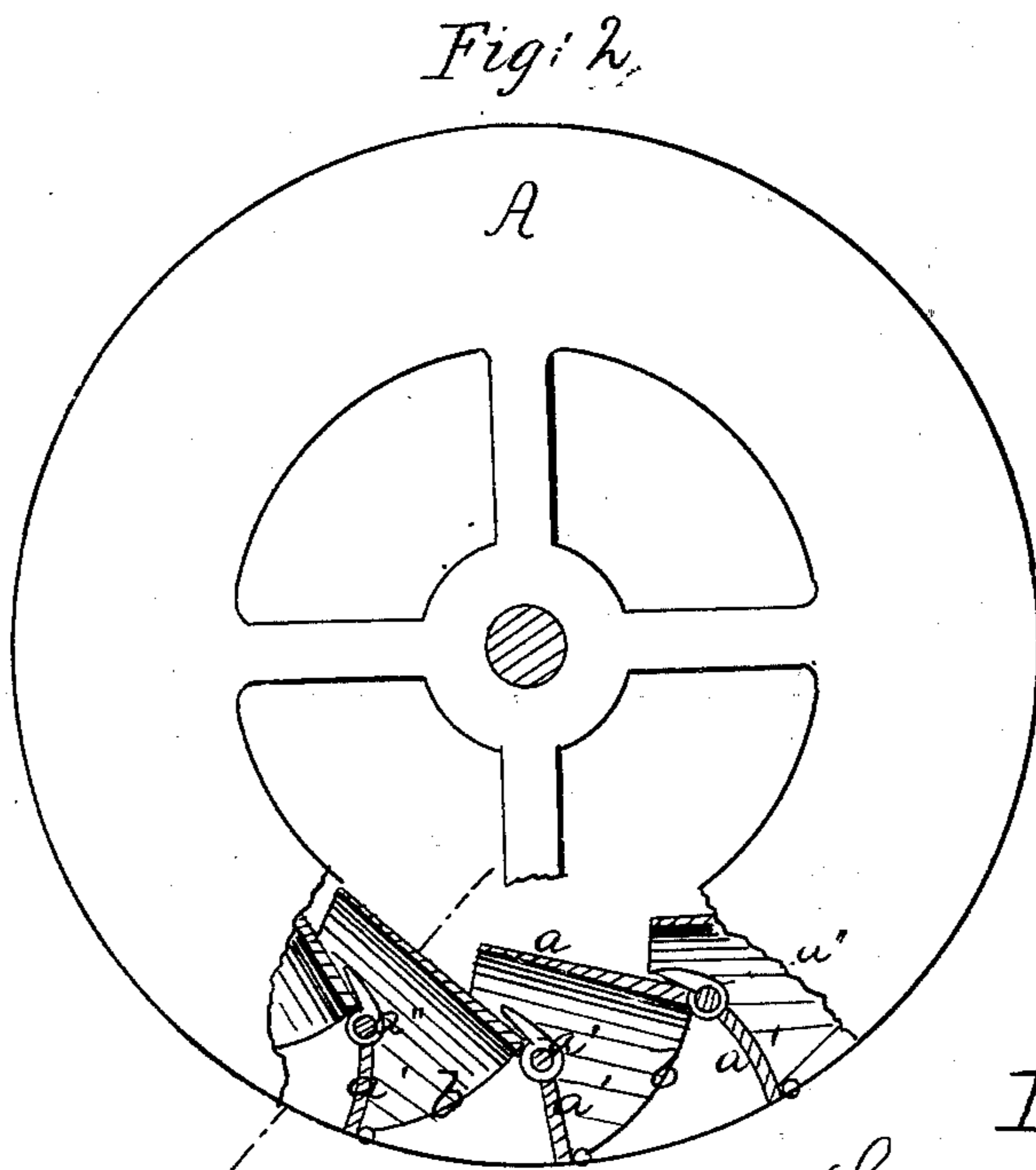
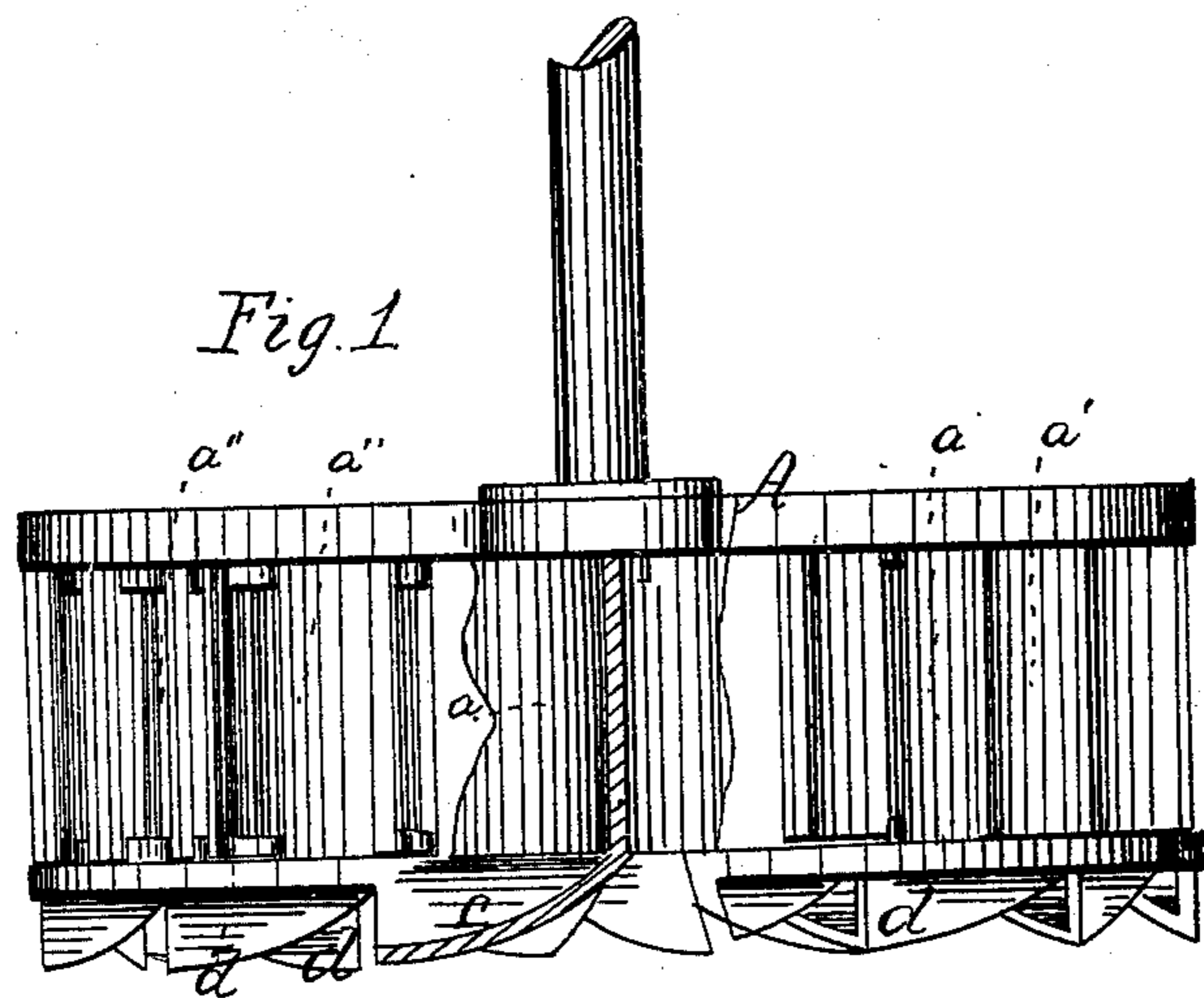


