

(No Model.)

J. McGARVEY.
REGROUNDING TOOL FOR VALVE SEATS.

No. 460,380.

Patented Sept. 29, 1891.

Fig. 1.

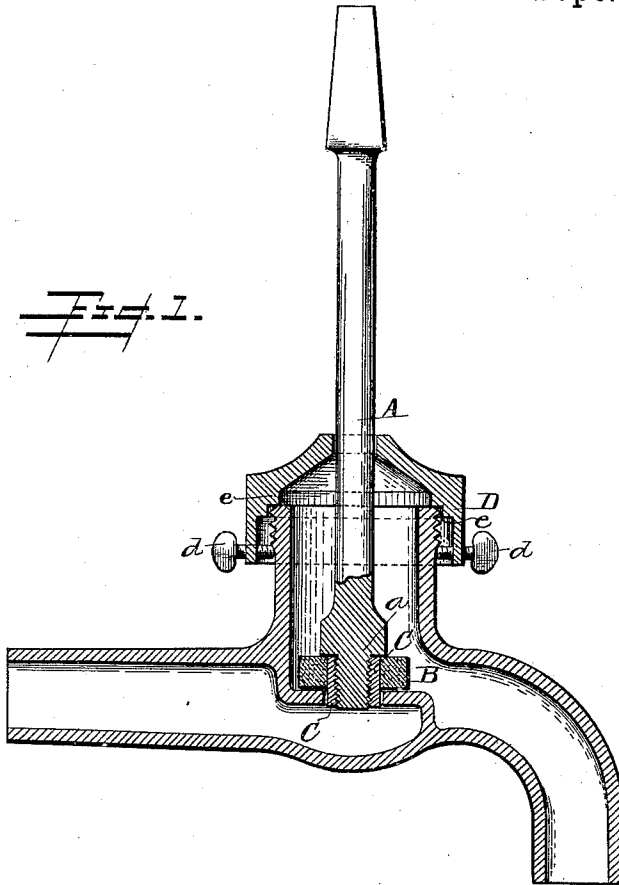


Fig. 2.

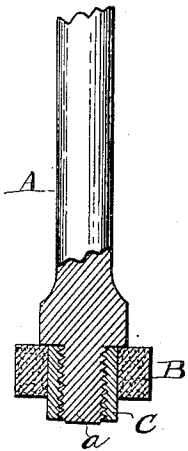


Fig. 3.

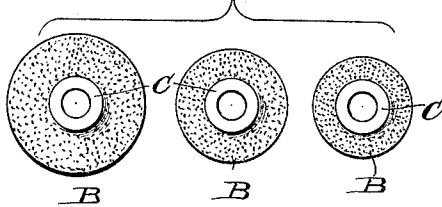


Fig. 4.

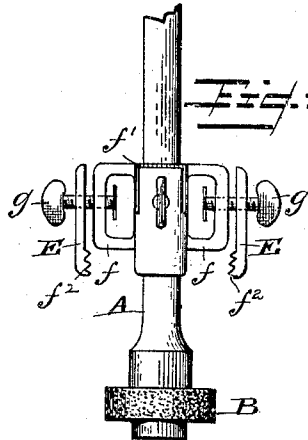


Fig. 5.



Witnesses

Joseph Blackwood
H. C. Johnson

Inventor
John McGarvey
By J. W. Winter
Attorney

UNITED STATES PATENT OFFICE.

JOHN MCGARVEY, OF ALLEGHENY, PENNSYLVANIA.

REGRINDING-TOOL FOR VALVE-SEATS.

SPECIFICATION forming part of Letters Patent No. 460,380, dated September 29, 1891.

Application filed January 30, 1891. Serial No. 379,737. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCGARVEY, a citizen of the United States, residing at Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Regrinding-Tools for Valve-Seats; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in tools for regrinding valve-seats, more especially of water faucets or cocks, as well as those for other purposes, having for its object to effect the regrinding of the seat and restoring it to its former or original smoothness, and in doing this in an effective and economical way.

