(No Model.) 2 Sheets—Sheet 1.

L. LONG.

WATER WHEEL.

No. 264,890. Patented Sept. 26, 1882.

Fig. 1.

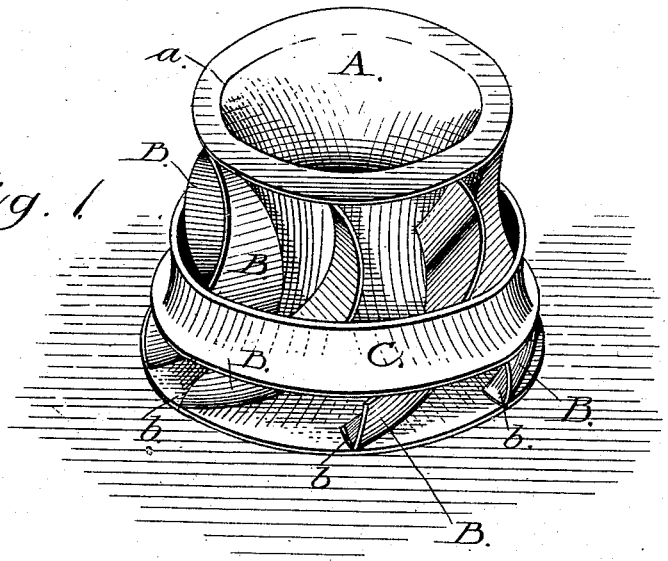
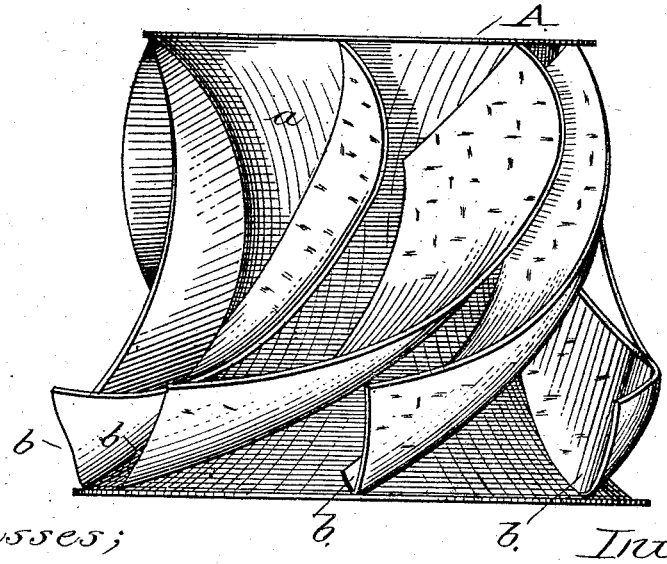


Fig. 2.



Witnesses;

F. Walter Fowler

H. B. Applewhaite.

Inventor:

Leonard Long

Per attys.

A. H. Evans & Co

(No Model.) 2 Sheets—Sheet 2.

L. LONG.

WATER WHEEL.

No. 264,890. Patented Sept. 26, 1882.

Fig. 3.

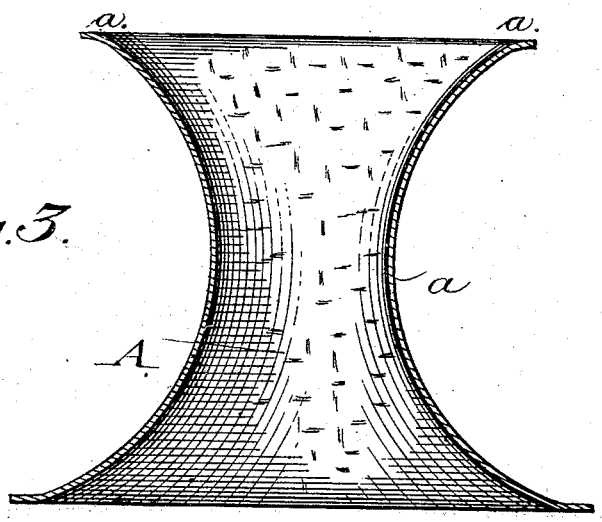
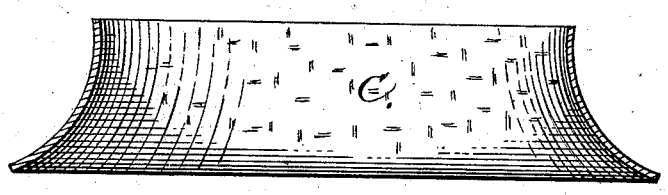


Fig. 4.



Witnesses;
D. Valle Fowler
H. B. Applewhaite.

Inventor;
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per attys.
A. H. Evans & Co.

UNITED STATES PATENT OFFICE.

LEONARD LONG, OF RICHFORD, WISCONSIN.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 264,890, dated September 26, 1882.

Application filed February 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEONARD LONG, of Richford, Wisconsin, have invented certain new and useful Improvements in Water-Wheels, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a water-wheel with my improvements attached. Fig. 2 is an elevation of the same with outer cylinder removed. Fig. 3 shows the hub stripped of the bucket and outer cylinder. Fig. 4 is a cross-section of the outer cylinder.

My invention relates to water-wheels for creating power, and is an improvement on Patent No. 181,084, granted to me August 15, 1876; and it consists in the peculiar construction and shape of the hub, in combination with buckets fitting the peculiar-shaped hub, as hereinafter more fully described and specifically claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents my improved hub, which is a hollow cylinder, flaring and flanged at each end, the outer longitudinal surface, *a*, forming a curve, as shown in Fig. 3, and the lower end or bottom of the hub being of larger diameter than the wheel is at the top.

B B are the buckets which wind around the curved hub, and are so shaped as to fit this curved or concave surface *a* of the hub, and at the same time so curved on their outer edges as to fit snugly within the concavo-convex cylinder C, which incloses the lower portion of each bucket, as shown in Fig. 1. These buckets, from their points of contact with the upper edge of the cylinder C down to their points of discharge, are inclosed, and form downwardly-winding channels, swelling outwardly until the water is discharged tangentially through the openings *b*, as fully illustrated in Fig. 1. The cylinder C, which is concavo-convex in the cross-section of one of sides, as shown in Fig. 4, along its whole depth is parallel, or nearly so, with the curve of the hub, and is secured to the buckets, its lower edge being above and nearly on a vertical line with the lower edge of the hub A. Between the lower edges of the hub and the outer cylinder are the discharges *b*, as shown in Fig. 1.

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

The hub A, flaring at top and bottom, in combination with the winding-buckets B and the outer concavo-convex cylinder, C, all constructed to operate substantially as herein described.

LEONARD LONG.

Witnesses:
A. H. WALKER,
ALDEN PEIRCE.