F. HASKELL.
Globe-Valve.

No. 217,847. Patented July 22, 1879.

Fig. 1.

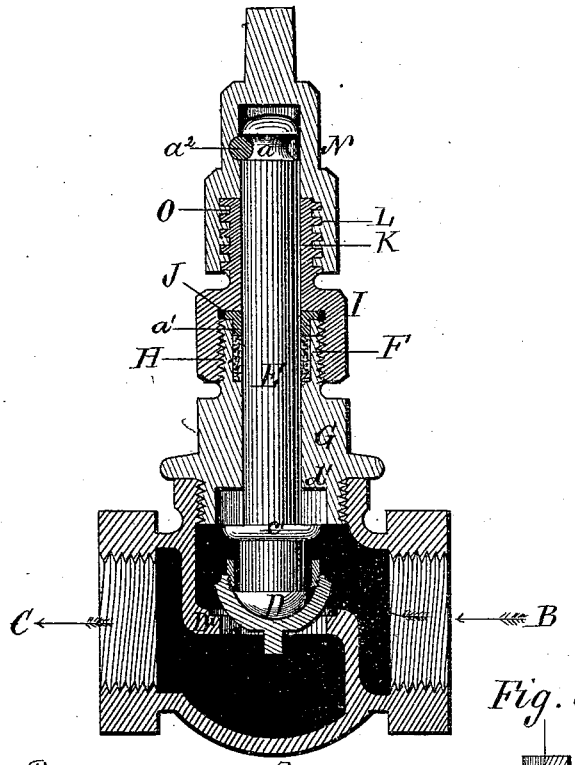


Fig. 2.

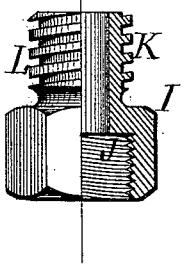


Fig. 4.

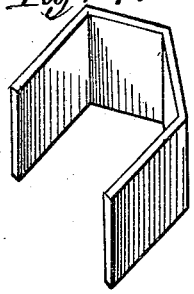
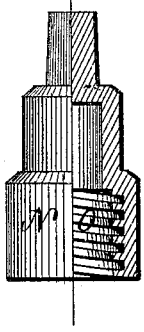


Fig. 3.



Witnesses.
J. Carpenter,
A. H. Gawler.

Inventor
Freeman Haskell.
H. Curtis. Atty.

UNITED STATES PATENT OFFICE.

FREEMAN HASKELL, OF CHELSEA, ASSIGNOR TO AMBROSE EASTMAN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GLOBE-VALVES.

Specification forming part of Letters Patent No. **217,847**, dated July 22, 1879; application filed November 14, 1878.

To all whom it may concern:

Be it known that I, FREEMAN HASKELL, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Globe-Valves, of which the following is a specification.

My improvements relate to that kind of globe-valve in which the valve-operating stem has longitudinal movement without rotation.

The drawings accompanying this specification represent, in Figure 1, a vertical section of a globe-valve embodying my improvements. Fig. 2 in such drawings represents a sectional elevation of the tubular block; and Fig. 3, a like view of the screw-threaded cap, both of which will be duly explained.

In these drawings, A represents the case of a globe-valve, the inlet and outlet ports of such case being shown at B and C, respectively, where the valve is shown at D, its seat at D′, and its stem at E, such valve-stem rising upward through the stuffing-box, which is shown at F as a pocket created in the upper part of a tubular block, G, the lower end of such block having a peripheral screw-thread to enter a female screw cut in the upper part of the valve-case.

In lieu of employing a male screw upon the valve-stem to operate in a female screw cut in the neck of the valve-case, as a means of raising and lowering the valve and stem in a spiral path, as heretofore, I proceed, as follows: Upon the upper part of the block G and outside of the pocket F, I cut a peripheral male screw-thread, H, and upon this thread I screw a tubular cap, I, having an internal annular shoulder or ledge, J, to screw down upon the stuffing in the box F, or upon a collet, a^1, placed over such stuffing, and a tubular neck, K, through which the valve-stem passes, a male screw-thread, L, being cut upon the outer periphery of such neck, upon which screw is screwed a cap or hub, N, having an internal peripheral screw-thread, O, to engage the said thread L. The upper end of the valve-stem is received within the bore of the cap or hub N, and is swiveled to such cap by a pin, a^2, screwed to the latter, and intercepting an annular groove, *a*, cut upon the periphery of the stem, or in any suitable manner which shall permit of rotary motion of the cap and vertical movements only of the valve-stem.

It is obvious that upon turning the cap N in one direction it is elevated, and the valve-stem raised by it in a vertical path without twisting motion, while a reverse movement of the cap effects a lowering of the valve in like manner.

It will be seen that the packing of the stuffing-box is isolated from the screw which operates the valve-stem, and cannot be entangled with or affected by the latter. It will also be seen that I avoid the spiral twisting motion of the valve-stem, which tends to loosen and score the packing, and the packing consequently remains effective and uninjured for a great length of time.

By the employment of a smooth valve-stem, and operating such stem by an interiorly screw-threaded cap screwed upon the neck of the valve-case above the stuffing-box and swiveled to the stem, I am enabled to preserve the packing material and maintain steam-tight joints about the valve-stem.

I do not confine myself to the use of the channel or groove *a* and pin a^2 as a means of swiveling the valve-stem and its operative cap N, as a set-screw may be employed, screwing through the cap and intercepting, by its inner end, the said groove. Various means may be adopted for connecting the cap with the valve-stem, whereby the cap may describe a spiral motion without imparting other than vertical motion to the valve-stem.

An auxiliary valve in the form of a collar, *c′*, is formed upon the valve-stem E a short distance above the valve proper, D, and this valve *c′* operates with a seat, *d′*, created in the lower part of the block G, the distance between the valve *c′* and its seat *d′* being such that, as the valve proper, D, is raised full open, the said valve *c′* closes upon said seat, and aids in preventing leakage of steam between the rod E and the bore of the said block G. The collar *d′* also constitutes, or may constitute, a stop to the elevation of the valve proper.

Though I have described my improvement as applicable to globe-valves, it is applicable with equal good results to valves of other construction in which the valve-stem passes through a stuffing-box.

In Fig. 4 of the drawings, I have represented a yoke, which I employ to prevent unscrewing of the block G as the cap I is raised. This yoke is slipped over opposite sides of the said block and cap, which are to be square or polygonal in cross-section and of equal size, and adapted to closely receive the yoke.

I claim as my invention, and desire to secure by Letters Patent of the United States, the following:

1. The tubular neck K, as screwing at bottom upon the neck of the valve-case, or an interposed collet, and confining the packing in place within the stuffing-box, and as provided at its upper part with the outer peripheral screw-thread, L, to receive the cap N.

2. The tubular neck serving to cover and isolate the packing, in combination with the screw-threaded cap, engaging an exterior screw-thread on said tubular neck, and connected with the valve-stem in such manner as to move the same longitudinally but without rotation.

FREEMAN HASKELL.

Witnesses:
H. E. LODGE,
AMBROSE EASTMAN.