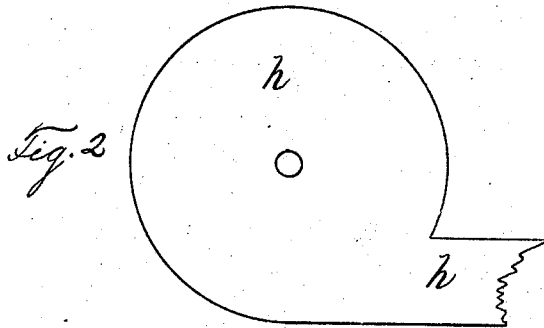
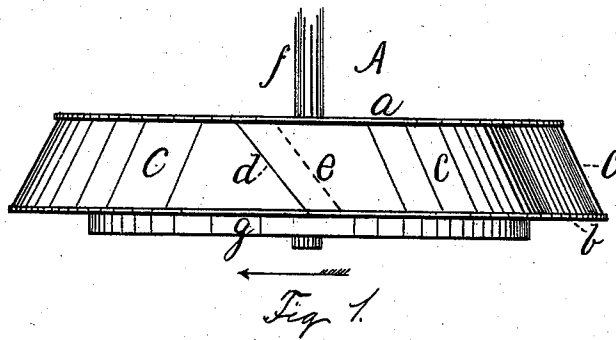


T. N. EGERY.
Water-Wheels.

No. 149,646.

Patented April 14, 1874.



Witness
Henry J. Fuller
W. E. Brown

Inventor
T. N. Eger
By Wm. McKim Peck
Att'y

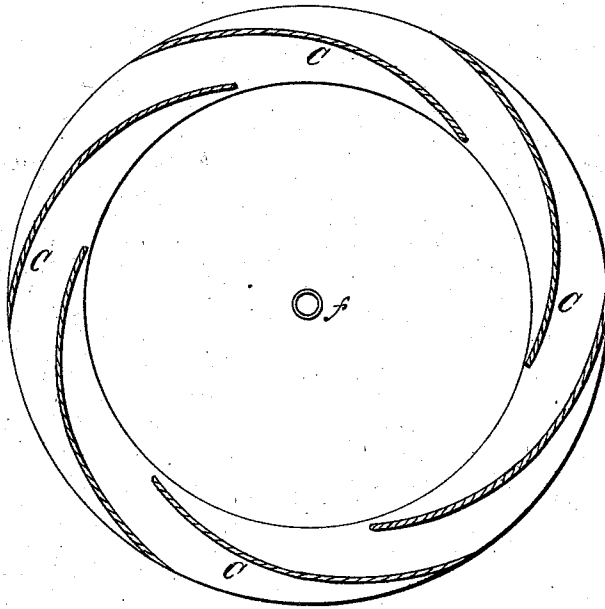
2 Sheets--Sheet 2.

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Fig. 3.



witnesses:

M. Gardner
Wm. B. Henry

Inventor:

Thomas N. Eger
per J. W. Franklin
Att'y

UNITED STATES PATENT OFFICE.

THOMAS N. EGERY, OF BANGOR, MAINE.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **149,646**, dated April 14, 1874; application filed January 22, 1873.

To all whom it may concern:

Be it known that I, THOMAS N. EGERY, of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 shows a side view; Fig. 2, detail of flume. Fig. 3 shows a transverse section.

The object of my invention is to produce a water-wheel the parts of which shall be in such relation to each other as to utilize more fully the power of the head. It is designed more particularly for a horizontal-pressure wheel.

In wheels of this class, when the buckets are perpendicular, the bottom of the wheel has a tendency to run away from the top, since the water acting upon it has a greater head or fall, and consequently more velocity, than that acting upon the upper part of the buckets; for instance, if the wheel is one foot in height from top to bottom, it has been demonstrated that the water at the bottom, having one foot more head, will, in passing around a given circle, come out about three feet in advance of the water at the top, so that the tendency is to carry the wheel around in advance of the water, which would otherwise act upon the upper portion of the buckets. I obviate this by making the top of the wheel about three feet less in circumference, or, what is the same thing, about one foot less in diameter than the bottom for each foot it is distant from it, and inclining the buckets inward at the top in the same proportion. This causes both top and bottom of the buckets to be acted upon equally by the water. I also construct the buckets so as to avoid the concussion

caused by the water as it falls from one bucket to the next. The pressure of the water being inward toward the center, this causes a jar and tends to stop the rotation of the wheel.

Instead of cutting the ends of the buckets perpendicularly, I slant them at both extremities, the upper part of the outer end of the bucket being the longer, and the inner end being parallel thereto. This construction both eases the water as it falls from one bucket to another, and allows it to escape more readily from the wheel after it has done its work. The wheel is also provided with a rim at the bottom, which acts as a stop-water, retaining a portion of it under the wheel, and causing it to balance that which falls upon the top.

In the drawing, A shows the wheel, *a* being the top, and *b* the bottom thereof; *c*, the buckets, with inclined ends *d e*, and slanting inward from the perpendicular. At *f* is the shaft; and *g* the stop-water, as described. *h* shows the ordinary flume which may be used.

I do not claim, broadly, inclining the buckets inward from the perpendicular, since if this be not done in accordance with the rule here specified, no good effect is produced. If the inclination be too great, the top of the wheel will run away from the bottom.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A water-wheel constructed substantially as herein described, to wit, having its top as much smaller than the bottom in diameter as the distance between them, and its buckets inclined inward, as specified.

2. Buckets *c*, having their ends cut slantingly, as shown at *d e*, as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of January, 1873.

THOS. N. EGERY.

Witnesses:

A. J. DURGIN,

WM. FRANKLIN SEAVEY.