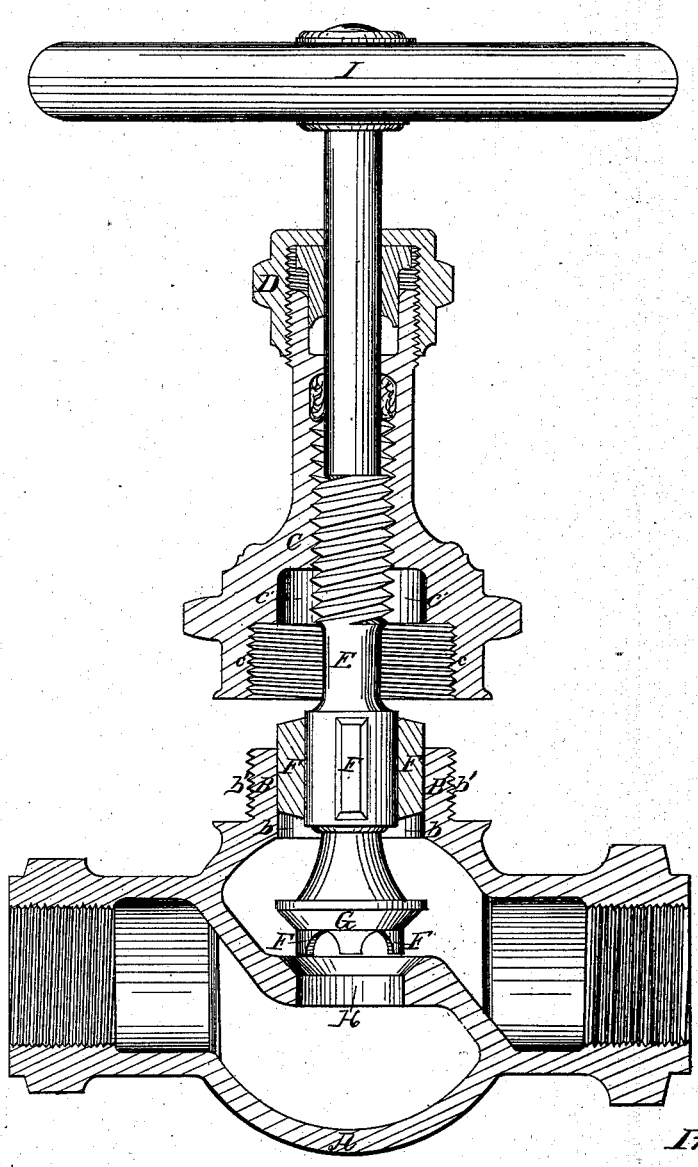
J. Powell,

Globe Valve,

No. 47,565, Patented May 2, 1865.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES POWELL, OF CINCINNATI, OHIO.

IMPROVEMENT IN GLOBE-COCKS.

Specification forming part of Letters Patent No. **47,565**, dated May 2, 1865.

To all 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-Cocks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

My invention relates to the class of cocks commonly known as "globe-valves," in which a screw cut upon the valve-stem is employed to close or press the valve down upon its seat or to elevate it therefrom; and it consists in a mode of constructing such cocks which enables the accurate and expeditious grinding of the valve to its seat, and also of regrinding the same when worn irregularly by use, and this without adding to the number or expense of parts composing the cock, and without the necessity of detaching the cock from the parts with which it is connected in use.

In the common globe valve or cock the valve is guided to its seat wholly by the thread on the interior of the screw-chamber, which thread is not and cannot be used to guide the valve in the act of grinding, a temporary plug being employed for that purpose. This mode of construction demands, of course, an exact agreement of centers between the screw-chamber and the plug when they are respectively in position in the cock, and such agreement being very difficult to attain, leakage is a frequent result. The customary construction also requires for each valve to be carefully fitted to its proper body, to which alone it is applicable, whereas cocks made on my plan may be composed of pieces taken at random, without selection or any tedious adaptation of the screw and seat to bring them into line.

The accompanying drawing is an axial section of a cock embodying my invention.

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 screw-chamber C *c*, which chamber is surmounted by a customary stuffing-box, D. The valve-stem E is provided with three or more wings, F, which fit and slide snugly within the cylindrical interior of the neck, while yet other wings, F', beneath the valve G, occupy the cylindrical passage-way H of the valve-seat.

It will be seen that said wings and their inclosing cylinders discharge the entire duty of guiding the valve-stem and holding the same in a true line with the seat, irrespective of the screw-chamber, which is consequently not required to be so accurately in line as in the common globe-valve. The screw-chamber C has on its under side a cavity, *c'*, to receive the wings F when the stem is fully retracted.

When it is desired to grind the valve to its seat, the screw-chamber C is unscrewed, as in the drawing, and the valve is momentarily withdrawn to receive the sand and water or other abradant, and, being returned to its place, the grinding is effected by grasping the handle I and vibrating the same with a downward pressure.

It will be seen that the wings F and F', which act to guide the valve in actual use, are the very same which hold it to a truly axial position and prevent any wabbling or lateral displacement in the act of grinding, as above.

It will also be seen that the valve may at any moment during the operation of grinding or regrinding be momentarily withdrawn for the introduction of the grinding material or abradant.

It is also apparent that by my mode of construction the bodies and valves may be made separately in large numbers and quickly fitted together without the delay of selection.

I have selected to illustrate my invention a form which I have found efficient in actual use, but do not propose to restrict myself to the precise arrangement here represented, so long as I attain the same result by means substantially equivalent—for example, instead of the upper wings, F, the valve-stem may be provided with a collar fitting the cylindrical interior *b* of the neck B, while the lower wings, F', may be replaced by a slender axial prolongation, occupying a socket in the body or globe.

I am aware that it is common to construct globe-cocks so that their valve-stems can be held in a perpendicular position during the operation of grinding, but I know of no in

stance in which these results have been attained with a valve-stem and valve adapted to be fitted and ground independently of its screw-chamber, and without the aid of an auxiliary or additional piece.

I claim herein as new and of my invention—

The combined valve and valve-stem, constructed and guided substantially as herein set forth.

In testimony of which invention I hereunto set my hand.

JAMES P. WELL.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.