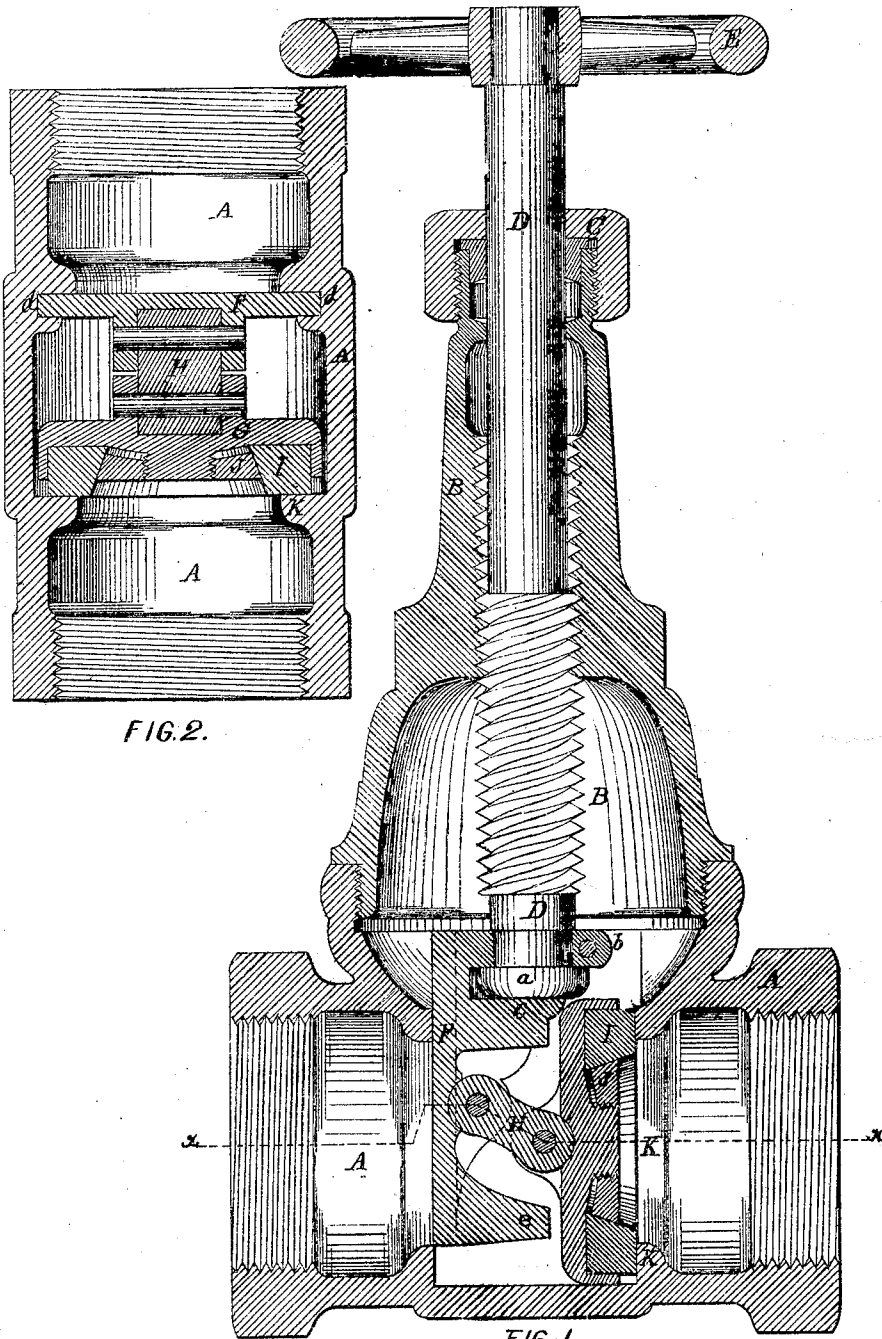


GEORGE PIERCE.

