

No. 77,913,

PATENTED MAY 12, 1868

J. POWELL.
GLOBE VALVE.

Fig: 1.

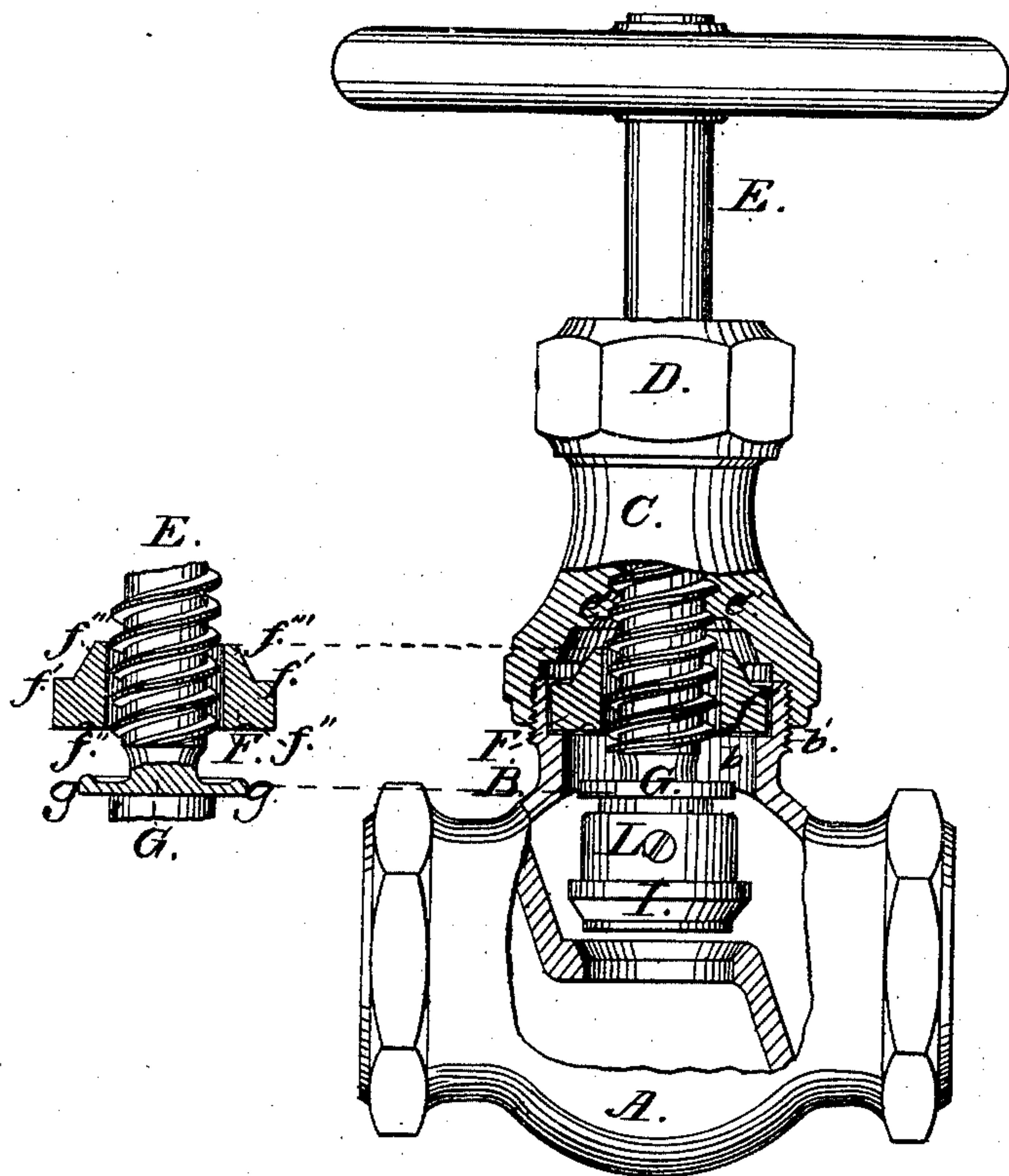


Fig: 4.

