

O. GRIFFITH.
Water-Wheel.

No. 205,741.

Patented July 9, 1878.

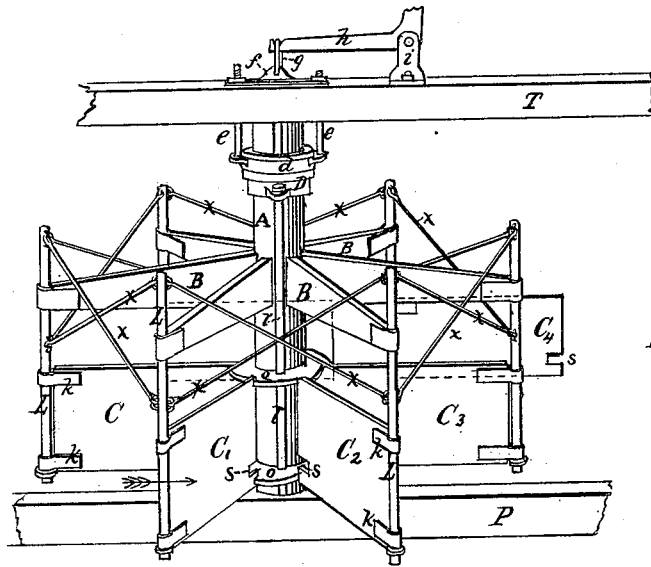


Fig. 1

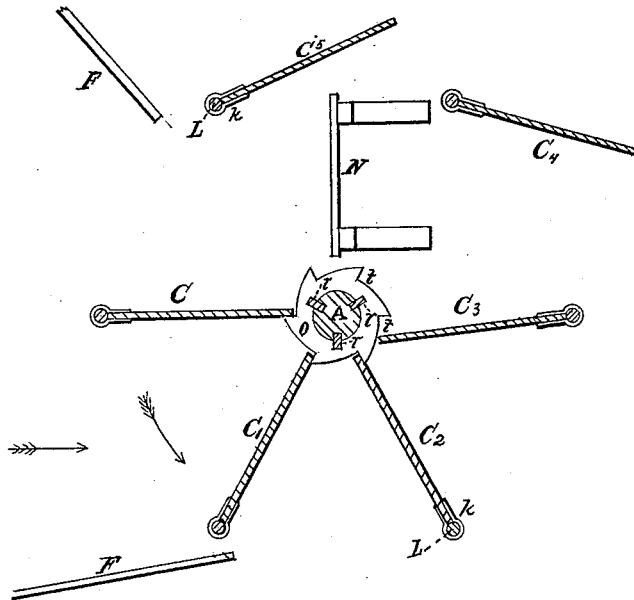


Fig. 2

WITNESSES

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IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **205,741**, dated July 9, 1878; application filed December 31, 1877.

To all whom it may concern:

Be it known that I, OWEN GRIFFITH, of the city of Marshall, State of Michigan, have invented certain new and useful Improvements in Water-Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which like letters refer to like parts in the different figures.

My invention relates to that class of water-wheels known as "current-wheels," and intended to be set in the natural current of the stream, or the current modified by simple chutes set so as to direct it more advantageously upon the wheel.

In the drawings, Figure 1 is a perspective view of the wheel. Fig. 2 is a horizontal section through the middle of the wings.

Arms B B project from the upright shaft A. To the extremities of these arms are secured upright bars L L, extending below, to which the wings C C₁, &c. are hinged in such manner as to allow them to make a complete revolution around L L. Encircling the main shaft A, and within the vertical limits of the wings C C₁, &c., are two or more movable serrated stops, *o o*, the number of serrations in each being equal to the wings, and are so placed that, when the free ends of the wings are turned into line toward the axis of the shaft A, they shall rest against each of the shoulders *t*, Fig. 2, of the corresponding notches. These stops *o o* are connected together and held in position by rods *r r r*, extending upward to a sliding collar, D. These rods slide freely up and down, either in grooves in the shaft A or in ways or bearings bolted onto the surface of the shaft. Around the upper portion of the sliding collar D is a groove, in which a yoke, *d*, fits loosely. Rods *e e* connect the yoke with the cross-head *f* and a link, *g*, thence to the lever *h*.

The uprights L L, on which the wings are hinged, are united by tie-rods *x x*, and may be further braced to secure their rigidity.

In Fig. 2 are shown the positions of chutes

F F and a sort of bulk-head, N, to retard the flow of water on that side of the wheel.

The operation of the wheel is simple and obvious. The arrows show the direction of the current and of the motion of the wheel. Beginning at C, Fig. 2, the current of water presses the wing against the shoulder of the stop *o*, carrying it successively to the positions of C₁, C₂, and C₃. On passing the position of C₃ the current acts from the other side, and the wing swings round and hangs freely in the current through the remainder of the revolution, presenting little resistance. As the wings successively return to the position of C their free ends fall gently and without concussion into the notches *t t*, and receive the full pressure of the water, the wheel having a strong, smooth, and steady motion throughout its entire revolution.

Should it be necessary to stop the wheel the lever *h* is raised, lifting the stops *o o* until the upper one clears the top of the wings and the lower one coincides with the notch *s* near the bottom of the wings, when they will all fall freely into the direction of the current, and, the pressure being equal on both sides, the wheel will stand still.

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

1. In a water-wheel, the series of separate and independent wings C, C₁, C₂, &c., hinged in a vertical line at the periphery and held radially during a portion of their revolution by a stop near the axis A, when arranged substantially as herein shown and described.

2. The stops *o o*, in combination with the wings C, C₁, &c., when arranged substantially as and for the purpose herein shown and specified.

OWEN GRIFFITH.

Witnesses:

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