

DANIEL EHRHART'S WATER WHEEL

116937

Fig 1

PATENTED JUL 11 1871

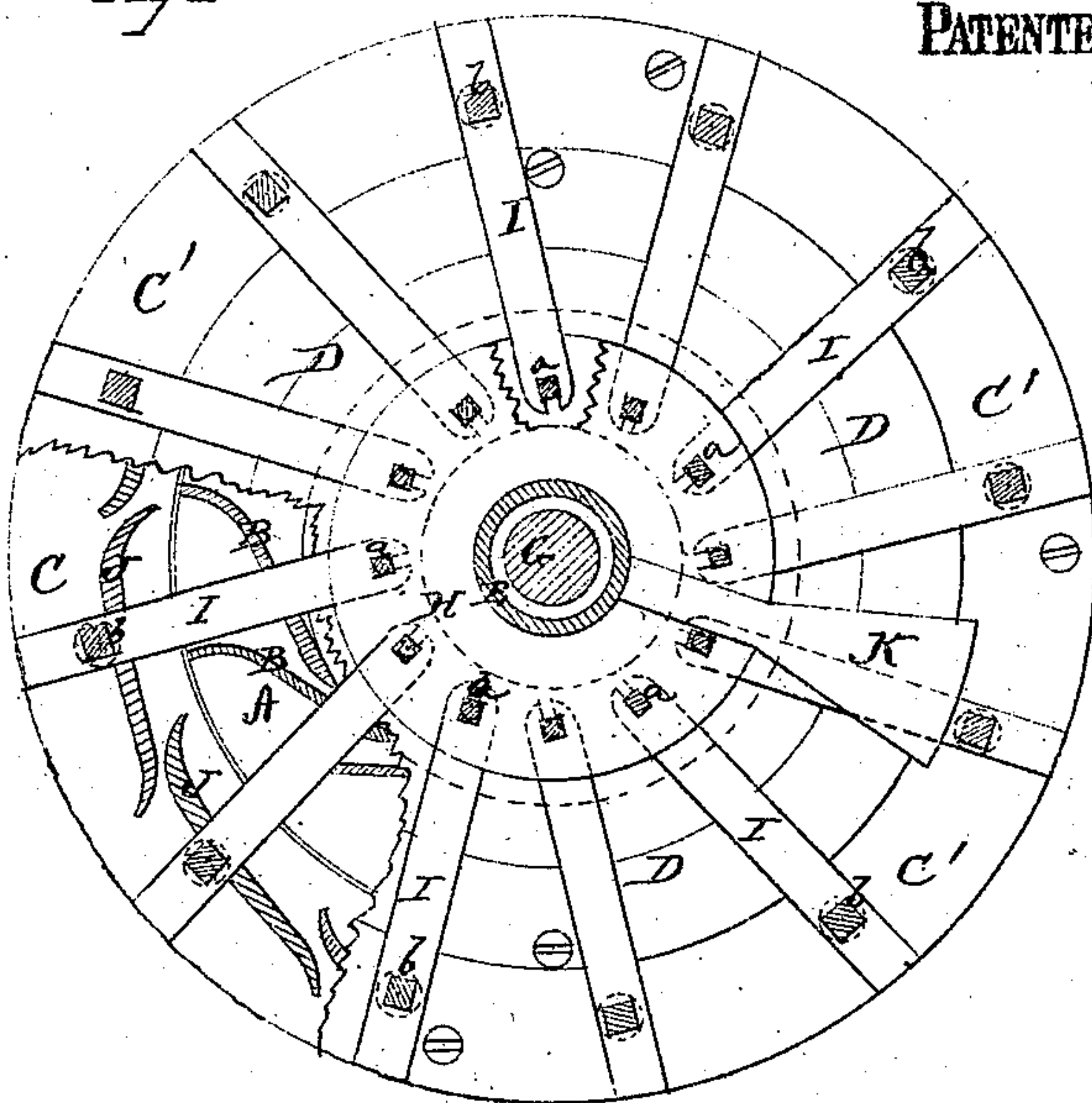
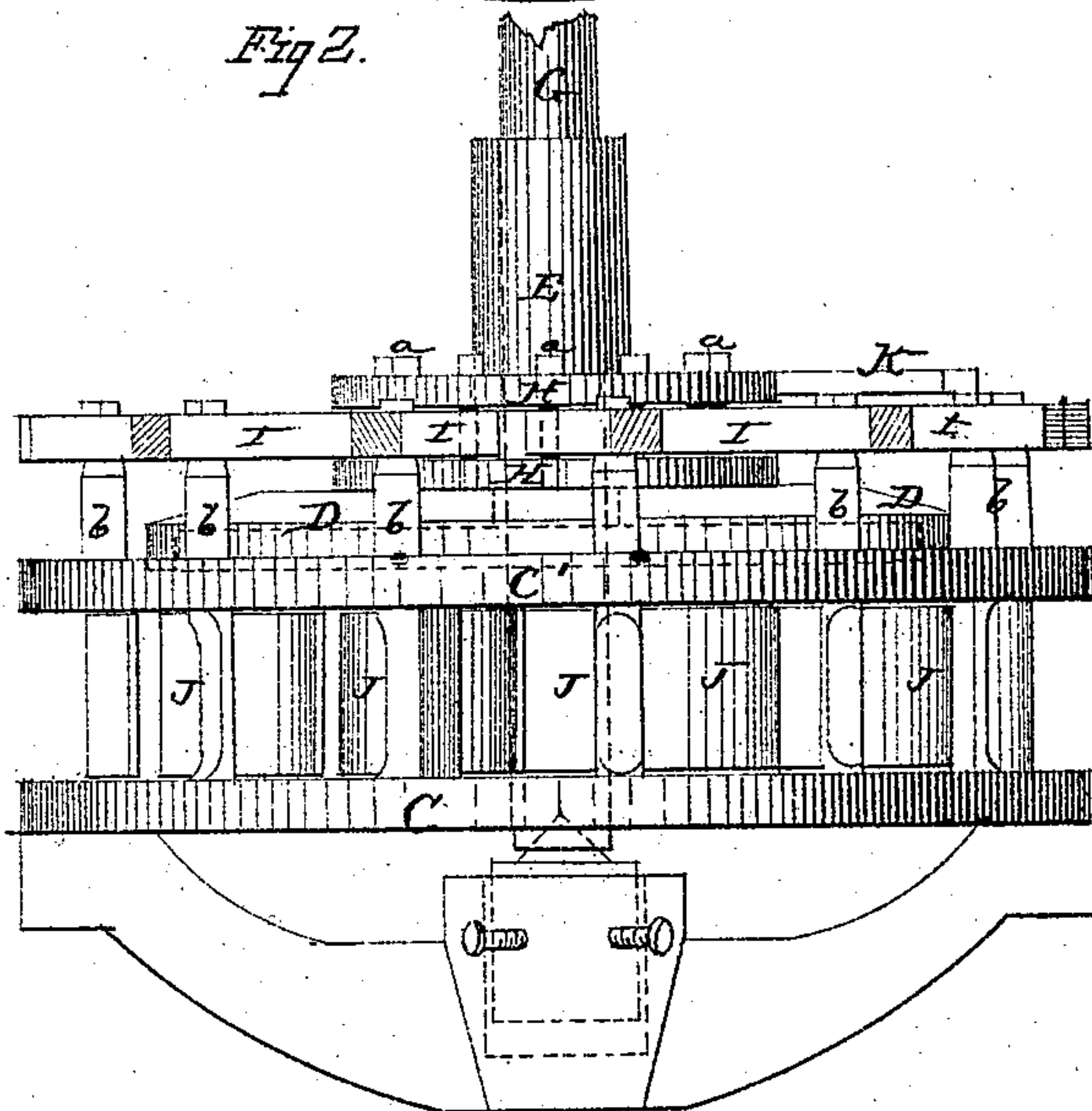


