J. Martin.

Water Wheel.

No. 86,238. Patented Jan. 26, 1869.

Fig. 1.

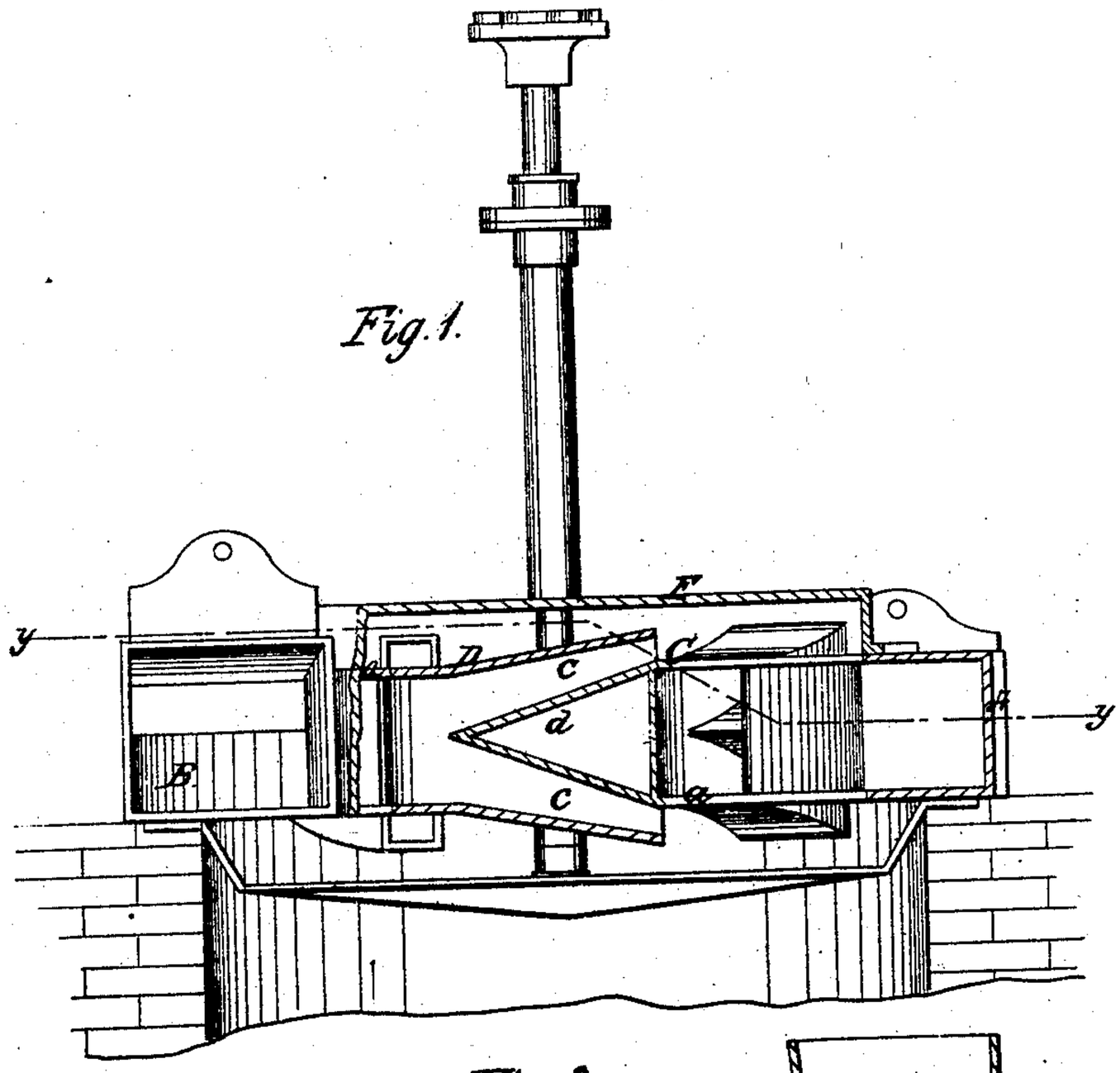
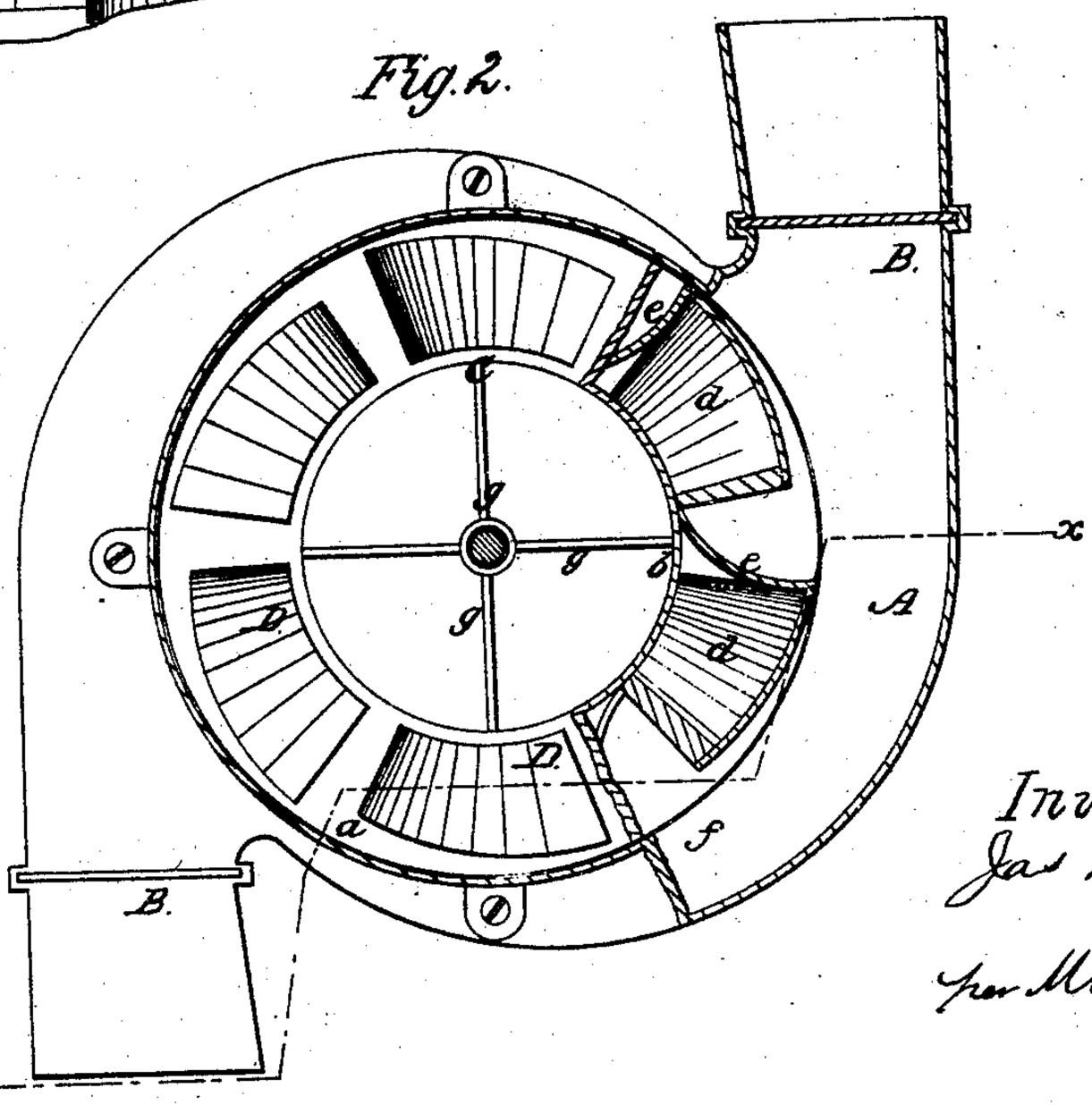


