

J. H. Gould,

Water Wheel.

No. 91,739.

Patented June 22, 1869.

Fig. 1.

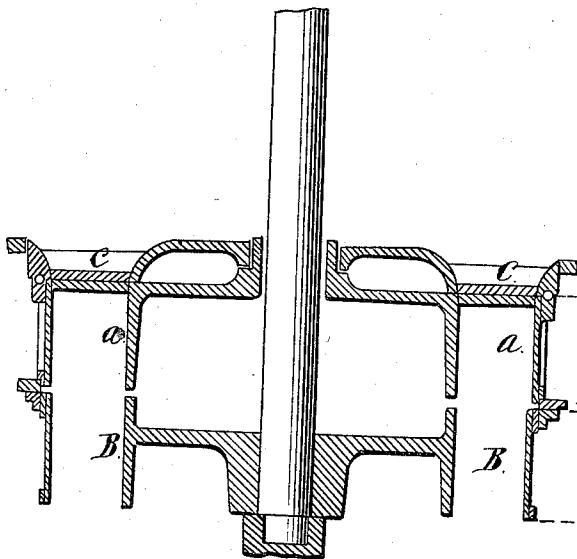
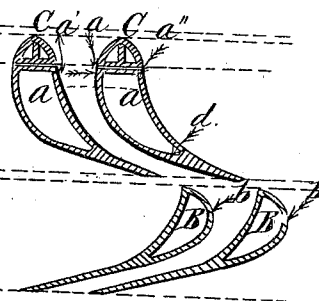


Fig. 2.



Witnesses:

C. D. Killum
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Inventor:

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United States Patent Office.

DAVID HENRY GOULD, OF TROY, NEW YORK.

Letters Patent No. 91,739, dated June 22, 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, DAVID HENRY GOULD, of Troy, in the county of Rensselaer, and State of New York, have invented certain new and useful Improvements in "Water-Wheels;" and I do hereby declare the following to be a full, clear, and exact description of the same, reference being hereby had to the accompanying drawings, which form and make a part of this, my specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 represents a section of a water-wheel, and Figure 2 represents sectional views of the guides and buckets, showing my invention and improvements, more fully hereinafter described and set forth.

The nature of my said invention and improvements consists in the guide, in combination with a water-wheel, substantially in the manner and for the purposes hereinafter fully described and set forth.

It also consists in the bucket, combined with a water-wheel, substantially in the manner and for the purposes hereinafter described and set forth.

To enable others skilled in the art to which my invention relates, to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follows, to wit:

The object of the first-named improvement, that is, the guide, is to render all wheels, using gates of the class shown in the accompanying drawings, more effective, by making the contraction of the vein, or stream, or current of water more perfect in passing between the guides, and avoiding loss of power that would otherwise occur in eddying motion occasioned by the sudden enlargement below the gate *a a'*, becoming *a' a''*; it being a principle of hydraulics that any intermediate enlargement of the opening through which the water passes is detrimental to the useful effect.

This guide A A, fig. 2, is formed by joining the point *a*, at the extremity of the flange which supports the gate C, with the point *d*, near the lower extremity of the guide A, all of which is fully shown at fig. 2 of the drawings.

The bucket B B, fig. 2, is formed by casting, or otherwise attaching to the back or rear side of the

bucket B, the additional plate *b*, which may be of any size, strength, and shape that future experiment may deem best to use.

The object of making this bucket B, as shown in said drawings, by means of the plate *b*, is to avoid the large open space which must otherwise occur, and thus prevent the eddying motion of the water, in passing from the guide A to the wheel, by the enlargement of the opening through which the vein or stream of water passes, and for the reasons above set forth.

My invention and improvement may be applied to any form of wheel, guide, or bucket, where the parts are cast solid or with a core, or to the extent of the use of either beyond the ordinary guide and bucket, composed of a single thickness of thin plate of cast-iron or other metal, neither to the combination of the two improvements in the same wheel.

Having thus described the nature of my said invention and improvements,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The guide, or chute A A, formed of a large exterior and a small interior circle, the segments thereof meeting below, at the extremity of the guide, and terminating above, remote from each other; so as to give the form of a curved wedge, presenting a convex and a concave surface, in the manner and for the purposes substantially as herein described and set forth.

2. The buckets B B, of the water-wheel, made on like principle with the foregoing guides or chutes, except that the difference in the two circles of which they form segments, is less, while that side of the broad part, or back of the wedge presents an acute angle to meet the impact of the water, and the other side is so rounded as to permit the easy flow thereof, so as to strike the inner surface of the next preceding bucket, in the manner substantially as herein described and set forth.

In testimony whereof, I have hereto set my hand, March 6, 1869.

D. H. GOULD.

Witnesses:

C. D. KELLUM,
JAMES DALEY.