C. F. SMITH.
Water Wheel.

No. 202,062. Patented April 2, 1878.

Fig. 1.

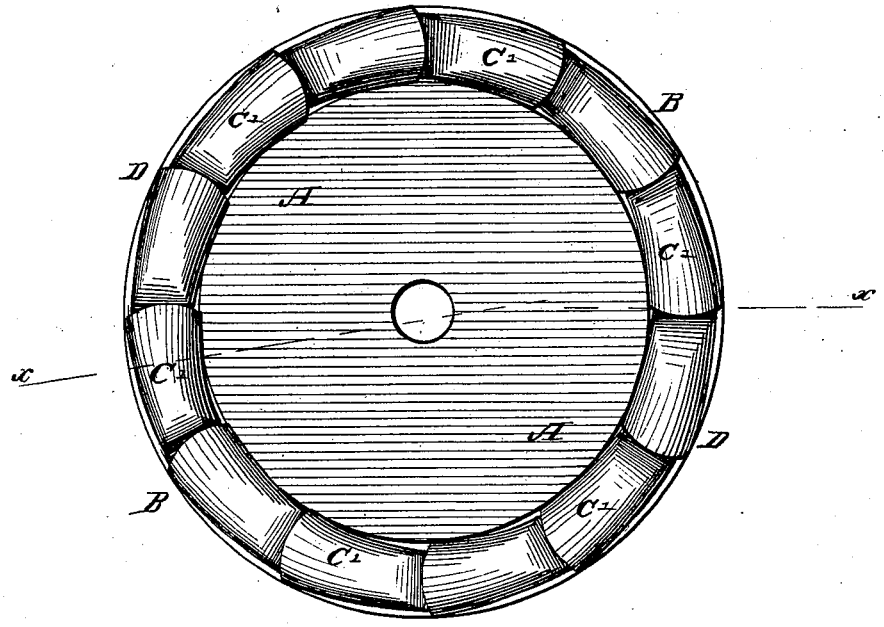


Fig. 2.

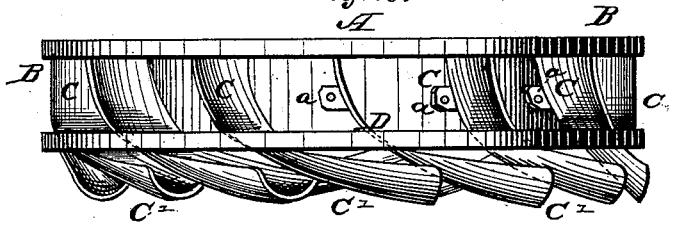
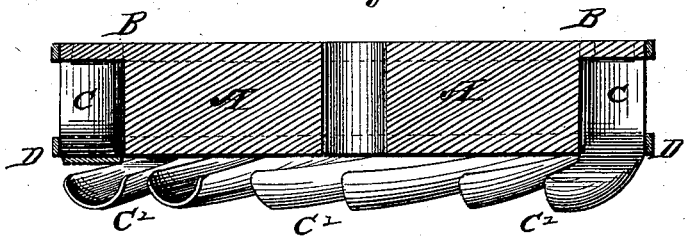


Fig. 3.



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UNITED STATES PATENT OFFICE.

CALEB F. SMITH, OF MOUNT PLEASANT, NORTH CAROLINA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **202,062**, dated April 2, 1878; application filed October 11, 1877.

To all whom it may concern:

Be it known that I, CALEB F. SMITH, of Mount Pleasant, in the county of Cabarrus and State of North Carolina, 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, which will enable others skilled in the art to which they appertain 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.

The nature of my invention consists in the construction and arrangement of a water-wheel, as will be hereinafter more fully set forth.

In the annexed drawing, which fully illustrates my invention, Figure 1 is a bottom view. Fig. 2 is a side elevation, and Fig. 3 is a central vertical section on line *x x*, Fig. 1.

A represents the wheel proper, made cylindrical in form, and formed around its top with a projecting flange, B, as shown, of the same width as the buckets C C. These buckets stand at the top nearly vertical, and are then curved forward and extended, as shown at *c'*, below the lower edge of the wheel and underneath the adjoining bucket. That portion of each bucket which extends below the wheel and under the next bucket has its edges curved upward to make the end of the bucket concave, substantially as shown in the drawing.

Each bucket C is formed or provided with an ear, *a*, which is fastened by a screw or otherwise to the wheel A, and the top of the bucket is fastened to the under side of the flange B. A ring, D, also surrounds and connects all the buckets at their outer edges a suitable distance above the lower edge of the wheel.

By this construction any one or more of the buckets may be removed when necessary for repairs without taking the whole wheel apart.

The wheel is simple in construction, durable, and is comparatively cheap.

The special advantages of my water-wheel are, that the buckets are attached in such a manner as to receive the water in a straight line, which is the strongest way water can be applied, after which the elongation of the bucket gives full power of the weight of the water in escaping, while the elevation of the outer portion of the lower extremity of the bucket gives the additional advantage of the centrifugal force of water in attempting to discharge, thus obtaining all the power there is in the water, due allowance being had for friction. There is also very great leverage, as the water is applied at the extreme radius of the wheel.

This wheel will act as well in eddy-water, because by nature of its construction it will be almost entirely in active water except the lower extremities of the buckets. It will also waste but little water, as there is no possible way for its escape except between the ring or band D and flange B.

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

The within-described water-wheel, consisting of the wheel A, with top flange B, the independently-removable buckets C C, constructed as described, with concave extensions C' C', and the surrounding band D, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CALEB F. SMITH.

Witnesses:

PAUL B. MEANS,

WM. SMITH.