A. C. LESNER.

Water-Wheel.

No. 132,298. Patented Oct. 15, 1872.

Fig. 1.

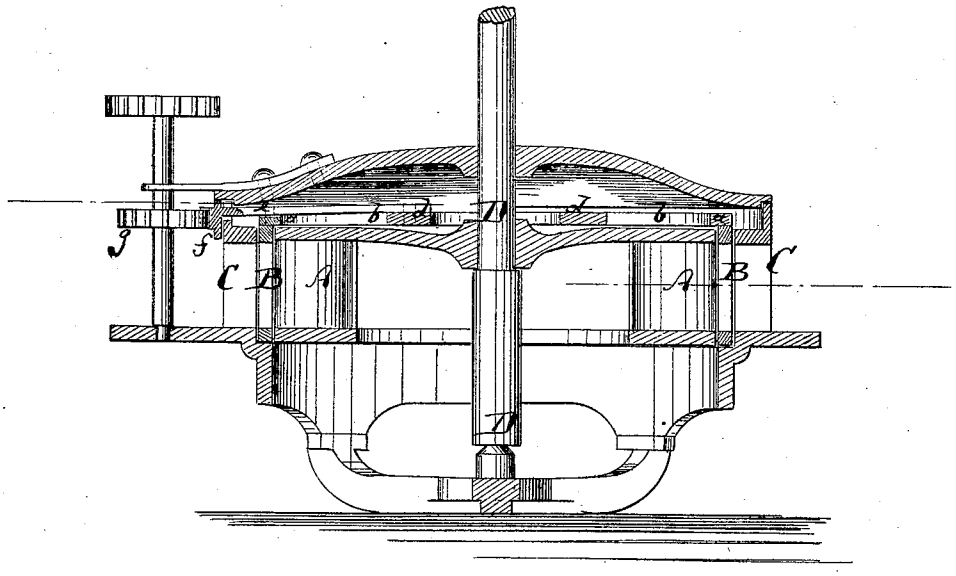
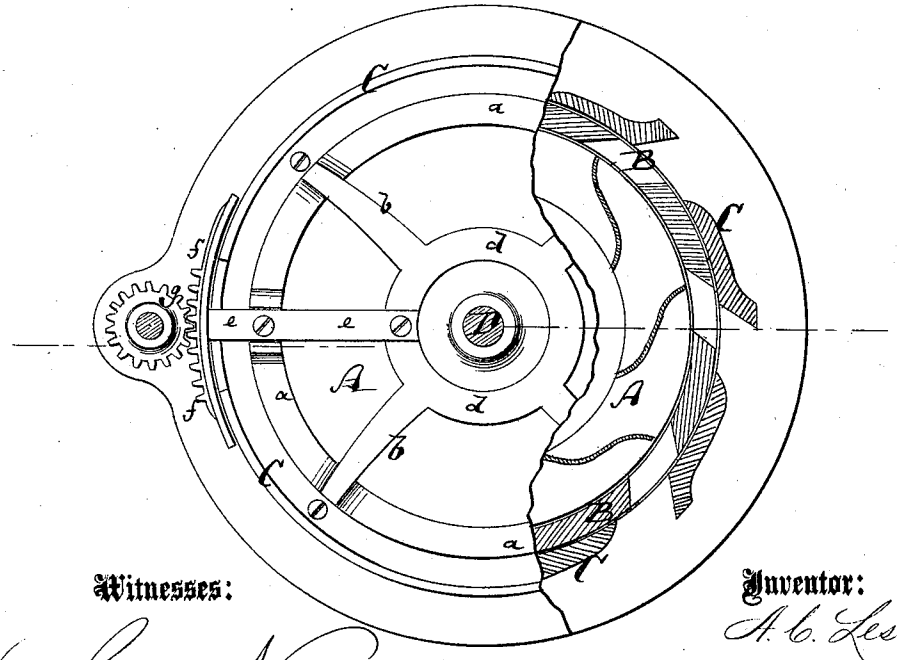


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALEXANDER C. LESNER, OF FONDA, ASSIGNOR TO HIMSELF AND ABRAM V. DAVIS, OF NEW YORK, N. Y.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **132,298**, dated October 15, 1872.

To all whom it may concern:

Be it known that I, ALEXANDER C. LESNER, of Fonda, in the county of Montgomery and State of New York, have invented a new and Improved Water-Wheel, of which the following is a specification:

Figure 1 represents a vertical central section of my improved water-wheel. Fig. 2 is a top view, partly in section, of the same.

Similar letters of reference indicate corresponding parts.

The invention relates to a new construction of gate mechanism for a water-wheel; and consists in bracing the top of the cylindrical gate by a frame-work which extends over the wheel, and in slotting the stationary external chute-cylinder to admit the projecting arm from the gate to which the toothed segment for adjusting the gate is attached. By the use of this invention the gate-cylinder is braced and prevented from springing to one side or the other, and from consequently bearing against the wheel or chute-cylinder, or both, and hindering the operation by excess of friction.

In the accompanying drawing, the letter A represents the water-wheel; B, the gate-cylinder; C, the chute-cylinder. The wheel is mounted upon the shaft D, and has buckets of suitable style and number. The gate-cylinder embraces the wheel, and is interposed between the same and the chute-cylinder. The openings through the latter and through the gate-cylinder are, respectively, equal in number with the buckets of the wheel. The cylinder B has a flange, *a*, at the upper edge overlapping the wheel, and arms *b b* extending from said flange to an inner ring, *d*, that embraces the shaft D. The ring *d*, arms *b b*, and flange *a* constitute thus a top frame by which the gate-cylinder is braced and strengthened. An arm, *e*, projects outward from the gate-cylinder through a slot in the upper part of the cylinder C, and crosses at its outer end the toothed segment *f*. A pinion, whose teeth engage into those of the segment, serves, when turned, to turn the gate-cylinder, to enlarge or reduce the openings to the wheel. The pinion can be turned by suitable means. The step of the wheel may be made vertically and horizontally adjustable to center and keep the wheel always in the desired position.

It is evident that in the upper bracing-frame of the gate-cylinder the flange *a* may be dispensed with if the arms *b* reach directly to the cylinder.

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

1. The gate-cylinder B, interposed between the wheel A and chute-cylinder C, and braced on top by the frame *b d*, substantially as herein set forth.

2. The gate-cylinder, provided with the projecting arm *e* and segment *f*, and combined with the chute-cylinder C, which is slotted to admit the arm *e*, substantially as herein set forth.

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