A. Housewirth.

Paddle Wheel.

No. 15,564. Patented Aug. 19, 1856.

Fig. 3.

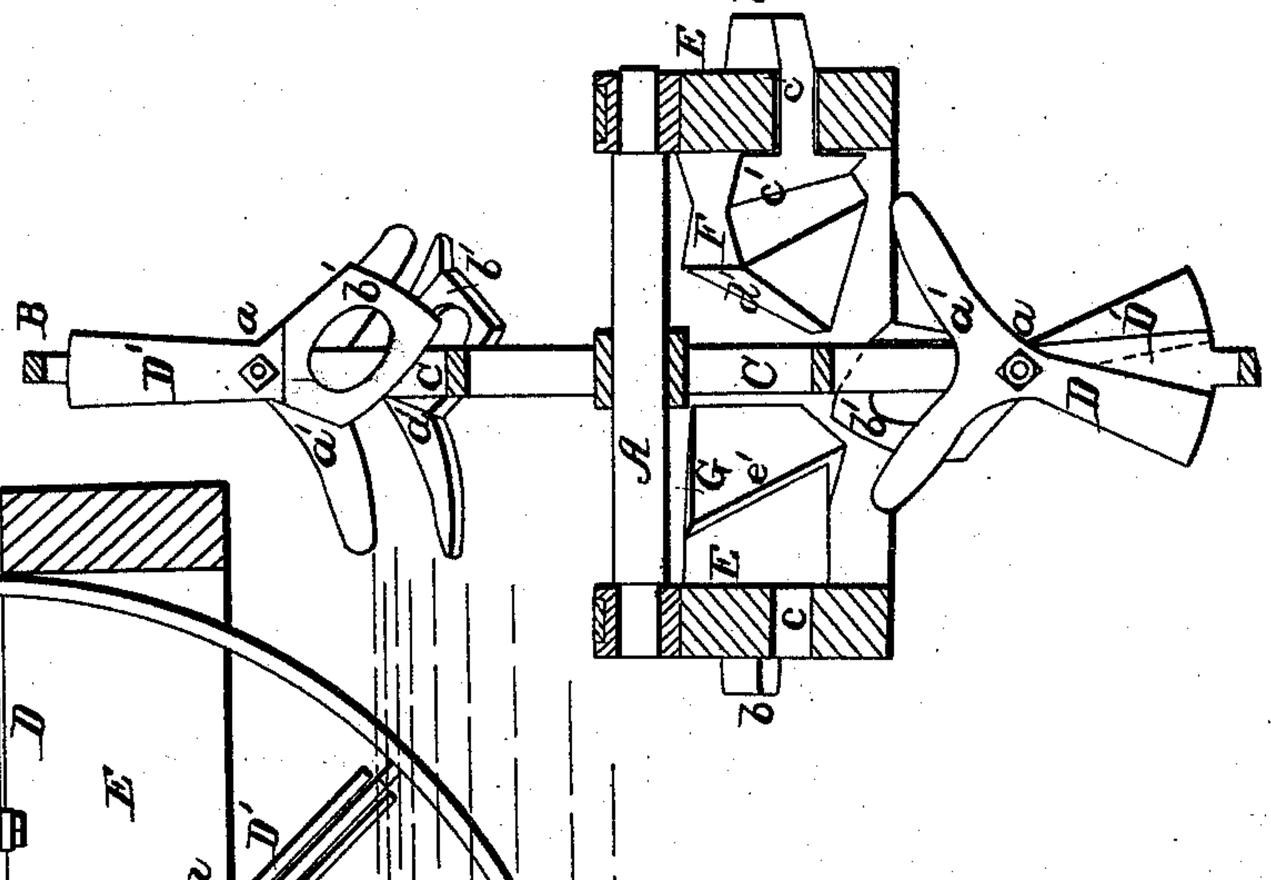


Fig. 1.

