E. M. Buckley.

Water Wheel.

No. 98,739. Patented Jan. 11, 1870.

Fig. 1

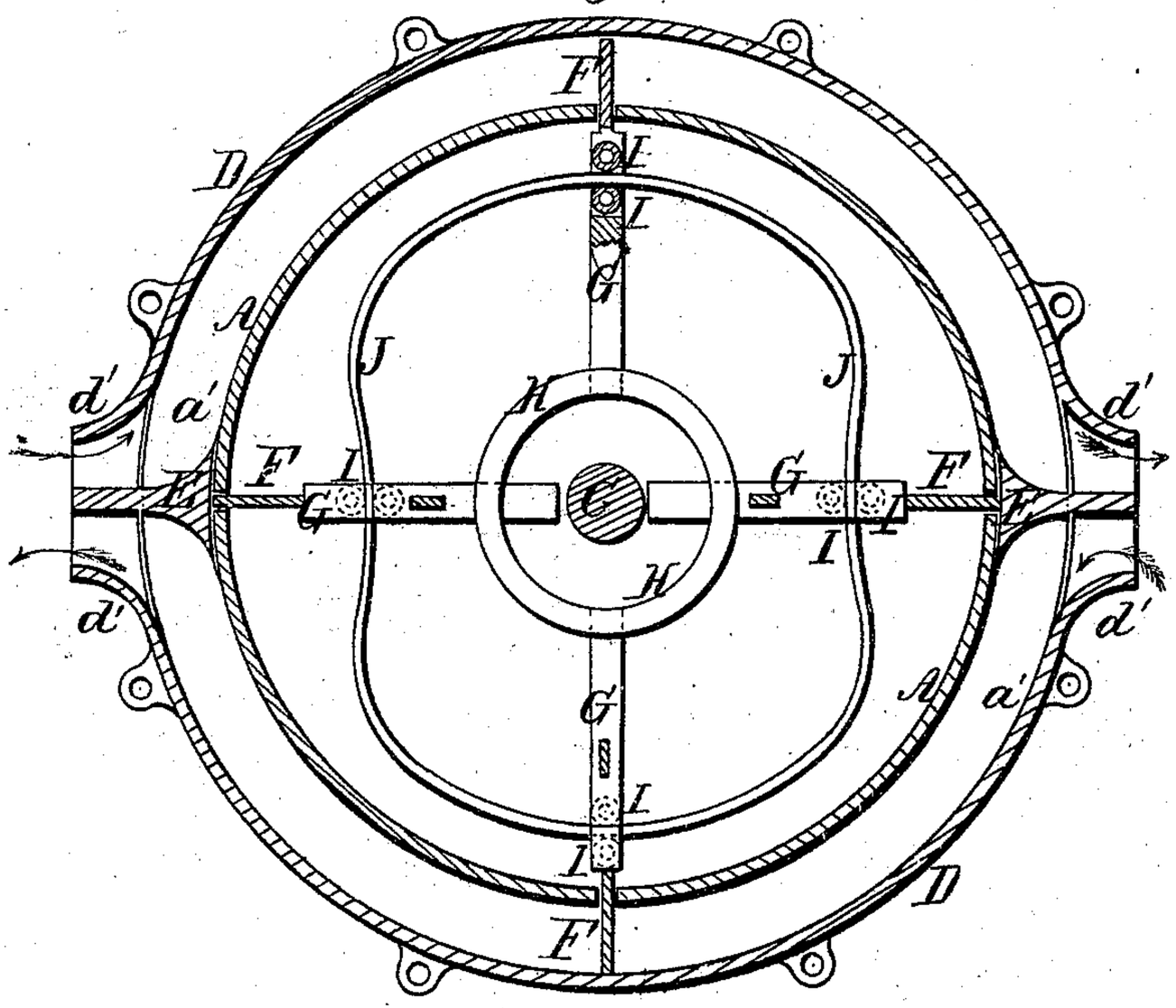
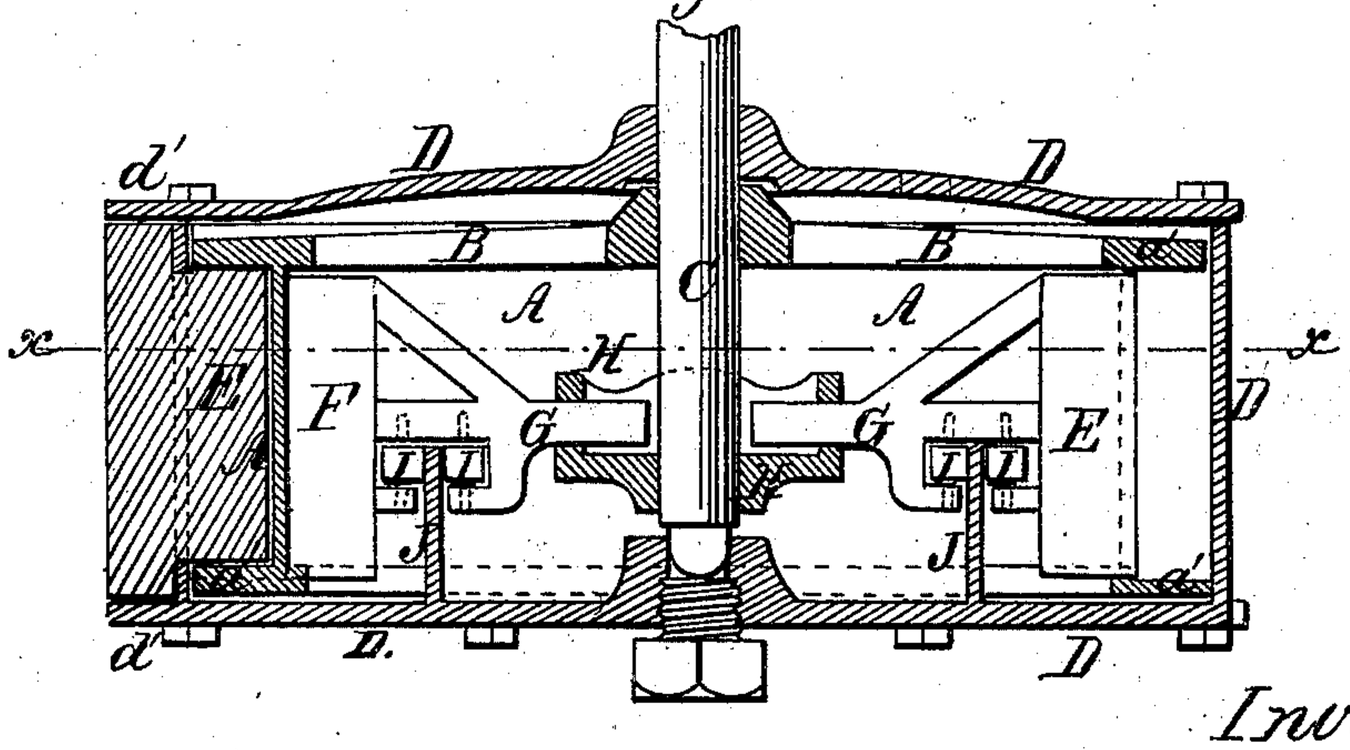


