

No. 42,708.

PATENTED MAY 10, 1864.

W. WHITNEY.
WATER WHEEL.

Fig. 1

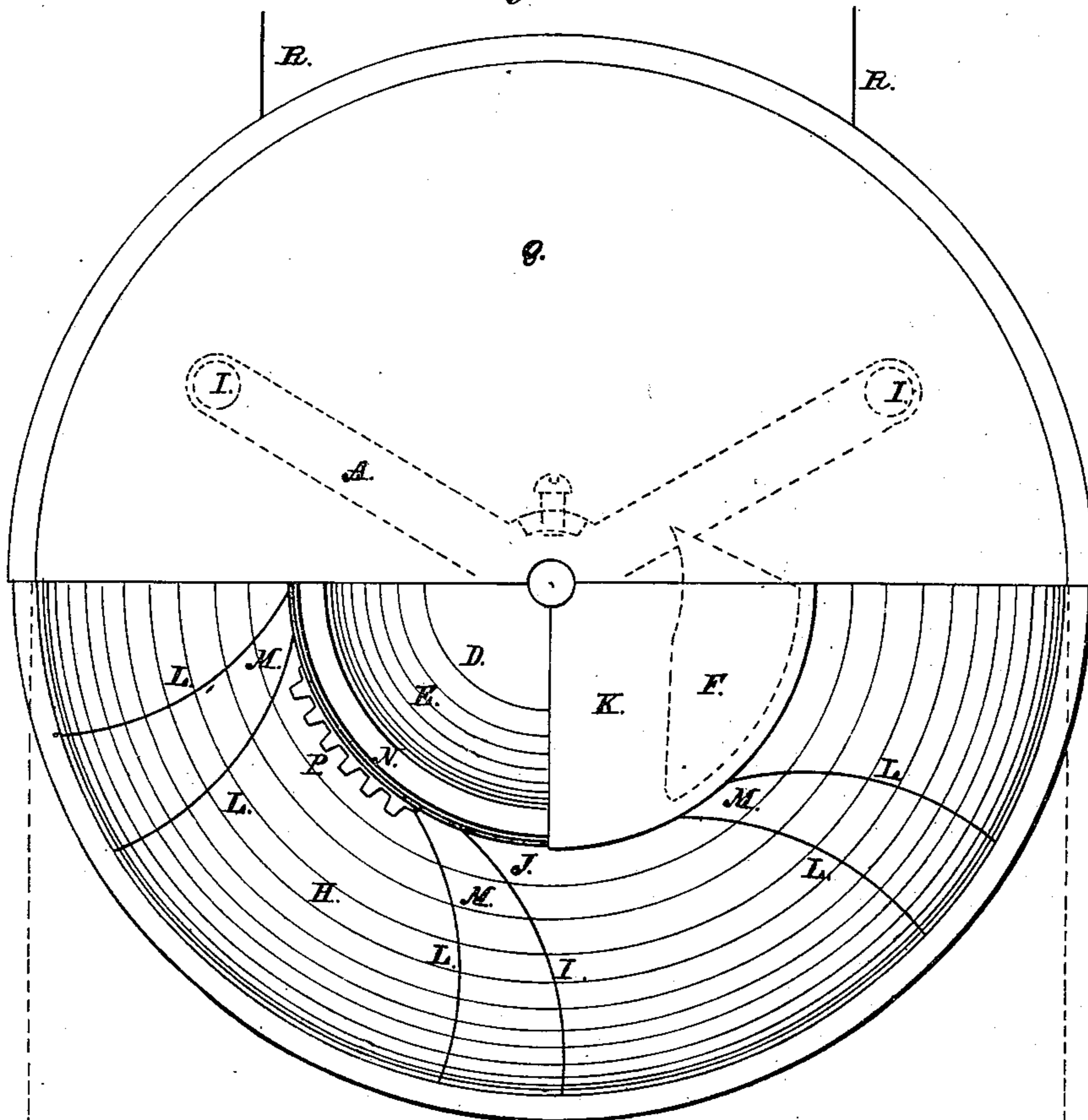