Fig 2.



Witnesses.

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per

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UNITED STATES PATENT OFFICE.

DANIEL EHRHART, OF BEL AIR, MARYLAND.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 116,937, dated July 11, 1871.

To all whom it may concern:

Be it known that I, DANIEL EHRHART, of Bel Air, in the county of Harford and in the State of Maryland, have invented certain new and useful Improvements in Water-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a water-wheel, as will be hereinafter more fully set forth.

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 drawing, in which—

Figure 1 is a plan view, part in section; and Fig. 2 is a side elevation of my water-wheel.

A A represent the rims of the wheel, between which the buckets B B are secured. These buckets are curved at their outer ends, as shown, while their inner ends are curved in the opposite direction. They are also so placed as to overlap each other about one-half of their length. C is the lower rim, and C' the upper rim of the casing, held a suitable distance apart by means of bolts or other convenient means. On the inner circumference of the upper rim C' is formed a shoulder or offset, upon which the top plate D rests, said plate being further fastened by screws or other suitable means. In the center of the plate D is inserted a hollow sleeve, E, through which the wheel-spindle G passes. Around the sleeve E is placed a wheel, H, having a groove extending the entire distance around the outer circumference. This groove is deep enough for the insertion of the inner ends of a series of arms, I I. These arms are slotted at their inner ends, as shown in Fig. 1, and a pin, *a*, is put through each arm and the wheel H, to hold the arms in their proper places on the wheel. The outer end of each of the arms I is provided with a square

hole, and placed upon the square tenon of a rod, *b*, passing through and having its bearings in the rims C C' of the casing. On each of the pins *b* is fastened one of the gates J, constructed as shown in Fig. 1. To the wheel H is attached a handle, K, by means of which said wheel is turned for a short distance in either direction, to open and close the gates by the arms I I.

It will be noticed that the gates are operated—that is, opened and closed—by the turning of the rods or pins which pivot them between the rims of the casing. The plate D being separate from and resting on the upper rim C', the wheel can readily be removed when necessary without disturbing the casing. Merely remove the arms I I from the pins *b b*, when the plate D, and all above the same, can be lifted out, leaving the rims C C' with the gates in their place.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement, substantially as described, of the gates for a water-wheel so that the mechanism for opening and closing the gates will operate directly on the rods or pins which, rigidly attached to said gates, pivot said gates in the casing, as set forth.

2. The combination of the grooved wheel H, slotted arms I I, pins *a a* and *b b*, and gates J J, all substantially as and for the purposes herein set forth.

3. The combination of the wheel A B, rims C C', plate D, sleeve E, spindle G, wheel H, arms I, gates J J, and pins *a b*, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1871.

DANIEL EHRHART.

Witnesses:

C. L. EVERT,
A. N. MARR.