Fig. 2.



Witnesses,
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United States Patent Office.

JAMES MARTIN, OF FLORENCE, ALABAMA.

Letters Patent No. 86,238, *dated January* 26, 1869.

IMPROVEMENT IN TURBINE 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, JAMES MARTIN, of Florence, in the county of Lauderdale, in the State of Alabama, have invented a new and useful Improvement in Turbine 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, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, fig. 2.

Figure 2 is a horizontal section of the same, taken in the line *y y*, fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a new and useful improvement in turbine water-wheels, and has for its object the obtaining, in a more perfect manner than hitherto, power from the percussive and reacting force of the water.

In the accompanying sheet of drawings—

A represents the scroll, in which the wheel is fitted and works, said scroll having a horizontal position, and provided with two or more inlet-passages, B, as shown in fig. 2.

The wheel C is composed of two annular plates, *a a*, placed one above the other at a suitable distance, the space between being closed, at the inner sides of the plates *a a*, by a lining, *b*.

The buckets D are between the plates *a a*, and are composed of curved boxes, gradually decreasing in width from one end to the other, and divided into two equal parts, *c c*, by a V-shaped partition, *d*, as shown clearly in fig. 1.

The spaces between the parts *c c*, at the wide ends of the buckets, are made concave, as shown at *e* in fig. 2.

The plates *a a* of the wheel are flush with the top and bottom of the scroll A, and the outer edges of the buckets, at their widest ends, are in line with the outer edges of the plates *a a*, the water-passage *f*, in the scroll, being between the outer sides of the buckets and the exterior of the scroll.

From the above description, it will be seen that the water, as it passes through the wheel, first acts by impact against the concave ends *e* of the buckets, and then passes through the inclined parts *c c*, and is discharged at the top and bottom of the wheel in equal volume. The water which is discharged at the top of the wheel being confined by a cap, E, is compelled to pass down through the centre of the wheel, between its arms *g*.

By this construction and arrangement, I obtain, by impact and reaction, a much larger percentage than usual of the effective force of the water, as the water is not prematurely discharged from the wheel, nor is it allowed to serve in any degree as a drag to the same.

Having thus described my invention,

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

The buckets D of the turbine water-wheel, constructed in box-form, as described, and divided by the V-shaped partitions *d*, closed at the base by the concave plates *e*, all arranged and operating as described.

JAMES MARTIN.

Witnesses:

JAS. B. IRVINE,

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