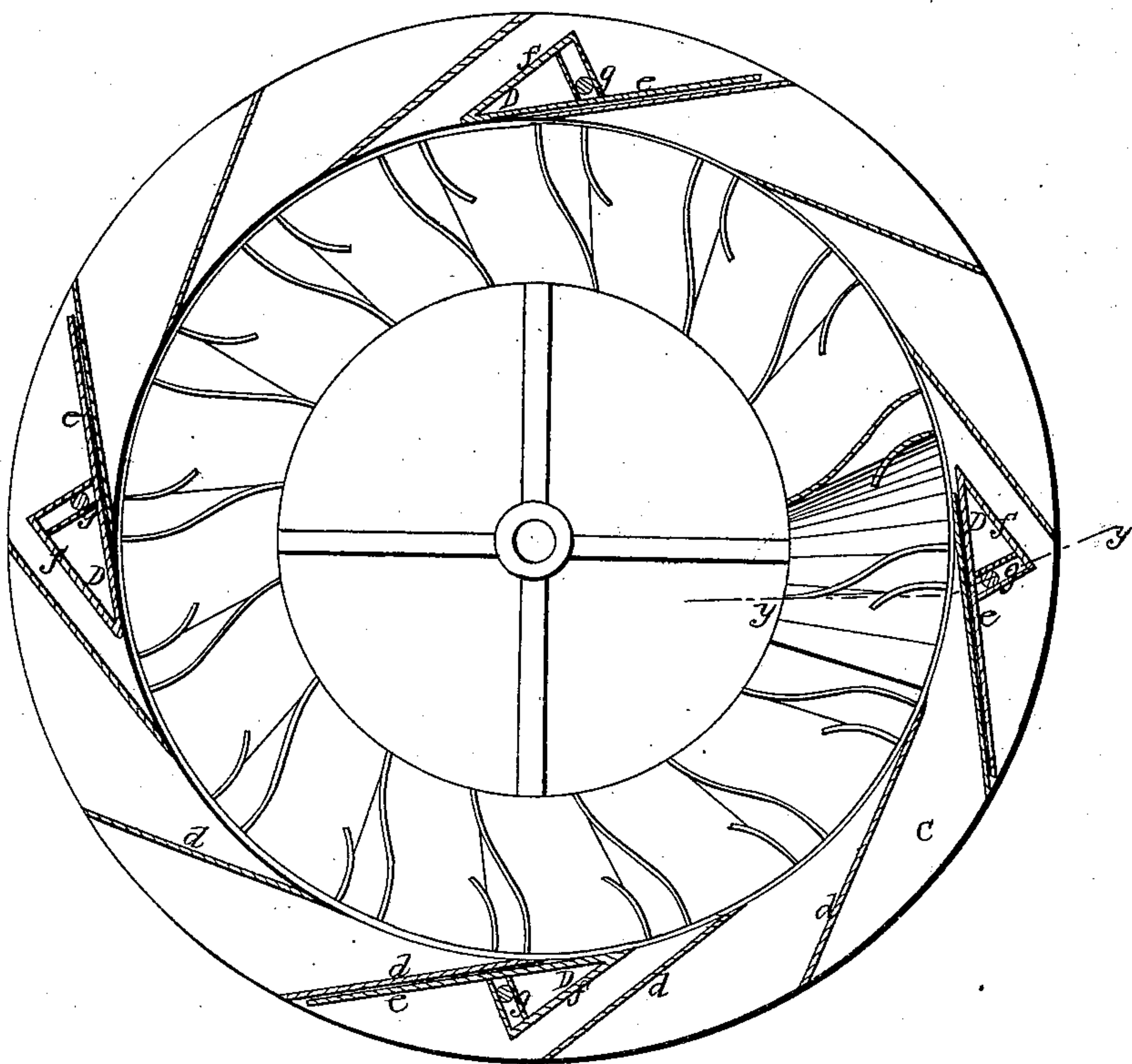


*V.M. Baker,*  
*Water Wheel,*

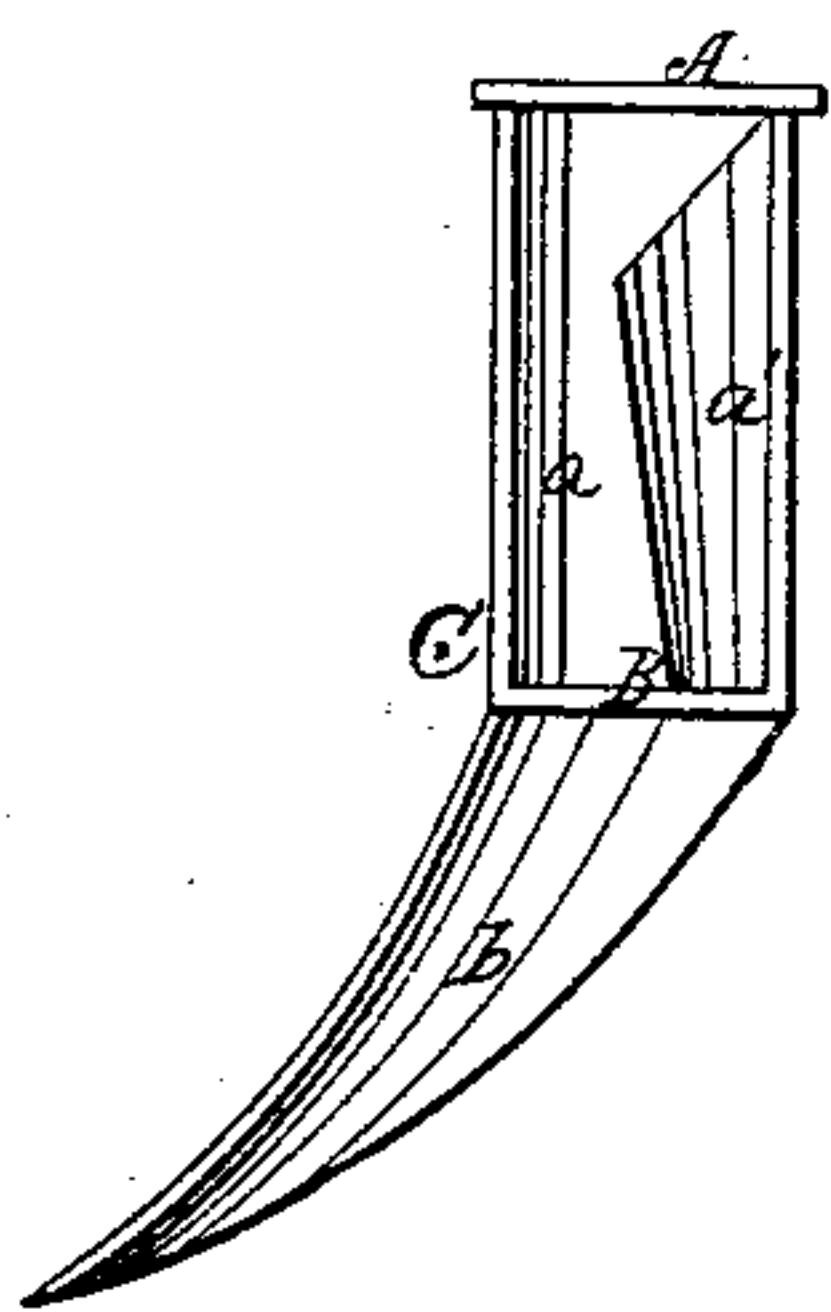
*N<sup>o</sup> 84,158.*

*Patented Nov. 17, 1868.*

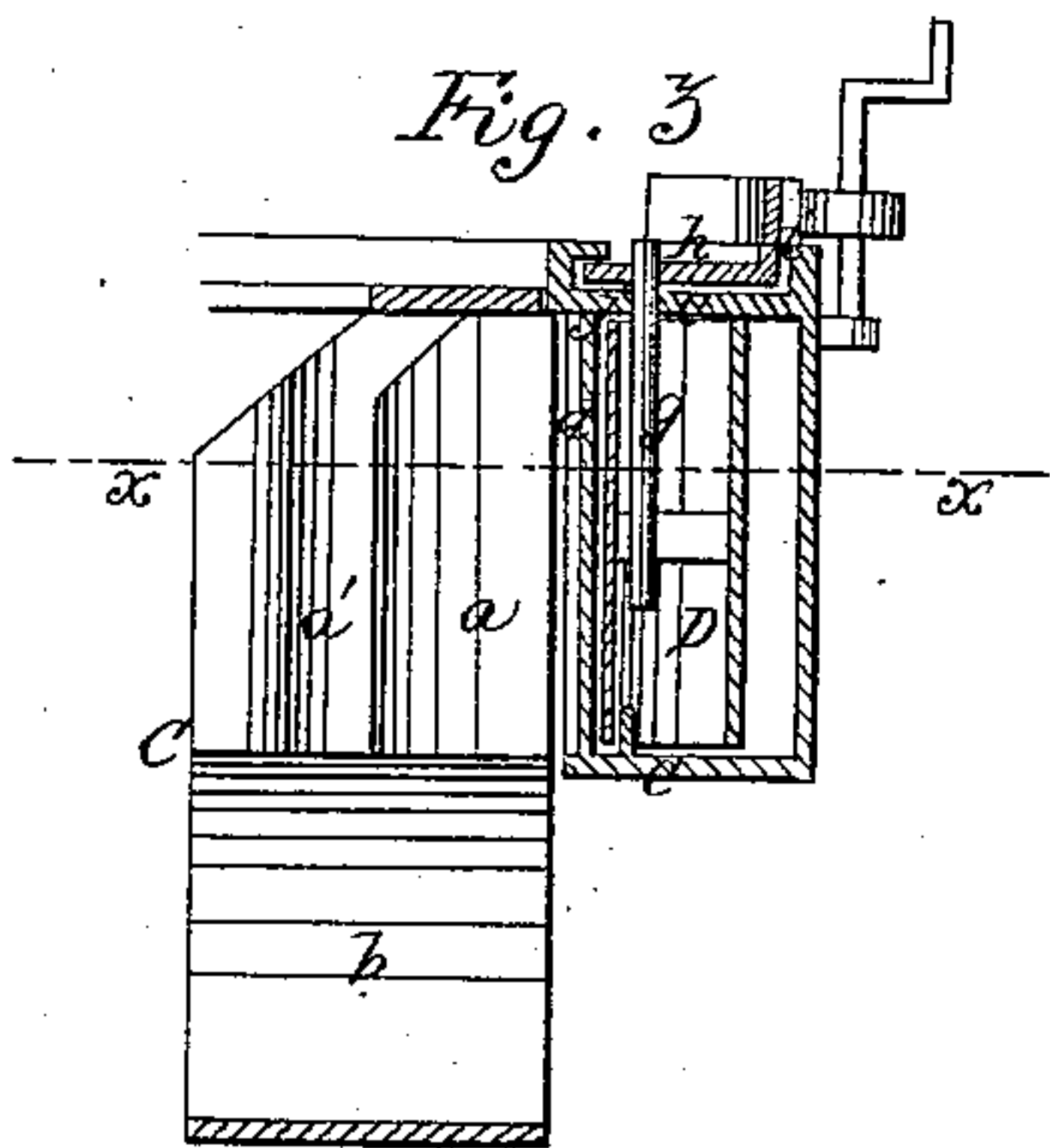
*Fig. 1*



*Fig. 2*



*Fig. 3*



*Witnesses:*  
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*J. A. Morgan*

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*per* *M. M. C.*  
*Attorneys.*

# United States Patent Office.

VINCENT M. BAKER, OF PRESTON, MINNESOTA.

Letters Patent No. 84,158, dated November 17, 1868.

## IMPROVED WATER-WHEEL.

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, VINCENT M. BAKER, of Preston, in the county of Fillmore, and State of Minnesota, 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 others 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 horizontal water-wheel, and of that class in which power is obtained both from the percussive and reacting force of the water.

The invention consists in a novel construction of gates and chutes, and in a peculiar form of bucket, whereby several advantages are obtained, as hereinafter set forth.

In the accompanying sheet of drawings—

Figure 1 is a horizontal section of my invention, taken in the line *x x*, fig. 3.

Figure 2 is a detached side view of a bucket.

Figure 3 is a horizontal section of a portion of the wheel, taken in the line *y y*, fig. 1.