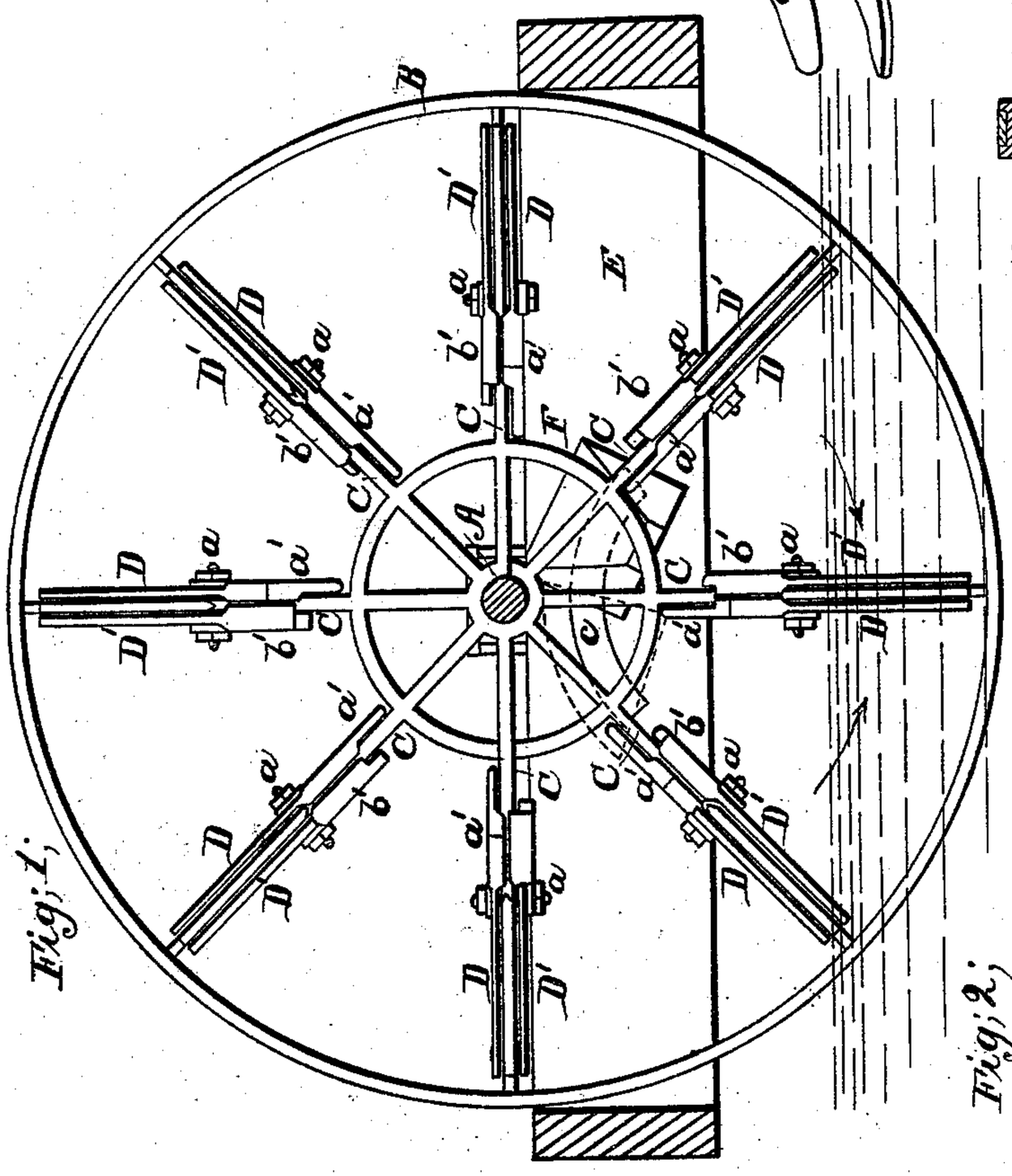
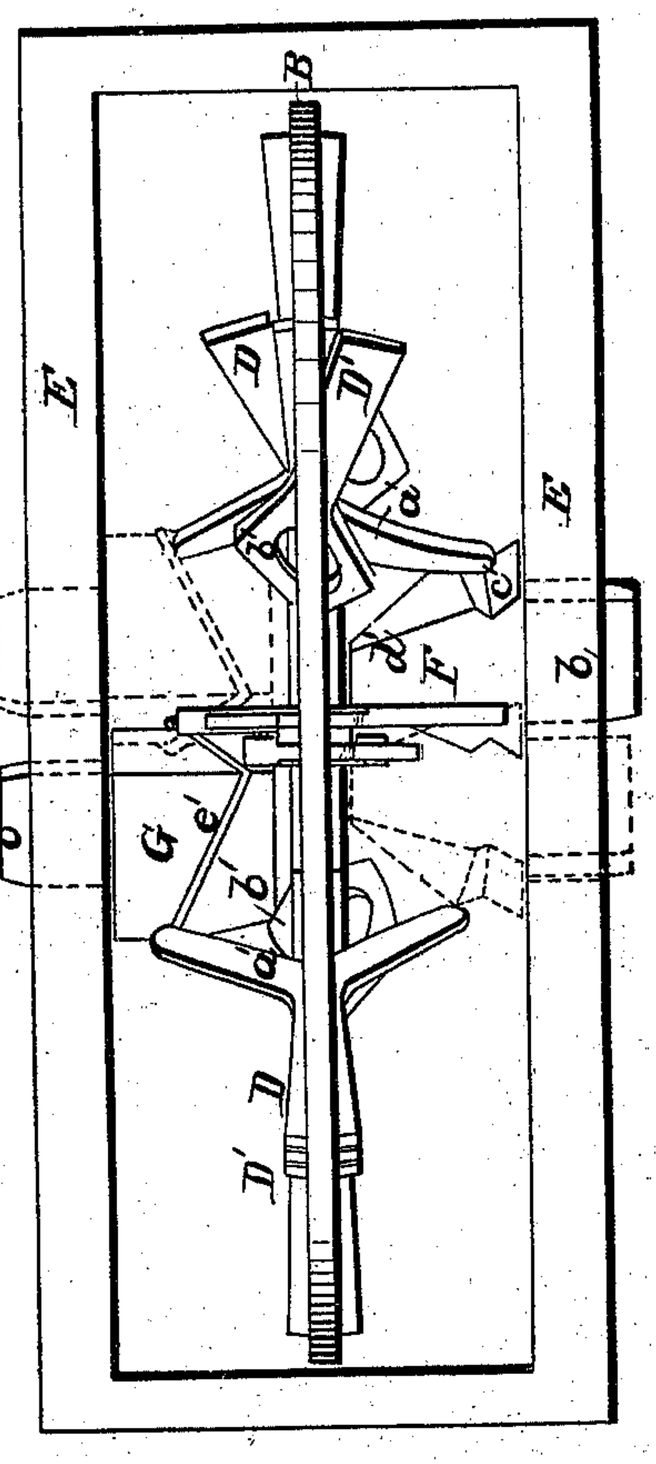


