M. E. WASHBURN.

Water-Wheels.

No. 157,250. Patented Nov. 24, 1874.

Fig. 1.

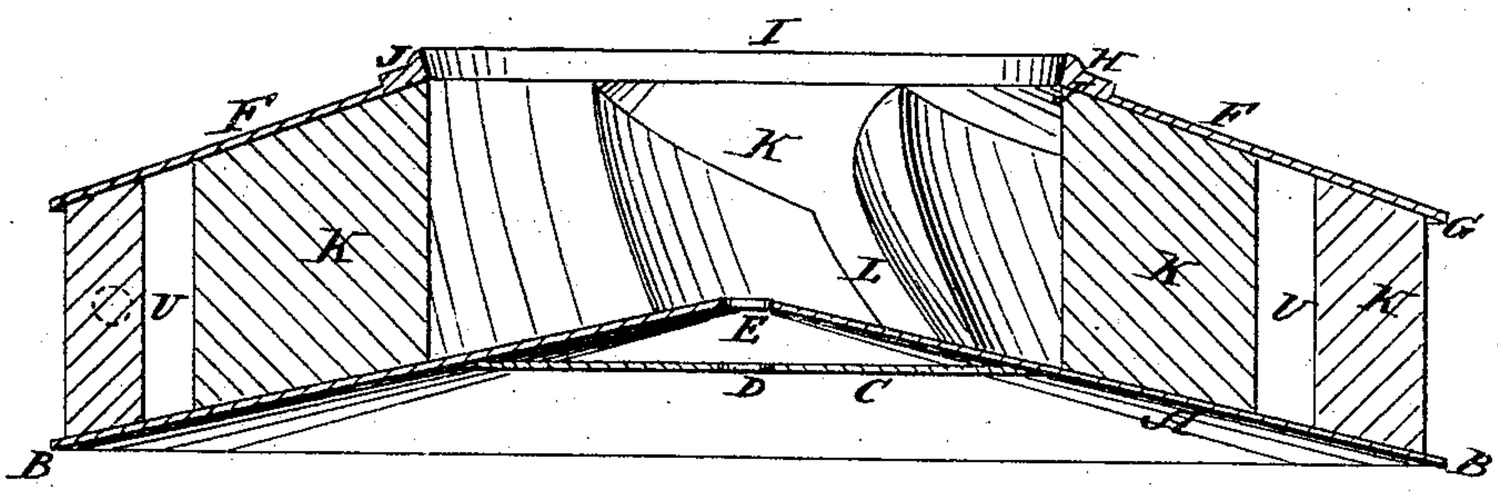


Fig. 2.

