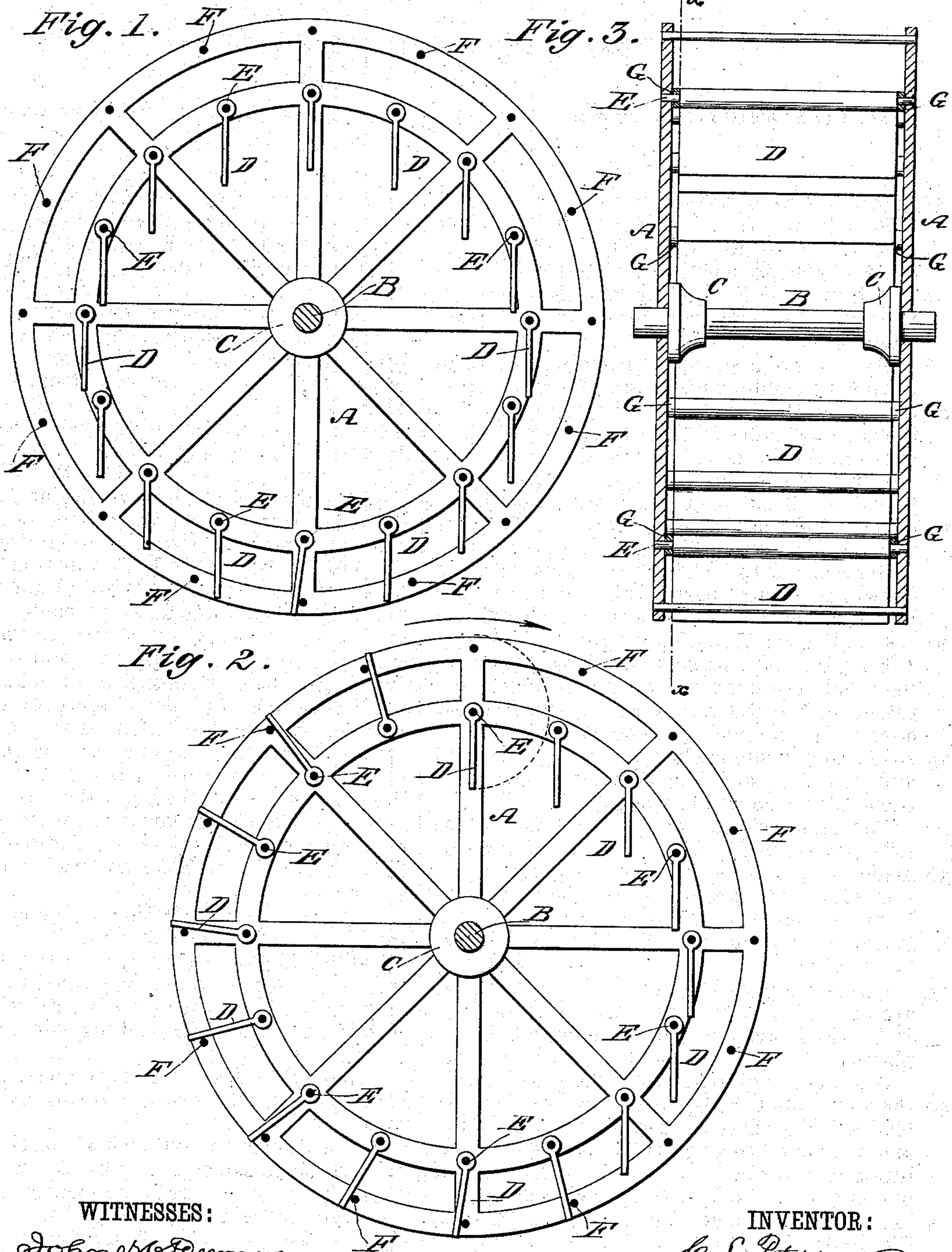


(No Model.)

C. L. PETERSEN.
FEATHERING PADDLE WHEEL.

No. 293,509.

Patented Feb. 12, 1884.



WITNESSES:
John McDeemer
C. Sedgwick

INVENTOR:
C. L. Petersen
BY *Munn*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHRISTIAN L. PETERSEN, OF BOSTON, MASSACHUSETTS.

FEATHERING PADDLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 293,509, dated February 12, 1884.

Application filed November 19, 1883. (No model.)

To all whom it may concern:

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

My invention seeks to provide a practical feathering paddle-wheel of simplified construction; and the invention consists in pivoting the several blades of the wheel at their inner edges in the frame of the wheel, and arranging suitable stops in the frame radially beyond the pivots of the blades and near their outer edges, which act to hold the blades to their work while passing through the water.

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.

Figures 1 and 2 are sectional elevations of my new and improved feathering paddle-wheel, taken on the line *xx* of Fig. 3, showing, respectively, the blades of the wheel in the position they assume when the wheel is at rest and in action; and Fig. 3 is a transverse sectional elevation of the wheel.

The frame of the wheel is composed of the side plates, A A. These are, by preference, made in skeleton form, and are duplicates of each other, and are made fast upon the shaft B by any suitable means, and are held from lateral movement upon the shaft by the collars C C.

D D represent the blades of the wheel. These are pivoted at their inner edges upon the rods E E, which are secured at their ends in the plates A A.

Arranged radially beyond the rods E E are the stop-rods F F, against which a side of the blades C C strikes as they successively enter and are forced through the water by the revolution of the wheel, so that in operation the blades C C are held by the rods E and stops F in radial position all the time they remain in the water, and until they reach the highest point in the wheel, when they swing forward away from the rods F and assume a pendent position until they again enter the water and meet resistance, whereupon they will again assume a radial position for propulsive action, as in Fig. 2.

In order to prevent all lateral movement of the blades D upon the rods E, I place the collars G upon the rods E, between the ends of the blades and the side plates, A A, as shown in Fig. 3.

Constructed in the manner described, it will be seen that the blades D are left free to revolve in nearly a full circle on rods E, to act against either side of the stop-rods F, so that when the paddle-wheel is revolved in either direction the blades will revolve in the same direction, making a half-revolution with each full revolution of the wheel, so that they will always enter the water edgewise and remain in that position until they meet resistance, when they will be pushed through the water sidewise by both rods E F, and thus propel the vessel. By reversing the direction of revolution of the paddle-wheel, the blades will arrange themselves to their work in the opposite direction in one-half a revolution of the wheel, and the blades feather in front and rear to all resistance, except at the working-point.

When the paddle-wheel is at rest, all of the blades may assume pendent positions, as shown in Fig. 1, and the wheel may be immersed in the water nearly to the main shaft B, and yet retain its propelling-power and feathering advantage, and for this reason is adapted for sea-going vessels as well as for river and coast steamers.

I am aware that a feathering paddle-wheel has been heretofore constructed in which the weighted blades are pivoted near their centers to the wheel-frame, and said frame also having stop-rods just below the pivots of said blades, and means for locking said blades in position.

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

The feathering paddle-wheel herein shown and described, consisting of frames A, secured on shaft B, and blades D, hinged at their inner edges and adapted to be held to their work by the rods F, placed radially beyond the pivots of the blades and near their outer edges, substantially as shown and described.

CHRISTIAN L. PETERSEN.

Witnesses:

ALBAN ANDRÉN,
ALEXANDER J. McDONALD.