(Model.)

T. F. ODELL.

CRANK PADDLE.

No. 248,945. Patented Nov. 1, 1881.

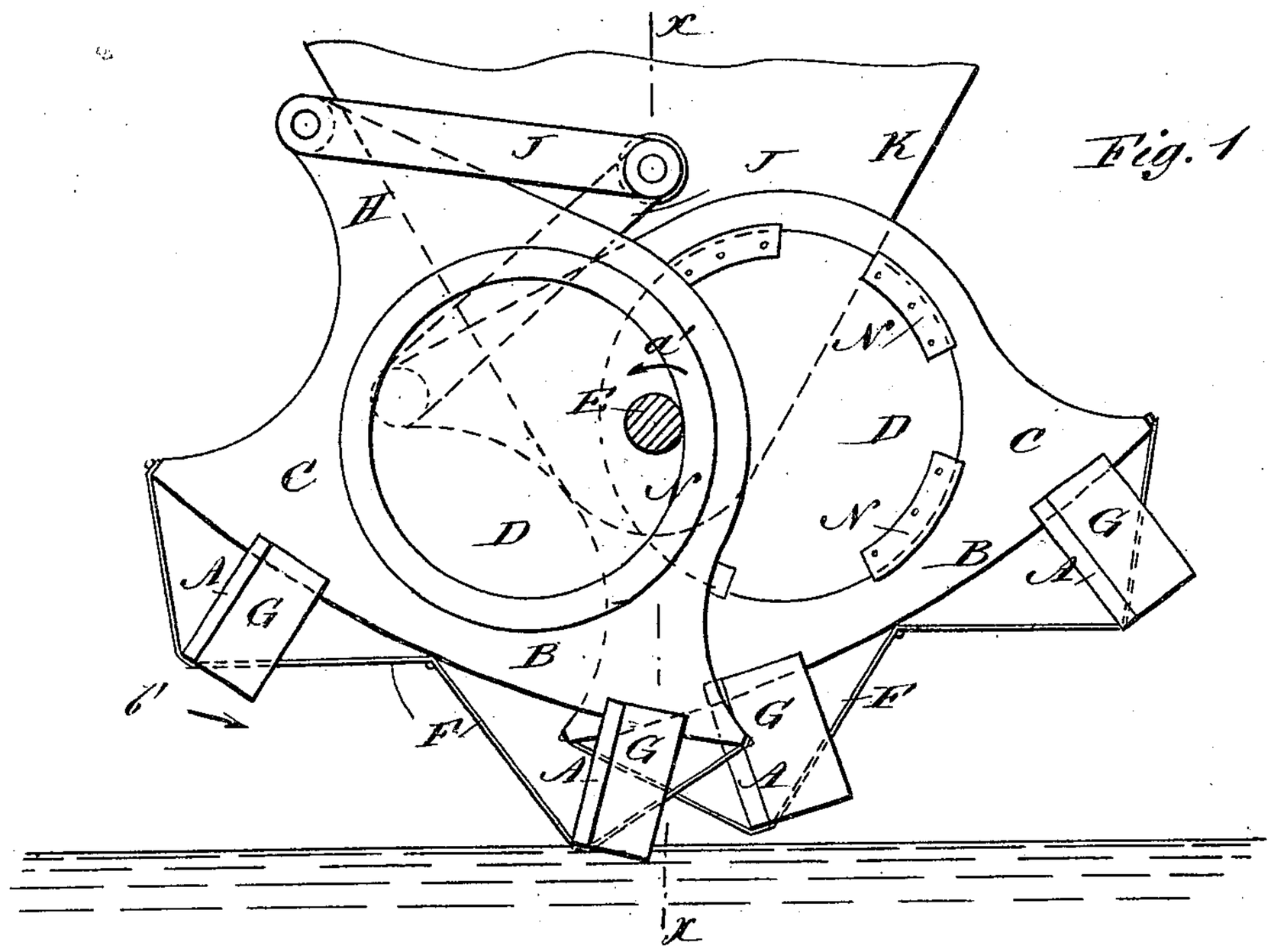

Fig. 1

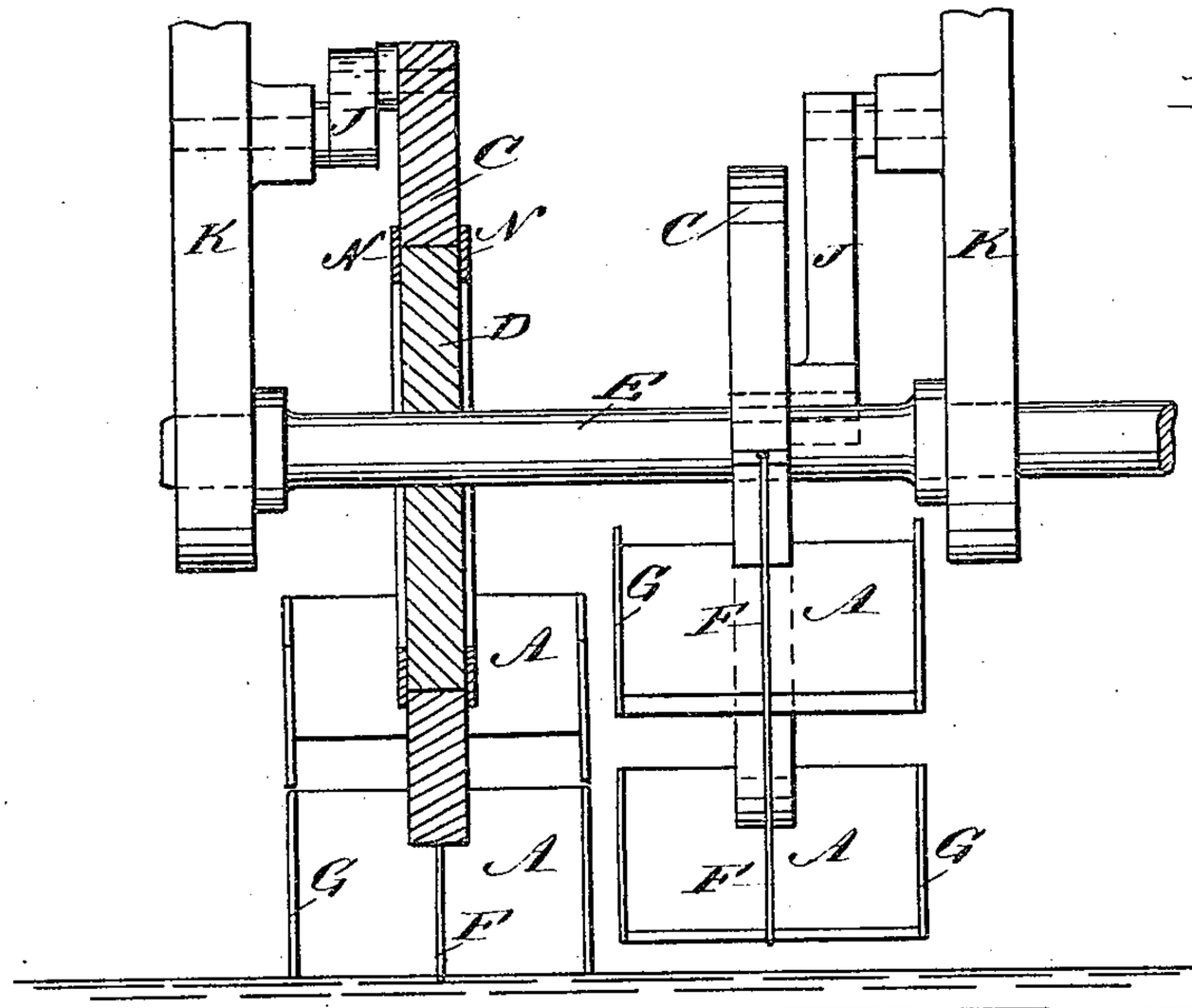

Fig. 2

WITNESSES:

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UNITED STATES PATENT OFFICE.

THEODORE F. ODELL, OF NYACK, NEW YORK.

CRANK-PADDLE.

SPECIFICATION forming part of Letters Patent No. 248,945, dated November 1, 1881.

Application filed March 30, 1881. (Model.)

To all whom it may concern:

Be it known that I, THEODORE F. ODELL, of Nyack, Rockland county, New York, have invented a new and Improved Propeller, of which the following is a specification.

The object of my invention is to provide a device for propelling vessels which will utilize the power much more economically than the devices in use for the same purpose heretofore.

The invention consists of a series of paddles attached to the lower edges of frames loosely mounted on the edges of eccentric wheels mounted on a shaft and projecting in opposite directions, which frames have an upper arm connected with a rigid frame by a pivoted rod, so that if the shaft is rotated the paddles will describe a segmental curve in the water, will be raised and describe a segmental curve in the air in opposite direction, and will dip in the water and describe the same segmental curve in the water, and so on, thereby propelling the vessel.

In the accompanying drawings, Figure 1 is a longitudinal elevation of my improved propeller; and Fig. 2 is a cross-sectional elevation of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A series of paddles, A A, are attached transversely to the lower edge, B, having a flat segmental curve of a frame, C, which is loosely mounted on the periphery of a disk or wheel, D, eccentrically, and rigidly mounted on a shaft, E, which is rotated by suitable machinery in the boat.

The paddles may be braced by means of rods F F, and may be provided with wings G G at the sides.

