

C. ULLER & J. N. BENNETT.

STEERING-PROPELLER.

No. 189,972.

Patented April 24, 1877.

Fig: 1.

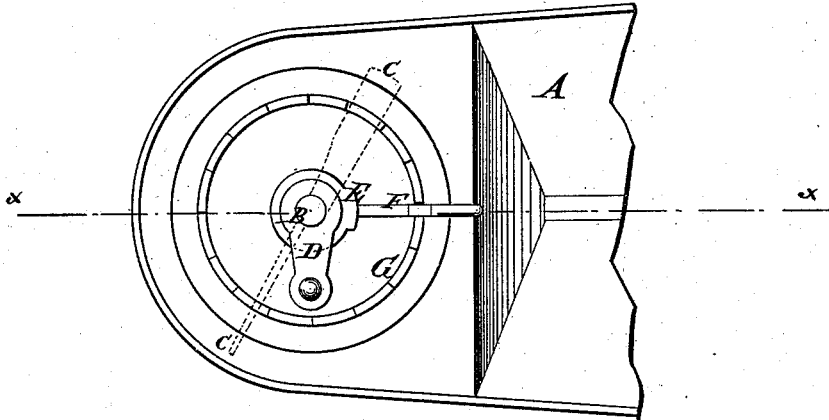


Fig: 2.

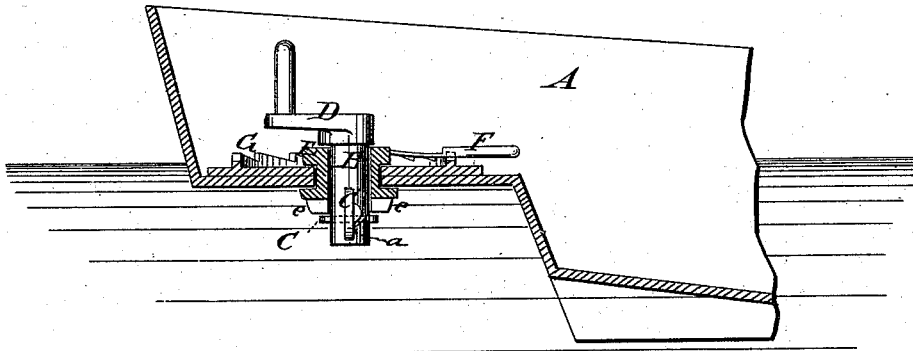
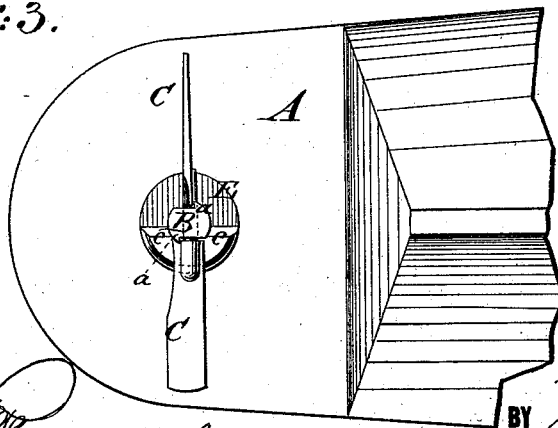


Fig: 3.



WITNESSES:

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CLEMENS ULLER AND JASPER N. BENNETT, OF COLUMBUS, OHIO.

IMPROVEMENT IN STEERING-PROPELLERS.

Specification forming part of Letters Patent No. 189,972, dated April 24, 1877; application filed March 19, 1877.

To all whom it may concern:

Be it known that I, CLEMENS ULLER and JASPER N. BENNETT, of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Apparatus for Propelling and Steering Vessels, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, Fig. 2 a vertical longitudinal section on line *x x*, Fig. 1, and Fig. 3 a bottom view, of our improved apparatus for propelling and steering vessels.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide, as an auxiliary device for vessels already built, or to be built, an improved propelling and steering apparatus, by which the vessel may be propelled to the right or left, forward or backward, without stopping the engine; and the invention consists of a vertical revolving shaft, with horizontal paddles that are submerged in the water, and turned alternately into horizontal position by a cam of a sleeve around shaft, said sleeve being adjusted by a steering-lever, in connection with a disk and ratchet device.

In the drawing, A represents the stern or other part of a vessel, to which our propelling and steering device is attached. It is constructed of a vertical shaft, B, that is revolved by a crank, D, or otherwise, in one direction, in connection with the engine of the vessel. The revolving shaft B is provided at the lower end with horizontal paddles C, which extend in diametrically-opposite direction from the shaft, and submerged in the water, being supported in a bearing of the shaft in such a manner that they may readily turn around their axis when passing over a cam, *e*, of a sleeve, E, placed around shaft B. The paddles bear against seats *a* of the shaft when in vertical direction.

The cam *e* is inclined at the ends to admit the gradual swinging of the paddles C, which are so placed by sockets on their short connecting-shaft that they are at right angles to each other. The paddles are concaved at the front side of the sockets, where they form contact with the inclined cam *e*, and so as to swing gradually, without jerking, from hori-

zontal into vertical position as they are revolved by the shaft.

When in horizontal position the paddle cuts the water without propelling, while the other paddle, being then in vertical position, exerts a forward propelling motion.

The sleeve E is guided in suitable manner to swing around the shaft, and connected by a hand-lever, F, and an adjusting pawl or ratchet, or other mechanism, with the top disk G, for the purpose of employing the paddles for steering purposes.

When the lever is set in the position shown in the drawing the vessel is steered in forward direction, as the cam acts on the paddles, so as to impart a forward-propelling motion to the vessel; but when the lever that is turned by the sleeve in a direction opposite to that of the revolving shaft is set in any other direction into the ratchet of the disk, the strokes of the paddles are produced at an angle, or in reverse direction to their former stroke, and thereby the vessel steered in reliable manner to the right or left or backward without requiring the stopping of the engine.

If desired, more than one set of paddles may be arranged, which are then revolved in opposite direction to the former, the steering being accomplished by one or the other, forming thus a reliable and effective steering and propelling device for the different classes of steam-vessels.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

An improved propelling and steering apparatus for vessels, consisting of a revolving shaft with alternately-swinging horizontal paddles placed at right angles to each other, in combination with the cam of a sleeve, and adjusting-lever turning in opposite direction to the shaft to steer and propel the vessel in either direction without stopping the engine, substantially as and for the purpose herein specified.

CLEMENS ULLER.
JASPER N. BENNETT.

Witnesses:

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JOHN BROOKS.