Fig. 2



Witnesses
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EDWARD M. BUCKLEY, OF AMENIA UNION, NEW YORK.

Letters Patent No. 98,739, *dated January* 11, 1870.

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, EDWARD M. BUCKLEY, of Amenia Union, in the county of Dutchess, and State of New York, have invented a new and useful Improvement in 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.

Figure 1 is a horizontal section of my improved water-wheel, taken through the line *x x*, fig. 2.

Figure 2 is a detail vertical section of the same, taken through the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved water-wheel, simple in construction and effective in operation, utilizing a larger per cent. of the power of the water, and running with a less head of water than the wheels constructed in the ordinary manner.

And it consists in the construction and combination of the various parts of the wheel, as hereinafter more fully described.

A is the rim of the wheel, which is made with outwardly-projecting flanges, *a*, upon its upper and lower edges, as shown in fig. 2.

The upper part of the rim A is securely attached to the outer ends of the radial arms B, the inner ends of which are securely connected with the shaft C, so as to carry the said shaft with them in their revolution. The lower end of this shaft C revolves in a step, in the ordinary manner.

D is the casing, which entirely surrounds the wheel A B, and in the opposite sides of the rim of which are formed chutes, *d'*, one or more, for the ingress and egress of the water.

The chutes *d'* are divided into two compartments by the partitions E, which curve toward their inner ends in both directions, as shown in fig. 1. One of these compartments serves for the ingress, and the other for the egress of the water, the curves of the said partition E giving a proper direction to the inflowing and outflowing water.

F are the buckets, two or more of which are used, and which move out and in through slots in the rim A, their end edges working in grooves in the flanges, *a'*.

The buckets F are securely attached, at their inner edges, to the outer ends of arms G, the inner ends of which pass through guide-holes in the flanged collar H, securely attached to the shaft C.

Upon the lower sides of the arms G are formed, or to them are attached arms, having rollers I pivoted to them, which pass down, one upon each side of the guide-flange J. The lower edge of the flange J is securely attached to the bottom plate of the casing D, and the said flange is so formed as to draw the buckets F inward, to allow them to pass the partitions, and as soon as the said buckets F have passed the said partitions, to again project them, to receive the water, as shown in fig. 1.

Having thus described my invention,

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

1. An improved water-wheel, formed by the combination of the rim A *a'*, arms B, shaft C, casing D *d'*, partitions E, buckets F, one or more, arms G, flanged collar H, arms or rollers I, and guide-flange J, with each other, substantially as herein shown and described, and for the purpose set forth.

2. The partition E, constructed as described, in combination with the chutes *d'*, of the casing D, and with the rim A *a'*, and sliding buckets F, substantially as herein shown and described, and for the purpose set forth.

EDWARD M. BUCKLEY.

Witnesses:

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