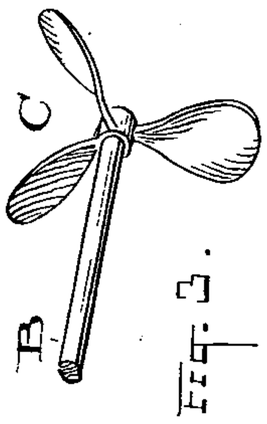

Fig. 3.

Fig. 1.

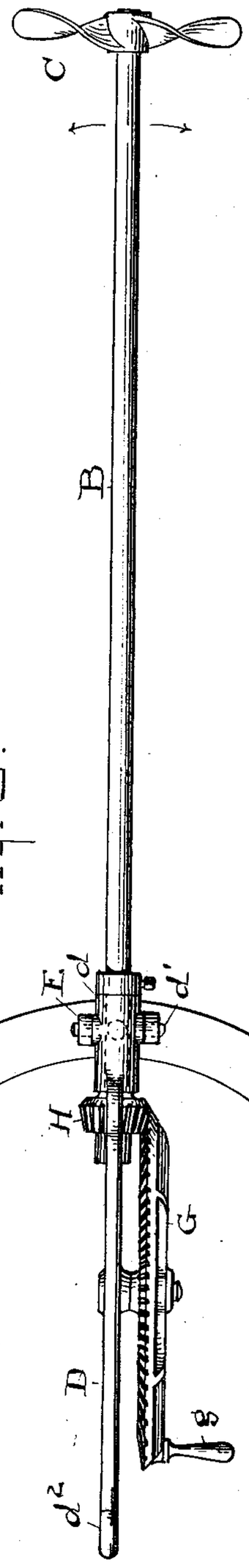

Fig. 2.

Attest
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UNITED STATES PATENT OFFICE.

FRANCIS H. GLIDDEN, OF CLEVELAND, OHIO.

STEERING-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 622,343, dated April 4, 1899.

Application filed November 10, 1898. Serial No. 696,000. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. GLIDDEN, 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 Steering-Propellers; and I do 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 a steering-propeller; and the invention consists in the construction, arrangement, and combination of parts, substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of the rear portion of a presumably small boat or yawl and a side elevation of my new propelling and steering attachment in operating position thereon. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a perspective elevation of the screw and a section of the oar-shaft carrying the same.

In the views thus shown, A represents what may be any preferred style of row-boat or other small craft or vessel of a kind which is propelled by hand-power, and no novelty is claimed here for the boat itself.

B is the combined oar and rudder shaft, and C the screw or propelling-wheel secured to the outer extremity of the shaft and with the associated parts performing a dual office, serving the purpose of an oar in that the boat is propelled thereby, and also as a rudder because the same mechanism is employed to steer or guide the boat. Thus my attachment becomes at once both rudder and propelling-oar, and the rotations of the screw or wheel C are utilized alike for steering and impelling the boat. To these several ends the attachment is located at the stern of the boat, and a single attachment suffices to do all the required work; yet I do not regard myself as limited to one if two or more can be used. At its upper or inner end the shaft C is carried in a head-piece D, provided with a tubular extremity d, forming not only a bearing-sleeve for the shaft B, but also in this instance being the part from which the bar is supported on the boat. An ordinary oar-lock E may be used in this connection, having its stem e set rotatably in the cross portion of the stern of the boat and provided with a yoke on top, within the ears or sides of which the shaft B is held by lugs or trunnions d' on the said sleeve engaged in the sides of the yoke. This affords both a horizontal and a vertical pivot for the oar-shaft, and the combined pivots amount substantially to and are the equivalent of a universal joint for all operating purposes; but although such large freedom of operation is given to the oar-shaft and its carrying-head D the said head is, notwithstanding, held against rotation in the yoke by the trunnions d', on which it plays vertically, and it has perfect freedom for horizontal movement and position on the stem e of the yoke or lock E.

The so-called "head" D is essentially the handling and carrying part of the device in that it is fitted at its extremity with a handle portion d^2, standing, preferably, vertically at its end and affording an open grip, say, with the left hand, while the drive-wheel G is supported on a suitable bearing about midway the length of the head D and has a handle g to be engaged by the right hand, thus giving one hand to steering or guiding the boat and the other exclusively to propelling it.

The wheel G has teeth on its inner side meshing with bevel-pinion H on the shaft B, so that power is thus communicated directly to shaft B from drive-wheel G through pinion H. I might, if preferred, have a more complex system of gearing and accomplish the same purpose, and a separate crank could be used instead of applying the handle g directly to the drive-wheel. The manner of communicating power to the shaft is therefore subject to change and modification without departing from the spirit of the invention, the essential purpose of which is to convey hand-power mechanically to shaft B, and the best way to do this and economize power and conserve speed may be adopted.

In operation the oarsman of course sits or stands facing toward the stern, and the direction or guidance of the boat is determined by the manipulation of the entire oar and rudder, by which the movements can be made very arbitrary, if desired, it being possible to throw the screw well to the right or left of the

direction of travel and to suddenly reverse its rotation when necessary, thus also reversing the action.

The screw C has its leaves or blades preferably of the clover-leaf pattern, as shown, and three in number; but I do not confine the invention to this form of blade and may use any other construction that will be found desirable.

The attachment is of course made and sold as a separate and complete article of manufacture and may be applied to any of the common styles of row-boats or other small craft wherein the old-fashioned oars or other hand propelling mechanism is now being used.

What I claim is—

1. The attachment substantially as described, consisting of the steering-head and the swivel-support therefor constructed to prevent the axial rotation of said head, the combined propelling and steering shaft supported at one end in said head and having a propelling-wheel at the other end, and drive mechanism for said shaft consisting of a hand power-wheel and gear connections between the same and the said shaft, in combination with a boat carrying said parts, substantially as described.

2. A boat and steering and propelling mechanism thereon comprising a head-piece having a handle at its inner end and a swivel-support therefor at its other end, and said parts constructed to provide horizontal and vertical movement of the head-piece and to prevent axial rotation of the said head-piece on its support, a shaft having its bearing in said head-piece and a propelling-wheel on its outer end, a hand-wheel on one side of said head-piece and gear connections between said wheel and shaft to drive the shaft, substantially as described.

Witness my hand to the foregoing specification this 20th day of October, 1898.

FRANCIS H. GLIDDEN.

Witnesses:
H. T. FISHER,
R. B. MOSER.