

W. M. MILLS.

TURBINE WATER-WHEEL.

No. 175,132.

Patented March 21, 1876.

Fig. 1.

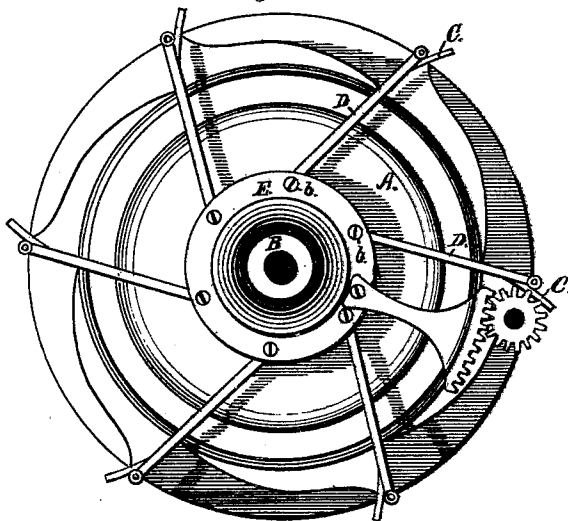
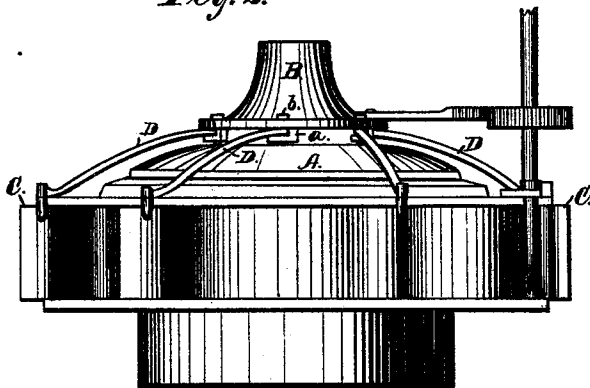


Fig. 2.



Witnesses:
Chas. M. Peck
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Inventor
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by his Attys
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UNITED STATES PATENT OFFICE.

WILLIAM M. MILLS, OF DAYTON, OHIO.

IMPROVEMENT IN TURBINE WATER-WHEELS.

Specification forming part of Letters Patent No. **175,132**, dated March 21, 1876; application filed March 2, 1876.

To all whom it may concern:

Be it known that I, WILLIAM M. MILLS, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Turbine Water-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to that class of turbine water-wheels in which the gates are opened and closed by rods connecting them to an adjustable ring fitted upon the bottom of the dome, just above the casing. Ordinarily the gate-rods are secured to the under side of the ring by bolts passed through the ring and the ends of the rods. The wear and tear incidental to the opening and closing of the gates is very great, and frequently the bolts become bent, thus seriously affecting the operating of the gates.

It is the twofold object of this invention to provide strong and unyielding bearings for the ends of the gate-rods where attached to the ring, and also to increase the distance between the ring and the face of the casing, to diminish the liability of the parts becoming frozen together or clogged.

To enable others skilled in the art to which my invention appertains to make and use the same, I would thus proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a plan view of a turbine water-wheel provided with my improvement. Fig. 2 is a side elevation of the same.

Corresponding letters of reference indicate like parts in all the figures.

A represents any ordinary turbine water-wheel, surmounted by a dome, B, and having gates C, from which rods D, attached in the usual manner, extend to the ring E fitted upon the base of the dome. Formed with this ring on its under side, or attached to it in any convenient way, at equal intervals, are the L-shaped bearings *a*, Fig. 2, consisting of a vertical and a horizontal portion, having the distance between the upper face of the horizontal portion and the lower face of the ring just about equal to the thickness of a gate-rod. Each rod is placed in the space between the bearing and the ring, and is secured by a bolt, *b*, passed through the ring, the rod, and the horizontal portion of the bearing *a*, as represented in Fig. 2. By this method much greater durability is given to the fastening, and the liability of the bolts becoming strained or bent is entirely obviated, while, at the same time, the ring is considerably elevated above the casing of the wheel.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

In a turbine water-wheel, the ring E, provided on its under surface with the bearings *a* for the attachment of the rods D, in the manner and for the purpose specified.

Witness my hand this 22d day of February, A. D. 1876.

WILLIAM M. MILLS.

Witnesses:

CHAS. M. PECK,
WM. RITCHIE.