

*O. L. Hart,
Water Wheel.*

No. 88,292.

Patented Mar. 30, 1869.

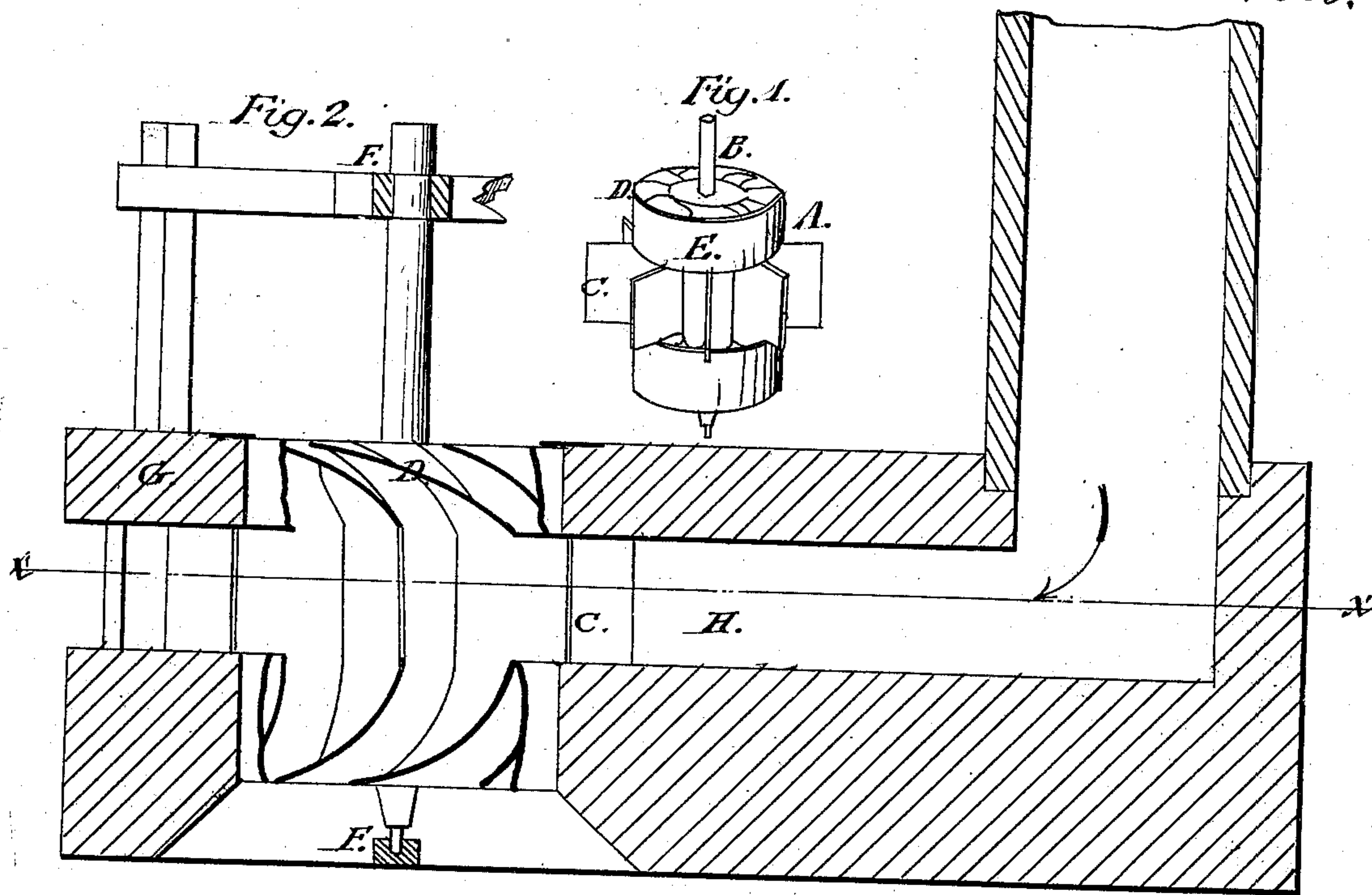
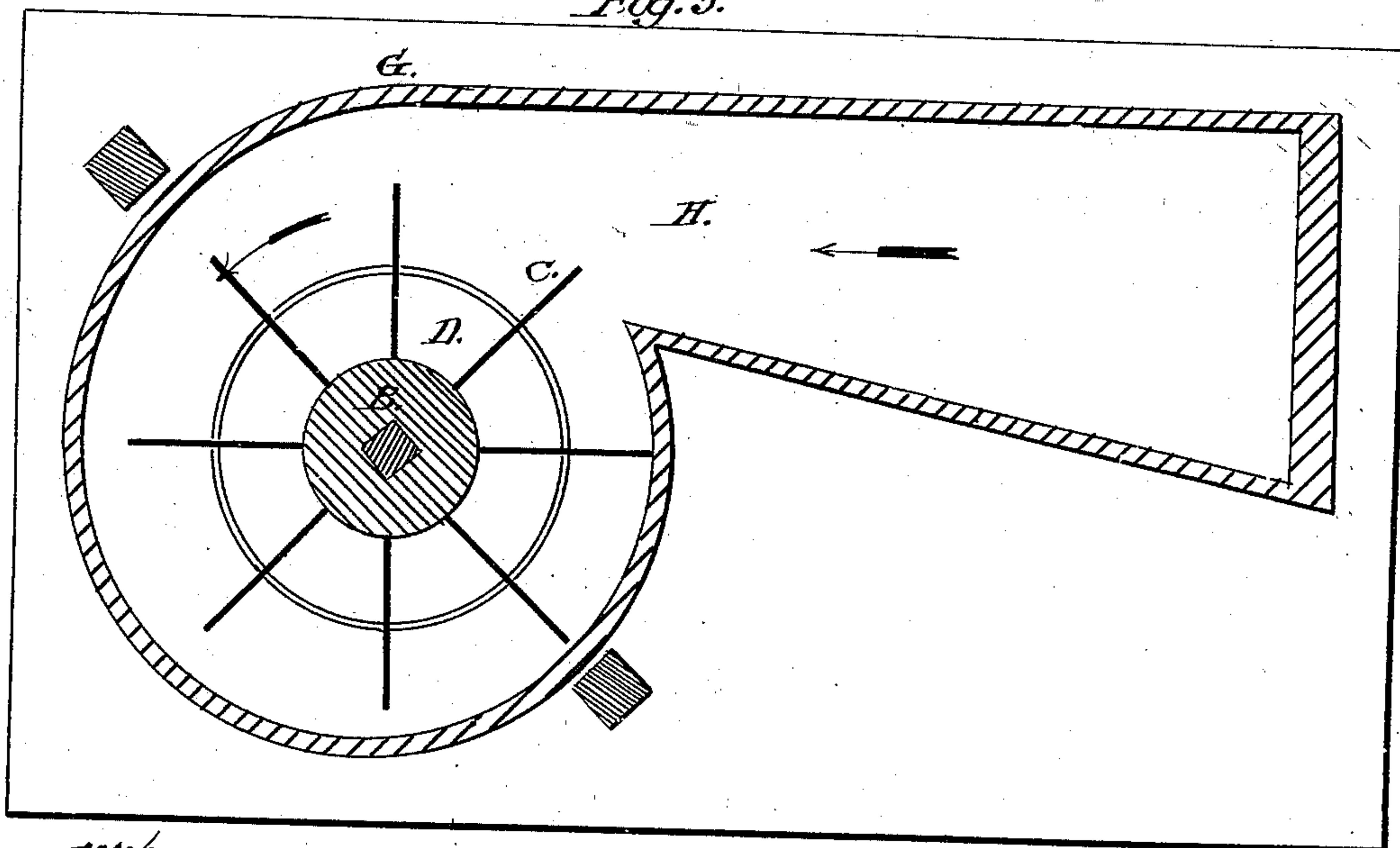


