

S. D. TAYLOR.
 Improvement in Water Wheels.
 No. 120,345. Patented Oct. 24, 1871.

Fig. 1.

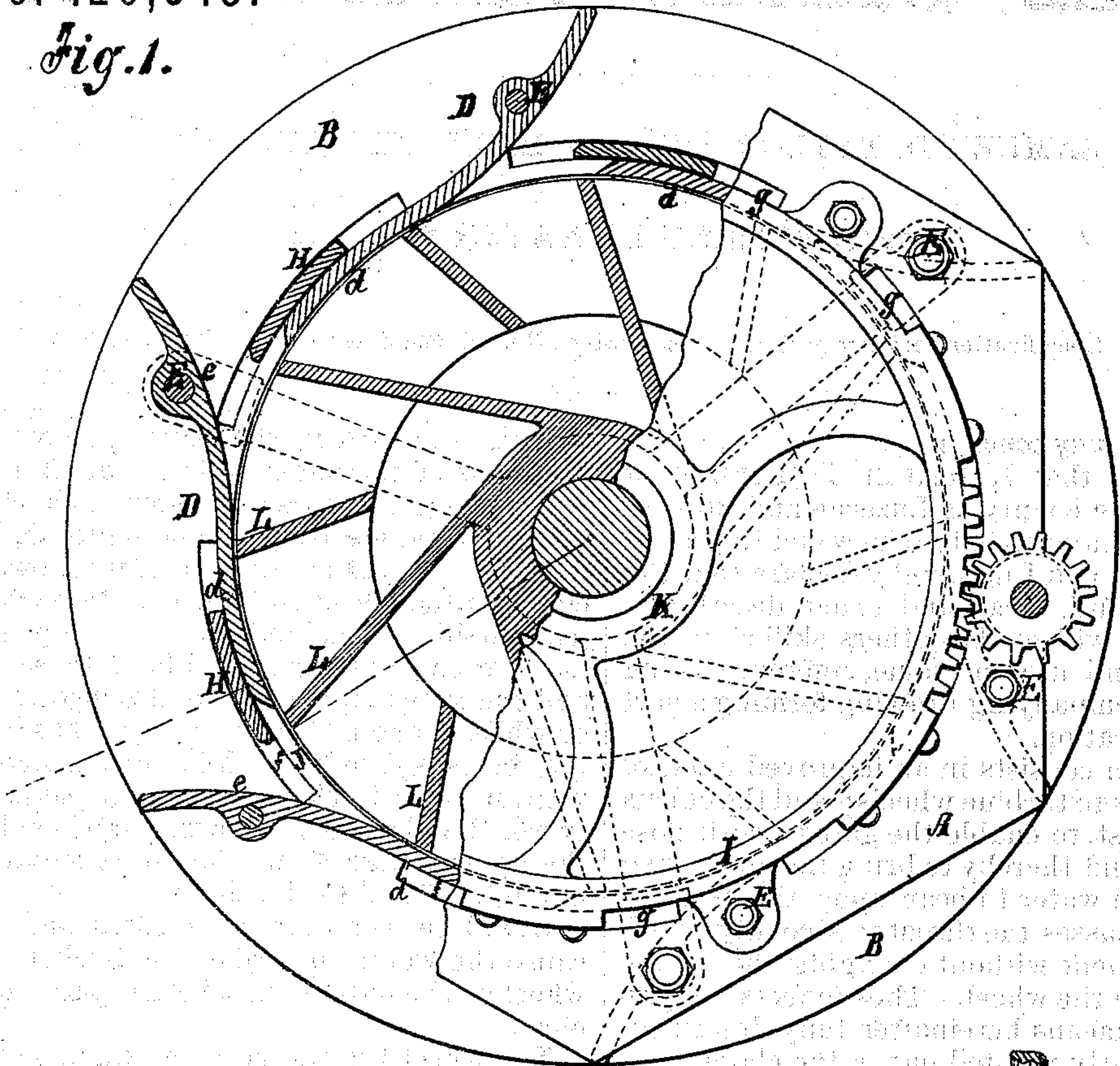
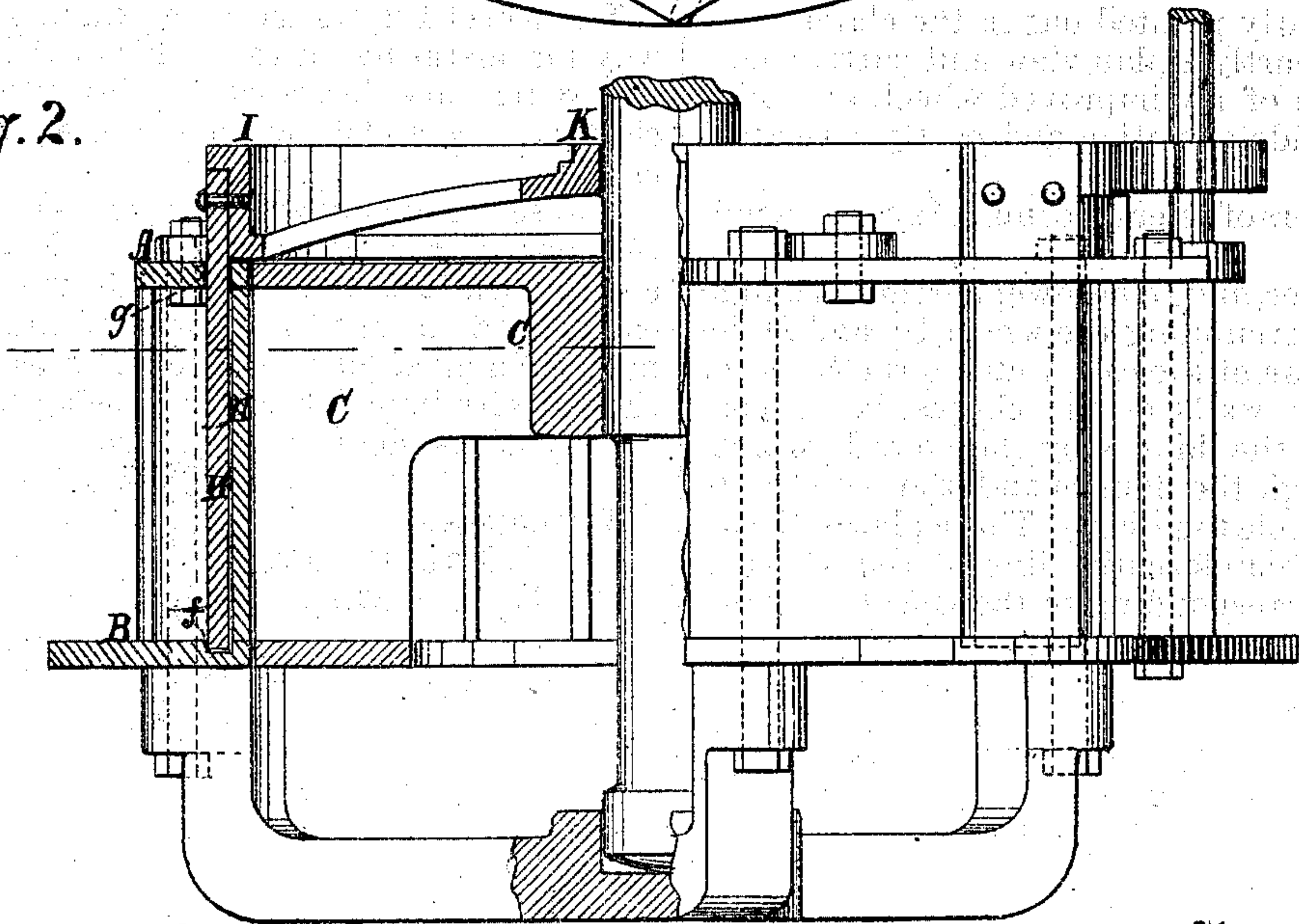


