JOHN T. FANNING.

Turbine Motor Gates.

No. 123,388. Patented Feb. 6, 1872.

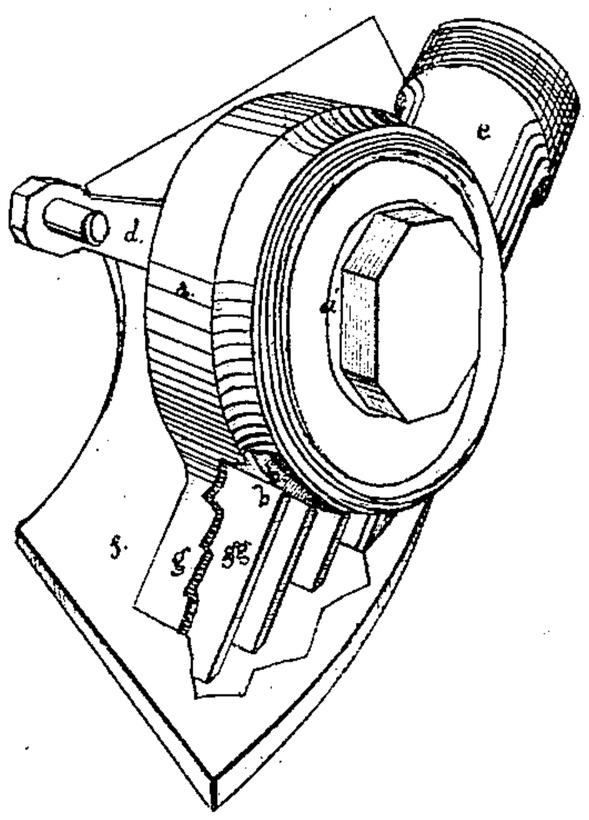

Fig. 1.

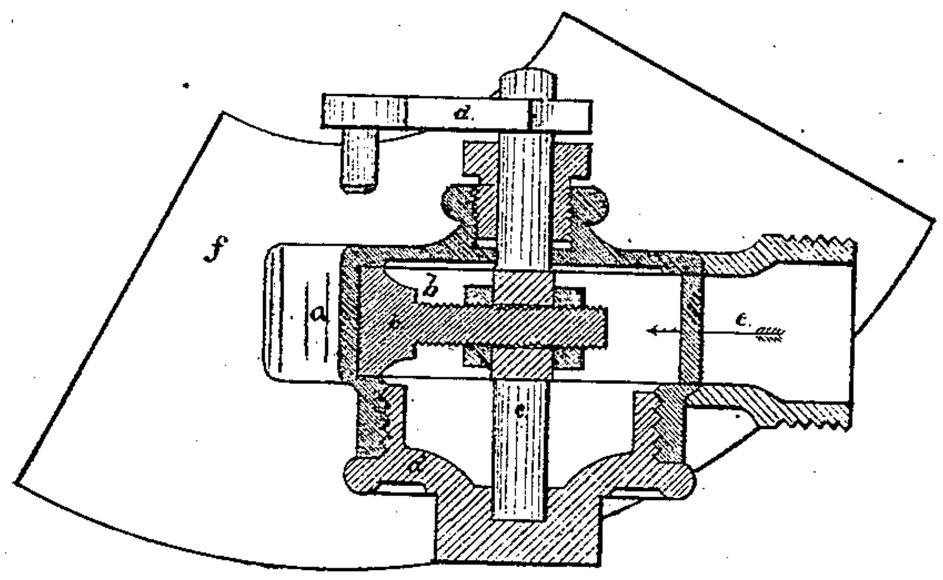

Fig. 2.