The frames C C are provided at the upper edge with an arm, H, projecting from the frame in the direction of the length of the same, and a connecting-rod, J, is pivoted to the end of this arm and to the frame K of the propeller.

Two or more eccentric wheels or disks, D, may be mounted on the shaft, so that the paddles enter the water successively. The eccentric wheels D must not all project in the same direction, although they are all to have the same eccentricity.

The operation is as follows: Two wheels, D, and frames C are shown, the latter having a paddle, A, at each end. If the shaft E is rotated from right to left, as indicated by the arrow *a'*, the paddles will move backward—that is, through the water in the direction of the arrow *b'*—on a segmental line, will then be raised and moved in the inverse direction of the arrow *b'*, to be again passed through the water, and so on, whereby the boat is propelled in the inverse direction of the arrow *b'*. As the wheels D project in opposite directions the rear paddle of one frame C will enter the water when the front paddle of the other frame leaves it, and the front paddle of the latter frame enters when the rear paddle of the former frame leaves the water. The paddles are inclined but very little, and cannot raise any water, and thus none of the power is wasted, and the paddles act at right angles against the water. The plates N N serve to retain the frames C on the wheels D.

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

In a propeller for steamboats, the combination, with the shaft E, of the eccentric wheels D D, the frames C, provided with paddles A on the lower edge, and with an arm, H, at the upper edge, and the connecting-rod J, pivoted to the frame K and to the arm H, substantially as herein shown and described, and for the purpose set forth.

THEODORE F. ODELL.

Witnesses:

OSCAR F. GUNZ,

C. SEDGWICK.