A. Morehouse,

Water-Wheel Gate.

No. 26,696. Patented Jan. 3, 1860.

Fig. 1.

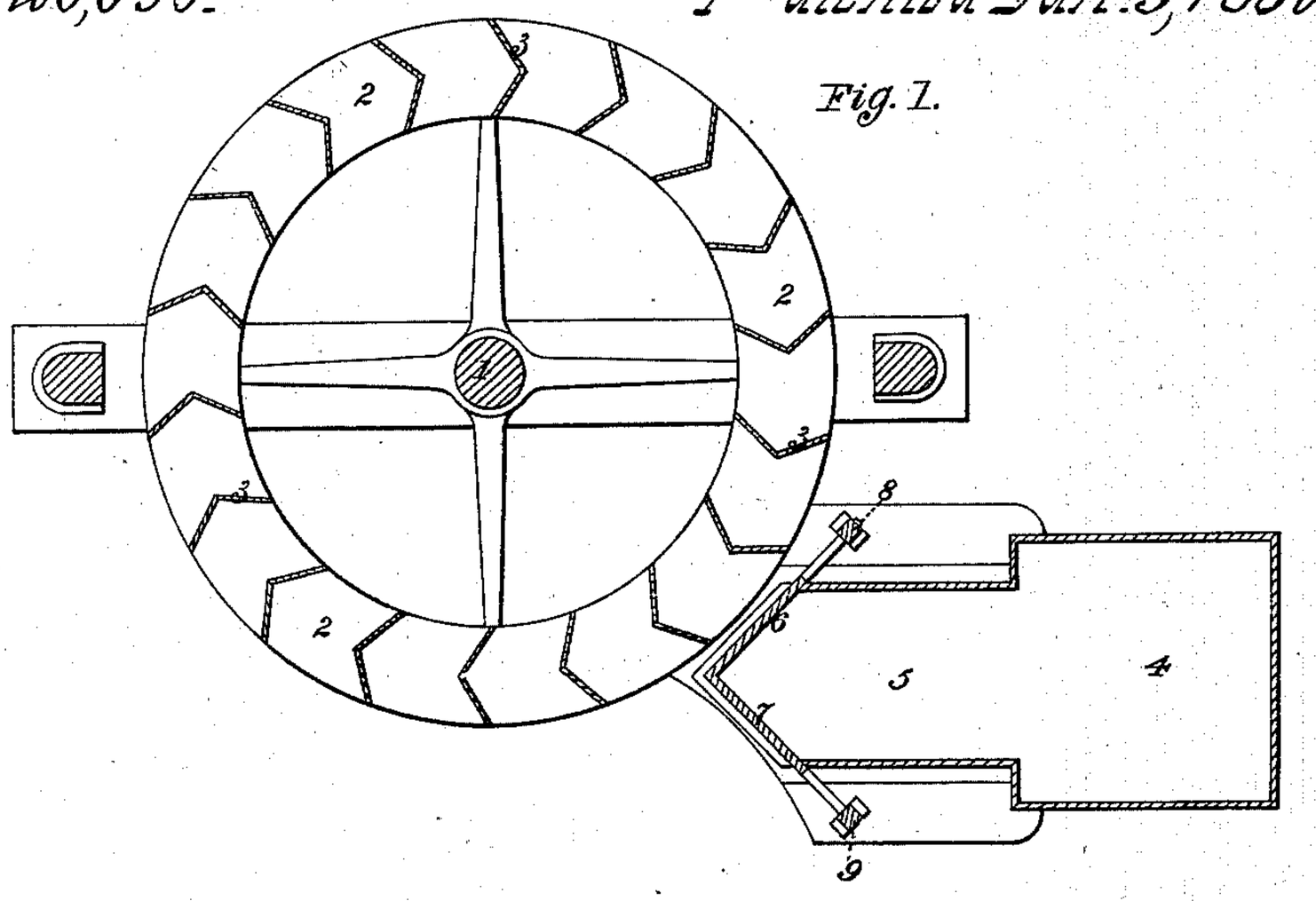
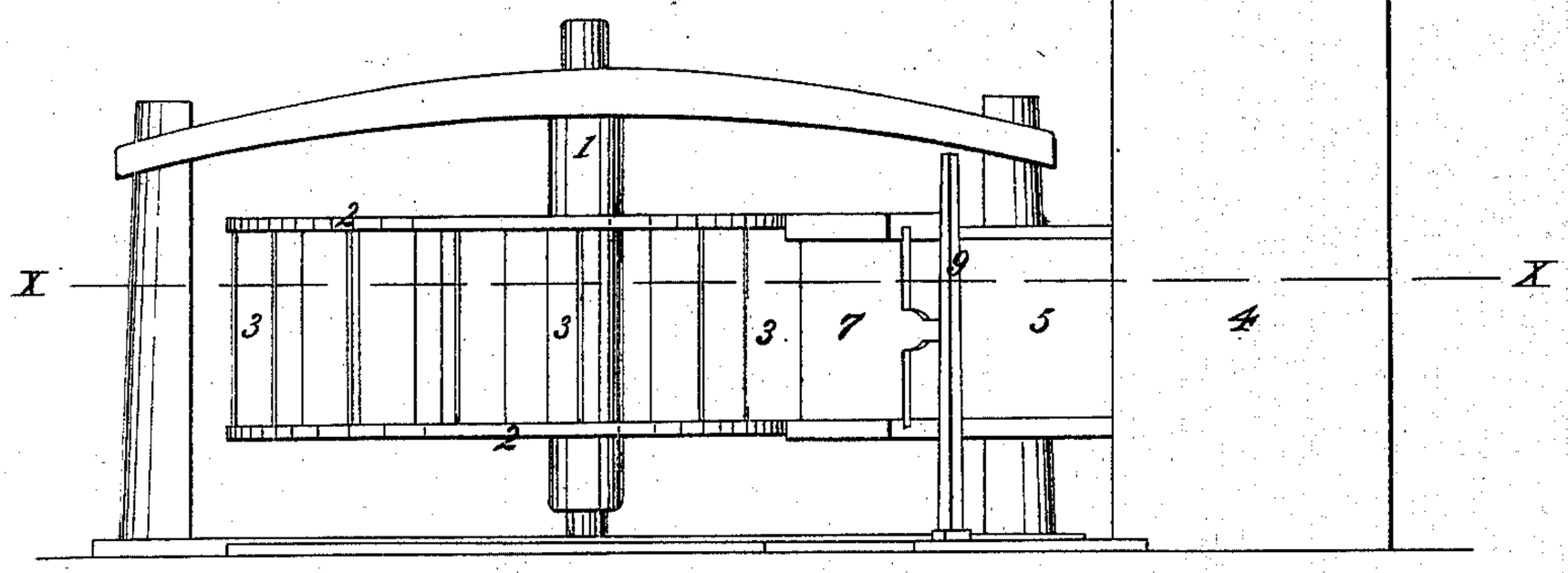


