

D. H. Heyen,
Screw Propeller
No 78,739. *Patented June 9, 1868.*

Fig: 1.

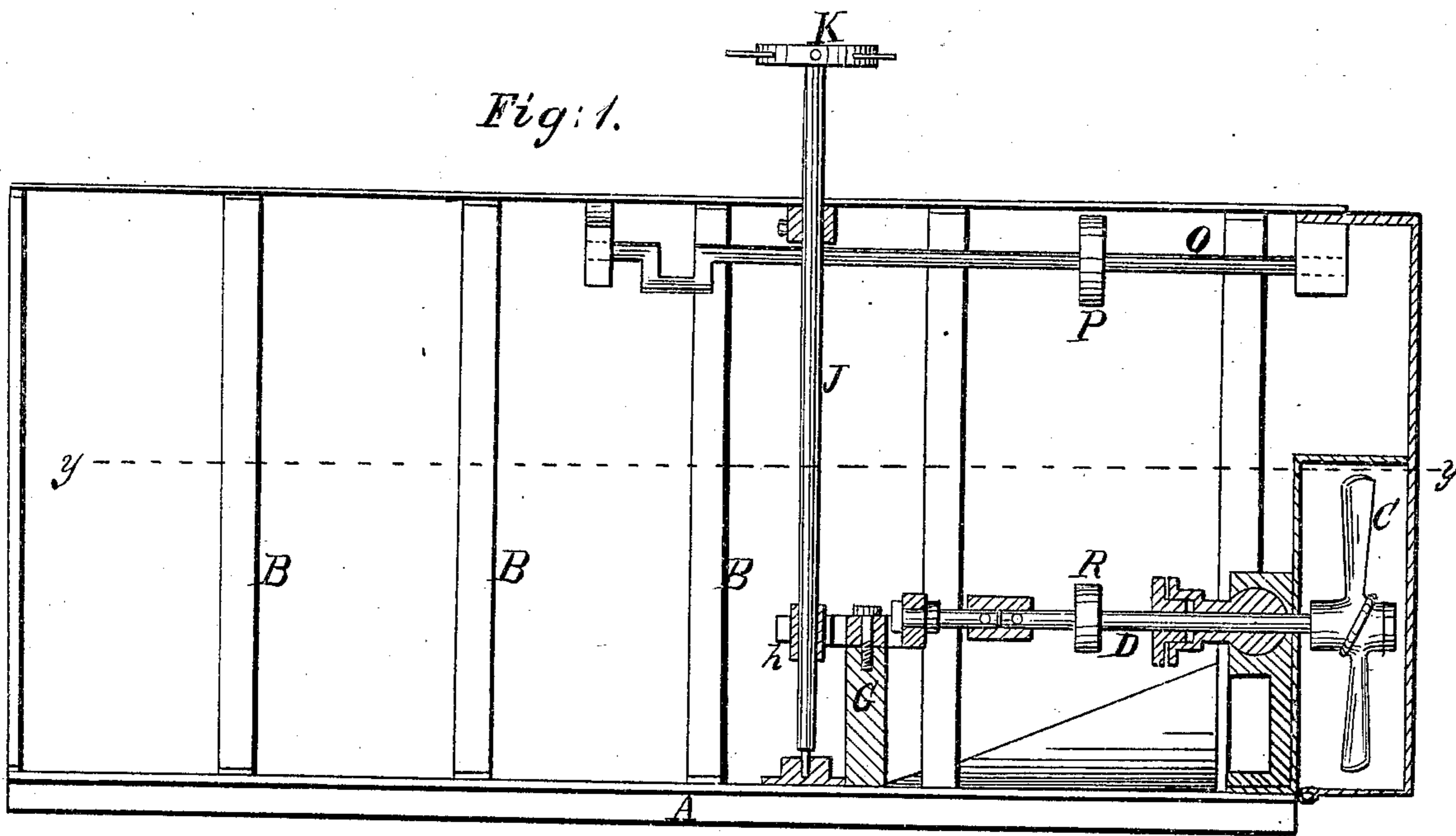
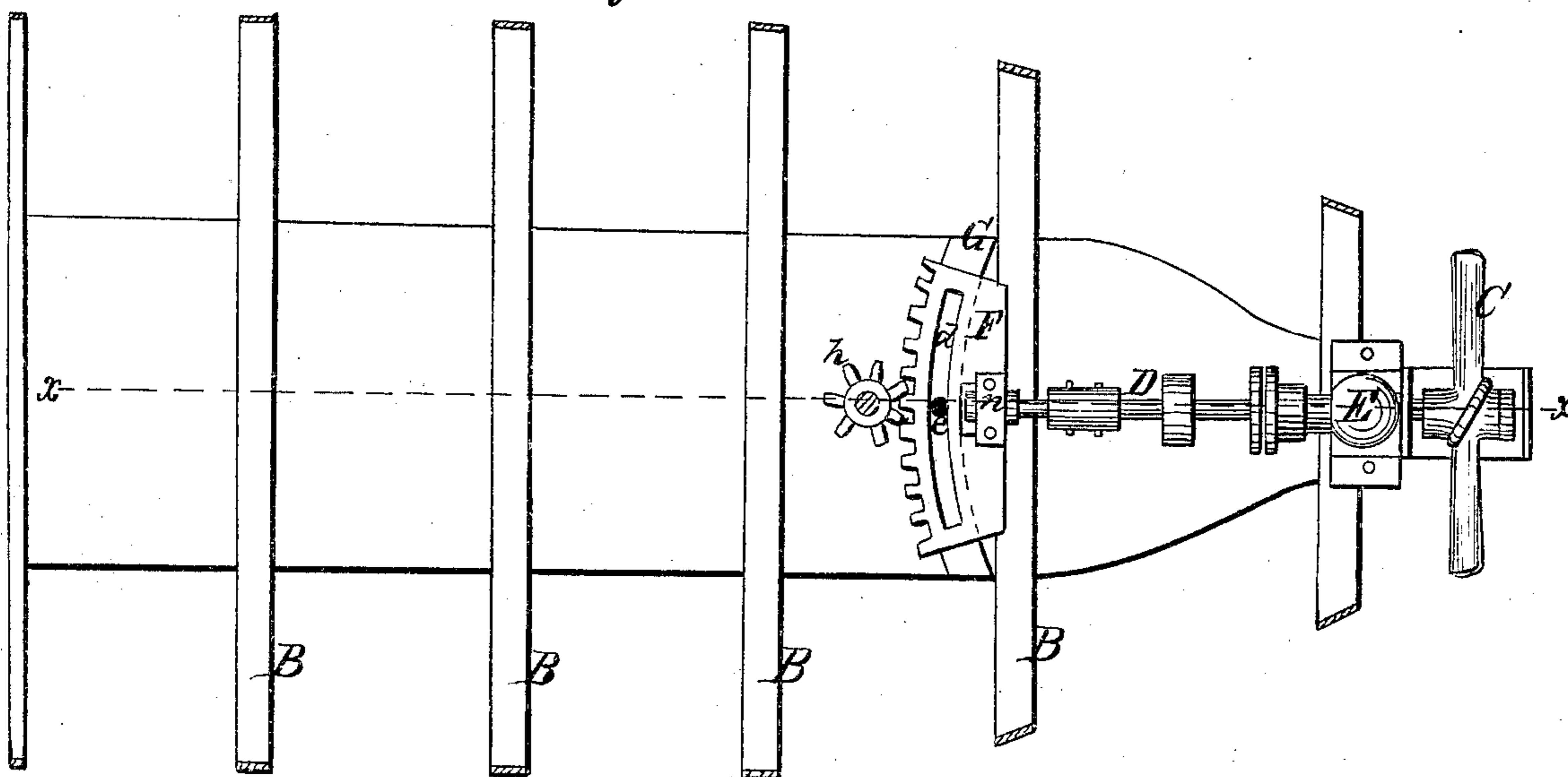


