

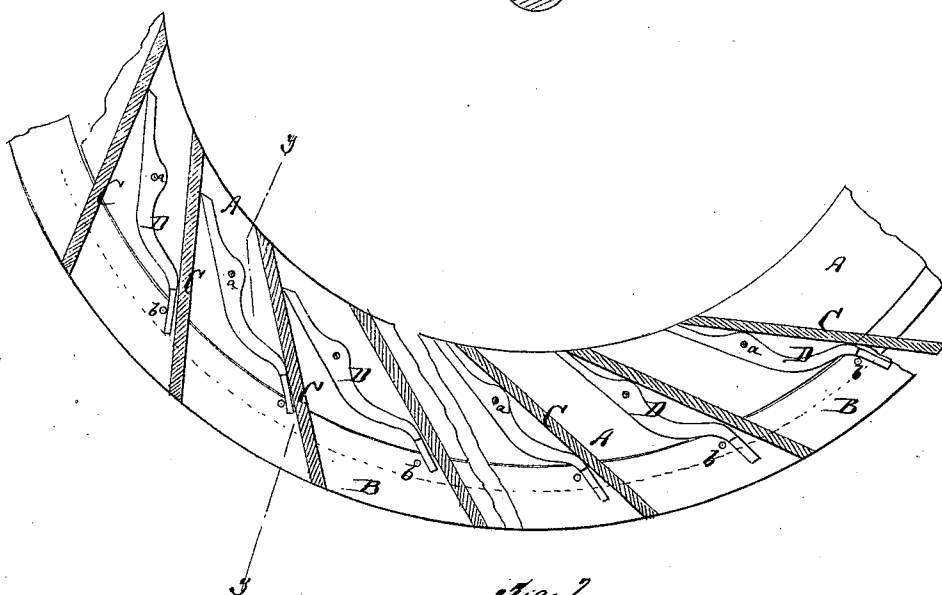
*F. G. Coggin,*

*Water Wheel.*

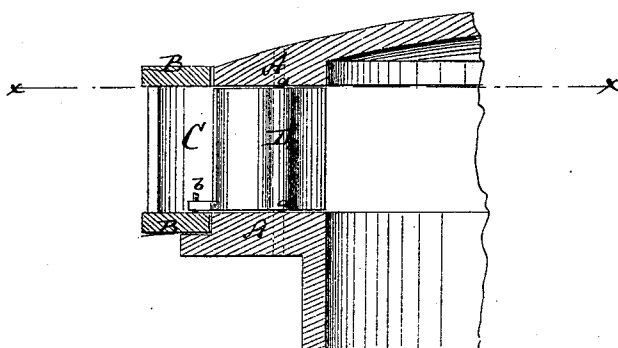
No. 108,970.

*Patented Nov. 8, 1870.*

Fig: 1.



*Fig: 2.*



**Witnesses:**

Witnesses:  
Chas. Kida  
L. J. Mabee

Inventor:

F. L. Coggin  
 PER *Munnell*  
 Attorneys.

# United States Patent Office.

FREDERICK G. COGGIN, OF BURLINGTON, VERMONT.

Letters Patent No. 108,970, dated November 8, 1870.

## IMPROVEMENT IN 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, FREDERICK G. COGGIN, of Burlington, in the county of Chittenden and State of Vermont, have invented a new and useful Improvement in Water-Wheels; 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 part of this specification, in which—

Figure 1 is a sectional horizontal section of my invention, *x x*, fig. 2, being the section line.

Figure 2 is a detail vertical section of the same, *y y*, fig. 1, being the section line.

Similar letters of reference indicate corresponding parts.

The object of this invention is improvement in water-wheels of that class in which gates are pivoted between chutes which guide the water to the buckets.

The invention consists in pivoting the gates, near their inner ends, to the base-plate and cover of the wheel-case, and at the other ends, to a sliding-ring, and in attaching the straight chutes firmly to said ring.

The object of this peculiar arrangement is, mainly, to avoid moving the ring the distance required in other wheels of a generally analogous construction, the chutes and gates in my invention being moved simultaneously.

A A, in the drawing, are sections of the cover and base-plates of the stationary wheel-case.

B B are movable annular plates or rings, placed with their inner edges against the circular outer edges of the plates A A, respectively, and connected with each other so that they can be turned together on the case.

C C are the straight or curvilinear chutes, cast to or otherwise rigidly united with the inner faces of the plates B, and extending over the faces of the plates

A, as shown, so that their inner ends are about in line with the inner edges of the plates A.

D D are the gates, pivoted by pins *a a* to the stationary plates A, but reaching with their heels over the lower plate B, as shown.

The heel of each gate rests against a chute, and is held in contact therewith by a pin, *b*, projecting from the plate B, as shown. When, by suitable pinion or other mechanism, the rings B are turned, the chutes are carried along with the same, and serve, in connection with the pins *b*, to swing the gates on their stationary pivots *a*, and to thereby regulate the width of the water veins. The chutes and gates move thereby simultaneously.

I am aware that wheels have already been in use with movable gates that are controlled by sliding-rings, but in the same the chutes were fixed to the wheel-case, while mine move with the rings; the gates are operated by the rings to which they are attached, while my gates are pivoted to the wheel-case, and opened or closed by the motion of the chutes; the gates were only moved to adjust the size of vein, while in my wheel the chutes and gates move simultaneous, so that but half the ordinary motion of the rings is required.

The pins *b* may be dispensed with, as the pressure of the water will always hold the heels of the gates in contact with the chutes; they are useful merely in case the gates become clogged and stick.

Having thus described my invention,

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

The straight vertical chutes C C, fixedly attached to the ring *b* and the gates D, pivoted, respectively, to the ring D and base-plate and cover of the wheel-case, in the manner shown and described, so as to operate as specified.

Witnesses:

WILL. W. NICHOLS,  
GEO. D. WRIGHT.

F. G. COGGIN.