Similar letters of reference indicate like parts.

A represents the upper, and B the lower rim of the wheel, between which the upper parts, *a a'*, of the buckets C are secured.

The part *a* is shorter than the part *a'*, and *a* has a concave face-side, as shown in fig. 1, while *a'* has a combined concave and convex face-side, and is about twice the length of *a*, a requisite space being allowed between *a a'*.

The lower part, *b*, of the buckets extends down in curved form, as shown clearly in fig. 2, *b* being equal in width to the longest part, *a'*, of the bucket.

The water first acts against the parts *a a'* of the buckets by impact, and then descends upon the lower parts, *b*, and exerts a reactive force against *b*, as it leaves the wheel.

By this arrangement, it is believed that a large percentage of the power of the water is obtained.

The water is directed upon the wheel as follows:

Two rims, *c c*, encompass the wheel, between which

partition-plates, *d*, are secured, said plates having a tangential position relatively with the wheel, as shown clearly in fig. 1.

Between the plates *d*, there are placed gates D, composed each of two plates, *e f*, arranged in v-form, the angle formed by the junction of the plates being next the wheel, as shown in fig. 1.

The plates E are considerably longer than the plates *f*, and the former are parallel with the plates *d*, which are directly behind *e*, while the plates *f* are parallel with the plates *d*, which are in front of them.

These gates D are all connected, by rods *g*, with a rim, *h*, which is concentric with the top rim of the wheel, and works in a recess, *i*, therein, as shown clearly in fig. 3. The rods *g* pass through oblong slots, *j*, in the top rim, *c*, of the wheel, and, by turning the rim *h*, the gates D may be opened and closed wholly or in part, as desired, and when opened, either wholly or partially, the gates D perform the function of chutes, to direct the water properly against the buckets. This will be fully understood by referring to fig. 1.

This wheel may be constructed at a moderate cost, and it has no parts liable to get out of repair, or become deranged by use. It is enclosed within a suitable case, as usual.

Having thus described my invention,

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

1. The buckets C, composed of the three parts *a a' b*, constructed and arranged as described, to be acted upon by the water as herein set forth.

2. The gates D, composed each of two plates, *e f*, arranged as shown, and connected to the rim *h* by rods *g*, in combination with the tangential plates *d*, between the rims A B, all being constructed, arranged, and made to operate substantially in the manner as and for the purpose set forth.

VINCENT M. BAKER.

Witnesses:

REUBEN WELLS,  
C. H. CONKEY.