

H. W. McAULEY.

Water Wheel.

No. 98,081.

Patented Dec. 21, 1869.

FIG. 1.

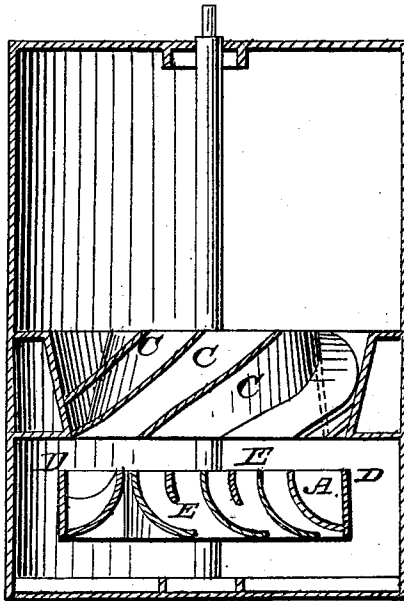
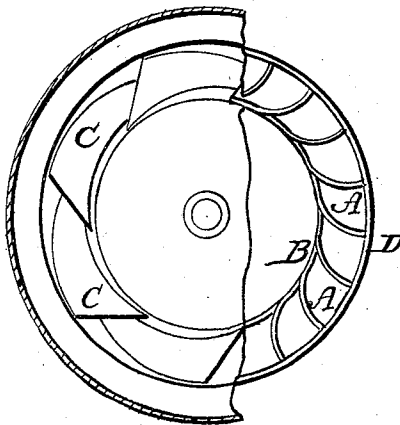


FIG. 2



WITNESSES:

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INVENTOR.

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PER
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United States Patent Office.

HENRY W. MCAULEY, OF DE SOTO, WISCONSIN.

Letters Patent No. 98,081, dated December 21, 1869.

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, HENRY W. MCAULEY, of De Soto, Vernon county, Wisconsin, have invented a new and useful Improvement 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in horizontal water-wheels, and the means for applying the water thereto, designed to provide an arrangement calculated to produce better results than now obtained from wheels of this class.

The invention consists in the particular construction, arrangement, and combination of parts, as hereinafter described.

Figure 1 represents a vertical sectional elevation of my improved wheel, and the chutes for conducting the water thereto.

Figure 2 represents a top broken view, showing a part of the chutes, and also a part of the buckets.

Similar letters of reference indicate corresponding parts.

I construct the buckets A of curved form at the top, as represented in fig. 2, uniting with the hub or inner rim B, in a tangential direction thereto, and with the outer rim in a radial direction.

These buckets are concave in the direction of their length, and each alternate bucket extends only about one-third of the length of the others, thereby providing an enlarged space at the bottom, and the said buckets are also widened from the top downward.

C represents spiral chutes, arranged in the bottom of the flume, under which the wheel is placed for directing the water to the buckets, the said chutes be-

ing so arranged and shaped as to direct the water upon the concave faces of the buckets, in a direction calculated to have the greatest direct impelling effect thereon.

The object of increasing the space at the bottom of the buckets, by widening them and reducing the number, is to allow the water freedom to escape, after the impact, without retarding the volume before the said impact, which would otherwise be the case, as after the impact the volume is necessarily increased in proportion to the reduction of velocity; also, to obtain the advantage of whatever reactive force may be left to the water as it escapes from the buckets, the said increase in space being proportioned in wheels employed for falls of various elevations, to the changes in volume due to the said variations of height, and the object of the short intermediate buckets is to increase the area of surface whereon the impact of the water may be effected, and to dispose the said surface as near to the mouths of the chutes as possible.

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

The spiral shutters C, fixed in the case of flume F, the short buckets E, and the long buckets A, the latter being curved and widened toward their lower edges, and united with the hub or rim B in a tangential, and the outer rim D in a radial direction, all constructed, arranged, combined, and operating as herein shown and described.

The above specification of my invention signed by me, this 3d day of February, 1869.

HENRY W. MCAULEY.

Witnesses:

HUGH McDILL,
WM. H. COFFIN.