Improvement in Stop-Cock Valves.

No. 114,338.

Patented May 2, 1871.



Witnesses.

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GEORGE PIERCE, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 114,338, dated May 2, 1871

IMPROVEMENT IN STOP-COCK VALVES.

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

I, GEORGE PIERCE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Stop-Cock Valves for steam and other purposes, of which the following, taken in connection with the accompanying drawing, is a specification.

Nature and Objects of the Invention.

My invention relates to that kind of stop-cock or valve called a "straight-way valve," through which the steam or water passes in a straight line, the valve or gate moving in a line at right angles to the motion of the fluid; and

It consists in the combining of a valve-disk with a sliding plate operated, by means of a screw-spindle or other suitable device, by means of a toggle-link or links, in such a manner that the valve will be forced onto its seat, and withdrawn therefrom in a line at right angles to said seat, and so that there shall be no sliding of the valve after it comes in contact with its seat.

Description of the Drawing.

Figure 1 is a vertical longitudinal section through the center of a valve embodying my improvements, and

Figure 2 is a horizontal section on line *x x* on fig. 1.

General Description.

A is the valve-casing, and

B the bonnet or cap, provided with a stuffing-box, C, at its upper end.

D is the valve-stem, the lower end of which is provided with a collar, *a*, by means of which it is connected to the valve, as will be described.

The valve-stem D is provided with a quick-acting screw-thread, to work in a corresponding thread in the upper portion of the bonnet B, and a hand-wheel, E, by which it may be revolved.

The lower end of the stem D is fitted to a hole in the ear *b* on the upper part of the sliding plate F, in such a manner that it is free to revolve therein, the collar *a* being below the ear *b*, as shown, so that the plate F and the valve may be lifted by said collar while the plate F is moved downward, and the valve forced onto its seat by the direct pressure of the end of the valve-stem upon the ear or lug *c*, in an obvious manner.

The plate F is fitted to slide in the grooves *d*, and necessarily moves in a vertical direction.

G is the valve-disk, to the center of the back side of which is pivoted the toggle-link H, the opposite end of which is pivoted in like manner to the sliding plate F, the length of the link being so adjusted that, when the valve is forced upon the seat K, the end of the link attached to the sliding plate shall be somewhat above the pin, by which the other end is attached to the valve to allow for the wear of the parts, and also to insure pressure sufficient to make the valve tight.

The face of the valve-disk G is cupped out so as to form a recess, into which is fitted the packing I, which is secured therein by the disk-nut J, as shown.

The operation of my improved valve is as follows:

The valve being closed, as shown, if the hand-wheel E is revolved so as to raise the spindle, the sliding plate F moving with the spindle and guided in a vertical direction by the grooves *d d*, the action of the link H and the pressure on the valve will cause the valve G to be drawn or moved away from the seat K in a line at right angles to said seat until the back of the valve rests against the lug *c* and the stop *e*, projecting from the lower part of the sliding plate F, when, if the wheel and valve-stem are kept in motion in the same direction, the valve and sliding plate will be raised into the bonnet, leaving a free passage for the flow of the steam or other fluid.

When the hand-wheel is turned in the opposite direction the sliding plate and the valve-disk will descend together, the valve-disk resting against the lug *c* and stop *e* until the bottom of the valve-disk strikes the bottom of the casing, when a continuation of the motion of the spindle will cause the valve to be forced upon its seat in a line at right angles to said seat, and to the motion of the sliding plate, by the action of the toggle-link H, in an obvious manner.

Claim.

Having fully described my improved valve,

What I claim as new, and desire to secure by Letters Patent of the United States, is as follows:

The arrangement of the valve-disk G, connected, by the link H, to vertically-sliding plate F, and held in a vertical position by the stop *e*, substantially as described.

Executed at Boston this 2d day of February, 1871.

GEORGE PIERCE.

Witnesses:

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