V. M. Baker.

Water Wheel.

No. 95,630. Patented Oct. 12, 1869.

Fig. 1.

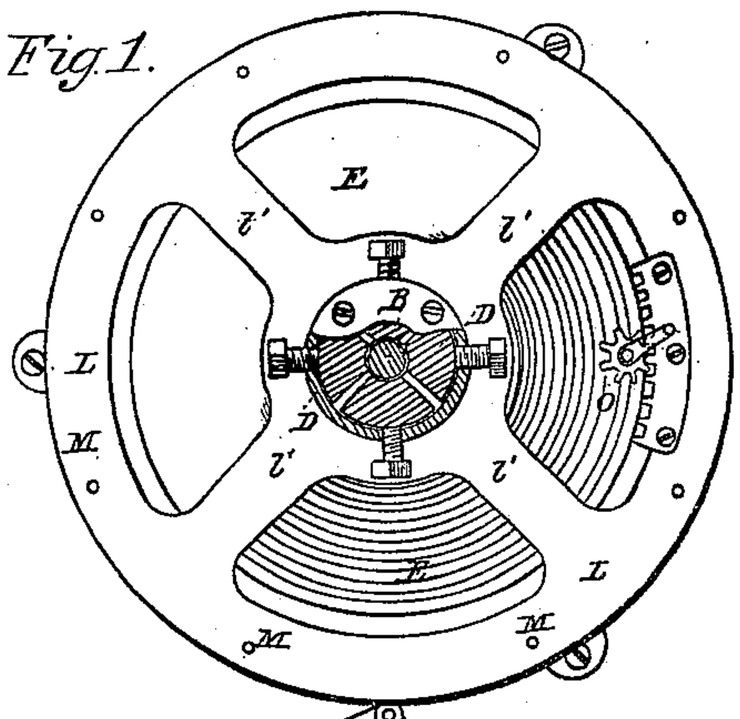


Fig. 2.

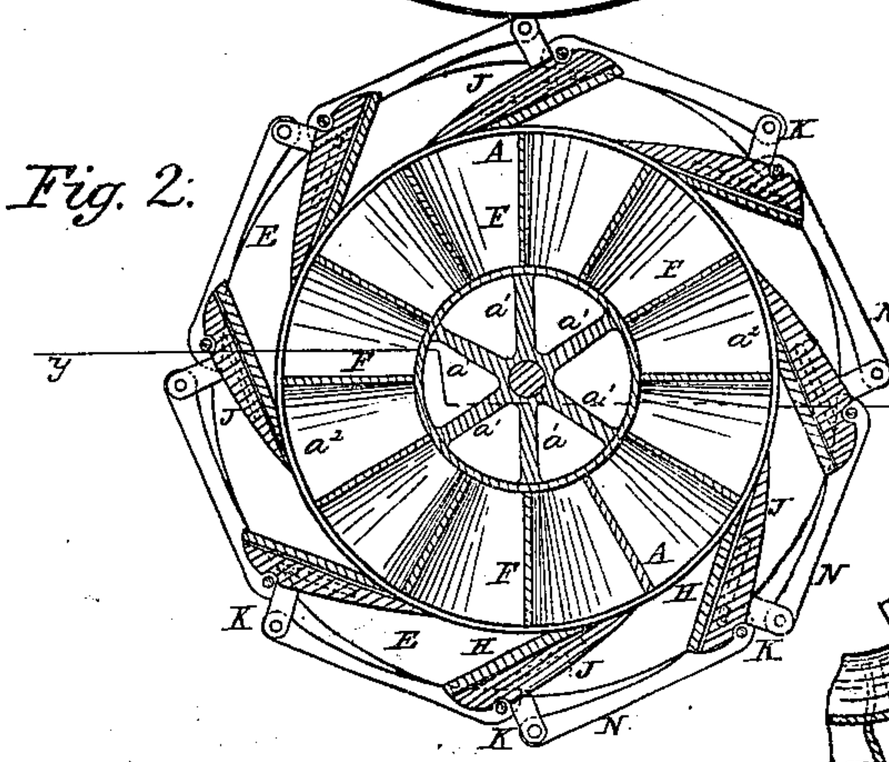


Fig. 4.

