

WILLIAM TUDER.

Improvement in Current-Wheels.

No. 115,660.

Patented June 6, 1871.

Fig 1

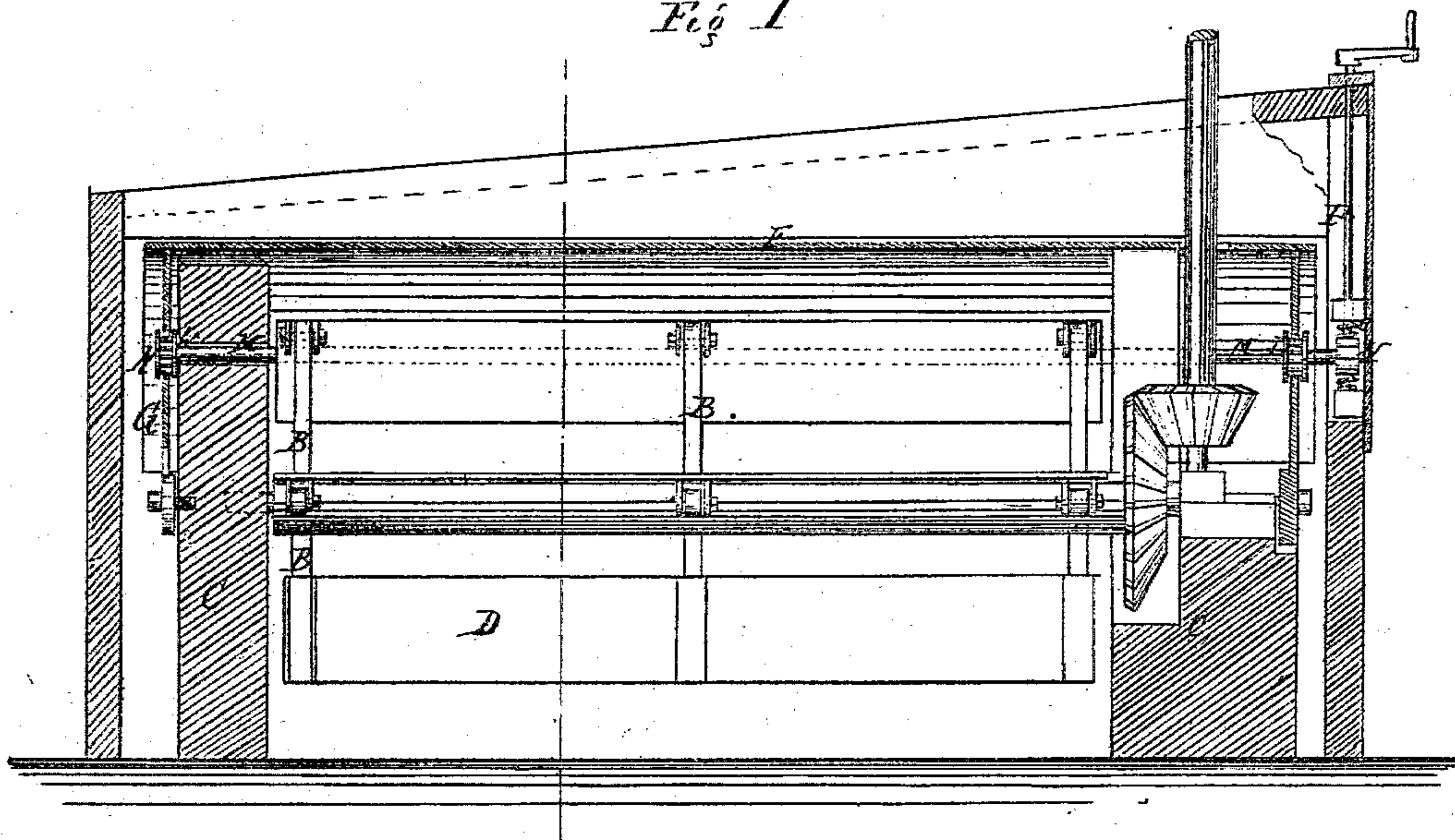


Fig. 2.

