J. C. Miller,

Water Wheel.

No. 54,937. Patented May 22, 1866.

Fig: 1.

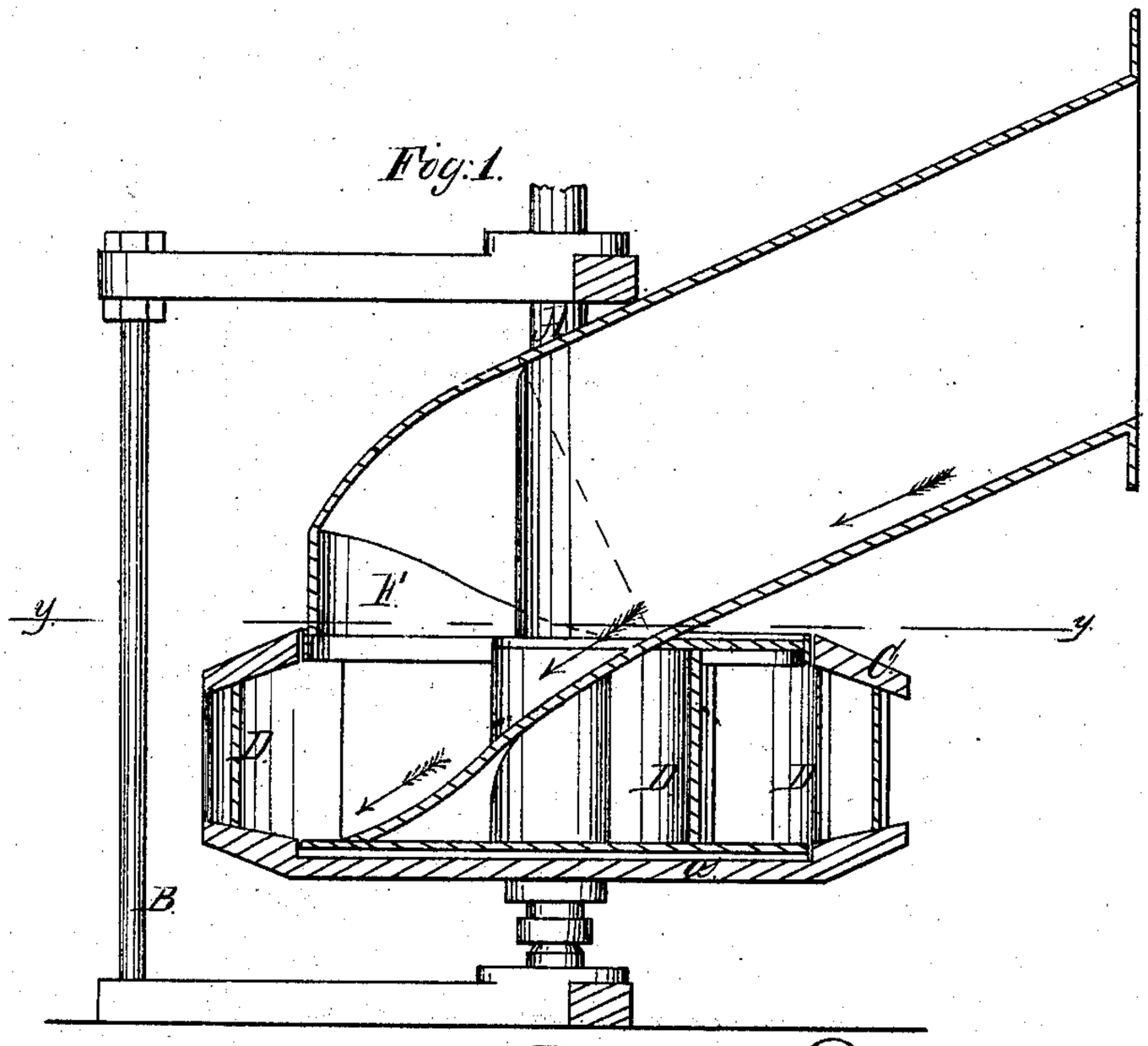
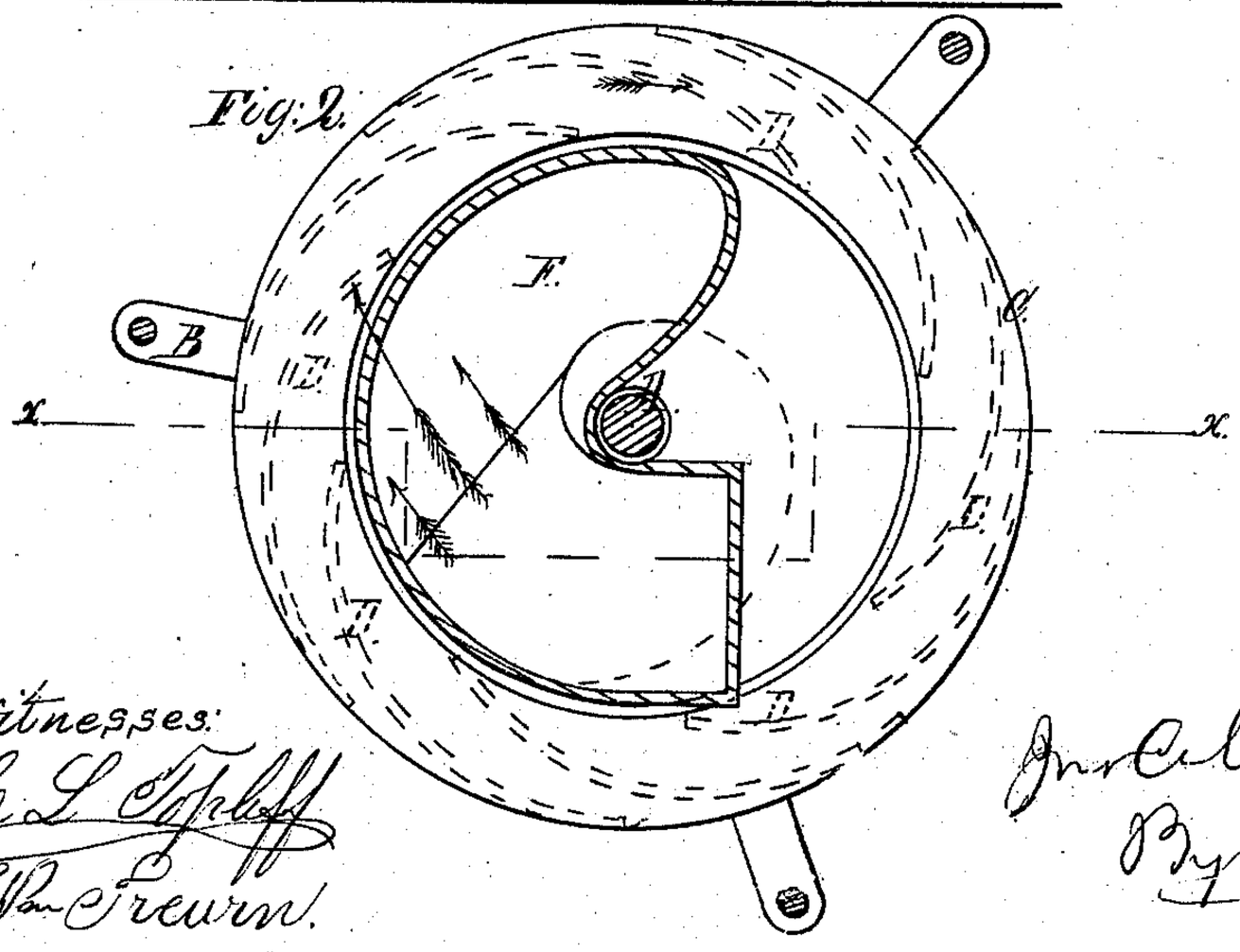


