

P. H. Wait,
Water Wheel,

N^o 81,439.

Patented Aug. 25, 1868.

Fig. 1.

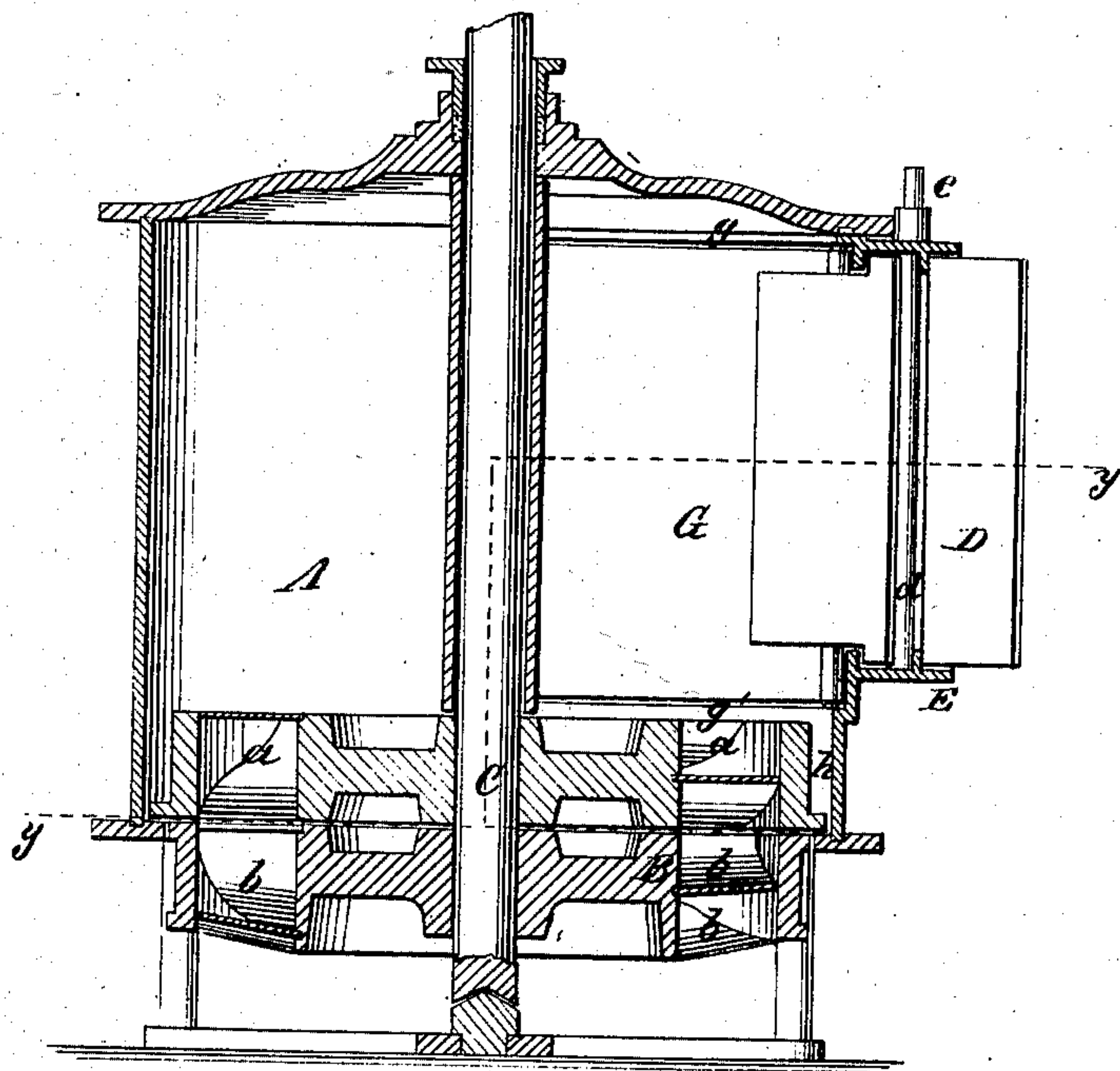
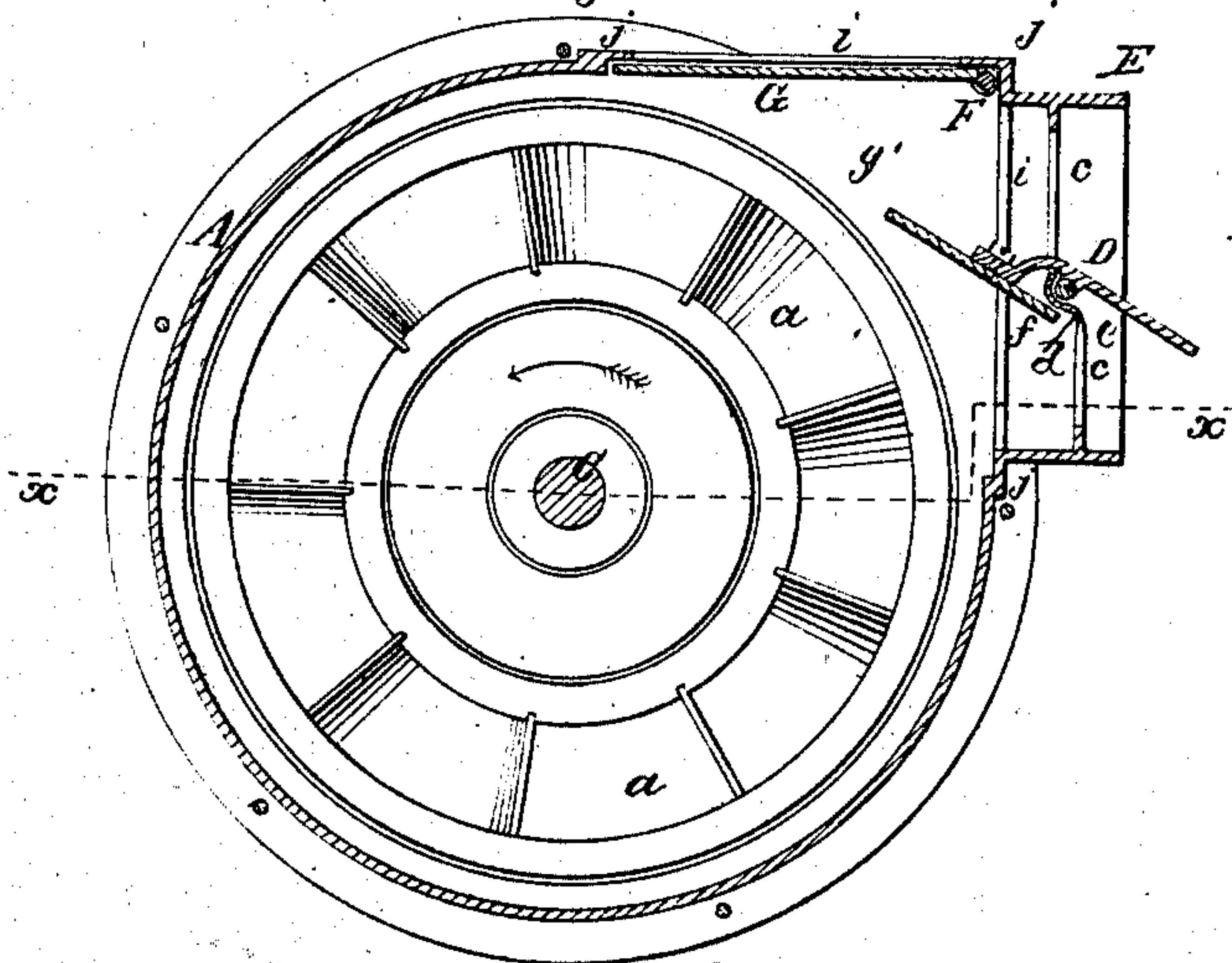


Fig. 2.