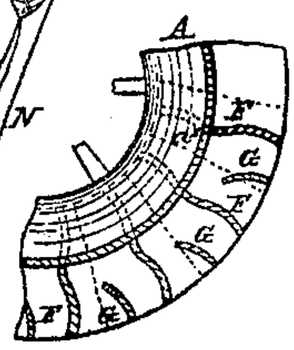
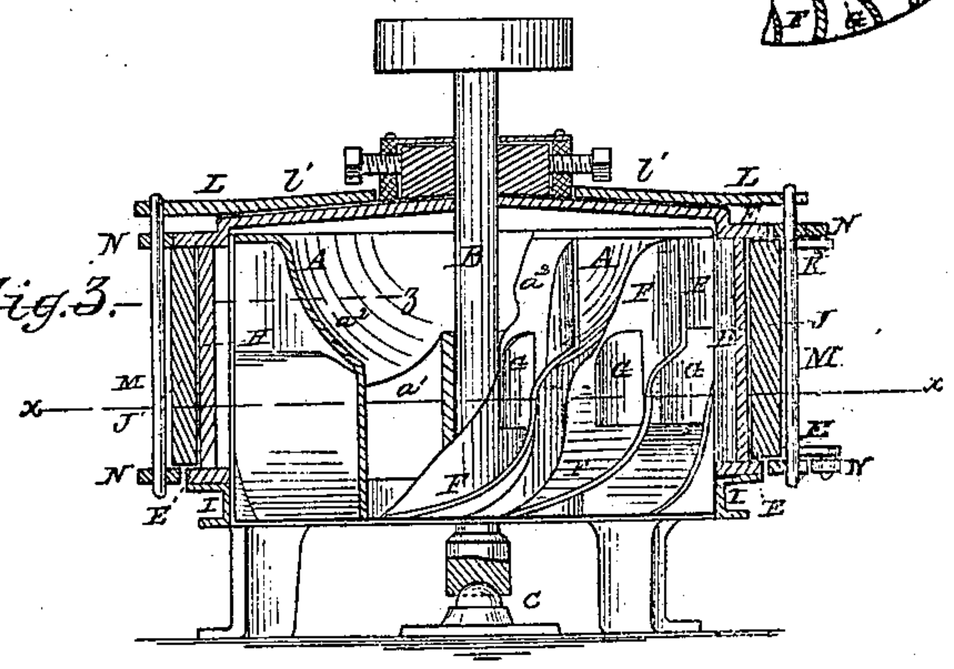


Fig. 3.



Witnesses.
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V. M. BAKER, OF PRESTON, MINNESOTA.

Letters Patent No. 95,630, *dated October* 12, 1869.

IMPROVEMENT IN WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, V. M. BAKER, of Preston, in the county of Fillmore, and State of Minnesota, have invented a new and useful Improvement in Water-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 drawings, forming a part of this specification, in which—

Figure 1 is a top view of my improved water-wheel.

Figure 2 is a horizontal section of the same, taken through the line *x x*, fig. 3.

Figure 3 is a vertical section of the same, taken through the line *y y*, fig. 2.

Figure 4 is a detail sectional view of the same, taken through the line *z z*, fig. 3.

Similar letters of reference indicate corresponding parts.

My invention has for its object to improve the construction of horizontal water-wheels, so as to make them more efficient in operation, enabling them to utilize a larger proportion of the water, and bringing them more fully under the control of the operator; and

It consists in the construction and combination of various parts of the wheel, as hereinafter more fully described.

A is the wheel, which is connected with the shaft B by the arms a^1.

The lower end of the shaft B revolves in the step C, and its upper end in the bearing D, supported by and rigidly attached to the cap of the wheel-case E.

The bearings D are made in parts adjusted by set-screws, as shown in fig. 1, for convenience in adjusting the shaft B.

The rim a^2 of the wheel is made with an incline or flare, extending from the top curve of the long buckets F to the top of the wheel.

F are the long buckets, which are made with a double curve, as shown in fig. 3, and their inner edges are securely attached to the rim a^2 of the wheel A.

G are the short buckets, which are attached to the long buckets F just below their upper curve, as shown in fig. 3, and which do not extend to the rim a^2 of the wheel A, as shown in fig. 4.

H are the chute-plates, which are made straight, and which are placed between and are secured to the top and bottom flanges of the case E.

I is a tube, extending below the wheel A, and which is made with a flange upon its upper end, to support the lower flange of the case E.

The inner ends of the chute-plates H should be rounded off, to correspond with the curve of the wheel A.

The outer ends of the chute-plates H should also be rounded off, to admit the water more freely.

J are the gates, which slide along one chute-plate, so that the entrance of the water to the wheel may be prevented, when desired, by their rounded inner ends coming in contact with the next chute-plate.

The gates J are guided in their movements by grooves formed in the upper and lower flanges of the case E, and to their outer ends, at top and bottom, are rigidly attached arms K, by which they are connected with the hoisting-ring L, by the rods M.

The rods M may pass directly through the arms K, in which case the said arms should be slotted, or they may pass through the ends of short bars N, the other ends of which are pivoted to said arms K.

The hoisting-ring L rests upon the case E, and is provided with radial arms *l'*, the inner ends of which are attached to or formed solid with a sleeve, which fits and works upon the case of the bearings D, as shown in fig. 3.

The hoisting-ring L may be operated to open and close the gates, by means of a gear-wheel and rack, O, or other convenient means.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The compound-buckets F G, formed by the combination of the long double-curved buckets F and the short buckets G with each other and with the body of the wheel, substantially in the manner herein shown and described, and for the purpose set forth.

2. The gates J, formed with curved inner ends and with the projecting arms K, connected with the hoisting-ring L, by means of the rods M, whether the connecting-bars N be used or not, substantially as herein shown and described.

3. The straight chute-plates H, in combination with the gates J and case E, substantially as herein shown and described, and for the purpose set forth.

4. The rim a^2 of the wheel A, when constructed as herein shown and described, that is to say, with an incline or flare from the upper curve of the long buckets F to the top of the wheel, substantially as herein shown and described, and for the purpose set forth.

V. M. BAKER.

Witnesses:

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