Fig. 2.



UNITED STATES PATENT OFFICE.

ABRAHAM HOUSEWORTH, OF NEW YORK, N. Y.

IMPROVEMENT IN PADDLE-WHEELS.

Specification forming part of Letters Patent No. **15,564**, dated August 19, 1856.

To all whom it may concern:

Be it known that I, ABRAHAM HOUSEWORTH, of the city, county, and State of New York, have invented a new and Improved Paddle-Wheel, which I term a Fan-Propeller; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of my improvement. Fig. 2 is an inverted plan view of the same. Fig. 3 is a transverse section of the same, the plane of section being through the center.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in having the floats or buckets pivoted to the arms of the wheel in pairs, so that they may open and close similar to a fan, the floats or buckets being made to open or spread as they enter the water and close as they pass out from it, as will be hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the shaft of the wheel. B is the rim, and C the arms. Only one set of arms and a single rim are required.

To each arm C two floats or buckets D D′ are secured by a pivot *a*, the floats being allowed to turn on the pivots. There is a float or bucket placed on each side of each arm, and the inner ends of the floats D are forked, as shown at *a′* in Figs. 2 and 3, and the inner ends of the floats D′ are spread out or flattened and their sides made oblique, as shown at *b′* in the same figures.

To the plumber-blocks E E, which support the bearings of the shaft A, cams F G are attached. These cams are on the inner sides of the plumber-blocks and are attached thereto by shanks *b b*, which pass through segment-slots *c* in the plumber-blocks, thereby allowing the cams to be moved to either end of the slots or to either side of the shaft A. The cam F is grooved obliquely on each side, as shown at *c′*, and the outer face or end of the said cam is beveled or inclined, as shown at *d′* in Fig. 3. Each side of the cam G is merely beveled and has an oblique shoulder *e′* on each side, its outer face or end having a vertical plane.

From the above description it will be seen that when the cam F is placed at the right side of the shaft A and the wheel rotating as indicated by the black arrow the floats or buckets D D′ will be spread apart as they enter the water, one end or prong of the forks *a′* being acted upon by the oblique groove *c′* and the oblique face or end *d′* of said cam acting upon the ends *b′* of the floats D′. As the floats pass underneath the center of the shaft and rise to pass out of the water, they are closed by the cam G. When the wheel rotates in the opposite direction, the cams F G are shifted to opposite sides, as shown in red, Fig. 2.

The above wheel is exceedingly simple and is not expensive to build. There are no parts liable to get out of repair nor create friction by their working. It occupies but little space as far as width is concerned, and therefore may be advantageously employed to boats on narrow rivers and canals.

Having thus described my invention, what I claim as new is—

The floats or buckets D D′, applied or attached to the wheel, as shown, and expanded or spread and contracted or closed by the cams F G, arranged as shown and described.

ABRAHAM HOUSEWORTH.

Witnesses:

ROBERT M. STREBEIGH,
H. W. TOWNSEND.