F. O. Clarke,

Water Wheel.

No. 98,561. Patented Jan. 4, 1870.

Fig. 1.

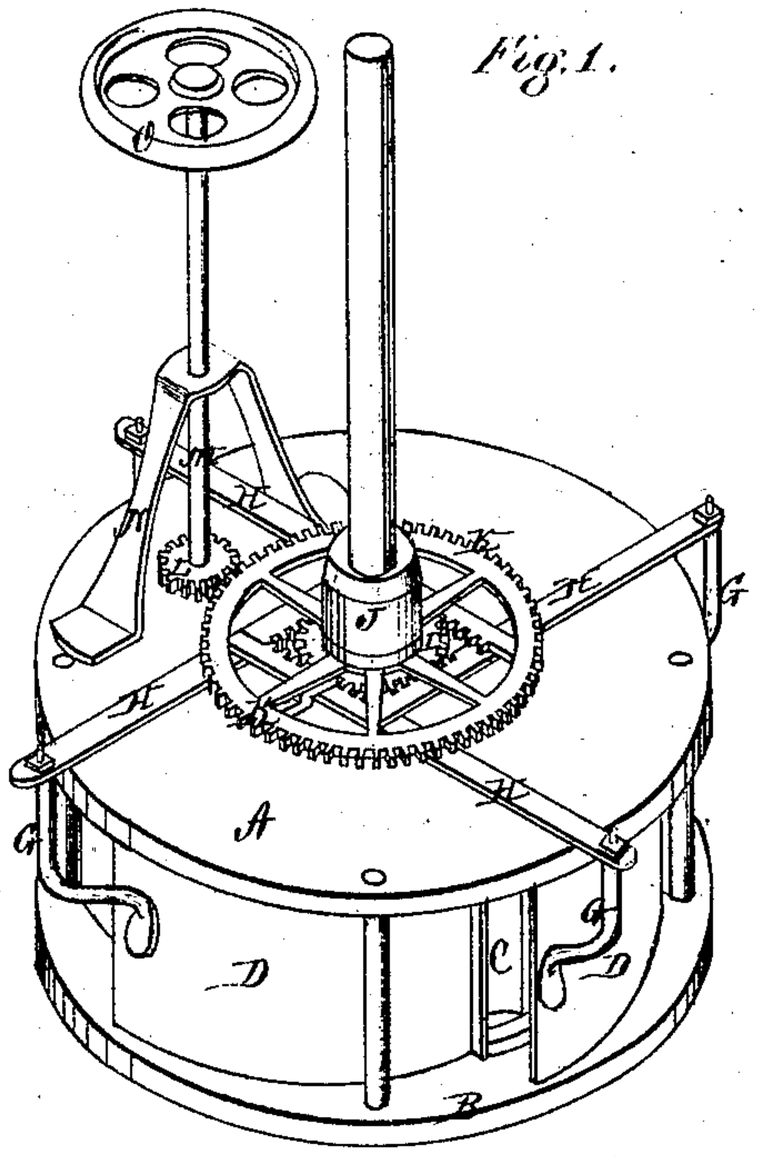
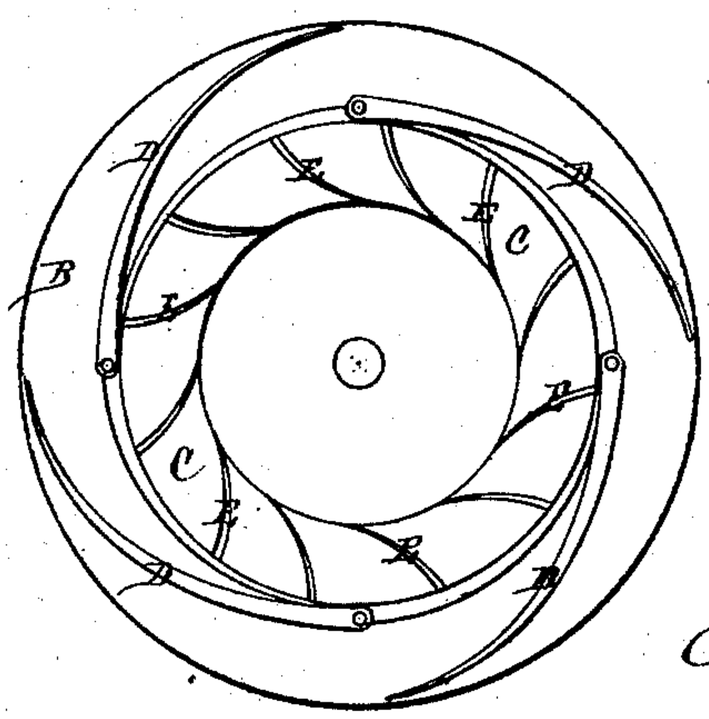


Fig. 2.



WITNESSES

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F. O. CLARKE, OF UNADILLA FORKS, NEW YORK.

Letters Patent No. 98,561, *dated January* 4, 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, F. O. CLARKE, of Unadilla Forks, in the county of Otsego, and State of New York, 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, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists, first, in the construction and arrangement of a combined scroll and gate; second, in the construction of the buckets of the water-wheel; and third, in the construction and arrangement of the devices for hoisting all the gates at one operation.

In order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a perspective view, and

Figure 2, a horizontal section.

A represents the upper, and B, the lower part of the casing, between which the wheel C is placed and moves.

Around, and close to the outer rim of the wheel C, between the casings A and B, are pivoted the inner ends of four curved gates, D D, which, when closed, completely encircle the wheel, and shut off the water, each one thus forming one-fourth of a circle, and, by their peculiar construction and arrangement, also serve as a scroll for conducting the water to the wheel, whether they are opened much or little.

The buckets E E, of the wheel, are each shaped on a circle of three-fourths the diameter of the inside face of the wheel, and in length, one-thirteenth of the circumference of the wheel. They are set, so that when the outer edge is at an angle of ninety degrees, the inner edge or issues touch an angle of one hundred and sixteen degrees from the centre.

From the outer edge of each of the scroll-gates D, an arm, G, extends upward, above the upper casing A, and is, at its upper end, connected with a rack-bar, H, which rests upon the upper side of said casing, and gears with a pinion, I, secured to a collar, J, which is placed loosely upon the wheel-shaft. There being four gates, D, there are consequently four of the racks, H, which are placed at right angles, and confined by suitable guides close to the pinion I.

A large cog-wheel, K, is secured to the collar J, which wheel gears with a pinion, L, upon an upright shaft, M, having its bearings in a suitable frame, N, on the casing A, and is operated by a wheel, O, at its upper end.

It will readily be seen, that by turning the shaft M, the racks H H are all operated at the same time, and consequently the gates D D are all four opened or closed at one operation.

Having thus fully described my invention,

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

1. The combination of wheel C and gates D D, when said gates are constructed and arranged to operate as and for the purpose set forth.

2. The combination and arrangement of the casing A B, wheel C, gates D D, buckets E E, racks H H, and pinion I, all constructed and arranged as described, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own, I affix my signature, in presence of two witnesses.

F. O. CLARKE.

Witnesses:

R. L. CLARKE,

J. M. HAYES.