(No Model.)

C. L. PETERSEN.

FEATHERING PADDLE WHEEL.

No. 291,766. Patented Jan. 8, 1884.

Fig. 3.

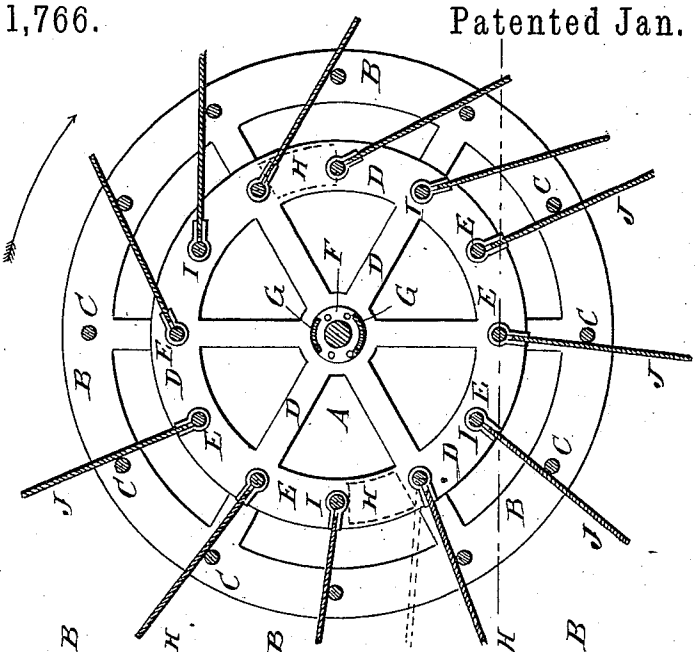


Fig. 2.

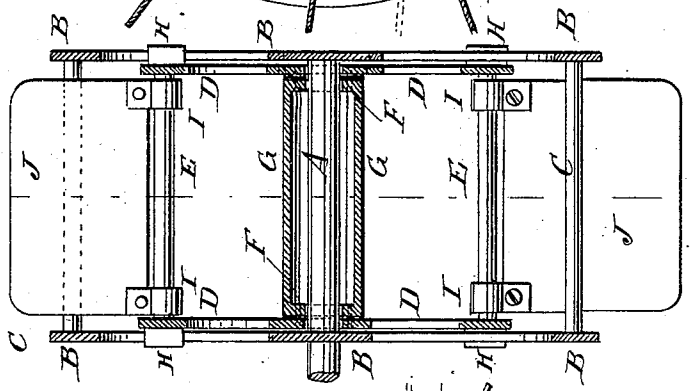
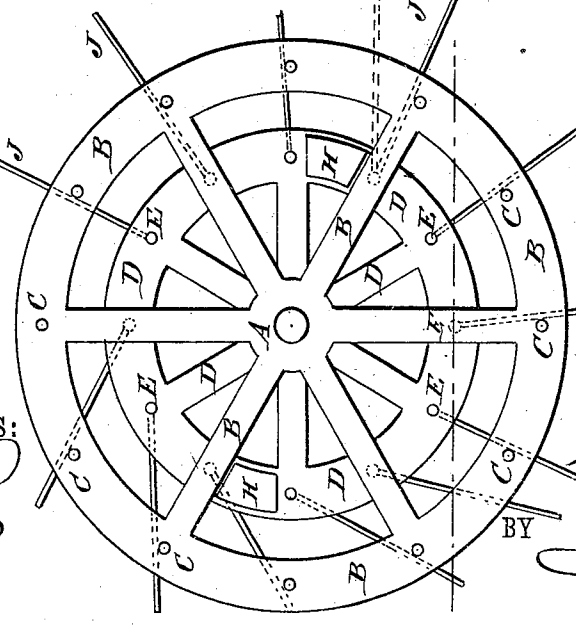


Fig. 1.



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CHRISTIAN L. PETERSEN, OF BOSTON, MASSACHUSETTS.

FEATHERING PADDLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 291,766, dated January 8, 1884.

Application filed May 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN LUDVIG PETERSEN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Feathering Paddle-Wheels, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improvement. Fig. 2 is a sectional front elevation of the same, taken through the line *y y*, Fig. 1. Fig. 3 is a sectional side elevation of the same, taken through the line *x x*, Fig. 2.

The object of this invention is to promote efficiency in the operation of paddle-wheels.

The invention consists in a paddle-wheel constructed with a rigid outer wheel and a loose inner wheel provided with stops to limit its movement, and with hinged paddles held to their work by the connecting-rods of the outer wheel, whereby the paddle-wheel will work with equal efficiency in both directions, as will be hereinafter fully described.

A represents the wheel-shaft, which is journaled to the boat and connected with the driving-engine in the ordinary manner.

To the shaft A are rigidly attached the side frames, B, of the outer wheel, the rims of which are connected by rods C, as many rods C being used as the wheel is to have paddles.

Upon the shaft A, at the inner side of the wheel-frames B, are placed the side frames, D, of the inner wheel, the rims of which are connected by rods E, and which are kept at the proper distance apart upon the shaft A by collars F, connected by bars G, by a tubular washer, or by other suitable means. The inner wheel, D E, moves freely upon the shaft A; but its movement is limited by blocks H, attached to the rims of the wheel-frames D, and which engage with the spokes of the wheel-frames B. The inner wheel, D, is made smaller than the outer wheel, B, and to the connecting-rods E are hinged, by straps I or other suitable means, the inner edges of the paddles J, which project between the connecting-rods C of the said outer wheel, B. With this construction, when power is applied to the shaft A, the paddles J will be forced through the water by the pressure against them of the rods C, as shown in Figs. 1 and 3. With this construction, also, the wheel will work with equal efficiency in both directions, and should the engine be stopped, locking the shaft A and outer wheel, B C, the counter-current in the water will reverse the paddles and check the advance of the vessel.

The paddles J can be made of any desired shape and size.

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

1. A paddle-wheel constructed substantially as herein shown and described, and consisting of the rigid outer wheel, the loose inner wheel having stops H, and the hinged paddles J, as set forth.

2. In a paddle-wheel, the combination, with the shaft A, the rigid outer wheel, and the loose inner wheel, of the hinged paddles J and the stops H, substantially as herein shown and described, whereby the paddle-wheel will work with equal efficiency in both directions, as set forth.

3. In a paddle-wheel, the combination, with the side frames, D, of the loose wheel and the side frames, B, of the rigid wheel, of the stop-blocks H, substantially as herein shown and described, whereby the movement of the loose wheel is limited, as set forth.

CHRISTIAN L. PETERSEN.

Witnesses:
ALBAN ANDRÉN,
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