Witnesses

W. C. Ashketten
H. A. Morgan

Inventor

P. H. Wait
per [Signature]
Attorneys

United States Patent Office.

P. H. WAIT, OF SANDY HILL, NEW YORK.

Letters Patent No. 81,489, dated August 25, 1868.

IMPROVEMENT IN CURBS FOR WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, P. H. WAIT, of Sandy Hill, in the county of Washington, and State of New York, have invented a new and improved Water-Wheel; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved water-wheel, of that class which are secured on a vertical shaft, and rotate in a horizontal plane at the lower end of a cylindrical case, underneath chutes or water-guides.

In the accompanying sheet of drawings—

Figure 1 is a vertical section of my invention, taken in the line $x x$, fig. 2.

Figure 2, a horizontal section of the same, taken in the line $y y$, fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a cylindrical case, having within it, at its lower part, a series of chutes, a , which serve to guide or direct the water properly to the buckets of the wheel B, which is attached to a shaft, C, the latter passing vertically up through the centre of the case A, as shown in fig. 1.

The buckets b of the wheel are of a peculiar form, their lower edges being inclined about three inches to the foot of their radial length, and said fall diminishing gradually from the bottom to the tops of the buckets, which are in a horizontal plane, as will be fully understood by referring to fig. 1.

This variation in the fall or pitch of the buckets, which is downward from their outer to their inner edges, causes the water to act more efficiently against the buckets of the wheels than usual, as the water, owing to centrifugal force, has a tendency to expend a considerable portion of its power against the outer rim of the wheel, the ordinary buckets admitting of that result, a contingency which, in a great measure, is obviated by my improvements.

D represents the gate of the wheel, which is a balanced one.

This gate is hung in a frame, E, the top, bottom, and sides of which, at their inner surfaces, are provided with ledges, $c c$, which are out of line with each other, and serve as bearings for the gate to close against, a vertical central bar, d , dividing the opening into two parts.

The stem e of the gate works centrally in bearings in the frame E.

The gate is of curved form in its horizontal section, and is provided with a lip or flange, f , at its inner side, to work around the central bar d , and form a tight joint, (see fig. 2.)

There is no appreciable degree of friction in the operation of this gate—that only which occurs in the bearings of the stem—and it may be easily operated, opened and closed, under pressure.

F represents a curb, formed of two portions of two plates, $g g'$, the inner edges of which are curved, forming the parts of two circles, and the lower plate g' provided with a pendent flange, h , which is a portion of the case within which the chutes a are fitted.

The outer portions of the plate $g g'$ are composed of two sides, $i i$, at right angles with each other, and connected by vertical bars, j .

These plates $g g'$, flange h , and bars j , may all be cast in one piece.

The gate-frame E is secured in one side of this curb, and a door, G, in the opposite side, through which access is had to the wheel, when required.

By means of this curb, the water may be admitted into the case at either side by shifting or reversing the gate and curb, and a right or left-hand wheel obtained, as desired, and the water is made to enter the case, and turn or move in the direction of the rotation of the wheel, with the least possible degree of friction.

I claim as new, and desire to secure by Letters Patent—

1. The portion F of the curb, constructed as described, of the top and bottom plates $g g'$, the latter provided with a pendent flange, h , forming a portion of the case A, the side and end bars $i j$, adapted to receive the gate D and door G, all arranged as described, for the purpose specified.

2. The curved gate D, constructed as described, with a flange, f , adapted to work against the vertical central bar d in the frame E, said frame being provided with the ledges $c c$, out of line with each other, as herein described, for the purpose specified.

Witnesses:

W. M. COLLIN,
J. K. PIXLER.

P. H. WAIT.