

United States Patent Office.

L. D. GILMAN, OF LANSINGBURG, NEW YORK.

Letters Patent No. 101,002, dated March 22, 1870.

STOP-VALVE.

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, L. D. GILMAN, of Lansingburg, in the county of Rensselaer and State of New York, have invented a new and improved Valve; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is an elevation of my improved valve.

Figure 2 is a diametrical section through the same.

Figure 3 is a top view of the interior of the valve, as seen by removing the cap, showing the valve shut.

Figure 4 is a similar view of the same parts shown in fig. 3, indicating the valve open.

Figure 5 is a view of one of the segmental valve-plates, and a section through the lower portion of the stem.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements on valves which are designed for water-pipes, steam and gas-pipes, and for any and all purposes where tightness and durability are desired.

The nature of my invention consists in the arrangement within a cylindrical case of any suitable capacity, of two or more segment valves, and in connecting a screw-threaded valve-stem to such segments by shoulders, inclined planes, and a wedge, in such manner that, in the act of turning the said stem to close the valve-opening, the valve-segments will also be turned, and at the same time expanded and forced tightly against their seats; and, in the act of opening the valve, the lateral pressure of the wedge on the segments will be removed, and the segments forced outwardly by the internal pressure of the fluid or gas passing through the valve-case, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will explain its construction and operation.

In the accompanying drawing—

A represents the valve-case, which is made of a cylindrical form internally, and constructed with two or more pipe-connections, *a a*.

The inlets and outlets may be made diametrically opposite each other, as shown in the drawings, or they may be arranged in any other suitable manner; for instance, one inlet might be made through the bottom of the case A, and two outlets made through the cylindrical side of the case, as shown.

The cap B, which is screwed into the upper end of the case A, is centrally perforated, to receive through it the valve-stem C, and on this cap a nut, *b*, and externally screw-threaded portion *c*, is constructed.

The bore through the cap is partly tapped with a quick thread to receive the male-threaded portion on the screw-stem, as shown in fig. 2, so that, in the act of turning this stem to open or shut the valve, it will also be moved in a direction with its length.

The stem C has a hand-wheel or handle of any suitable kind on its upper end, and this stem is packed, by means of waste or other material, confined on the top of the threaded portion *c* by the nut or stuffing-box *d*.

On the lower end of the screw-stem C a short wedge, *g*, is constructed, the downwardly-tapering sides *i i* of which are received by beveled recesses *s s*, which are made into bosses formed on the inner sides of two segments G G, as shown in figs. 2, 3, and 4.

The wedge *g* is arched, as shown in fig. 2, so that it will not materially offer an obstruction to the flow of fluids or gas through the valve-case.

The segments are slightly less than semicircles, and are perforated at *m m*, so that when they are turned so that these openings register with the passages *a a*, there will be a free course for fluids or gas through the valve-box or case, and when turned as indicated in fig. 3, their imperforated portions will tightly close the passages *a a*.

It will be seen, from the above description, that, in the act of turning the stem C, and, with it, the segments or gates G G to close the passage *a a*, this stem will be screwed downward, which will cause the wedge *g* to expand the segments forcibly against the interior side of the case A, thereby making tight joints, and preventing the valve from leaking. On the other hand, during the act of opening the valve by reversing the movements of the screw-stem C, the wedge *g* will be retracted, and the segments allowed to turn freely.

The force of the fluid which flows through the case A will expand the segments, and hold them so tight against the interior sides of the case A that sand or grit will not be allowed to work behind them.

One-quarter turn of the stem C opens the valve, and a similar amount of movement will shut it.

In carrying my invention into practice, I shall, when required, make my valves with more than two ways, and, if necessary, shall employ more than two segment gates.

I do not, therefore, confine my invention to the precise construction of the parts composing the valve, as shown in the drawings, as such construction may be departed from without changing the principle of my invention.

Having described my invention,

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

1. Circularly and laterally-movable segments G G, applied within a circular valve-case, so as to operate substantially as described.

2. The screw-stem G, constructed with a wedge or expander, *g*, on its lower end, in combination with expansible segments G, and a circular case, A, substantially as described.

3. The expansible segments G G, having beveled

and recessed bosses *h h* formed on their interior sides, and adapted for receiving a wedge, *g*, on a screw-stem, C, substantially as and for the purposes described.

L. D. GILMAN.

Witnesses:

F. W. ACKLEY,
M. T. CLOUGH.