

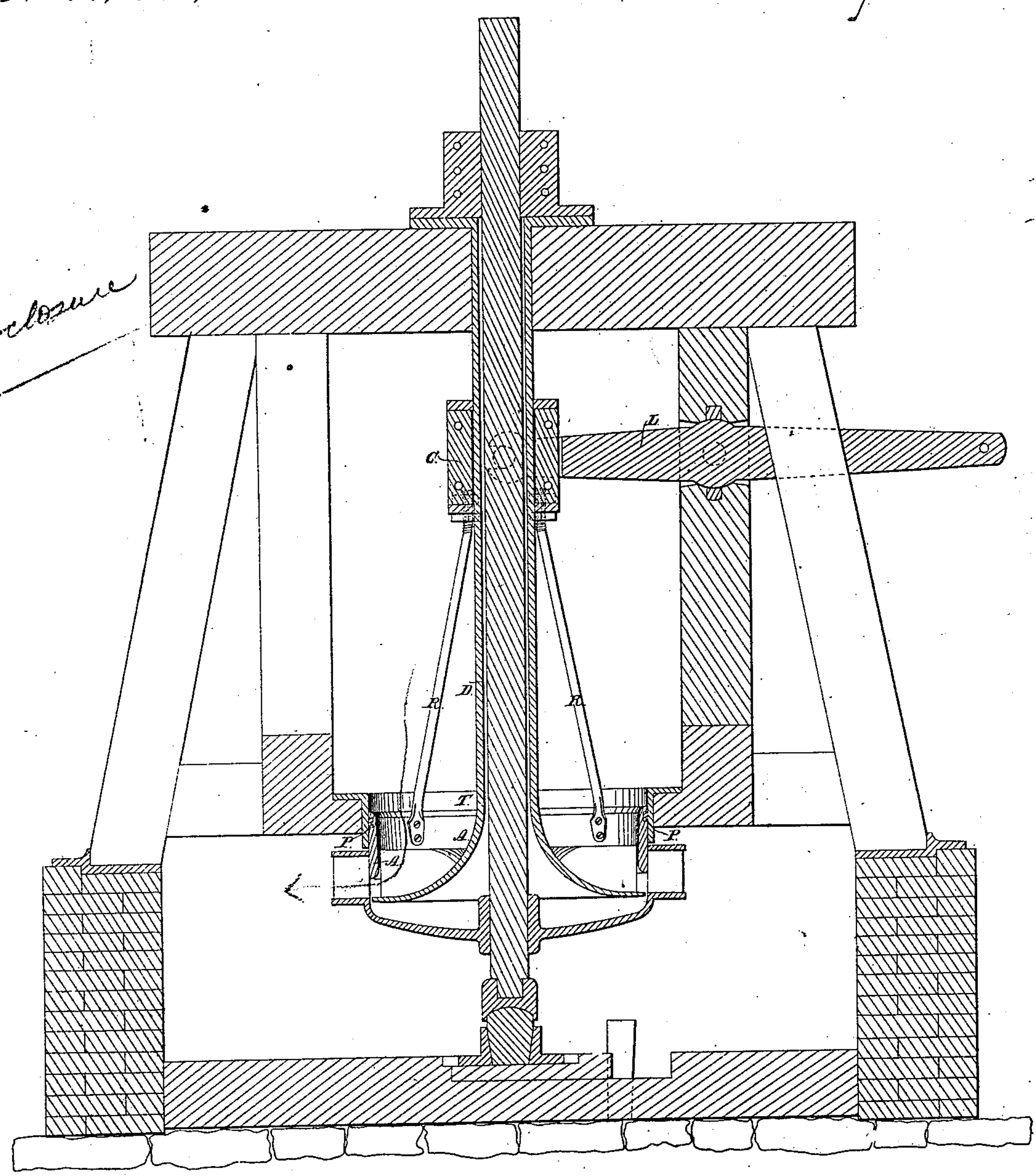
*L. M. Wright,  
Water Wheel,*

*Nº 17,246.*

*Patented May 5, 1857.*

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*in disclosure*





# UNITED STATES PATENT OFFICE

L. M. WRIGHT, OF NIAGARA FALLS, NEW YORK.

## IMPROVED METHOD OF OPERATING THE GATES OF TURBINE WHEELS.

Specification forming part of Letters Patent No. 17,246, dated May 5, 1857.

### *To all whom it may concern:*

Be it known that I, L. M. WRIGHT, of Niagara Falls, in the county of Niagara and State of New York, have invented a new and useful Improvement in Hoisting and Shutting Circular Gates for Turbine Water-Wheels, which is peculiarly adapted to the wheel commonly known as "Fourneyron's Turbine," of which the following is a specification.

The nature of my invention consists in so constructing the gate-hoisting apparatus as to greatly reduce the cost of building by uniting the lifting-rods in a manner so as to be worked with one lever. The effective power of the wheel will not be impaired, while the cost of constructing will be much less than any now in use. It will also be more compact and most of it placed in the water surrounding the wheel-shaft, and therefore not exposed to frost. This improvement is a step toward placing this excellent wheel within the reach of mill-owners of small means, and at the same time retaining all of the elements required to give the maximum percent. of power.

The following is a description of the parts: The gate A A is of a circular form and of a sufficient width to suit the wheel and curb. It has a groove or notch in the side next to the curb near the top edge of sufficient width and depth to receive the packing P P, as seen in the drawing and the model. In this groove is placed a band of leather or other elastic substance which is to fit the groove in the gate on one side and on both edges. The other side is to lie against the curb and prevent the escape of water. There are lifting-rods R R attached to the upper edge of the gate A A by screws or otherwise. These rods extend to a sliding collar C, fitted to the disk-pipe D (or to the wheel-shaft when there is

no disk-pipe.) The sliding collar C is cast in two parts and put together with bolts or rivets for the convenience of being placed on the disk-pipe, which disk-pipe has an enlargement at the bottom and a flange at the top, so that the collar could not be put on whole. The collar is also cast open or only with connecting-bars reaching from top to bottom flange. The object of this is to prevent the accumulation of any considerable amount of small weeds, leaves, or other floating substance that may be in the water that surrounds the shaft and disk-pipe and collar and thereby prevent it from moving easily on the pipe. Two of the connecting-bars between the top and bottom flange of the collar are cast with horns or trunnions for the purpose of connecting with the forked lever L. The bottom flange is also constructed in a position and proper manner to receive the upper ends of the rods R R, having a face for the nuts to rest on and room to turn them, so as to raise or lower the rods and adjust the height of the gate. The sliding collar C is moved up and down by the lever L for the purpose of hoisting or shutting the gate, which lever L may be worked by hand or by a rack and pinion or by a screw. The fulcrum of the lever L when it passes through the side of the flume is packed in a manner to prevent the escape of water.

I do not claim the parts separately, but I claim—

Their arrangement in the manner described and for the purposes set forth.

In witness whereof I have hereunto subscribed my name this 18th day of April, 1857.

L. M. WRIGHT.

In presence of—

H. R. SYMONDS,  
WILLARD STONES.