July 4, 1950 J. T. FISHER 2,514,155

FAUCET VALVE SEAT DRESSING TOOL

Filed March 30, 1948

Fig. 1.

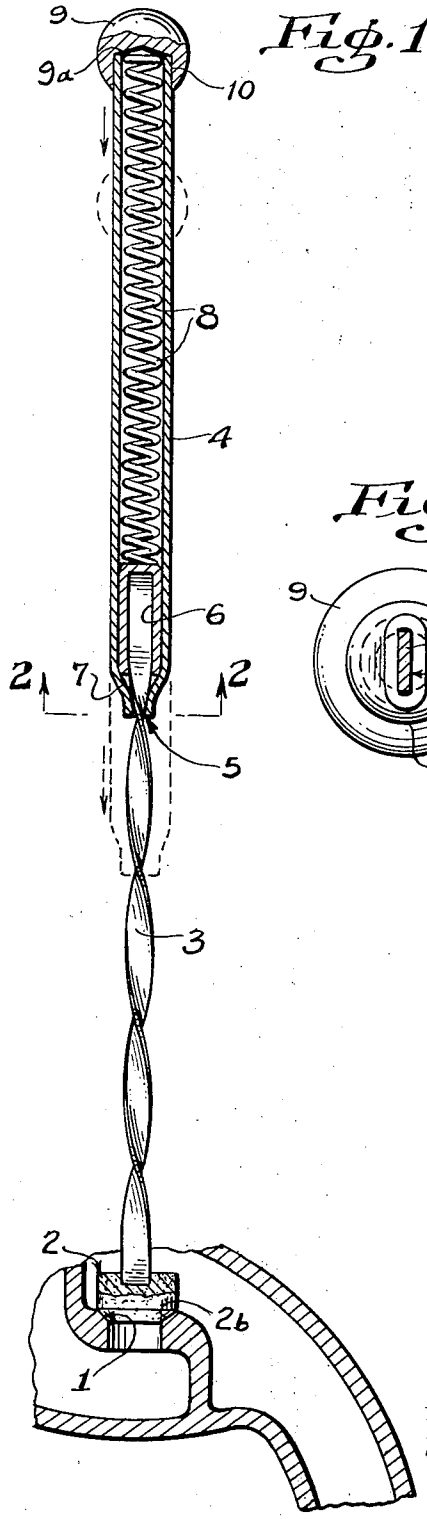
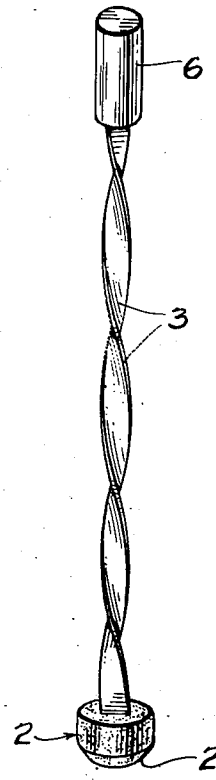


Fig. 2.

Fig. 3.



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FAUCET VALVE SEAT DRESSING TOOL

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1 Claim. (Cl. 51—134.5)

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This invention relates to a faucet valve seat dressing tool.

In changing worn out rubber washers in spigots, for example, those located in kitchens where said washers are found to deteriorate more rapidly due to the frequent turning on and off of the hot water for dishwashing purposes and the like, it has been found upon inspection of the valve seat that, due to the chemicals in the water, these seats become pitted in a sense, and if not dressed so as to remove the pitted surfaces, a groove is worn due to the water flowing past the rubber valve and metal seat, so that leaks are thereby caused which are never eliminated by the complete screwing of the valve down upon its seat. Thus drippage of water which cannot be stopped, additionally causes dark spots to be formed upon the enamel of the sink subjacent to the mouth of the spigot. This constant dripping is not only annoying, but, over a period of time creates a loss of water which otherwise might be valuably used.

It is therefore one of the principal objects of this invention to provide a tool having a work-engaging head of abrasive material, which head may be inserted into that portion of the spigot from which the valve is removed to replace the gasket or washer, and then by rotational application to the valve seat of said abrasive material during pressure upon the head of the tool, smooth off or dress down said seat. The tool shaft is rotated after the fashion of the "Yankee" screwdriver, thereby causing said working head to smooth off the pitted surface to which it is applied.