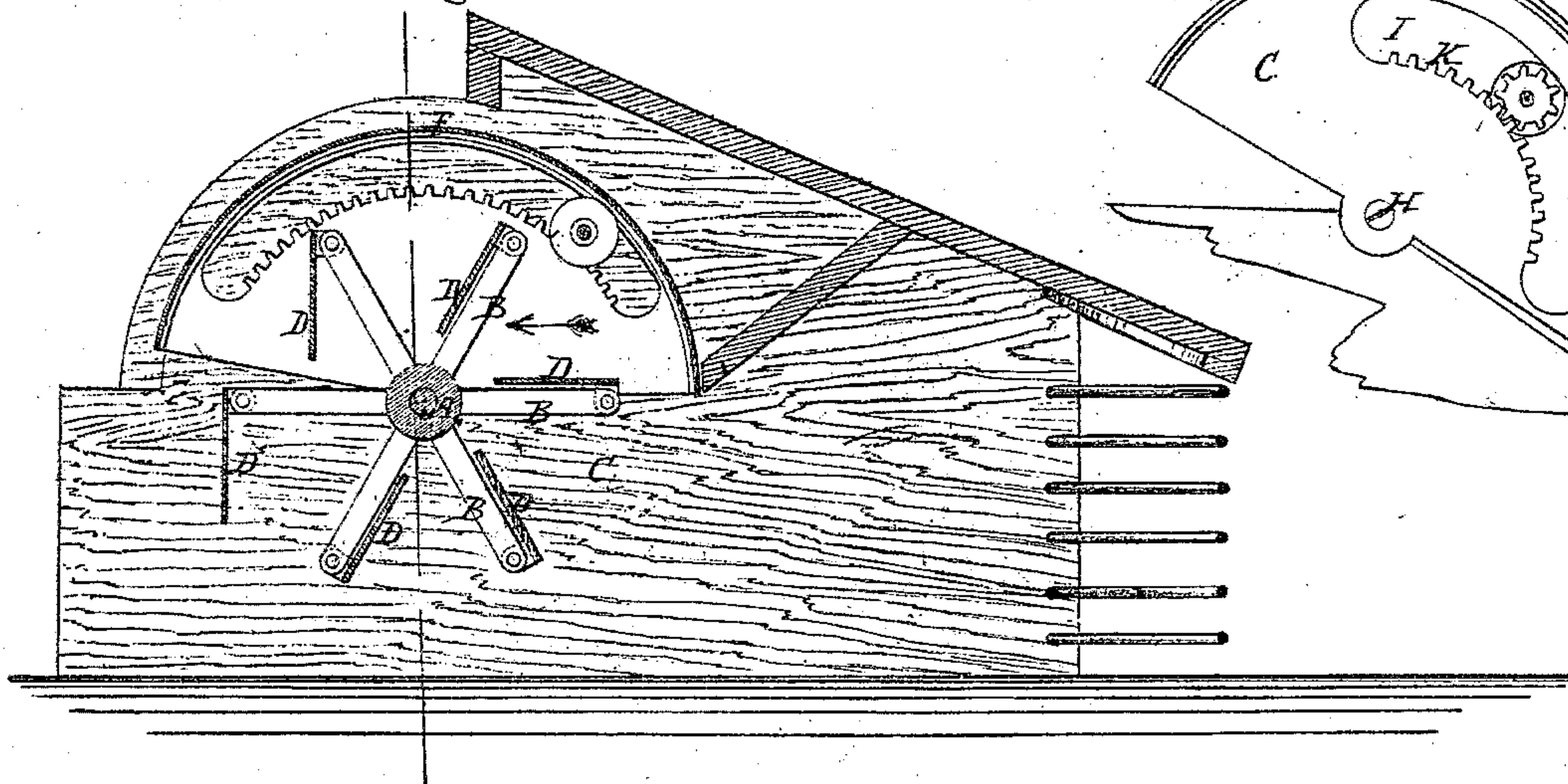
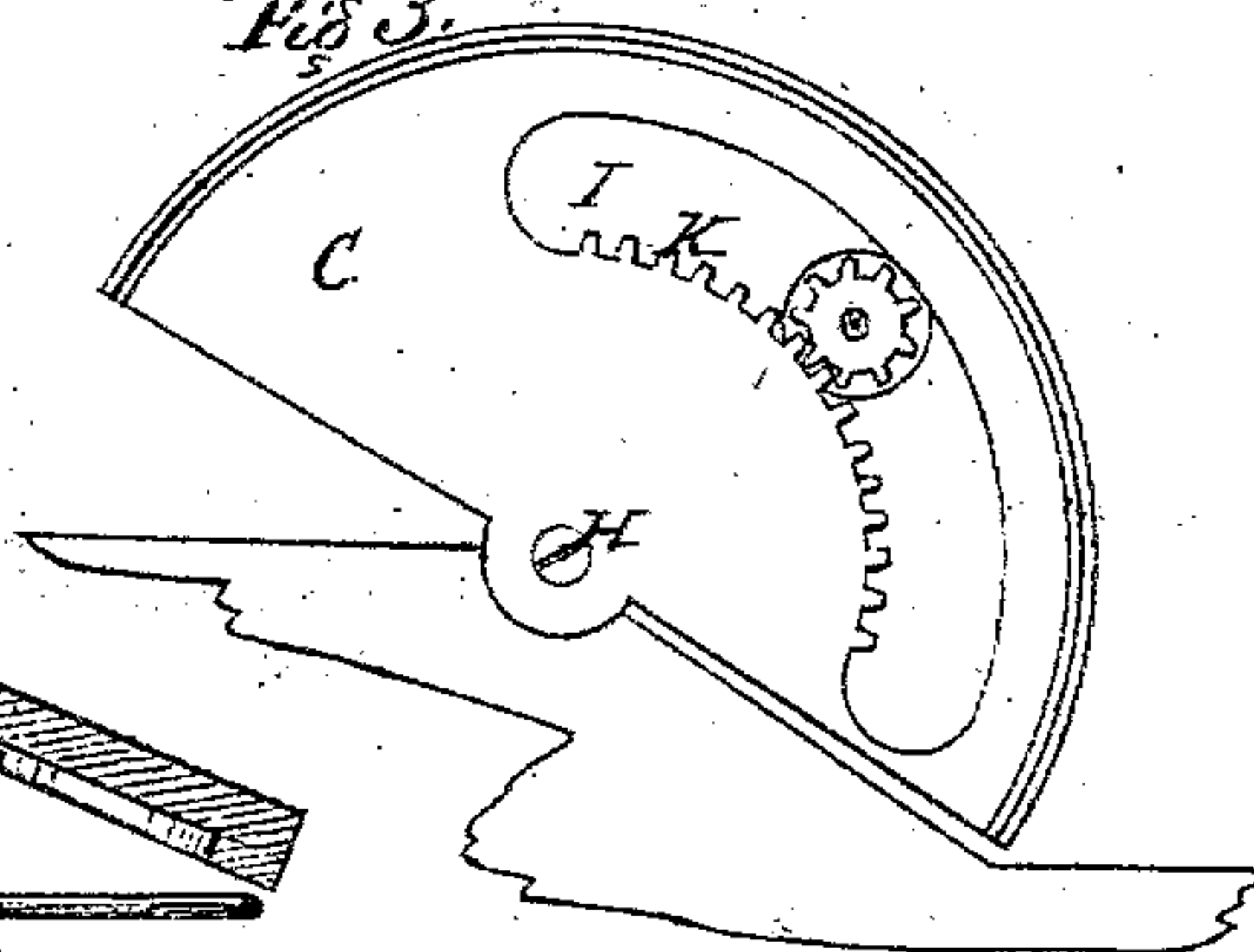