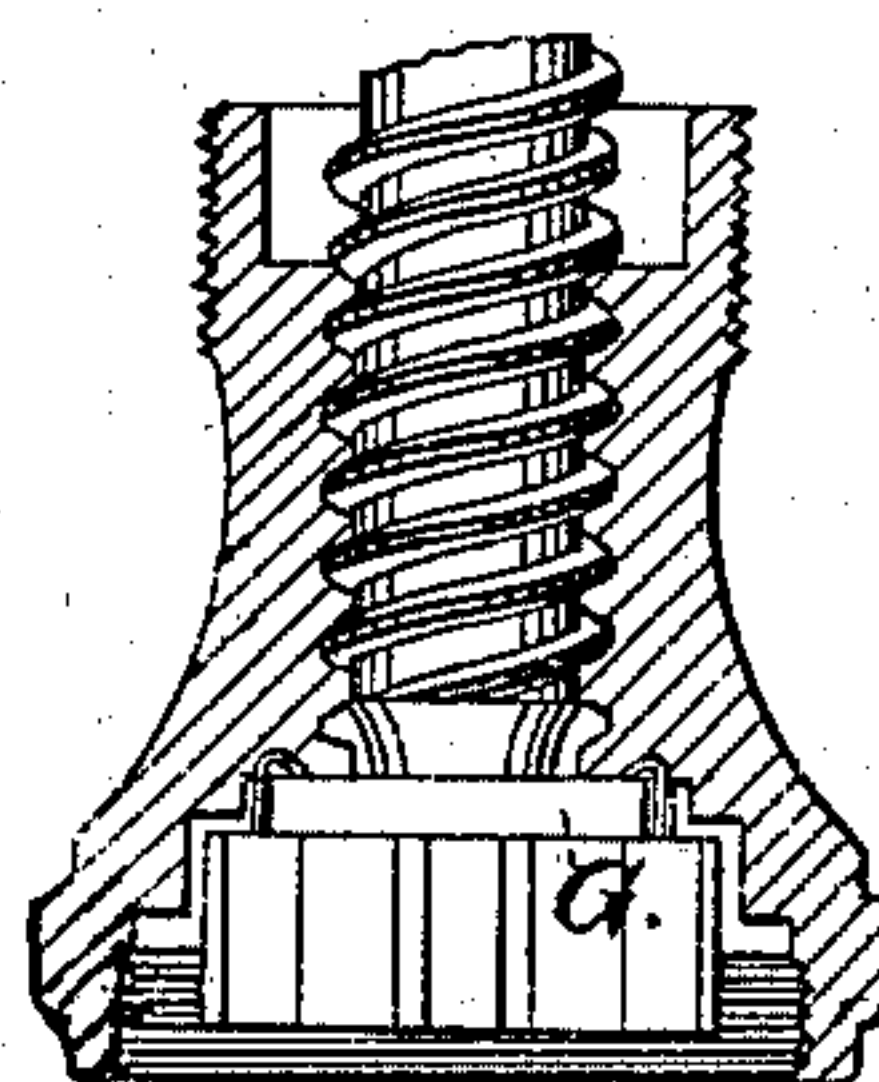


Fig: 3.

