

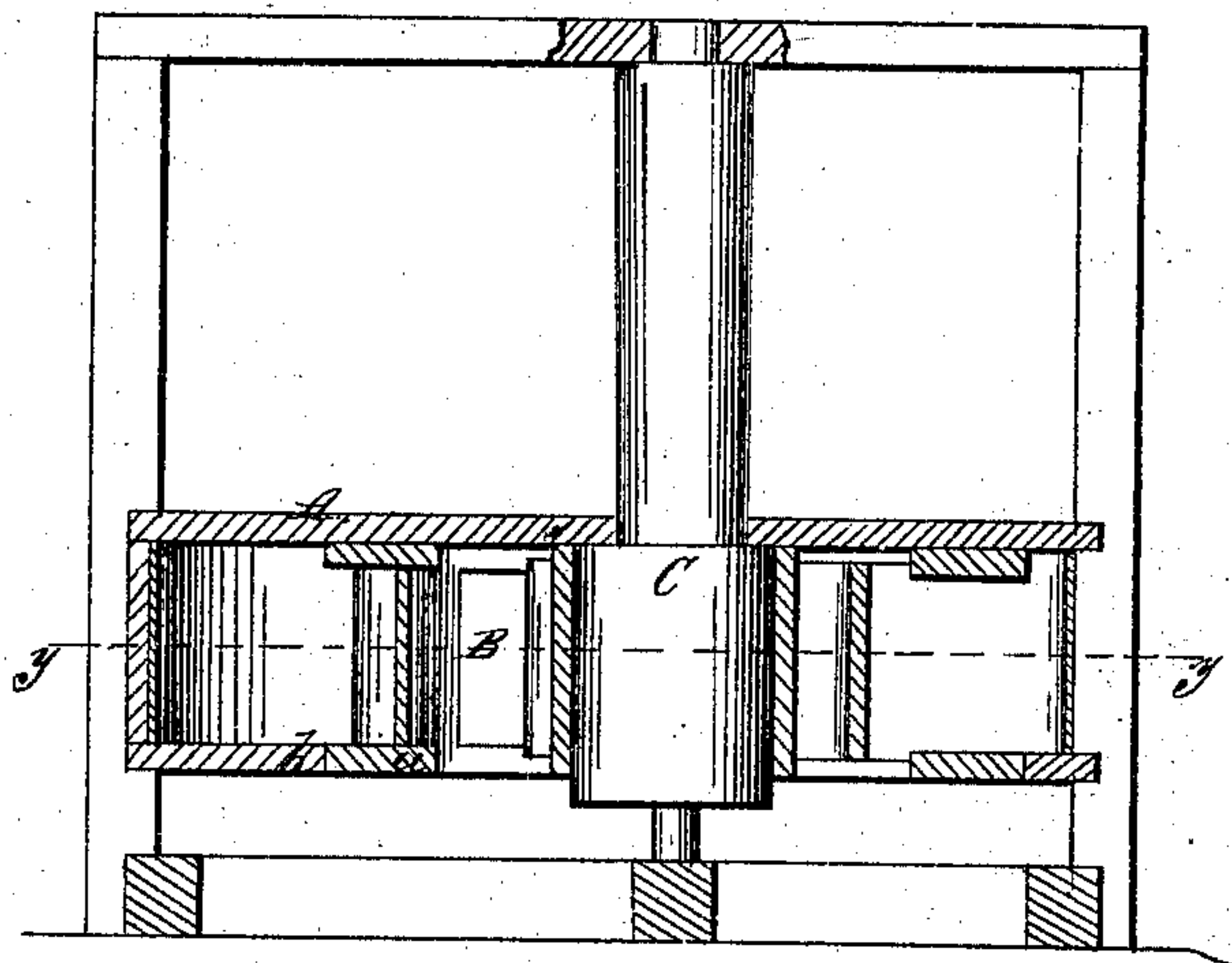
*G. W. Herring.*

*Water Wheel.*

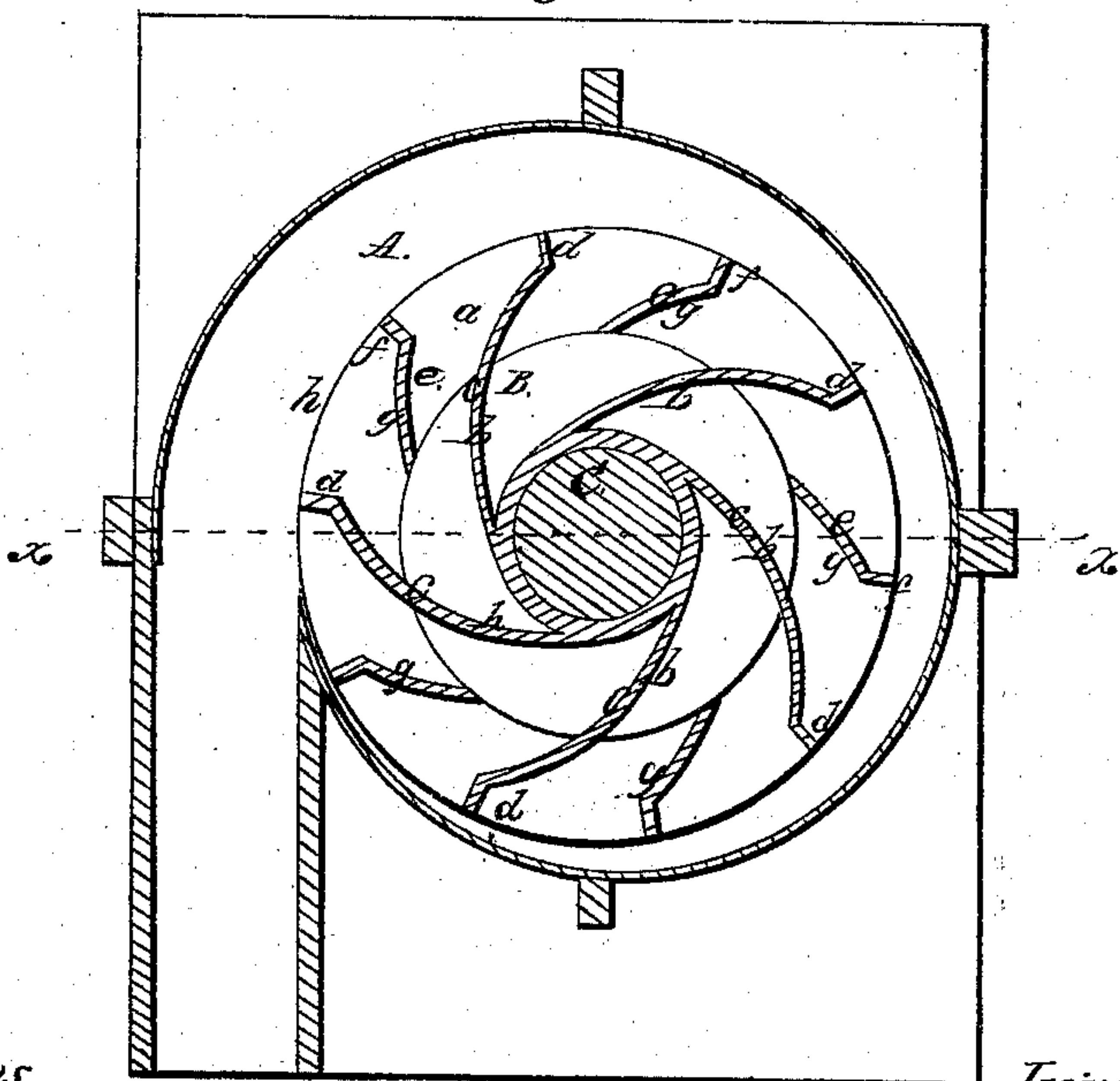
*No. 70,211.*

*Patented Oct 29, 1867.*

*Fig. 1.*



*Fig. 2.*



*Witnesses*  
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# United States Patent Office.

GEORGE W. HERRING, OF BANGOR, MAINE.

*Letters Patent No. 70,211, dated October 29, 1867.*

## 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, G. W. HERRING, of Bangor, in the county of Penobscot, and State of Maine, 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.

This invention relates to a new and improved centre-vent water-wheel, and it consists in a peculiar construction and arrangement of the same, whereby the usual platform for the wheel to run upon is avoided, and the wheel rendered capable of running in either direction, right or left, at the option of the millwright. In the accompanying sheet of drawings—

Figure 1 is a vertical central section of my invention, taken in the line *x x*, fig. 2.

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

Similar letters of reference indicate corresponding parts.

A represents the scroll, in which the wheel B is fitted. This wheel is composed of two annular plates or rims *a a*, placed one over the other, and connected to the shaft C by buckets *b*, which are of curved form, and extend each from the exterior of a shaft, C, with a gradual curve, as shown at *c*, to nearly the outer edges of the rims *a a*, from which they extend radially to the edges of the rims, as shown at *d*, (see fig. 2.) These buckets *b* may be termed the long buckets, for between them are shorter buckets, *e*, which are formed with radial portions, *f*, at the outer edges of the rims *a a*, the other portions being curved, as shown at *g*, and extending only to the inner edge of the lower rim *a*. The bottom *h* of the scroll A has a circular opening made in it to receive the lower rim *a* of the wheel, as shown in fig. 1, and the water first acts by impact against the radial parts *d f* of the buckets, and then reacts against the curved parts *c g*, and passes out through the opening at the centre of the lower rim *a* of the wheel, which rim forms a portion of the bottom to hold up or sustain the water, the latter, in passing through the wheel, not coming in contact with any immovable surface, which has a tendency to create friction and detract from the effective force of the water.

This wheel may be set up to turn either to the right or left, as occasion may require; it will operate equally well in turning in either direction. The alternate long and short buckets *a a* are a great advantage, as a sufficient number of buckets is obtained near the periphery of the wheel for the water to act against, and a free space allowed for the escape of the water at the centre of the wheel.

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

The alternate long and short buckets *b e*, formed respectively with curved and radial portions *c g d f*, and placed or arranged relatively with the upper and lower rims *a a* of the wheel and the shaft C, and the lower rim *a* fitted in a circular opening in the bottom of the scroll, substantially as herein shown and described.

Witnesses:

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GEORGE W. HERRING.