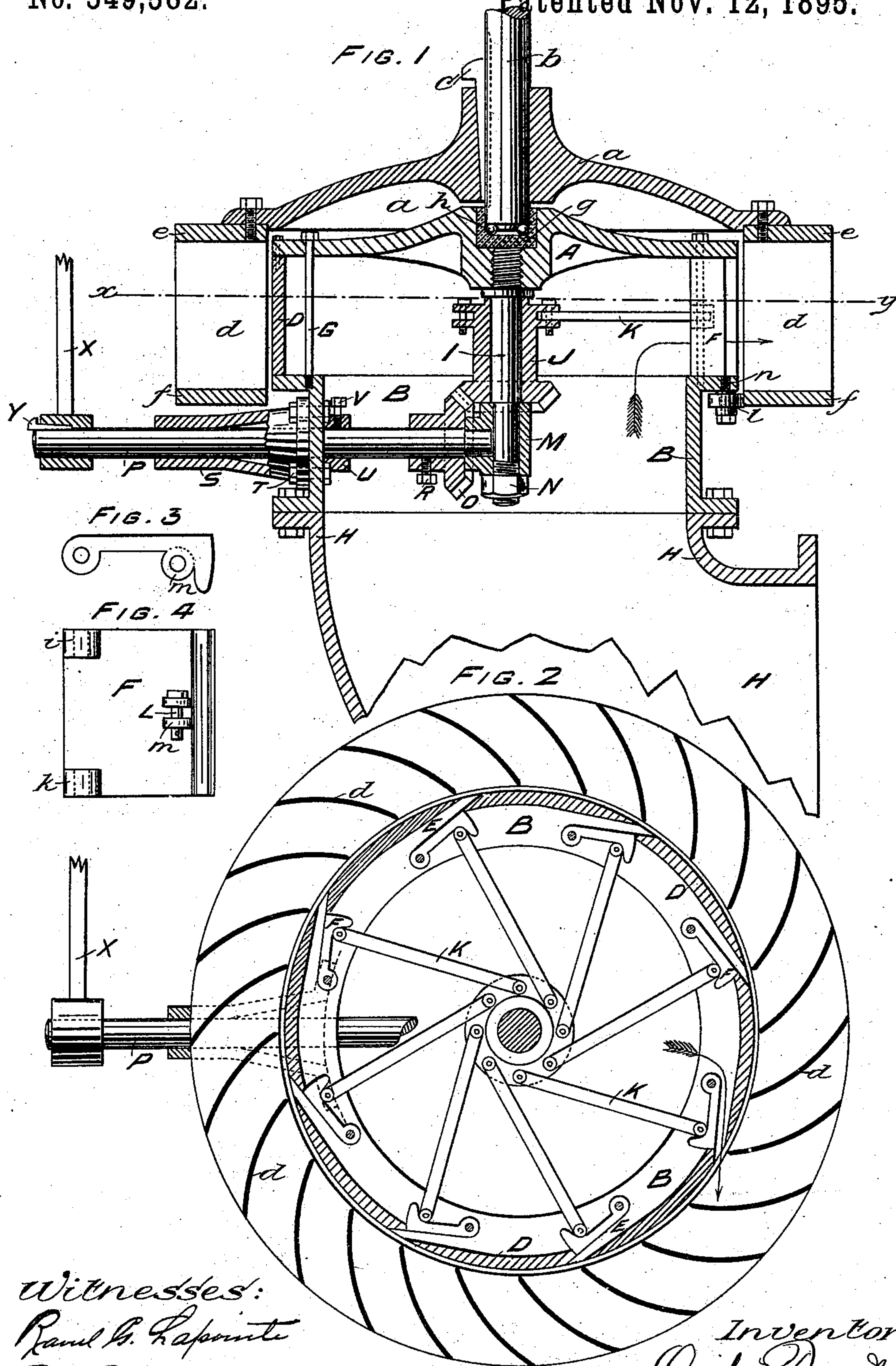


(No Model.)