Fig 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM TUDER, OF MOFFETTOWN, TEXAS.

## IMPROVEMENT IN CURRENT-WHEELS.

Specification forming part of Letters Patent No. 115,660, dated June 6, 1871.

*To all whom it may concern:*

Be it known that I, WILLIAM TUDER, of Moffettown, in the county of Bell and State of Texas, have invented a new and useful Improvement in Current-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 drawing forming a part of this specification.

This invention relates to improvements in current-wheels, and consists in an improved arrangement of feathering-buckets; also, improvements in the arrangement of the gate and the operating devices therefor, all as hereinafter described.

Figure 1 is a longitudinal section through the gate and the wheel supports, showing the wheel, gate, and operating devices in elevation. Fig. 2 is a transverse section taken on the line *xx* of Fig. 1; and Fig. 3 is a partial end elevation of the gate.

Similar letters of reference indicate corresponding parts.

A is the shaft; B, the arms thereof; and C are the end frames, in which are located the bearings for the journals of said shaft. The buckets or floats D are hinged to the outer ends of the arms and swing back toward the shaft, so that on the lower side, where the water acts on them, they are supported by the arms and thereby receive the force of the water; but on the upper and retiring side, in case the water be higher than the shaft, they will swing away from the arms. When they come down to take the water they are prevented from swinging outward by the action of the water, as will be clearly understood by inspection of the drawing. This wheel may be wholly immersed in the water and secured to the bottom of the stream, or it may be at the surface, working well in either case. The

gate consists of a semicircular or nearly semicircular case, F, having closed ends G, pivoted to the supports of the wheel in the axis H so as to swing around the wheel in opening and closing. For operating it, it has the curved slots I in each head with the toothed racks K, in which the pinions L work, the said pinions being on a long shaft, M, extending from end to end, and mounted in the supporting-frame for the wheel. This shaft also has a pinion, N, by which it is turned by a worm, O, on the vertical hand-shaft P, suitably supported.

The mode of operation is as follows: As the water approaches (see Fig. 2 of drawing) from the right, the buckets on the side of the wheel, having been folded inwardly by gravity, are braced against the arms B; but after they have passed out of range of the current they are pendent therefrom until they leave a horizontal plane, where they reach a right angle, which is the maximum distance from the arm, when they gradually hug the arms again. By turning the crank-shaft P the gate F G is turned upon its pivot H to regulate the approach and impingement of the water.

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

1. The gate F G arranged to swing upon the shaft A of a current-wheel, as and for the purpose described.

2. The arrangement of circular racks K K, pinions L L, shaft M, worm O, pinion N, and shaft P, as and for the purpose described.

3. The arrangement of the buckets D to fold inwardly and flatly upon the radial arms B, as and for the purpose described.

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Witnesses:

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