Fig: 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN C. MILLER, OF AMSTERDAM, NEW YORK.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **54,937**, dated May 22, 1866.

To all whom it may concern:

Be it known that I, JOHN C. MILLER, of Amsterdam, in the county of Montgomery and State of New York, have invented a new and Improved 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, 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 improved water-wheel of that class which are placed on a vertical shaft, receive the water at the center, and discharge it at their periphery.

The object of the invention is to give the water before it comes in contact with the buckets of the wheel, and while entering the wheel or passing into the center of the same, a spiral direction, so that all the benefit of the centrifugal force generated by the rotation of the water will be made to act upon or be applied to the wheel, thereby materially augmenting its power.

A represents a vertical shaft, which is fitted in a proper framing, B, and C is the wheel placed on said shaft. This wheel is composed of a circular bottom plate, *a*, between which, near its periphery, and a rim, *b*, at the top of the wheel, the buckets D are placed. The buckets D are of curved form, as shown by the dotted lines in Fig. 2, the spaces between them gradually diminishing in width from their inner to their outer ends.

F represents the scroll which conducts the water to the buckets. This scroll conducts the water within the wheel, and it is of helical or spiral form, and makes an entire revolution from its upper part or the commencement of its curvature, which is some distance above the wheel to its lower end, which is in contact with the bottom of the wheel. This helical or spiral scroll gives a circular direction to the water, causing it to enter the wheel with a rotary motion and in a proper direction relatively with the buckets D. The water is not appreciably retarded by friction, and the centrifugal force generated by the rotation of the water causes the latter to act in the most efficient manner upon or against the wheel. Other wheels of this class receive the water in a direct manner without any particular direction being given it other than conducting it into the wheel, and the column or stream is consequently broken and its effective force considerably diminished.

I do not claim, broadly, a helical or spiral scroll for a water-wheel irrespective of the arrangement of the scroll and its adaptation to the kind of wheel specified; but

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

1. As an improvement in water-wheels, the arrangement of the spiral or helical scroll F and curved buckets C of the wheel D, when constructed and operating in the manner and for the purpose herein specified.

2. The combination of the helical or spiral scroll, circular bottom plate, and curved buckets, when applied in connection with a water-wheel which receives the water at its center and discharges it from its periphery, in the manner substantially as herein described.

The above specification of my invention signed by me this 29th day of August, 1865.

JOHN C. MILLER.

Witnesses:

M. M. LIVINGSTON,

C. L. TOPLIFF.