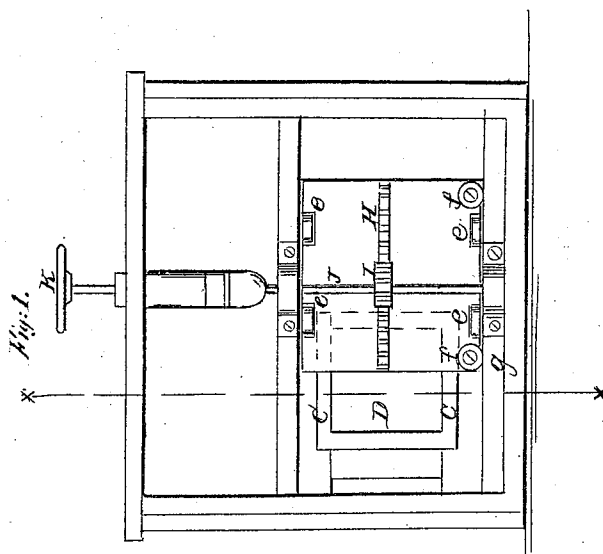
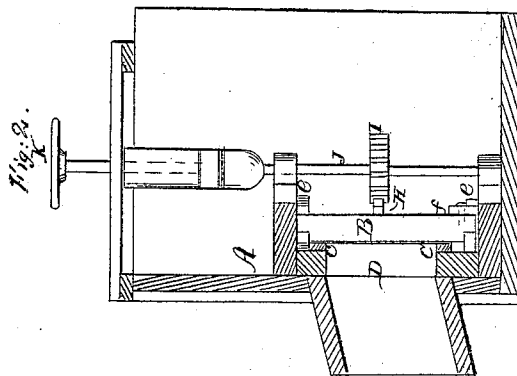


V. E. Smith,

Water Gate.

No. 92,384.

Patented July 6, 1869.



Witnesses

Geo. W. Mober.
Oscar Kinchman

Inventor

V. E. Smith

per

Attorneys



VERNON E. SMITH, OF LANCASTER, NEW HAMPSHIRE.

Letters Patent No. 92,384, dated July 6, 1869.

IMPROVED WATER-GATE.

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, VERNON E. SMITH, of Lancaster, in the county of Coos, and State of New Hampshire, have invented a new and useful Improvement in Water-Gates; 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 part of this specification.

This invention relates to a new and improved arrangement for operating water-gates in discharging water on to water-wheels, and for all other purposes for which water-gates are used; and consists in the construction and arrangement of parts as hereinafter described.

In the accompanying sheet of drawings—

Figure 1 represents a vertical section, showing the gate partly closed.

Figure 2 is a vertical section of fig. 1, through the line *x x*.

Similar letters of reference indicate corresponding parts.

A is the bulkhead or flume, in which the gate works.

B is the gate or valve, which slides on the raised face C C of the outlet-orifice D.

The pressure of the water against the gate would naturally produce a great deal of friction on the face C; but to prevent this, I provide the gate with fric-

tion-rolls, *e*, which traverse the wall of the bulkhead, outside of the face C, as seen in the drawing.

These rolls are so adjusted that the side of the gate barely comes in contact with the face C, without friction.

The weight of the gate is also sustained by rollers *f f*, which traverse back and forth on the bar *g*.

The gate is operated by means of a rack and pinion.

H is the rack, on the back of the gate, extending its whole length.

I is the pinion, which engages therewith, which is fast on the shaft J.

The shaft extends through the frame-work of the bulkhead, and is revolved by means of the hand-wheel K.

Having thus described my invention,

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

The arrangement of the friction-rollers *e f*, with relation to the gate B, operated by the rack H and pinion I, the guide-face C of the discharge-spout D, and the bottom guide-bar *g*, as herein described, for the purpose specified.

VERNON E. SMITH.

Witnesses:

B. F. WHIDDEN,

I. M. WHIPPLE,

HENRY A. MORTON.