Fig. 2

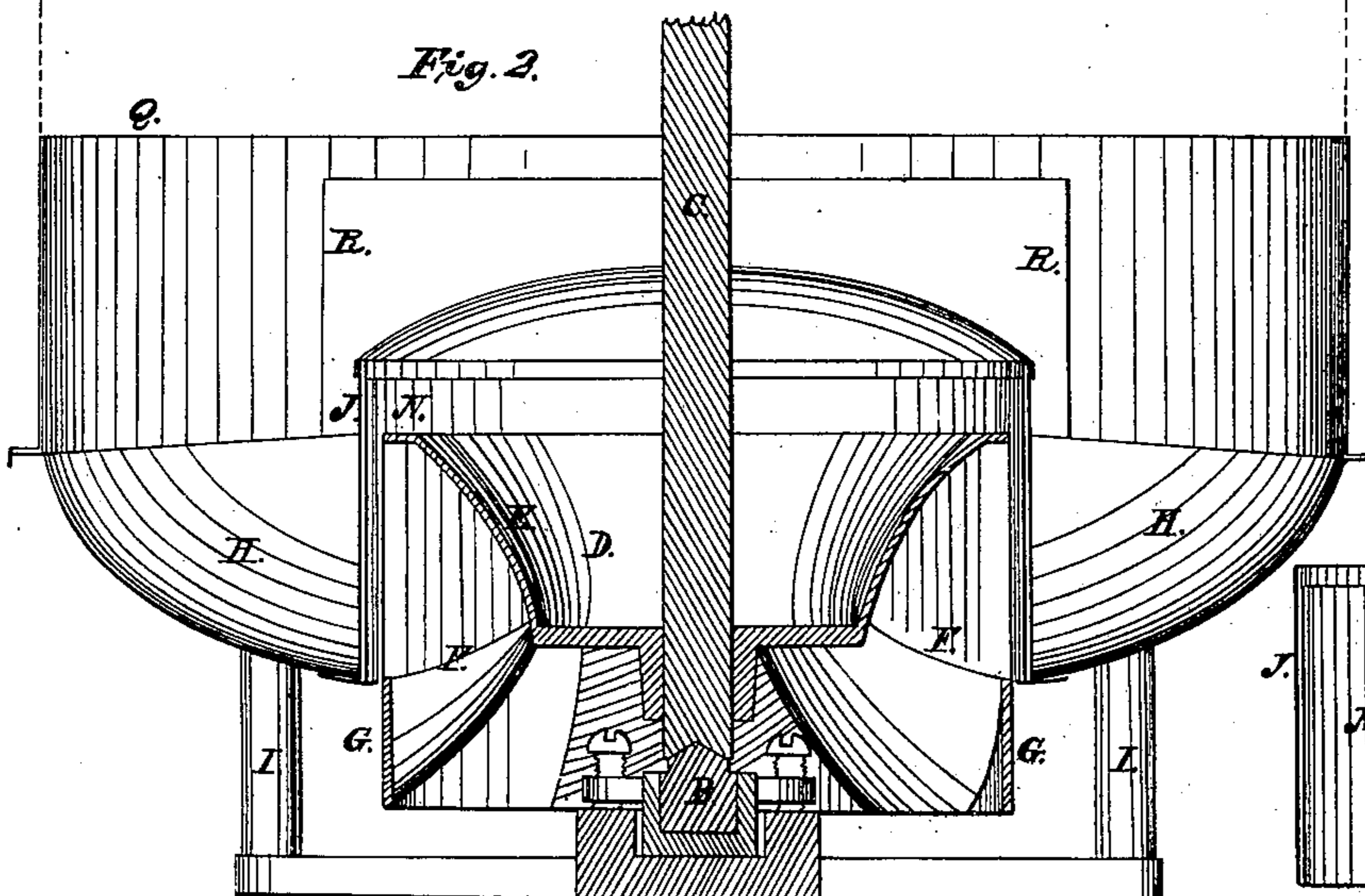
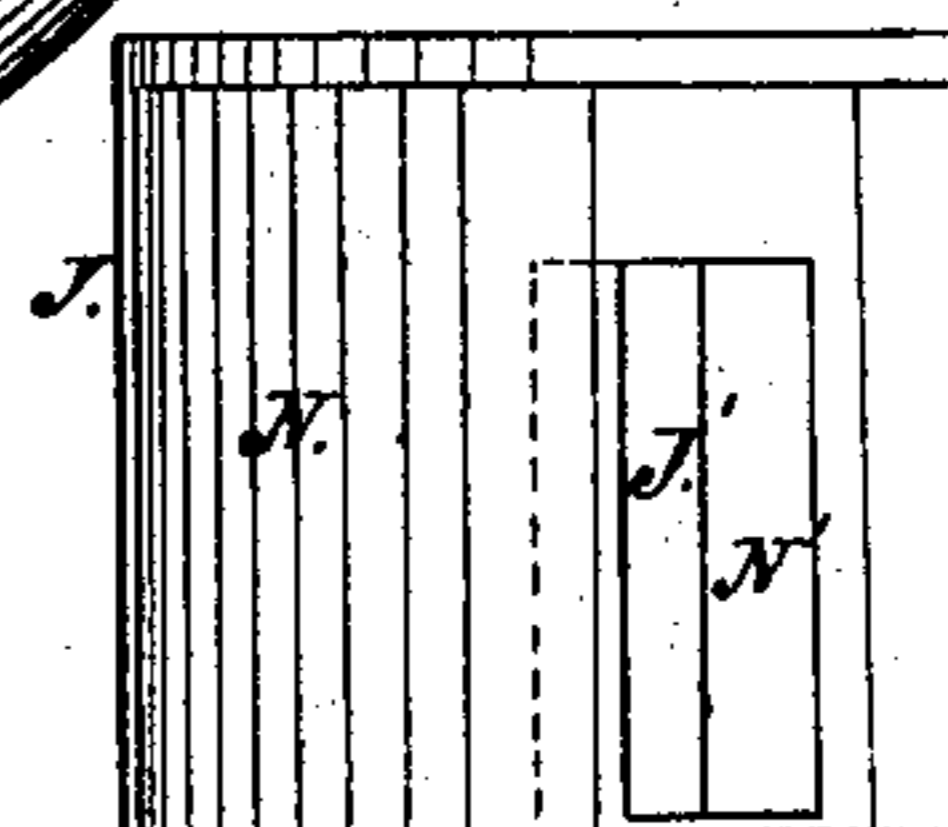