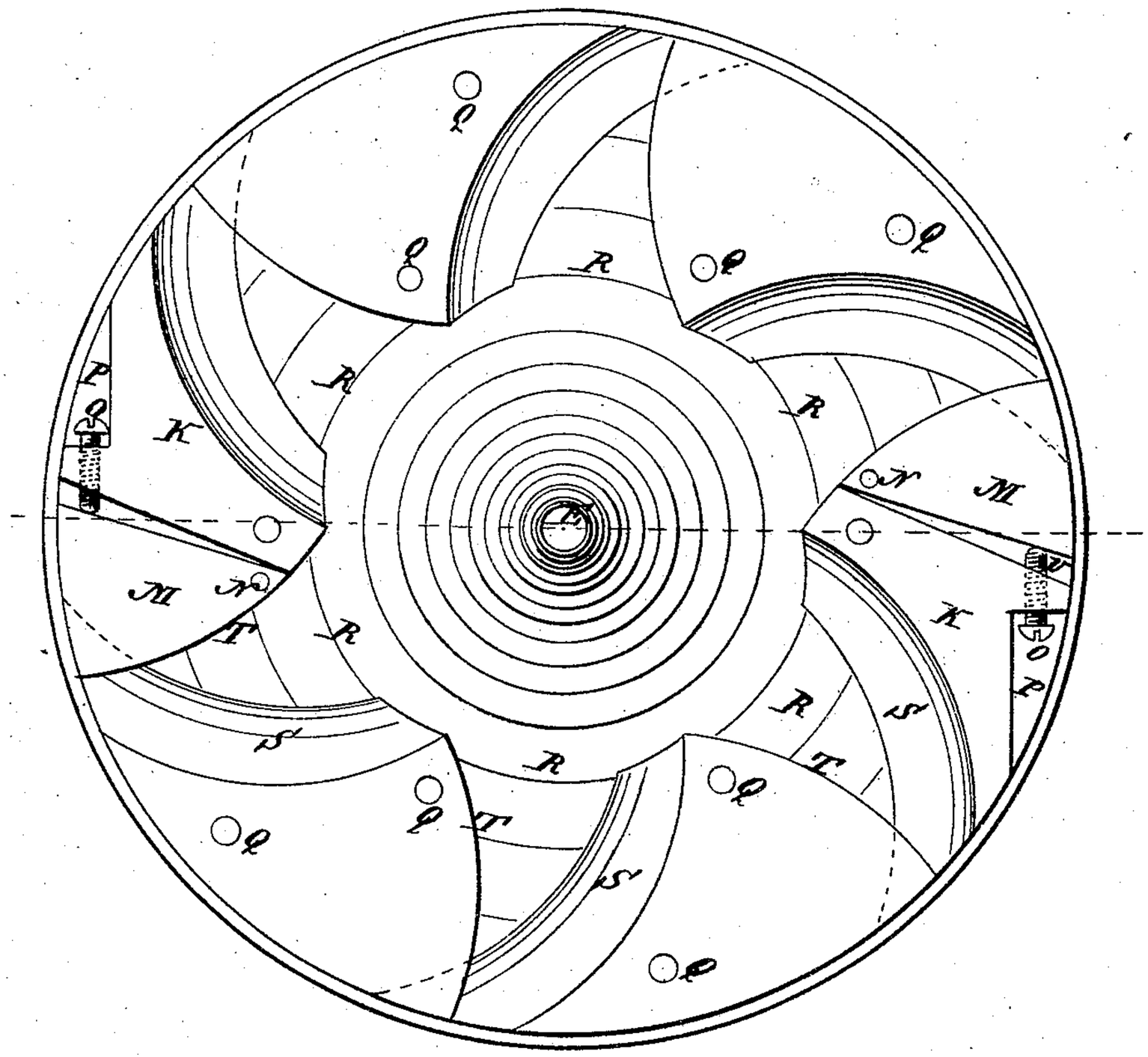
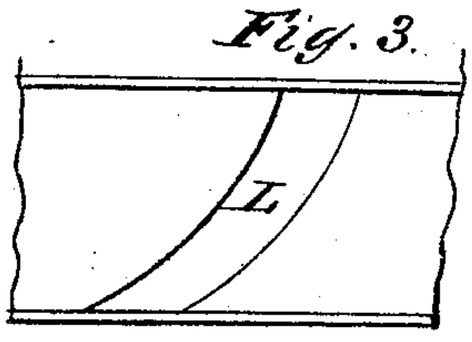


Fig. 3.



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UNITED STATES PATENT OFFICE.

MILO E. WASHBURN, OF INDIAN LAKE, NEW YORK.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **157,250**, dated November 24, 1874; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, MILO E. WASHBURN, of Indian Lake, Hamilton county, New York, have invented a new and useful Improvement in Water-Wheels, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

In the drawing, Figure 1 is a vertical section of the wheel taken on the line *x x*, Fig. 2. Fig. 2 is a top view with the upper head removed; and Fig. 3 is a view of one of the water-issues.

Similar letters of reference indicate corresponding parts.

This water-wheel consists of a lower and upper head, with buckets between them. A is the lower head, made preferably of metal, and springing upward from its outer edge B to the center, in a concave form. C is a round plate or disk of metal, which is rigidly attached to A on a horizontal plane, which serves to strengthen the concave and support the central shaft, which passes through the orifices D and E in the disk and center of the concave. There is a cast-iron hub at the center, confined in any manner to more effectually hold the shaft. F is the upper head, which is an annular plate springing upward in a convex form parallel with the head A, from its outer rim, G, to the point H. I is the opening around the shaft where the water enters. J is a collar around the opening, of either cast or wrought iron. K represents the buckets, which are in the block form, but made of either wood or metal. If made of metal they may be open or hollow. L are the water issues or discharges. The buckets are made in two parts. Each bucket has an adjustable part, *m*, which is pivoted by the pin N through the heads of the wheel, which may be adjusted to increase or diminish the size of the water-issues, as may be desired, by means of the screws O, which are placed in the recesses P of the bucket K, or by other means. The buckets K are confined between the heads of the wheel by screws or bolts Q. The water enters through opening I. The interior openings between the buckets R are broad, one portion of the surface of the bucket S being concave and curved obliquely, and the surface of the opposite bucket, T, being convex and curved to correspond, so as to make the issue L of a curved oblique form. (Seen in Fig. 3.) U are openings between the adjustable portion M and the buckets.

The water, it is claimed, acts by its gravity as well as by its reactive force on the wheel, and serves to revolve it with great velocity and power.

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

1. The combination, with parallel cone-shaped plates A F, of intermediate buckets made in two parts, one pivoted and adjustable to or from the other, as and for the purpose described.

2. The recesses P and screws O, in combination with the adjustable parts *m* of the buckets K, substantially as specified, for the purposes set forth.

MILO E. WASHBURN.

Witnesses:

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