O. PARENT.  
WATER WHEEL.

No. 549,582.

Patented Nov. 12, 1895.



Witnesses:  
Paul B. Lapointe  
A. Bélanger.

Inventor  
Ovide Parent



# UNITED STATES PATENT OFFICE.

OVIDE PARENT, OF MONTREAL, CANADA.

## WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 549,582, dated November 12, 1895.

Application filed August 9, 1895. Serial No. 559,910. (No model.)

*To all whom it may concern:*

Be it known that I, OVIDE PARENT, a subject of the Queen of Great Britain, residing at Montreal, in the county of Hochelaga and Province of Quebec, Canada, have invented certain new and useful Improvements in Water-Wheels, of which the following is a specification.

My invention relates to improvements in water-wheels, in which a horizontal ring provided with buckets operated by one or more jets of water rotates over and around a tank provided with openings forming the jets, (the said openings may be opened and closed at will;) and the objects of my invention are, first, to provide a higher percentage of efficiency of power by having the water-jets acting perpendicularly on the surface of the buckets; second, to utilize the centrifugal force developed by the wheel for emptying the buckets after the water has produced all its action on the surface of the buckets; third, to afford facilities for the proper opening and shutting of the revolving gates. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through the middle of the wheel. Fig. 2 is a horizontal section on the line *xy* of Fig. 1, and Figs. 3 and 4 are detail views of one of the revolving gates.

Similar letters refer to similar parts throughout the several views.

The immovable tank is formed of the top plate A, the bottom plate B, riveted or screwed to the penstock H, the circular plate D, having the openings E E, and the gates F F, revolving on their axes G. The rod I, screwed to the top plate A, carries the cog-wheel J, to the upper part of which is secured one end of the arms K K, the other end being connected with the revolving gates F F by means of the device *m* and bolt L. The said cog-wheels are held in place by the cylindrical piece M, acting as socket for the shaft P, and the nut N.

The cog-wheel J is connected with another cog-wheel O, firmly secured to the shaft P by the screw R. One end of the rotating shaft P is retained by the socket M and the other end by the shaft-cushions S, fastened to the bottom plate B by the bolt T. The ring U, secured to the shaft P by means of the screw V, maintains the said shaft in its proper position.

The lever X, attached to the shaft P by the

key Y, serves to shut and open the revolving gates. The buckets *d d* are curved and placed between the top plate *e* and the bottom plate *f* of the ring of the buckets. The top plate *e* of the said ring of buckets is screwed or riveted to the cap or cover *a*, which is fixedly secured on the shaft *b* by means of the key *c*.

The top plate A of the tank has a socket *g*, containing antifriction-balls *h h*, upon which rests and rotates the shaft *b* with its annexed parts.

The revolving gates F F have the form shown in Figs. 3 and 4 and carry the hinges *i* and *k* and the device *m* with the bolt L, which serves to connect the arm K.

Guide-rollers *l l* are fastened to the upper flange of the lower plate B of the tank by the screw *n*. By means of the lever X and its annexed parts, if the revolving gates F F are opened to a required size, the water from the penstock H forces its way through the openings E E left by the gates F F. Each jet of water acting perpendicularly on the surface of the buckets *d d* causes the ring, the cover *a*, and the shaft *b* to rotate. When the water-jet has produced all its action on the surface of the buckets, the centrifugal force developed by the rotating ring of buckets throws this water out of the buckets.

The lever X and its annexed parts can be operated either by hand or automatically by suitable connection with an ordinary governor receiving its motion from the shaft *b*, the size of the water-jets being thus regulated according to the power required, the direction of the water-jets remaining the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a water-wheel, the combination with the ring of buckets, connected to the shaft *b* by the cover or cap *a*, of a flume formed of the top plate A, and the bottom plate B, connected with the penstock H, and the circular plate D, having openings E, E, a series of revolving gates F, F, connected to the lever X by means of the arms K, K, the cog wheels J and O, and the rod I, the cylindrical socket M, and the shaft P, all substantially as and for the purpose set forth.

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Witnesses:

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