

*W. Chesley,
Globe Valve,*

No. 46,077,

Patented Jan. 31, 1865

Fig. 1.

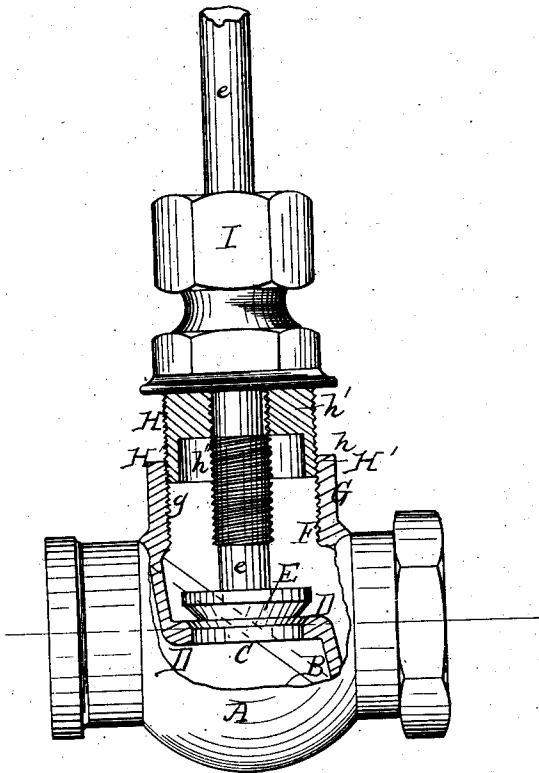
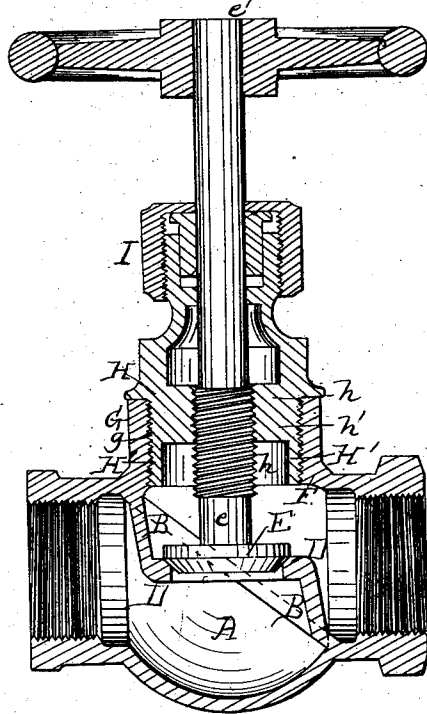


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM CHESLEY, OF CINCINNATI, OHIO.

IMPROVEMENT IN VALVE-COCKS.

Specification forming part of Letters Patent No. 46,077, dated January 31, 1865.

To all whom it may concern:

Be it known that I, WILLIAM CHESLEY, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Valve-Cocks; and I do 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 having a flat or a conical valve, which is adapted to be screwed on or off of a corresponding seat by means of a stem, which passes through to the outside and terminates in a handle, under control of the engineer; and my invention consists in a construction intended to facilitate the regrinding of the valve upon its seat.

Figure 1 is a partially-sectionized side elevation of a globe-formed cock, embodying my improvement, in condition for regrinding. Fig. 2 is an axial section of the same in condition for use.

A represents the body of the cock. B is the customary oblique diaphragm, containing the usual circular opening, C, whose chamfered margin forms the seat D for a conical valve, E, of the ordinary form. Immediately over the opening, C, and in a line with it, the body A has the usual circular opening, F, surrounded by a raised rim or margin, G, called the "boss." The boss G is screw threaded, *g*, within, to receive the exterior screw-thread, *h*, of the plug H. The interior of the plug H is also screw-threaded, *h'*, to receive and hold the screw-threaded stem *e* of the valve E, which stem is surmounted by a wheel, *e'*, or other convenient handle. The plug H terminates above within a suitable stuffing-box, I, of any approved form. The plug H and stuffing-box I, I style collectively the hub H I.

In the common valve-cock the screw threaded portions *g* and *h* of the boss and hub, respectively, are employed simply to hold the parts together, and are so constructed as to become entirely separated in the act of unscrewing before it is possible to entirely disengage the screw of the valve-stem from the interior thread of the hub, and hence, when it becomes necessary to regrind the valve to its seat, it is customary to strip off the handle and to remove the screw-hub and to substitute a false hub exteriorly screw-threaded,

but in whose interior a smooth cylindrical perforation takes the place of the threaded interior and stuffing-box of the hub proper.

Instead of the above and other costly expedients, I provide in the construction of the cock itself the means of its own grinding and regrinding, as follows: Instead of terminating the exterior threaded periphery, *h*, of the plug H flush with the sole of said plug, I prolong the screw-threaded periphery thereof so as to form an annular rim, H', which incloses a recessed chamber, *h''*, of sufficient width to receive the valve E, when screwed back, in ordinary use. The said recess also affords room for the ascent of the valve stem in the act of regrinding, as hereinafter explained. My boss G is in like manner prolonged upward, so as to correspond with the plug in the number of its threads.

The above construction enables the hub H I to be instantly converted into an immovable and very accurate stem-guide by simply screwing the said hub back to the position shown in Fig. 1, and then screwing the valve E forward sufficiently to release its screw-thread from that of the plug H.

In the condition for regrinding as above, the stuffing-box I and the ridges of the thread *h'* serve as upper and lower guides for the smooth portion of the valve-stem *e*, which they hold to its true center, while freely permitting the rotary and longitudinal motions commonly employed in grinding valves to their seats.

In the above operation the only part moved during the act of grinding is the single member E *e e'*, the handle *e'* of which is grasped and turned by the operator, the hub H I remaining perfectly stationary.

In the above construction the depths of the rims G and H' must be such as to permit the hub to be screwed back, as above, without becoming loose in the body.

A peculiarity of my improvement is that the valve-stem is guided in the act of grinding by the very same parts which serve to hold and guide it in actual operation, so that the chance of disparity between diverse guides and changes of centers is avoided.

I have selected to illustrate my invention a form of valve-cock which I have put in successful operation, but do not desire to restrict

my invention to the precise proportions here laid down, as the principle of the hub-guide and free valve-stem may obviously be applied to flat and other valves and to valve-cocks of various forms, while the relative sizes and proportions of the screw-threaded rims G and H' and of the recessed chamber h'' may be modified as circumstances or judgment may direct, so long as adequate provision is secured for the play of the valve and for conversion of the hub into a stationary stem-guide for regrinding, as above stated.

An inferior, because bulky and wasteful, modification of my invention may consist in a still further prolongation of the boss G and plug H, in which case the chamber h'' may be made proportionally shallow or omitted alto-

gether, resulting in an equally firm stem-guide, accompanied, however, by a serious expenditure of costly material and objectionable weight.

I claim herein as new and of my invention—
So constructing the boss G and the hub H I as to liberate the valve-screw stem for regrinding by simply screwing back said hub, which thereby becomes a fixed guide for the smooth portion of said stem, substantially as set forth.

In testimony of which invention I hereunto set my hand.

WILLIAM CHESLEY.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.