Fig: 2.



Witnesses:

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Inventor:

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United States Patent Office.

D. H. HEYEN, OF NEW YORK, N. Y.

Letters Patent No. 78,739, dated June 9, 1868.

IMPROVEMENT IN PROPELLERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, D. H. HEYEN, of New York, in the county and State of New York, have invented a new and improved Canal-Boat Propeller; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention has for its object the construction and arrangement of a propeller-wheel, which shall be adapted to the propulsion of boats on canals, more especially, but which may be used to propel boats on all navigable waters; and also in the construction of the boat itself, whereby it is suited and adapted to the use of the wheel, as will be hereinafter more fully described.

Figure 1 is a sectional side elevation of the skeleton of the boat with the wheel attached, the section being through *xx* of fig. 2.

Figure 2 is a top or plan view from the line *yy* of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the keel of the boat.

B represents the ribs.

C is the propeller-wheel, which is placed on the end of a horizontal shaft at the bow-end of the boat.

D is the propeller-shaft.

The propeller-wheel is made adjustable by an arrangement which allows the shaft to be moved laterally on a central pivot or ball-journal, which ball is confined in the journal-box of the shaft, as seen in the drawing at E.

The back or inner end of the propeller-shaft is confined in a journal-box on a movable plate, which plate is marked F.

This plate is supported by a block of suitable height, which rests on the bottom of the boat or otherwise, in a fixed position, which block is marked G.

In the block a bolt, *e*, is confined, and *d* is a slot in the plate F. The head of the bolt laps over on to the plate from the slot, so that the plate is confined to the block, while it is allowed to move longitudinally, carrying the end of the shaft, and thereby altering the position of the wheel. The outer edge of this plate is a cogged rack, as seen in the drawing.

h is a pinion on the end of the upright shaft J, which engages with the rack.

The shaft J is partially rotated by the hand-wheel K when it is desired to alter the position of the wheel.

The ribs of the boat are made of iron, and the form of the bow of the boat is varied from the ordinary shape, in order to accommodate the wheel, as seen in the drawing.

The keel of the boat is extended forward at the bow, so as to support the forward or ball-journal box of the shaft.

In navigating canals by steam, especially when there is a side wind, or when turning short curves in the canal, or when it is necessary to move the bow of the boat laterally without headway, this device for altering the position of the wheel is of great importance, as thereby the bow of the boat may be moved laterally with perfect ease, either with or without headway, and the influence of a side wind is readily counteracted.

The rudder of the boat may be operated with chains or ropes, if desired, so that one man may manage the wheel, and attend to the rudder also.

n is the shaft-journal on the plate F.

O is the engine-shaft, from which the propeller-shaft is driven by a band or by gearing, as may be most convenient.

P is a pulley on the engine-shaft, and R is a pulley on the propeller-shaft, for using a belt.

The propeller-wheel may have two or more blades, set at any desired angle.

Having thus described my invention, what I claim as new, and desire to secure by Letter Patent, is—

1. The combination of the propeller-wheel C and shaft D, when adjustable laterally upon the central pivot

E, slotted segmental plate F, support G, pinion h, upon the upright shaft J, engine-shaft O, pulley P, and pulley R, all arranged as described for the purpose specified.

2. The combination of the propeller C, shaft D, having the ball-joint E, slotted segment F, and pinion h, upon the shaft J, all constructed and operating as and for the purpose specified.

The above specification of my invention signed by me, this 21st day of December, 1867.

D. H. HEYEN.

Witnesses:

WM. F. McNAMARA,
JAMES T. GRAHAM.