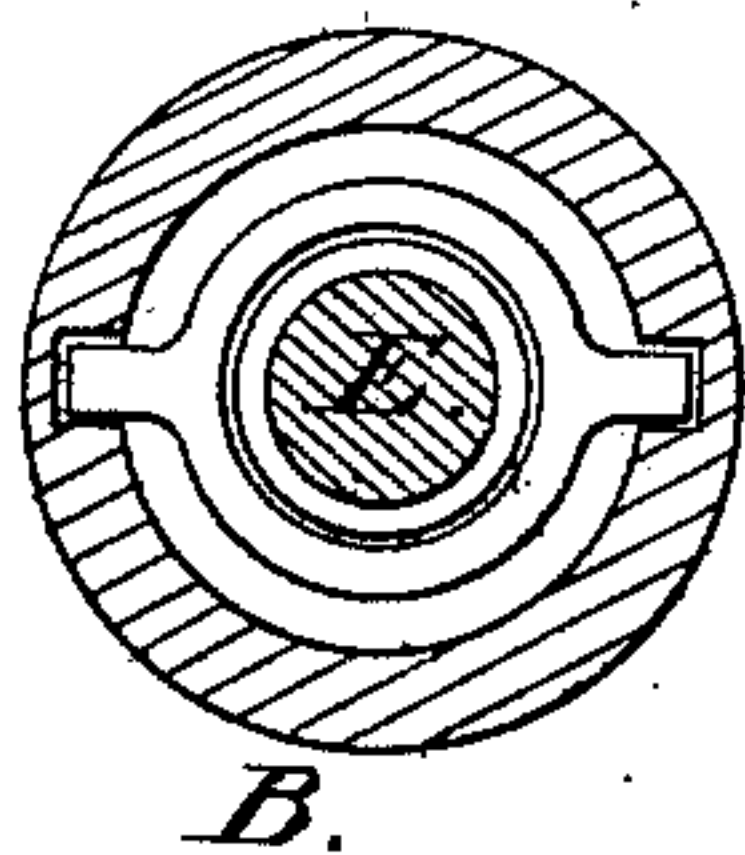
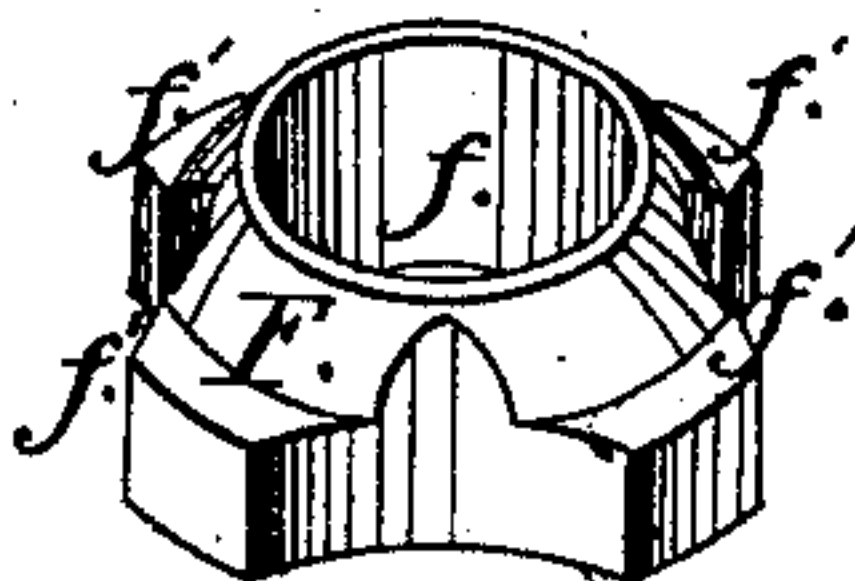


Fig: 2.



Witnesses:

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United States Patent Office.

JAMES POWELL, OF CINCINNATI, OHIO.

Letters Patent No. 77,913, dated May 12, 1868.

IMPROVEMENT IN GLOBE-VALVES.

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

TO WHOM IT MAY CONCERN:

Be it known that I, JAMES POWELL, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Globe-Valves; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My improvement relates to the class of cocks known as globe-valves, in which provision is made for regrinding of the valve by the instrumentality of its proper stem and handle; and my invention consists chiefly in an arrangement of a loose guide-collar, and its accessories, for the convenient and accurate grinding and regrinding of the valve.

My invention further consists in an arrangement of secondary or auxiliary seats on the guide-piece and cap, which enables the valve-cock to be packed at the stuffing-box while a full pressure of steam remains in the valve.

