

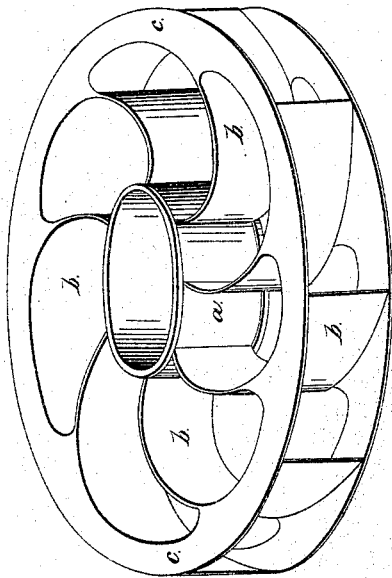
*S. L. Valentine,*

*Water Wheel,*

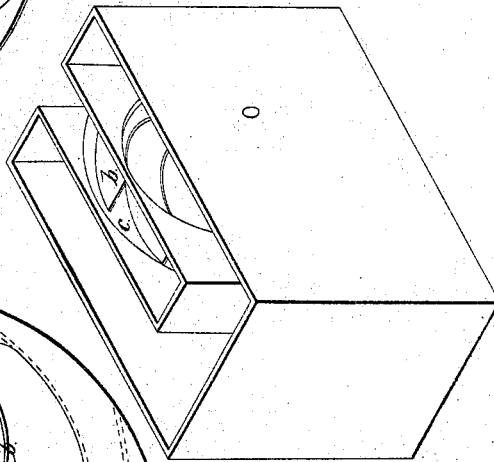
*N<sup>o</sup> 3,855.*

*Patented Dec. 12, 1844.*

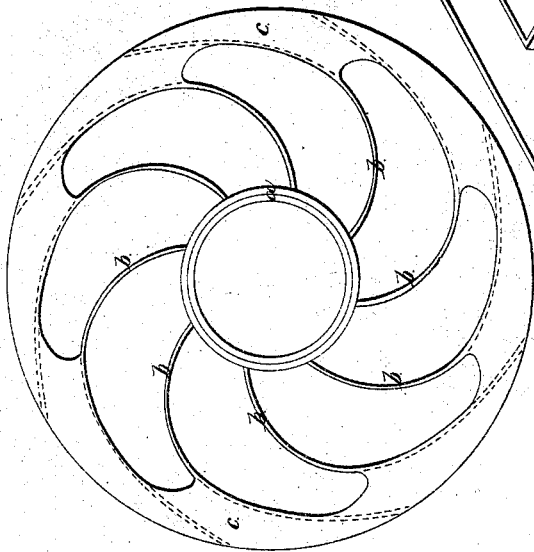
*Fig. 2.*



*Fig. 3.*



*Fig. 1.*



# UNITED STATES PATENT OFFICE.

SAMUEL L. VALENTINE, OF BANGOR, MAINE.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 3,855, dated December 12, 1844.

*To all whom it may concern:*

Be it known that I, SAMUEL L. VALENTINE, of Bangor, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Water-Wheels, in the construction of what I denominate a "Centrifugal Reversing Water-Wheel;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a side view, and Fig. 2 a perspective.

The nature of my invention consists in forming a spiral bucket-wheel without any top or bottom, each bucket extending into the shaft and their ends supported by rims, as hereinafter described. This construction permits the wheel to be run either as a right or left hand wheel by simply reversing it on the shaft without in any way altering the patterns.

The construction is as follows: The hub *a* can be made either for an iron or wooden shaft and projects sufficiently at each end and beyond the face of the wheel to receive a stout wrought-iron ring. From this hub the buckets *b* project outward in a spiral curve to the periphery of the wheel and having their cross-section parallel to the shaft. They terminate in a tangent line to the outer circumference of the wheel, and at this point they are connected with each other by two flat rings *c*, one on each side, which extend up the

buckets far enough to support them and are scalloped out between the buckets for admitting the water more freely thereto. Near the outer edge of these rings their faces all round run close to the bottom or side plate or table to prevent leaking, while the table supports the whole weight of the water, and thus relieves the wheel from the load that tends to impede its action when used as a horizontal wheel.

When the wheel is placed vertically, it is put between two cisterns and receives the water from both sides in equal quantities, which is discharged at the periphery in either position, vertical or horizontal. It can be made to turn in a contrary direction by simply reversing it on the shaft.

What I claim as my invention, and desire to secure by Letters Patent, is—

The water-wheel constructed as herein described, the buckets of which are on a line exactly parallel with the shaft in their cross-section and extend into the center, with flat rings around their periphery and without any shrouding beyond the outer rings toward the center, the whole being arranged so that the wheel can be made to run either way, in the manner and for the purposes herein set forth, combined with the flume on each side thereof, as herein specified.

SAMUEL L. VALENTINE.

Witnesses:

THOS. N. EGERY,  
F. F. FRENCH.