Fig. 3



Attest:
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By his Atty
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WALDO WHITNEY, OF MANCHESTER, NEW HAMPSHIRE.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 42,708, dated May 10, 1864.

To all whom it may concern:

Be it known that I, WALDO WHITNEY, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Water-Wheels; and I do hereby declare that the same are described and represented in the following specification and drawings.

The nature of my invention and improvements in water-wheels consists in a peculiar-shaped bucket or float, in combination with an inverted conical center, and in a concave disk or basin around the wheel, provided with guides or chutes to direct the water tangentially against the wheel; also, in a cylindrical gate arranged between the curb and the wheel, and fitted to traverse circularly around the wheel and open and close the chutes or apertures that supply the wheel with water.

To enable others skilled in the art to make and use my improvements, I will proceed to describe their construction and operation, referring to the accompanying drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a plan or top view, one-half of the case and one-fourth of the cover being omitted to show the interior. Fig. 2 is a section of Fig. 1, cut perpendicularly through the center. Fig. 3 is a portion of the curb which surrounds the wheel, with a portion of the gate, which is between the curb and the wheel.

In these drawings, A is the base or bottom frame, provided with an adjustable pivot, B, for the shaft C of the wheel D to turn, as shown in Fig. 2. The top and center of the wheel D consist of the inverted cone E, fastened to the shaft C by the disk at the bottom of the cone.

The buckets or floats F are made in the form shown in the drawings, and fastened to or cast with the inverted cone E, and their outer lower corners are fastened to or are surrounded by the rim or hoop G. The outer edges of the floats F are perpendicular and nearly radial. They then curve so as to join the lower end of the cone E nearly in a tangent, while that part of the float below the cone extends downward and backward beyond the perpendicular part of the next float, and is inclined and curved outward and joined to the hoop G.

H is a concave disk or basin surrounding the wheel, and supported by the standards I I from the frame A. This disk H has an opening in the center just large enough for the hoop G of the wheel to turn freely in, and the top of the hoop should be just even with the inside of the bottom of the basin. The cylindrical curb J surrounds the wheel and is fastened to or cast with the basin H, and is provided with a cover, K, to keep the water from the top of the wheel or inverted cone E. This curb J is provided with long perpendicular openings, J', through which the water passes onto the wheel, and there are guides L L, either curved or straight, fastened to the sides of the openings and to the basin, forming chutes M, which direct the water tangentially onto the wheel or against the floats, so as greatly to increase the power of the wheel in proportion to the quantity of water expended. The curb J is made enough larger than the wheel to permit the cylindrical gate N to rotate between the curb and the wheel. This gate N is fitted to the inside of the curb and rests on the basin H, and is provided with openings N', corresponding with the openings in the curb, for the water to pass through onto the wheel. The gate N is provided with a rack of teeth, P, which project through an opening in the side of the curb, and may be acted on by a pinion, to rotate the gate and open and close the openings in the curb through which the water passes onto the wheel. The form of the frame A is shown by dotted lines in Fig. 1, and also the form of the float F, as seen perpendicularly.

Q is a top case covering the wheel and basin H, to receive and hold the water over the basin and wheel. The water enters the case Q through an opening, the sides of which opening are shown at R R in the drawings.

With my improvements a part or fraction of the water may be applied to the wheel with nearer a proportionate result to the whole than upon any other turbine or reaction wheel known to me.

I believe I have described and represented my improvements in water-wheels so as to enable any person skilled in the art to make and use them without further invention or experiment. I will now state what I desire to secure by Letters Patent, viz :

1. In combination with the peculiarly-

shaped floats F, the inverted conical center E and hoop G, to which the floats are fastened.

2. In combination with the concave disk or basin around the wheel, the stationary guides L and chutes M, to direct the water onto the wheel, substantially as described.

3. The cylindrical gate N, arranged between the curb and the wheel and fitted to

traverse circularly around the wheel and open and close the chutes or apertures which supply water to the wheel.

WALDO WHITNEY.

Witnesses:

ISAAC RIDDLE,
B. P. CILLEY.