Figure 1 is a partially-sectionized side elevation of a globe-valve embodying my invention.

Figure 2 is a perspective view of the loose guide-collar.

Figures 3 and 4 show modifications.

In the original and improved forms of globe-valves, patented to me on the 2d of May, 1865, and on the 5th of February, 1867, respectively, the valve-stem is provided with fixed wings or guides, for retaining said stem to an axial position, with respect to the seat, while being reground.

In my present improvement, in its preferred form, the guiding-wings consist of projections from a loose or movable collar, placed over and around the threaded or smooth part of the valve-stem, thus enabling cocks embracing my principle to be more cheaply and expeditiously manufactured.

Globe-valves having loose disks, as heretofore constructed, have had no provision for packing the stem under full-pressure of steam, and hence, before such valves could be repacked, the flow of steam had invariably to be shut off, which has often involved great inconvenience and delay, whereas globe-valves made on my present improved plan may be readily repacked, whether the valve proper be in its closed or extreme open position.

The body A of the cock has a neck, B, having a smooth cylindrical interior, *b*, and a screw-threaded exterior, *b'*, which exterior receives the interiorly screw-threaded hub, cap, or chamber C, which hub is surmounted by a customary stuffing-box, D, as described in my patent of second of May, 1865.

The valve-stem E is threaded, in the ordinary manner, as far down as the fixed collar G.

In addition to the above, I provide a loose guide-piece or collar, F, whose cylindrical orifice *f* is adapted to slide or revolve freely over the threaded portion of the valve-stem E, while, at the same time, the periphery of the wings *f'*, which radiate from said collar, is adapted to fit and slide snugly within the cylindrical interior, *b*, of the neck B.

In my preferred form of the above, the fixed collar G is surmounted by a raised rim or seat, *g*, which, in the elevated condition of the valve, fits and occupies an annular depression or gutter, *f''*, on the under side of the loose collar F; and the said loose collar is itself surmounted with a raised rim or seat, *f'''*, which, when the valve is elevated, occupies an annular gutter, *c'*, in the under side of the hub or cap C.

I is the valve proper, so chambered out as to receive the lower swell of the screw-stem, and is provided with a set-screw, L, which, when the valve is in operation, works in a circumferential groove in the lower end of the stem E, while, at the same time, it retains the valve in its place.

A countersink is provided, to receive the end of the screw L when the valve is locked for the purpose of grinding.

When it is desired to grind the valve to its seat, the cap C is temporarily unscrewed, and, the valve and stem being withdrawn, the set-screw L is turned down into the cavity provided, as in my patent of February 5, 1867, so as, without impairing the free oscillation of the valve, to oblige it to revolve, in company with the stem, in the operation of grinding.

A suitable abradent being applied, the loose collar is adjusted in its place in the neck B, and it thus becomes a guide, through which the stem revolves, and by which it is retained in a truly axial position while the valve is being ground.

The grinding having been effected, the screw L is to be loosened sufficiently to allow the valve to revolve upon the stem.

When it is desired to repack the stem while the valve is in use, or while a full head of steam is flowing through the cock, the stem is screwed back to its fullest extent, until the fixed collar is forced up against the loose collar, and the latter against the cap, so as to secure a perfectly tight joint.

I do not propose to confine myself to the precise arrangement here described, as various modifications of my improvement may be made. For example, the loose collar may, instead of the winged piece F, consist of a circular ring, or may be a simple cross-bar, dropped into vertical grooves in the neck of the globe, as in fig 3; or the fixed collar G may bear, at once, in the depression of the cap in its elevated position, (see fig. 4.)

It is also obvious that my improvement will apply to a check-valve as well as to the ordinary globe-valve.

I claim herein as new and of my invention—

1. The loose collar or guiding-rim F, applied to the neck of a globe-valve, substantially in the manner described.

2. The packing-collar G, in combination with the loose disk-valve and grooved hub C, as described and set forth.

In testimony of which invention, I hereunto set my hand.

JAMES POWELL.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.