

J. C. CHAFFEE.

Paddle-Wheels.

No. 138,856.

Patented May 13, 1873.

Fig. 1

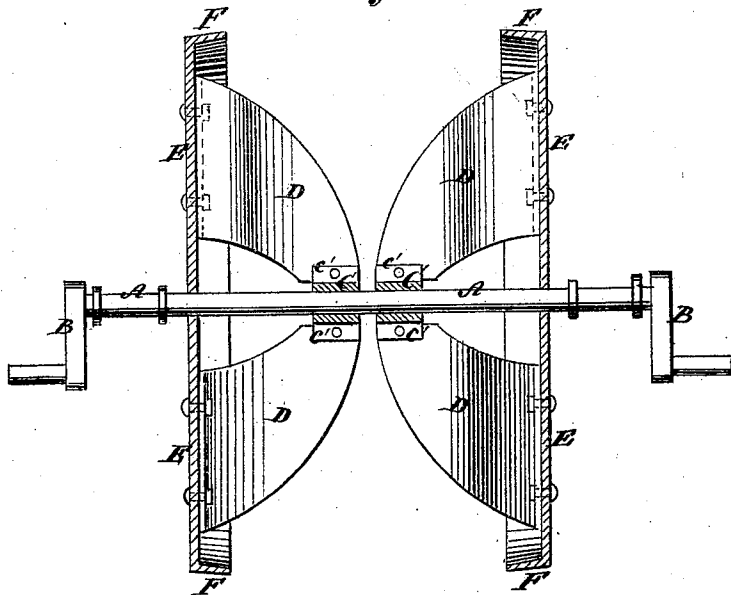
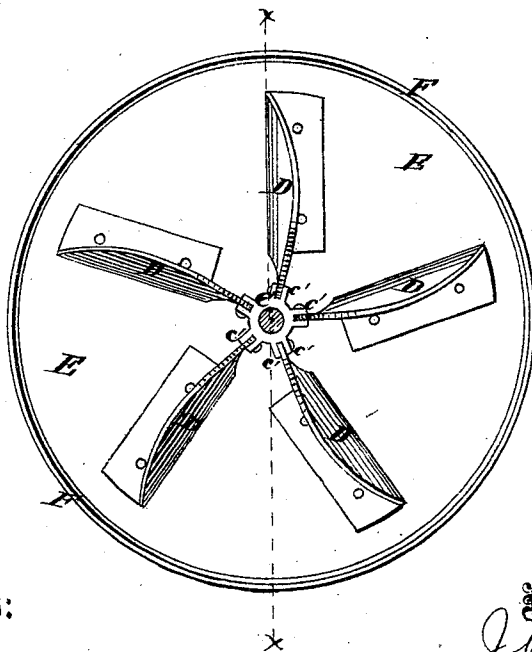


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES C. CHAFFEE, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN PADDLE-WHEELS.

Specification forming part of Letters Patent No. **138,856**, dated May 13, 1873; application filed February 21, 1873.

To all whom it may concern:

Be it known that I, JAMES C. CHAFFEE, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Wheels for Canal-Boats and other vessels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a detail section taken through the line *xx* of Fig. 1. Fig. 2 is a side view of part of the wheel.

The invention will be first fully described and then clearly pointed out in the claim.

A is the shaft, which is connected with the driving-power by cranks B, and to which are attached hubs C made with pairs of parallel flanges *c'* to receive the inner ends of the paddles D. To said ends are secured by bolts the paddles D, made in about the form shown in Fig. 1, bent in the middle, flanged on their outer ends, and bolted to the disks E. Upon the outer edges of the disks E are formed flaring rims F to protect the buckets from obstructions in the water. The connections with the power may be made in the center of the shaft, or at one or both ends, as may be desired.

When the wheel is used as a side wheel for

deep water, the inner rim F is removed and the connections with the power are made at the inner end of the shaft A.

When the wheel is used as a stern wheel for river-boats, both the rims F are removed and the connections with the power made at both ends of the shaft A.

This construction, the paddles being set opposite to each other, makes the boat more steady and renders the wheels less liable to clog than wheels constructed in the ordinary way.

The wheel may also be divided in the center and one-half placed at each side of the boat, with the paddles D toward said boat. By this arrangement the water will be driven under the boat and will tend to lift it out of the water. This arrangement is designed more especially for shallow water.

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

The bent paddles D, the flanged hubs C *c'*, and disks E, in combination with each other and with the shaft A, substantially as herein shown and described.

JAMES CLARK CHAFFEE.

Witnesses:

WM. MCLEAN,
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