Fig. 3.



Witnesses:

*L. Hailer,
Jno. Johnson*

Inventor:

*O. L. Hart.
by Dodge & Munroe
attys.*



ORRIN L. HART, OF MILLVILLE, WISCONSIN.

Letters Patent No. 88,292, dated March 30, 1869.

IMPROVED WATER-WHEEL.

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, ORRIN L. HART, of Millville, in the county of Grant, and State of Wisconsin, have invented certain new and useful Improvements in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to water-wheels, and consists in the novel construction and arrangement of a wheel with float-boards and spirally-shaped buckets, so that it may be operated by the water impinging directly against the float-boards in entering the wheel, and in reacting against the spirally-shaped buckets in being discharged from it.

In the drawings—

Figure 1 is a perspective view;

Figure 2 is a view, partly in section, and with a portion of the side of the wheel broken away to show its interior structure; and

Figure 3 is a view of a horizontal section, on the line *x-x* of fig. 2.

I construct my wheel A by attaching to a central shaft, B, a series of float-boards, C, radially and in the same plane with it, as shown in figs. 1, 2, and 3.

Directly above and below the float-boards C, I place a series of spirally-shaped buckets, D, connecting their inner ends to the shaft B, and their outer ends to a surrounding case, E, as shown in fig. 1. The portion of the shaft B to which the float-boards C and the spirally-shaped buckets are connected, I make larger than the ends of the shaft B, as shown clearly in figs.

1 and 3. If desired, the central part of the wheel A, to which the float-boards and buckets are attached, may be so constructed as to permit a shaft to be passed through it, and then be keyed fast.

The wheel A, thus constructed, I mount in bearings F of the curb G, as shown in fig. 2, so as to rotate horizontally.

The float-boards C of the wheel A, I make so as to extend a considerable distance beyond the casings E of the buckets D, and the delivery-end of the spout, or channel H, of the requisite width to allow the ends of the float-boards to enter about half its width as the wheel rotates.

In operating my wheel, I let on the water through the spout, or channel H. It impinges against the float-boards C, as shown in fig. 3, giving the wheel its initial rotating motion, and then discharges through the spirally-shaped buckets D, and by its reacting force increases this rotation.

In this way I construct a water-wheel, so as to be operated at the same time by the direct action of the water as it enters it, and by the reaction of the water as it is discharged from it; and in this way I utilize at the same time both the momentum and gravity of the water.

Having thus described my invention,

What I claim, is—

A water-wheel, consisting of a shaft, or hub, having the radial, plain-surfaced, extended buckets, or floats C, with the spiral buckets D, enclosed by the rims E attached, all as herein shown and described.

ORRIN L. HART.

Witnesses:

SILAS F. NICE,
D. W. NICE.