To these ends my invention consists in the employment of a grinder, preferably of emery, having a bushing of an alloy, preferably of antimony and lead, having a downward extension serving as a guide for centering the lower end of the mandrel or holder, said bushing being adapted to have a screw-threaded connection with the mandrel or holder, and, secondly, in the employment of a centering device for the mandrel or holder intermediately of the tool and the application of the power, of peculiar construction, adapting it to the barrels of valve-stems, when the valve is removed, of various diameters, all as herein-after more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view showing my invention as applied for use in the act of regrinding the valve-seat of an ordinary faucet or cock. Fig. 2 is an enlarged detail view of the grinding-tool. Fig. 3 is a view of several of the emery-grinders of varying sizes; and Fig. 4 is a modification of one feature of my invention, the upper centering device. Fig. 5 is a sectional view of a modification of the grinder or emery-wheel.

In the embodiment of my invention I provide the mandrel or holder A at its lower end

with a screw-threaded stem or projection *a*, its upper end, as usual, being provided with an angular cross-section for the application thereto of an ordinary auger brace or handle. (Not shown.)

B is the emery-grinder, of circular form, and having an internally-screw-threaded bushing C, preferably of an alloy of antimony and lead, connecting it (the grinder) with the mandrel or holder A, so as to be readily detachable and replaced by another or different-sized grinder, as occasion may require, according to the size of the valve-seat to be reground.

The bushing C is extended downward below the grinder B to serve as a guide or centering device for that end of the grinder mandrel or holder A in properly disposing the grinder for regrinding the valve-seat, said guide or centering device entering or fitting the passage or water-way below the valve-seat for that purpose. This arrangement also dispenses with the use of a nut, as employed in one instance, for the retention in place of the grinder, and with both a nut and washer or ring, as shown in another instance, besides doing the duty of either of the foregoing.

In the use of my emery grinder or wheel I am enabled to give the valve-seat a smoothness of surface after regrinding it not obtainable by the cutting-tools (in every case a serrated or channeled faced tool or cutter being used) heretofore employed, and which is desirable to prevent the undue or premature cutting out of the surface of the fibrous valve.

D is the upper centering or guiding device, having a central opening through it for the passage therethrough of the grinder mandrel or holder A and having holding or binding screws *d*, engaging screw-threaded apertures in its marginal portions and adapted to engage at their inner ends the valve-stem barrel of the faucet or cock, upon which rests the centering or guiding device D, the valve, with its stem, being removed, as shown.

The under side of the centering or guiding device D is provided with a series of annular steps or shoulders *e* to provide for its adaptation to cocks or faucets whose valve-stem barrels are of varying diameters to enable the centering of the tool holder or mandrel with-

out requiring the exercise of great precision, as would otherwise be the case.

In the modification as disclosed in Fig. 4 I may employ, in lieu of the preferred form of centering device D, the series of jaws E, arranged upon radial arms *f* of a central ring *f'* and having screw-threaded faces *f''*, engaging the screw-thread of the valve-stem barrel of the faucet or cock, its cap, with the valve-stem, being removed. These jaws are adapted to be clamped in engagement with the screw-threaded portion of the valve-stem barrel of the faucet or cock by means of binding or holding screws *g*.

As shown in Fig. 5, I may, in lieu of using the internally-threaded and downward-extended bushing, cut the thread directly in the emery-tool B' and form a boss *b* on its lower side to take the place of the lower end guide or centering device.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The regrinding-tool having projecting beyond its lower surface a guide adapted to

enter the valve-seat passage for centering the tool upon or with relation to the valve-seat in regrinding the latter, substantially as set forth.

2. The regrinding-tool having the emery wheel or grinder provided with an internally-screw-threaded bushing having a downward extension projecting beyond the lower surface of grinder or wheel and adapted to serve as a guide or centering device for the lower end of the tool mandrel or holder and to engage said end of mandrel or holder, substantially as specified.

3. In a regrinding-tool for valve-seats, the combination, with the tool and its lower end centering device or guide and mandrel or holder, of the upper centering device or guide having holding or binding screws and an underneath serially stepped or shouldered surface, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN MCGARVEY.

Witnesses:

O. M. BALL,

J. W. MISTER.