

T. H. RISDON & W. W. TYLER.

Cylinder-Gates for Turbine Water-Wheels.

No. 148,577.

Patented March 17, 1874.

Fig. 1.

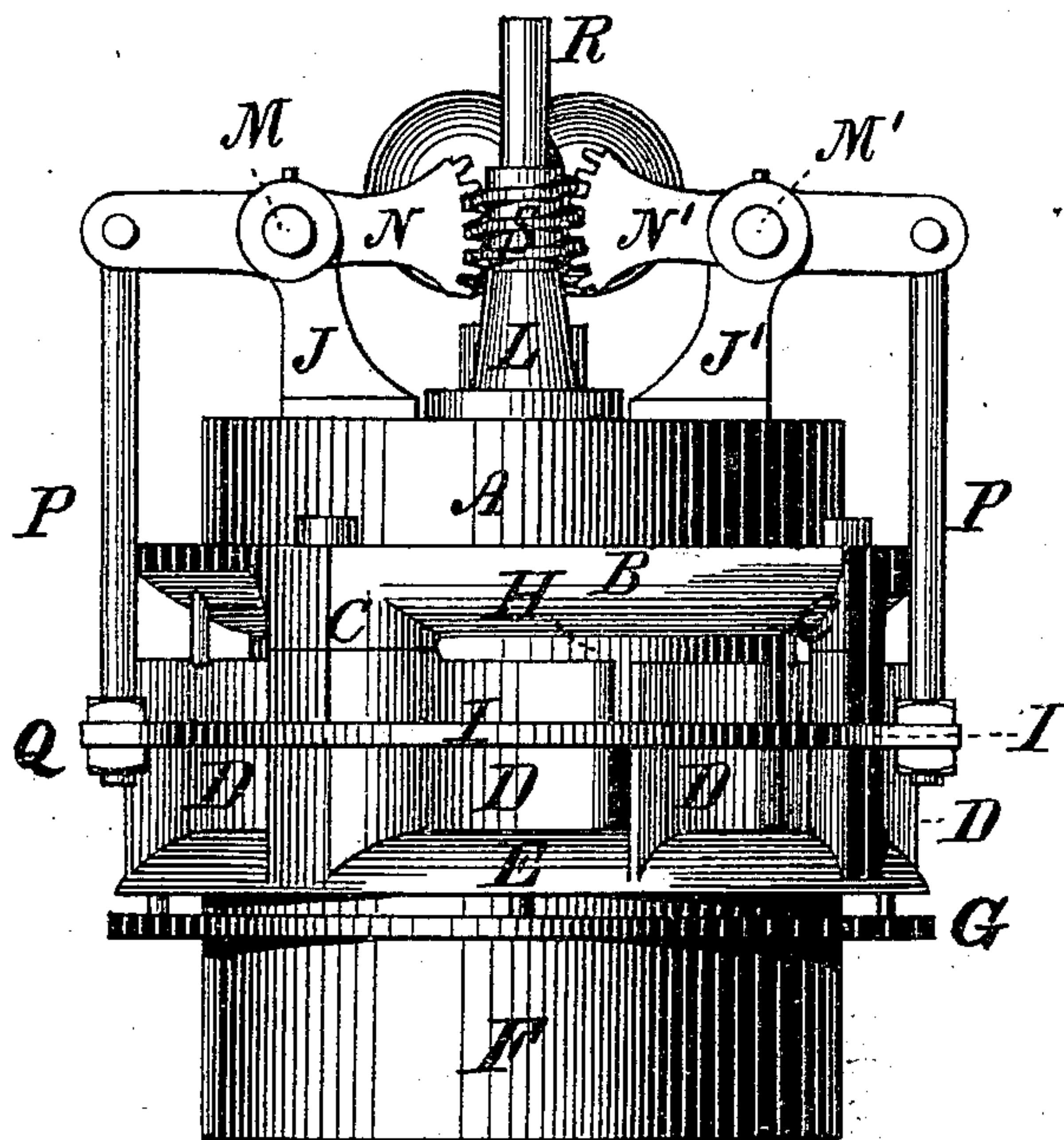
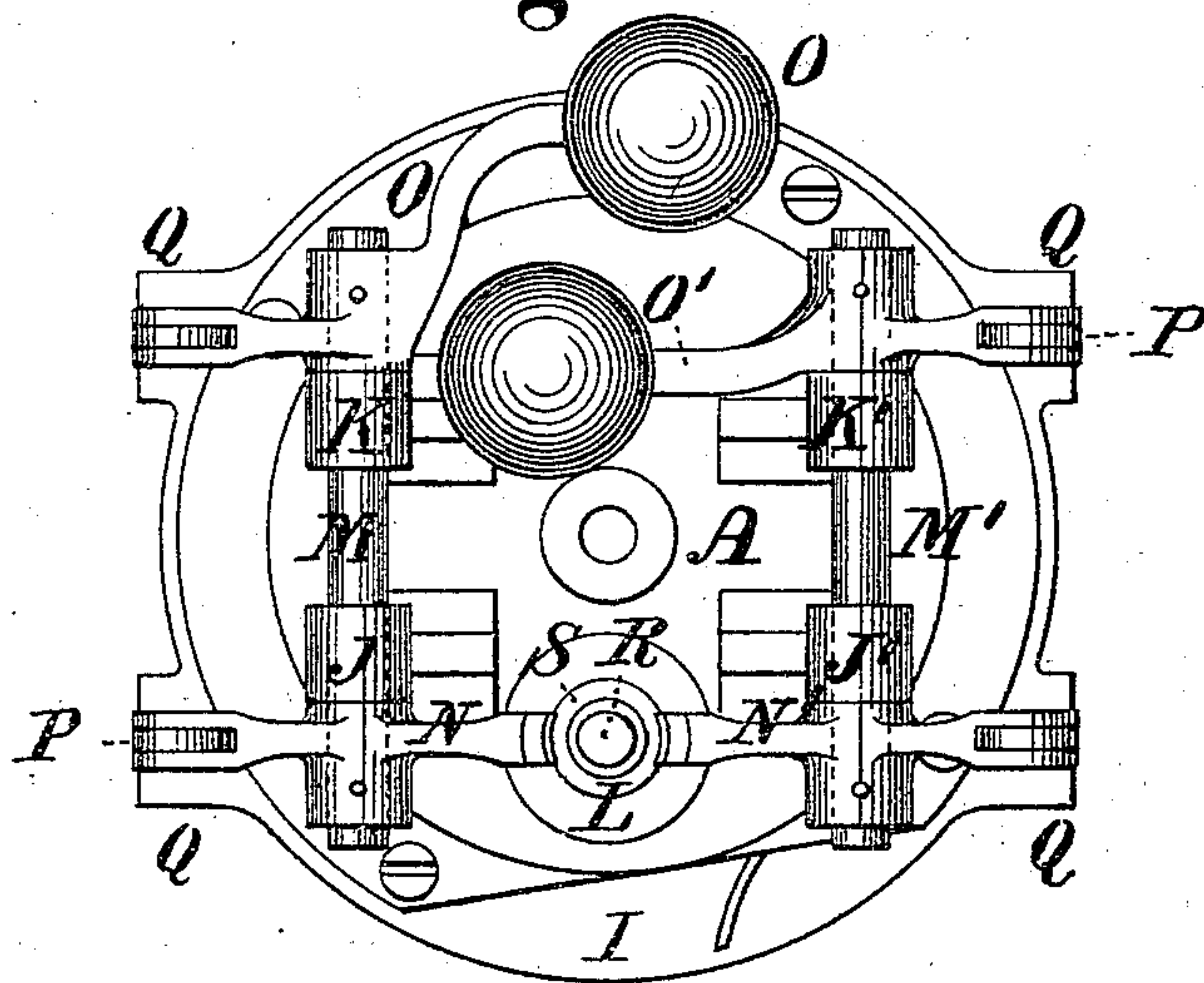


