

D. C. WOLF.

Water-Wheel.

No. 132,886.

Fig. 1.

Patented Nov. 5, 1872.

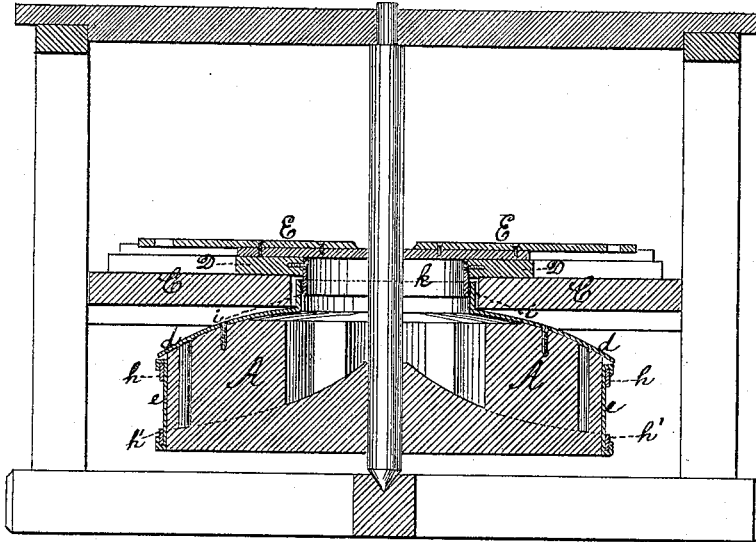
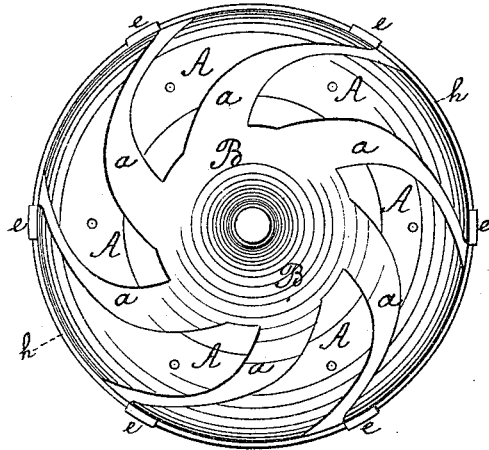


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DANIEL C. WOLF, OF PLEASANT VALLEY, SOUTH CAROLINA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 132,886, dated November 5, 1872.

To all whom it may concern:

Be it known that I, DANIEL C. WOLF, of Pleasant Valley, in the county of Lancaster and State of South Carolina, have invented a certain Improvement in Water-Wheels, of which the following is a specification:

The object of this invention is to improve the construction of water-wheels in respect of, first, protecting the outer ends of the buckets against fracture; and, second, preventing waste of water during its introduction into the wheel. To this end the invention consists, first, in the combination with the outer ends of the buckets of metal plates, held in place by means of hoops encircling the wheel; second, in the combination of a series of devices for conducting water from the forebay to the center of the wheel, all of which I will now proceed to describe.

Figure 1 is a vertical central section, and Fig. 2 a plan view, of the wheel.

A are the buckets aforesaid, formed together with the rest of the wheel out of a block consisting either of one piece of timber or of several pieces doweled together, and dressed down to the proper thickness—say, fourteen inches for a forty-eight inch wheel. Circles are struck on the top of this block of the proper diameter for the outside of the wheel, and also for the central open space, say twenty inches, and one, say, of twenty-three inches intermediate. The inner circle is divided into as many equal parts as there are to be buckets, say six. Each division is distinctly marked for the starting-points of the back and front of the bucket, and the backs struck in continuous arcs by compasses, open, say, fourteen inches, with one leg at the starting-point and the other leg in the inner circle. The fronts of the buckets are struck by opening the compasses to, say ten and one-half inches, placing one leg at the starting-point and the other in the intermediate circle, running the moving leg, say, two-thirds the distance from the start-

ing-point to the outer circle, and then opening the legs to fourteen inches, changing the pivot-leg to a point in the inner circle, and completing the back in a different arc, making a back with two faces at nearly a right angle. The water-ways *a* are then cut out between the buckets and the central space between the inner ends of the buckets, which would be some seven inches wide, the outer ends being three inches. The backs should be about an inch deeper than the fronts. The bottoms of the water-ways should incline downward from their inner to their outer ends to facilitate the passage of water through them. The tops of the buckets also slope in the same direction from the intermediate circle, and to them is secured a sheet-iron water-tight cover, *d*. Metal protecting-plates *e* are applied to the outsides of the buckets at their thin ends, and held on by strengthening-bands *h h'*, one at the bottom and the other at the top of the wheel. The circular central opening B receives the water through a tube, *i*, at the middle of the cover opening into and corresponding in size with said opening. This tube projects into a circular hole in the bottom C of the forebay, and inside the tube comes a metal band, *k*, extending down from the interior of an annular facing, D, placed on the floor C, above the hole in the same. Said band prevents any waste of water over the top of the tube *i*. Above the facing D are sliding gates E to shut off the water.

I claim as my invention—

1. The combination of the buckets A, plates *e*, and bands *h h'*, as described.
2. The combination of the water-wheel, herein set forth, with the cover *d*, tube *i*, floor C, facing D, and band *k*, as explained.

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Witnesses:

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