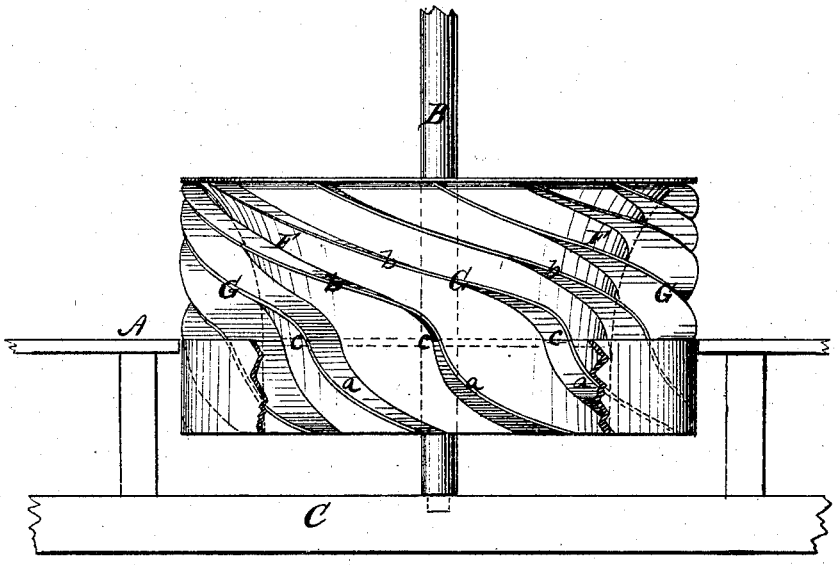
G. Cox,

Water Wheel.

No. 113400. Patented Apr. 4. 1871.



Witnesses:
Mary E. Welch.
Mrs. Wm B. Stone.

Inventor:
Gerelmer Cox.

United States Patent Office.

GARDNER COX, OF PIERPONT, NEW YORK.

Letters Patent No. 113,400, dated April 4, 1871.

IMPROVEMENT IN WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GARDNER COX, of Pierpont, in the county of St. Lawrence and State of New York, have invented a new and improved Water-Wheel; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and improved water-wheel of that class which is secured to a vertical shaft, and consequently rotates in a horizontal plane.

The invention consists in a peculiar construction of the buckets, and a novel application of them to the wheels, whereby a large percentage of the power of the water is obtained.

In the accompanying drawing—

A represents a suitable base or platform, in which the lower part of the wheel is fitted and works.

B is the shaft of the wheel, the lower end of which is stepped in the cross-bar C, fitted and secured to the base or platform in which the wheel is fitted and works.

The wheel is composed of a hub or body, F, having buckets, G, attached to its exterior. This hub or body has a concave periphery, as shown clearly in fig. 1, so that the hub or body gradually decreases in diameter in a concave form from its upper to about two-thirds down to its lower end.

The buckets G are each composed of two parts, *a* and *b*, the upper and longer parts, *b*, being inclined at an angle of from five to thirty degrees with a horizontal plane or the plane of rotation of the wheel, the longer or upper buckets *b* bending or curving down at the lower ends at *c*, the lower parts of the buckets *a* bending or curving up at the upper ends, forming a connection at *c*. The center, at *c*, forms nearly a flat *cyma recta*, which is shown clearly in fig. 1.

The lower portions of these buckets, which include the parts *a b*, are similar to those now employed in the ordinary turbine water-wheels, the extension or prolongation of the upper parts *b* and the gradual increase of the buckets from their upper to their lower ends, caused by the concave exterior of the body F, constituting the main portion of my improvement.

By having the buckets *a b* constructed and applied to the concave exterior of the hub or body F of the wheel, as shown and described, the full benefit of the force of the impact of the water is obtained, and also the force or power due to the gravity of the water in its discharge from the wheel, the gradual expansion of the buckets admitting of the free discharge of the water, so that the latter cannot serve as a drawback to the wheel.

I claim as new and desire to secure by Letters Patent—

The buckets *a b*, united at *c* to the external cylinder, arranged as shown, when said buckets are attached to the concave periphery of the downwardly-diminishing hub or body F of a wheel, as and for the purpose herein set forth.

GARDNER COX.

Witnesses:

MARY E. WELCH,

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