

R. M. GADDY.
WATER-WHEEL.

No. 179,696.

Patented July 11, 1876.

Fig. 1.

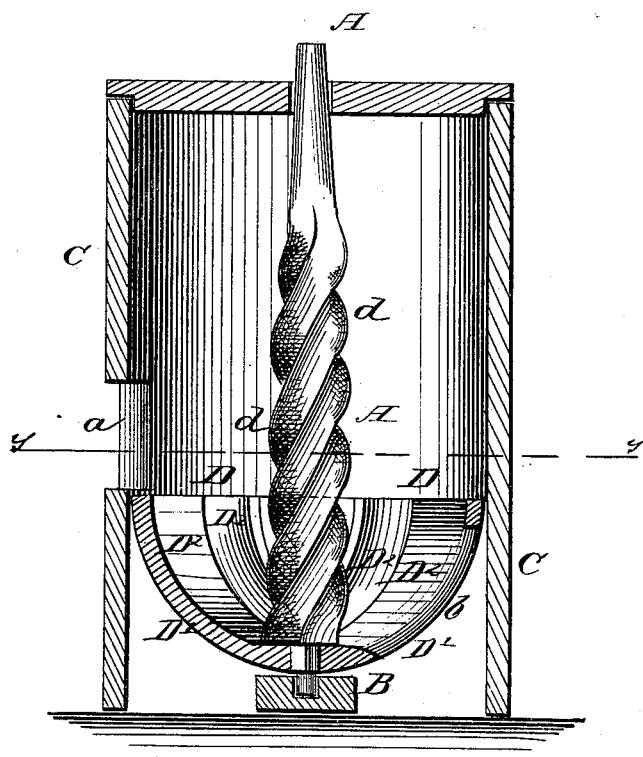


Fig. 2.

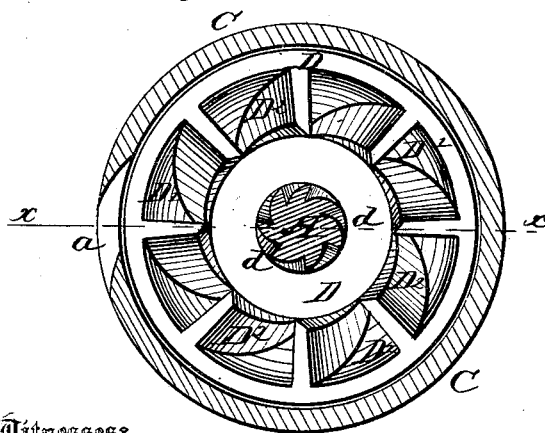
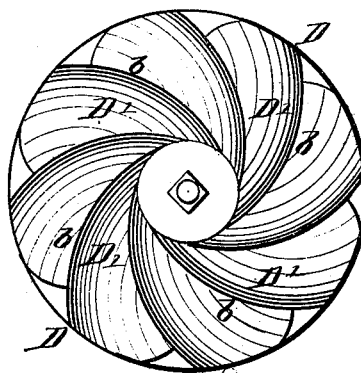


Fig. 3.



Witnesses:

P. C. Dieterich
F. H. Duffy

Inventor:

Richard M. Gaddy
Per: *C. H. Watson & Co* Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD M. GADDY, OF NICHOLS, SOUTH CAROLINA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **179,696**, dated July 11, 1876; application filed May 17, 1876.

To all whom it may concern:

Be it known that I, RICHARD M. GADDY, of Nichols, in the county of Marion and State of South Carolina, have invented certain new and useful Improvements in Water-Wheel; 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 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.

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, Figure 1 is a central vertical section on line *x x*, Fig. 2. Fig. 2 is a transverse cross-section on line *y y*, Fig. 1; and Fig. 3 represents a bottom view of the wheel.

A represents the vertical shaft on which the wheel is secured, said shaft having its lower bearing in the bridge-tree B, under the curb or casing C, and its upper bearing in a spider or cross-bar within said casing. The casing C may be constructed in any suitable manner, and have any desired number of chutes, *a*, for admitting the water into the same above the wheel, and also have suitable gates for letting on and shutting off the water, as required. The wheel D is made in bowl or semi-spherical shape, hollow, and cut with a series of spiral slots or openings, *b b*, running from near the upper edge to near the center of the bottom of the wheel, so as to leave, as it were, a solid top rim, and a solid center disk, with a series of spiral fan-shaped pieces, *D*¹, between and connecting said rim and disk. Each of these spiral pieces *D*¹ is curved or beveled inward along one edge, and from the top to the bottom along this edge, on the inside of the wheel, is a spiral tapering flange, *D*², as shown, the two spiral parts *D*¹

and *D*² forming the bucket of the wheel. The outer edge of the bucket as thus formed is also beveled, as shown. The shaft A passes through, and is fastened in, the center of this wheel, and on the shaft are formed a series of spiral flanges, *d d*, which extend from the bottom of the wheel upward a suitable distance above the top of the wheel. The relative dimensions of the shaft and wheel are such that a space will be left all around the shaft between the outer edges of its spiral flanges and the inner edges of the buckets, as fully shown in the drawing.

The chutes *a* in the case C being above the wheel D, the water passes through the same, and down onto the wheel, acting both on the buckets and on the spiral flanges of the shaft. The water that strikes the flanges *d* of the shaft aids in rotating the wheel, and then as the same water falls down onto the buckets it acts on them, giving still greater impetus to, and accelerating the motion of, the wheel.

The wheel may be made of wood or metal, or of both combined, as desired.

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

1. A water-wheel made hollow in semi-spherical form, and provided with interior buckets, substantially as herein set forth.

2. The water-wheel D, made hollow in semi-spherical form, with spiral slots *b*, and spiral interior buckets *D*¹ *D*², substantially as and for the purposes herein set forth.

3. The shaft A, provided with spiral flanges *d*, in combination with the wheel D, as and for the purposes set forth.

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

RICHARD M. GADDY.

Witnesses:

WM. B. UPPERMAN,
F. H. DUFFY.