Fig. 2.



Witnesses:

Thos. D. McCarthy

John Crumby

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UNITED STATES PATENT OFFICE.

ALBERT MOREHOUSE, OF FARMER, NEW YORK.

GATE FOR WATER-WHEELS.

Specification of Letters Patent No. 26,696, dated January 3, 1860.

To all whom it may concern:

Be it known that I, ALBERT MOREHOUSE, of Farmer, in the county of Seneca and State of New York, have invented certain Improvements in Gates for Water-Wheels, the construction and operation of which I have described in the following specification and illustrated in its accompanying drawings with sufficient clearness to enable competent and skilful workmen in the arts to which it pertains or is most nearly allied to make and use my invention.

My said invention consists in combining with the spout through which the water is laid on to the wheel, and with each other, of two gates set in an angular position to each other and to the direction of the stream, and so arranged in connection with the other parts as to be made a convenient means of graduating the thickness of the stream and of slightly changing its position or direction with the same thickness, by drawing the gates horizontally, as hereinafter more fully set forth.

My invention is illustrated in the accompanying drawings as follows:

Figure 1 is a horizontal section showing the parts below the line X X as drawn across Fig. 2. Fig. 2 is a side elevation, the plane of projection being parallel to that side of the plan which is toward the bottom of the page in Fig. 1.

1 is the shaft of the wheel, 2 is the rim, and 3, 3, are the buckets or floats.

4 is the flume or penstock from which the water is conveyed through the spout 5, to act upon the wheel. In most constructions, a vertical board or gate as it is called, placed in this spout 5, furnishes the means of shutting the water from the wheel, and is operated by raising it vertically, it leaving as it rises an opening below it to allow the water to pass.

It is often desirable to graduate the supply of water to the wheel and furnish it with only a portion of what might flow through the spout with the gate fully open. This is done by partially closing the gate. In the old construction, this movement cuts off the upper stratum of water, leaving the lower portion to issue as a flat spread out sheet operating only on the lower portions of the buckets. This is objectionable, the water not working as efficiently under such circumstances as might otherwise be the case. In my arrangement the gates are drawn horizontally, leaving the vertical thickness or depth of the sheet of water entire to act upon the whole breadth of the bucket. 6 and 7 are these gates. They are placed diagonally in the spout 5, meeting in the center, their arrangement being such as to condense the stream of water toward the middle of the spout, as will be obvious from an inspection of the parts. These gates, arranged in connection with the other parts as described and shown, furnish the means of not only graduating the supply of water allowed to flow upon the wheel, but also of governing its position and direction. If the outer gate 7, which is outside, were opened, while the other remained closed, the outer stratum of water in the spout 5 would be allowed to escape, and besides this, the direction of the surface of the inner gate would give the water an outward direction, which would perhaps, if it were entirely opened and the other gate entirely closed, carry the stream outside of the wheel. If, on the other hand, the gate 6 were opened, and the other closed, the inside stratum would be discharged, and a direction much farther toward the axis of the wheel would be given. By partially opening both these gates equally, the central portion of the stream would be discharged, and the direction of the water would be in line with the spout 5. It will be obvious that by the modified operation of both these gates, any proper direction may be given to the water, and the supply graduated to suit the circumstances of the case. By this means the miller can graduate the stream, and vary its direction, to obtain the best effect by making both circumstances correspond with the head of water, the work to be done, and the speed of the wheel which is required.

8 and 9 are levers to operate the gates.

Having thus fully described my said invention, I claim—

The combination with the spout 5, and with each other, of the gates 6 and 7, inclined and arranged as described, for the purposes set forth.

ALBERT MOREHOUSE.

Witnesses:

THOS. P. HOW,

JOHN CRUMLY.