A further object is to provide a device of this kind which is made up of a lesser number of parts, thereby reducing manufacturing cost and simplifying the device.

A further object is to provide for swedging the mouth of the body portion of the tool, through which the twisted operating stem runs, so as to eliminate the necessity of making and attaching a separate piece to cause the twisted stem to rotate when the shank of the tool is depressed.

A still further object is to provide, in a device of the kind described, a tool which has a new and improved mode of assembling.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates a preferred embodiment of the invention, now being manufactured in quantities,

Fig. 1 is a side view of the complete tool, shown

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partly in section and partly in elevation, in its operative position in relation to a valve seat. The operative movement of the shank or handle is indicated by broken lines.

Fig. 2 is a cross section looking up from line 2—2 on Fig. 1.

Fig. 3 is a perspective view of the driving shaft including the parts carried thereby.

Referring in detail to the drawing, in Fig. 1 is shown a faucet seat 1 engaged by an abrasive dressing tool 2, preferably made of emery dust moulded with a proper binding substance. Said dressing tool 2 is secured to an axially twisted driving shaft or blade 3 carried by an elongated tubular shank 4. The lower end portion of said shank is swedged, as shown, so as to provide a flattened mouth portion 5 the opening through which conforms to the cross section of said driving shaft 3. The inner end portion of said driving shaft is tightly fitted within a head consisting of a cylindrical bearing member 6, the mouth of said member normally resting upon a shoulder 7 provided in the tubular shank 4, where the swedging of said end begins.

The abrasive tool 2 carried by the outer end of the shaft 3 can be made of a variety of mined or manufactured materials. It may be cut out of a solid piece of abrasive material, or may be cast or moulded of such material combined with a proper binding agent. In the drawing it is shown beveled at 2b to produce a properly beveled valve seat onto which fits a popular type of moulded rubber replacement washer. When this beveled type is used no pilot or guide is needed.

Atop of the head of the slidable bearing member 6 is seated a coiled compression spring 8 which occupies the full height of the shank 4, when said spring is in its expanded condition. There is provided a hand abutment knob 9 having a downwardly opening socket 10 which is pressed over the upper end of the shank 4 to close it, the bottom of a recess 9a in the spherical body 9 providing a seat against which the upper end of said spring seats.

In the operation of the tool, by pressing downwardly upon the spherical knob or head 9 while holding the shank 4 against rotation, the shank is moved downwardly over the shaft against the resistance of the spring and the shaft is therefore forced to rotate, and hence to twist the dressing tool 2 in a clockwise direction to smooth the valve seat 1 to which the tool 2 is applied. When the spring 8 is completely compressed, pressure taken off from the knob 9 and the spring is permitted to expand to its untensioned con-

dition, whereupon, when pressure is reapplied to the knob 9, the operation of rotating the tool is repeated. In this manner the abrasive tool is successively rotated a sufficient number of times properly to dress the valve seat. After this has been done the parts of the spigot are reassembled in their operative positions.

It will be seen that by this invention a device has been provided for the manual, efficient grinding, in situ, a faucet valve seat, thereby solving a problem in the art to which this invention pertains. For several reasons motor driven seat grinders are unsatisfactory. Speed of rotation is not required, and is a detriment owing to the required beveled shape of the tool to produce the proper bevel for a faucet valve, causing said tool when rapidly rotated with a longitudinal thrust, into the valve seat, to chatter and bounce, thus resulting in a poor job or a ruined valve. Also a motor is too bulky to be used into the close quarters occupied by faucet valve seats, hence cannot be used on many such seats without first removing them from their operative positions to a more open space.

I claim:

In a grinding tool for dressing the valve seats of faucets and the like, a cylindrical handle member having an outer end open and the other end

flattened to form a mouth providing an elongated guide passage, a flat blade of elongated rectangular cross section spiraled axially and coacting with the mouth of the handle to provide a rotatable drive member, said blade having a close sliding fit in the correspondingly contoured guide passage, a sleeve of axially elongated form fixed on the inner end of said driving blade and having close fitting sliding and rotary engagement with the interior of the handle, a closure removably fitted on the outer open end of said handle member, a spring within said handle and engaging the sleeve to yieldingly force the blade to extended position, and a grinding head fixed on the outer end of said blade.

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