

V. M. BAKER.

Water Wheels.

No. 124,472.

Fig. 1.

Patented March 12, 1872.

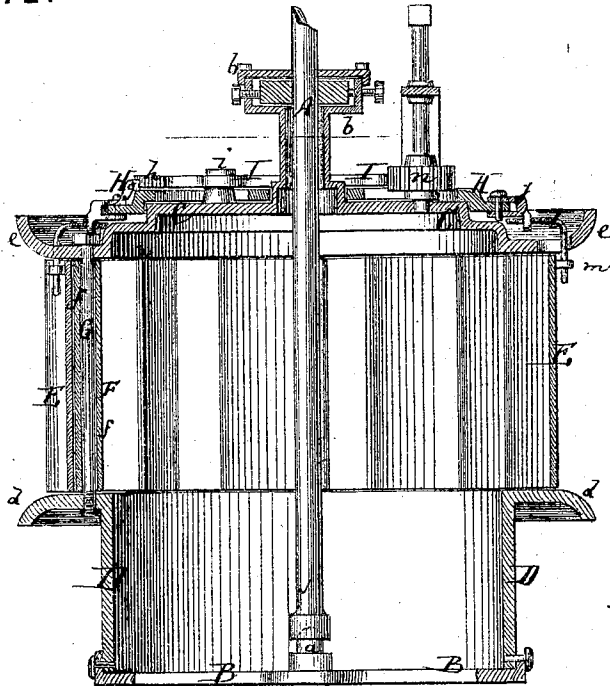


Fig. 2.

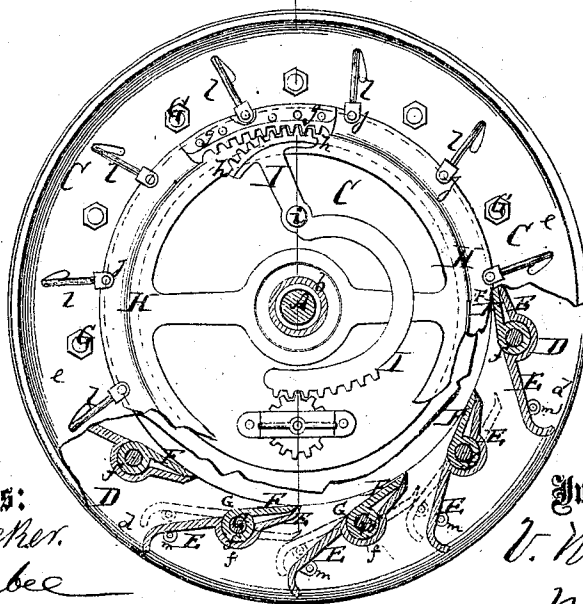
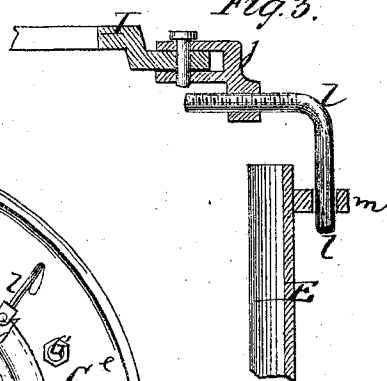


Fig. 3.



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UNITED STATES PATENT OFFICE.

VINCENT M. BAKER, OF PRESTON, MINNESOTA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 124,472, dated March 12, 1872.

Specification describing a new and Improved Water-Wheel, invented by VINCENT M. BAKER, of Preston, in the county of Fillmore and State of Minnesota.

Figure 1 represents a vertical section of my improved water-wheel, the line *c c*, Fig. 2, indicating the plane of section. Fig. 2 is a top view, partly in section, of the same. Fig. 3 is a detail section on an enlarged scale of the connection between gate-ring and gate.

Similar letters of reference indicate corresponding parts.

This invention relates to a new arrangement of gates and mechanism for adjusting the same in water-wheels; and consists principally in connecting with each gate a vibrating chute-plate, which will carry the water at the most advantageous angle to the wheel, whatever the position of the gate. The invention also consists in a new manner of hanging the gate, adjusting and connecting it with the several gates, as hereinafter more fully set forth.

A in the drawing represents the shaft of the wheel, its lower end resting on a step, *a*, which is secured upon or is part of the cross-bar or lower frame B, while its upper part works in a box, *b*, that is supported by the crown-plate C. D is the cylinder, having, at its upper end, an outwardly-projecting curved flange, *d*. The crown-plate C is provided with an outwardly-projecting flange, *e*. It will be noticed that the flange *d* is curved downward and the flange *e* upward, both forming thus a flaring and convenient entrance for the water. E E are the gates; F F, the chute-plates; and G G the bolts that hold them in place. The bolts are fitted through the flanges *d e* and through eyes *f f*, which are formed at the outer ends of the chute-plates. They (the bolts) serve not only as pivots for these chute-plates and gates, but also as supports of the crown-plate. Each gate has a circular recess formed in it, wherewith it embraces the eye *f* of its chute-plate, said eye thus form-

ing its pivot. The bolt G is therefore the pivot for the chute-plate, the latter forming the pivot for the gate. The gate can swing independent of the chute-plate, and vice versa. It will also be seen that each gate is pivoted at or near the middle, and with its inner part fully overlaps its chute-plate, while its outer part more or less covers the inner part of the gate next behind. The gates can be adjusted according to the amount of power to be obtained. But the chute-plates are self-adjusting, and will always swing toward the wheel to carry whatever water is at disposal at the most advantageous angle. H is the gate-ring, placed on top of the crown-plate, and made to vibrate on the base of the box *b*. It has a toothed section, *g*, into which meshes a toothed segment, *h*, formed on a lever, I, that is, by a pin, *i*, pivoted on the top of the crown-plate. To the edge of the ring H are secured clevises *j j*, that are, by elbow-bolts *l l*, connected with ears *m* projecting from the gates. The bolts *l* have screw-threads formed on them, so they can be adjusted in the clevises to set the gates. When the lever I is swung by means of a pinion, *n*, it carries all the clevises, and swings the gates on their respective pivots, to admit more or less water to the wheel.

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

1. The chute-plates F F, combined with the gates E E, to turn on joint axes therewith, as specified.
2. The combination of the bolts G, chute-plates F, and gates E with each other, the chute-plates having eyes *f*, whereon the gates turn, substantially as set forth.
3. The gate-ring H, carrying the clevises *j*, and connected by elbow-bolts *l* with the gates, as specified.

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