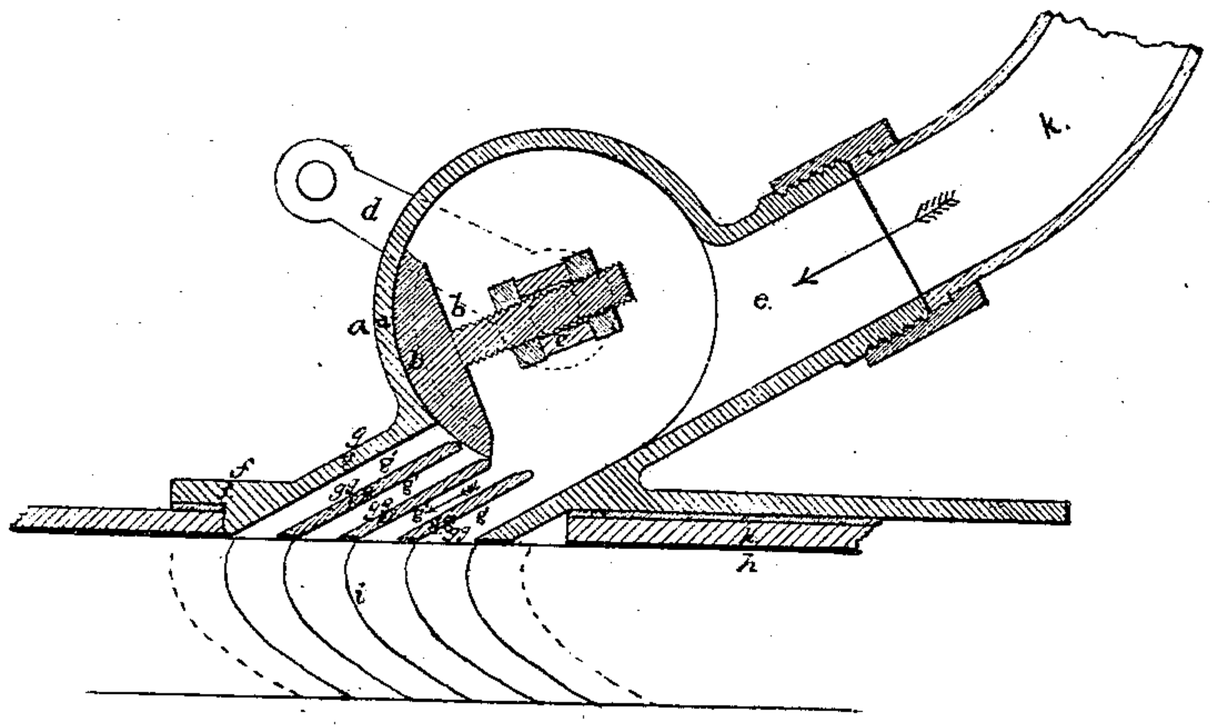

Fig. 3.

Half Size.

WITNESSES

George Perkins.

H. H. Richards.

INVENTOR

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JOHN T. FANNING, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN TURBINE-MOTOR GATES.

Specification forming part of Letters Patent No. 123,388, dated February 6, 1872.

SPECIFICATION.

I, JOHN T. FANNING, of Norwich, in the county of New London and State of Connecticut, have invented a new and Improved Turbine-Motor Valve containing effluent chutes, of which the following is a specification:

This invention relates to that class of valves which are adapted to limit or graduate the flow of fluid when either its volume is variable or the resistance to be overcome by the pressure obtained from it is variable; and consists in certain details of construction fully described hereinafter.

The form, method of construction, and of operation are shown in the accompanying drawing.

Figure 1 is a perspective view of the valve-case, and the case is broken out in part so as to show the chutes. Fig. 2 is a horizontal section through the valve and case. Fig. 3 is a vertical section through the valve, case, and chute as applied to a horizontal turbine-wheel.

The case *a*, Figs. 1, 2, and 3, and valve *b*, Figs. 2 and 3, are intended to be cast in brass or other metal. The casting for the case should be open on one side or divided into two parts to allow the valve-seat to be turned to its proper form and the insertion of the valve. The open side would be closed by screwing in a cap, *a'*. The valve *b* is hung by an adjustable arm to an axle, *c*, Figs. 2 and 3, and is turned to fit its cylindrical seat. The valve may be rotated by the movement of a crank, *d*, a hand-wheel, or other contrivance fixed on its axle. The case has a base-plate, *f*, of the proper form to allow it to be securely attached to the top of a horizontal turbine-motor case, *h;* and its base-plate might be formed to fit the periphery of a vertical or other turbine-motor case. The effluent chutes *g'* extend through the base-plate. The base-plate covers but one quadrant of a circular-motor case, so that one, two, three, or four valves may be applied to the same turbine-wheel. The influent passage *e*, Fig. 3, is so formed that a cylindrical supply-pipe *k* may be readily coupled thereto. The effluent passage *g* is divided by thin partitions of metal *g g* into sub-passages *g'*, that may be controlled independently, one after the other, by the movement of the valve across the ends of the passages. The partitions prevent the diffusion of the fluid through an enlarged space behind the valve when the valve is closed—a part equal to the breadth of one or more sub-passages—and enable the fluid to act at such part valve on the buckets *i* of the motor with the effect due to its head and volume.

The construction described possesses marked advantages. It is, first, a balance-valve, as it is equally exposed to the action of the water upon each side of its arm, and it is consequently rotated freely in either direction. It is, second, practically a frictionless valve, from the fact that it is rigidly held by its adjustable arm in any desired position, and the pressure of the water cannot in any case affect its bearing upon its seat. This arrangement makes it exceedingly sensitive in action, and adapted particularly for use under high heads.

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

The combination of the adjustable balanced valve *b*, constructed as described and rigidly held, when fixed in position, by its extensible arm, with the case *a*, having partitions *g g*, as described.

JOHN T. FANNING.

Witnesses:

GEORGE PERKINS,

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