Lamey & Peachell. Water Wheel.

N^o 94,614.

Patented, Sept. 7, 1869.



Witnesses

L. A. Pettit
S. C. Hemm

Inventors

Lamey and Peachell
by Messrs Ho
Attorneys.

United States Patent Office.

P. H. LAMEY AND A. J. BEACHELL, OF PORT TREVERTON, PENNSYLVANIA; P. H. LAMEY ASSIGNS TO GEORGE KUHN AND P. K. KNIGHTS.

Letters Patent No. 94,614, dated September 7, 1869.

IMPROVEMENT IN TURBINE 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 we, P. H. LAMEY and A. J. BEACHELL, of Port Treverton, in the county of Snyder, and State of Pennsylvania, have invented a new and improved Water-Wheel; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, making a part of this specification, in which the figure is represented by a horizontal section.

This invention consists in making the outer part of each of the buckets of a water-wheel a swinging gate, hinged to the inner rigid part; also, in so placing such swinging gate as that it shall be at right angles, or nearly so, to the direction of the current of water that acts upon it, so that the latter may strike it full on the side; also, in providing horizontal surfaces of triangular shape, the broad ends of which meet the lower ends of said swinging gates, so as to afford a foundation for the current acting against the face of the gate; also in providing three reacting-surfaces, and both side and bottom-vents to each bucket.

In the drawings—

A represents a water-wheel of ordinary construction, except as to the features to be hereinafter recited.

Each of the buckets of our wheel is made with a rigid inner part, *a*, and an outer part, *a'*, hinged to said inner part. The joint *a''* of each swinging gate, *a'*, is situated in rear of a line passing from the outer edge of the gate to the centre of the axis of the wheel, so that the instant any hard matter, such as sticks, stones, or the like, by accident enter within the casing, and lodge where the outer ends of the buckets strike against it while passing, owing to the jointure of the part *a'*, it may yield to any such obstacle, and fracture thus be avoided.

We give the outer gate *a'* of each bucket a direction such that the entering current strikes it squarely on the side, and thus we are enabled to get from this impact the full force of the water. Productive of this result is also the construction of horizontal surfaces, *b*, of a triangular form, whereof the apex of each surface is in rear of the outer side of one bucket, and its base at the foot of the front side of the next succeeding bucket, so that each surface, *b*, conducts the current straight to its bucket, and affords a foundation for its action while thus operating.

To secure a sufficiency of reacting surface we prolong the rigid part *a* of each bucket a good distance on an angle, obtuse as to the swinging part *a'*, and leave a vertical vent between each pair of buckets.

We also provide a bottom-part, *c*, to each bucket, coextensive with the side *a*, and of proper inclination, and we leave a vent between each bottom-piece and its neighbor. We also provide a third reacting vertical surface, *d*, on the front side of each bottom-part, *c*, so that the sides *a*, *c*, and *d* form one enclosure. By the time the water passes from these enclosures, our notion is that its force is pretty nearly exhausted, and that our construction enables us to get all the power of the liquid possibly extractable from it.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The hinged part *a'*, in combination with the rigid part *a* of the bucket, substantially as described.
2. The horizontal triangular surface *b*, in combination with the part *a'*, substantially as described.

P. H. LAMEY.

A. J. BEACHELL.

Witnesses:

JOHN K. HUGHES,
WM. H. OBERLIN.