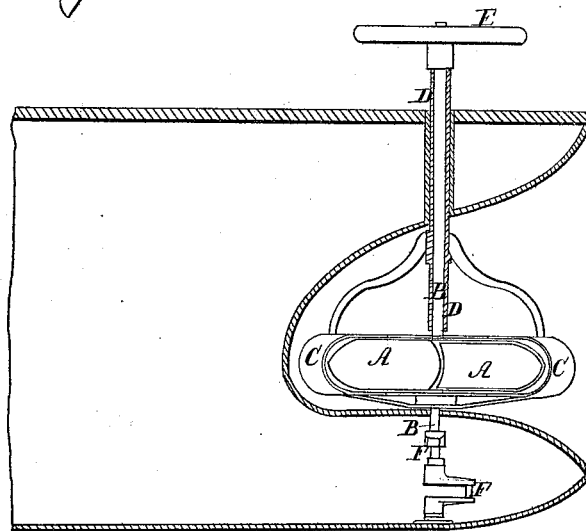
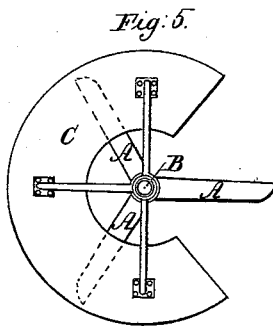
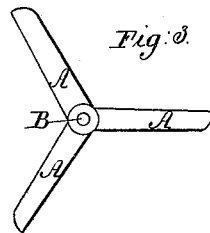
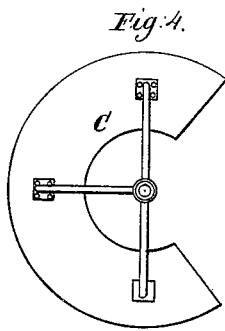
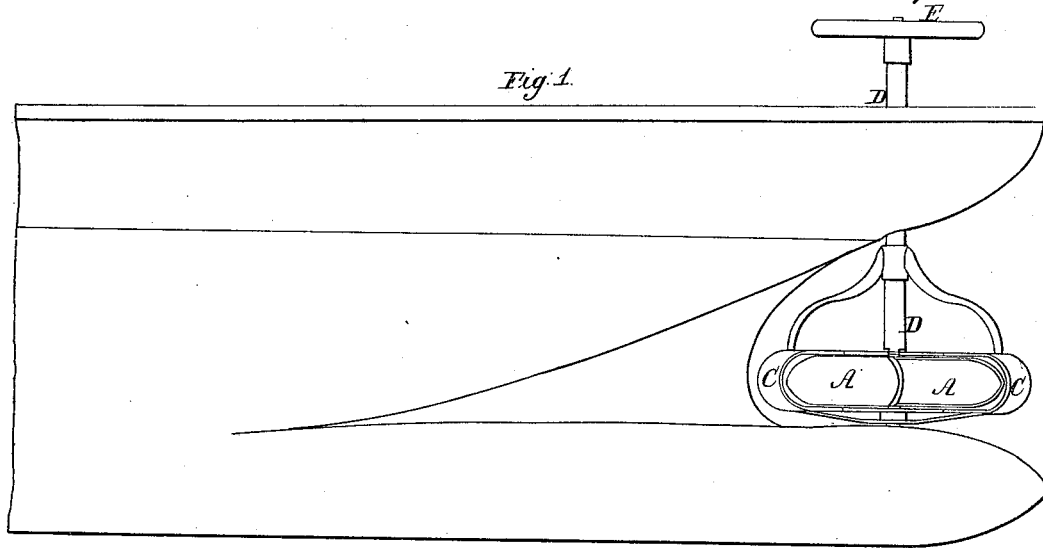


J. Jopling
Screw Propeller

Nº 53,759.

Patented Apr 3, 1896



Witnesses;

Anthony Thompson
Witness
W. A. Stone
Witness

Inventor

J. Jopling

UNITED STATES PATENT OFFICE.

JONATHAN JOPLING, OF BISHOPWEARMOUTH, ENGLAND.

IMPROVED PROPELLING AND STEERING APPARATUS FOR VESSELS.

Specification forming part of Letters Patent No. 53,759, dated April 3, 1866.

To all whom it may concern:

Be it known that I, JONATHAN JOPLING, of Bishopwearmouth, England, smith, have invented Improvements in Apparatus for Propelling and Steering Vessels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the figures and letters marked thereon.

This apparatus consists of a hollow vertical shaft on which is fixed a circular case, open in the center, to allow the water to enter when open for about one-third, more or less, of its circumference, to allow the water to pass freely out.

Inside of the hollow shaft rotates another vertical shaft, on which is fixed a fan or fanner-wheel having two, or three, or more, arms, fans, or blades, which, when in motion, cause the water to pass freely out of the case.

For turning the vessel or going astern, or altering the direction of the vessel's motion, this will be accomplished by causing the hollow shaft with the case to revolve or turn until the opening in its circumference allows the water to escape in the direction desired. It will thus not be necessary to reverse the engines, nor is any other rudder required.

The apparatus may be fixed near the stern post, and the shafts pass up where the rudder-trunk usually is.

The fan-wheel shaft may be driven from above or below the circular case, as may be desired.

The invention will be fully understood by the annexed drawings.

Figure 1 is a side elevation, and Fig. 2 an elevation, partly in section, of the apparatus. Fig. 3 is a plan of the fan or fanner-wheel, and Fig. 4, a plan of the case. Fig. 5 is a plan showing the wheel fitted in the circular case.

A is the fan or fanner-wheel, mounted on a vertical shaft, B. C is the case in which the wheel A rotates. The case is secured to a hollow vertical shaft, D, the upper end of which carries a wheel, E, for turning the shaft and the case C.

The fanner-wheel A may have two, three, or more, arms, blades, or fans.

F F are cranks on the fan-wheel shaft B, and which are driven from the engine, placed in any convenient part of the vessel.

I do not, however, confine myself to this means of communicating rotary motion to the shaft B, as other well-known means may be adopted.

I claim as of my own invention—

The apparatus for propelling and steering vessels, consisting of a fan or fanner-wheel fixed on a vertical shaft and made to rotate within a movable case secured to a hollow shaft, the combination of the fan, case, and shafts being substantially such as described, and operating substantially in the manner set forth.

J. JOPLING.

Witnesses:

WM. MOORE,
ANTHONY J. MOORE, Jr.,
Solicitors, Sunderland.