Fig. 2.



Witnesses:

A Benneendorf.
 Francis McCordle.

Inventor:

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UNITED STATES PATENT OFFICE.

SAMUEL D. TAYLOR, OF HAZLETON, PENNSYLVANIA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 120,345, dated October 24, 1871.

To all whom it may concern:

Be it known that I, SAMUEL D. TAYLOR, of Hazleton, in the county of Luzerne 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 thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification.

My invention consists in an improved mode of applying gates to turbine wheels; and the effects thereof are, first, to enable the gate to work close to the wheel and thereby to bring the unchecked velocity of the water to bear upon the buckets as soon as it passes the throats; secondly, to admit of adjustment without changing the course of the water to the wheel. These effects are produced by the means hereinafter fully described, and subsequently pointed out in the claim.

Figure 1 is partly a plan view and partly a horizontal section of my improved wheel, and Fig. 2 is partly a side elevation and partly a vertical section.

Similar letters of reference indicate corresponding parts.

A is the upper, and B the lower horizontal flange of the case surrounding the wheel C; and D the parts of the rim of the case which form the outer and stationary walls of the chutes, being confined between the flanges by the bolts E, which, passing through the flanges and the said parts D, hold the whole together. These plates E conform to the circumferential line of the wheel in the parts *d* corresponding to the rim of the case,

but turn outward in the parts *e*, answering the functions of the outer walls of the chutes. The lower flange has a recess, *f*, for each chute, extending from the front of one plate, D, as far as the next plate D in advance of it follows the circumferential line of the wheel, or thereabout, and just outside of said parts *d*. The upper flange has curved slots *g* directly above these recesses, and the gates H, which are attached to the rim or wheel I, extend down through these slots into the recesses *f*, to be worked forward and backward in them to close or open the passages J between the plates D. The rim or wheel I rests on the upper flange A, and has arms radiating from a hub, K, fitted to the shaft.

It will be seen that these gates and plates D cause the water to strike the buckets L of the wheel at the outer ends whether partly or wholly open.

The wheel I is turned by a pinion, in the usual way for operating gates of this character.

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

The series of movable arc plates H and arc extensions *d* of stationary chutes D *e*, combined concentrically and closely with the wheel and each other, so that the course of the water will not be changed (as where the chutes move) nor the velocity impeded, after passing the throats, by any adjustment of the gates.

SAMUEL D. TAYLOR.

Witnesses:

B. FRANK DAY,
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