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

THEODORE H. RISDON AND WILLIAM W. TYLER, OF MOUNT HOLLY, N. J.

IMPROVEMENT IN CYLINDER-GATES FOR TURBINE WATER-WHEELS.

Specification forming part of Letters Patent No. **148,577**, dated March 17, 1874; application filed January 31, 1874.

CASE B.

To all whom it may concern:

Be it known that we, THEODORE H. RISDON and WILLIAM W. TYLER, both of Mount Holly, in the county of Burlington and State of New Jersey, have invented a new and useful Improvement in Devices for Raising and Lowering Cylinder-Gates of Turbine-Wheels; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the said improvement, reference being had to the accompanying drawing which forms a part of this specification, and in which—

Figure 1 is an elevation, and Fig. 2 a plan, of the said improvement, the same parts being denoted by the same letters in both figures.

This invention consists in the combination, with an annular gate, by which water is admitted to or shut off from a turbine wheel, (commonly called a cylinder-gate,) of certain rock-shafts, rods, weighted levers, toothed levers, and a worm, all supported on the crown-plate of said wheel, and arranged in the following manner:

A in the drawing represents the crown plate which covers the wheel. This plate is made with a flange, B, from which project the seats C, which are bolted to the curved guides D. The annular plate E, on which said guides are cast, rests on the draft-tube F, and is bolted to the flange G on said tube. H is a vertically-movable annular gate, made with a flange, I, in which are curved slots conformed to the shape of the guides D, so as to permit the

gate to move freely up and down, the guides projecting through the slots. To the top of the crown-plate are bolted five standards, J, K, J', K', and L. The standards J and K support the rock-shaft M, to one end of which is keyed the toothed lever N, and to the other the weighted lever O, which counterbalances the gate. To the outer ends of these levers are pivoted rods P, which pass through lugs Q on the flange I, and are secured thereto by nuts. The standards J' and K' support a similar arrangement of rock-shaft, levers, and rods connected to the gate-flange, as shown in the drawing. In the standard L revolves the gate-rod R, constructed with a worm, S, which meshes into the teeth of levers N and N'.

In operation, the gate is raised or lowered so as to admit or shut off the water, accordingly as the gate opens upward or downward, by turning the gate-rod to the right or left, as the case may be.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

The combination, with the cylinder-gate of a turbine-wheel, of the rock-shafts, rods P, weighted levers, toothed levers, and worm, all supported on the crown-plate of said wheel, and arranged as shown and described.

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Witnesses:

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