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R. P. NORTON

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VALVE RESEATING TOOL

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Fig. 2.

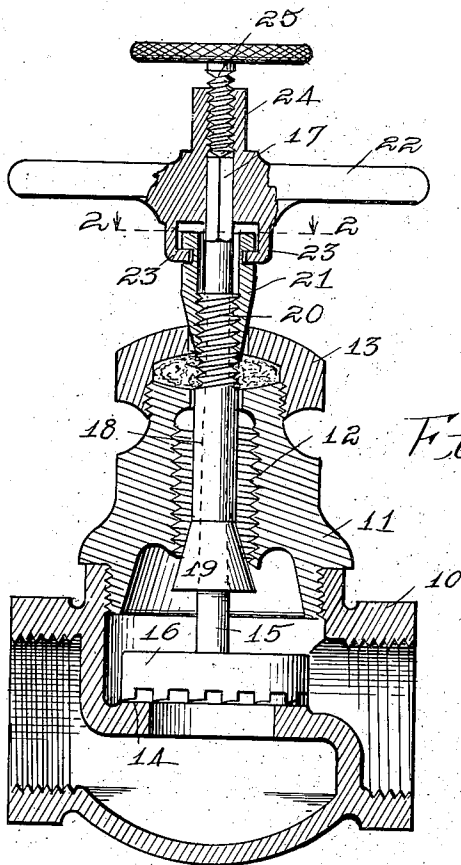
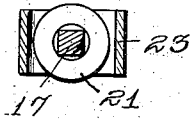


Fig. 1

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UNITED STATES PATENT OFFICE

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VALVE RESEATING TOOL

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2 Claims. (Cl. 90—12.5)

The object of my invention is to provide a valve reseating tool of simple, durable and inexpensive construction which, in operation, will not gouge into the valve seat being operated upon, and which will not tend to jump out of contact with the valve seat and produce what is commonly called a chattering effect.

A further object is to provide means of simple, durable and inexpensive construction whereby a valve reseating tool may be conveniently and easily applied to a valve, and which will provide means whereby the operator may readily and conveniently, from time to time, apply the desired amount of pressure to the reseating tool and against the valve seat for the maximum efficiency of cutting action.

My invention consists in the construction of the valve reseating tool and in the relative arrangement and combination of the cutter blades relative to each other and whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 shows a vertical central sectional view of a valve having my reseating tool applied thereto as in practical use;

Figure 2 shows a detail sectional view on the line 2—2 of Figure 1.

Referring to the accompanying drawing I have used the reference numeral 10 to indicate generally the body of a valve of the kind with which my improved reseating tool is used. This valve has a detachable bonnet 11 with a screw-threaded interior opening 12, and it also has a stuffing box 13 detachably mounted on its upper end. The valve seat is indicated generally by the reference numeral 14.

My improved reseating tool comprises a stem 15, to the lower end of which is fixed a cutter head 16. This stem 15 is smooth and straight and has a squared portion 17 at its upper end. Slidably mounted upon the stem 15 is a sleeve 18, to the lower end of which is fixed the cone 19, and the upper end of which is screwthreaded at 20. A second cone 21 is screwed to the threaded portion of the upper end of the sleeve 18, and when the implement is applied to the valve, as shown in Figure 1, the cone 21 is adjusted until it enters and fits into the lower end of the screwthreaded opening in the interior of the bonnet. The upper end of the cone 21 is formed with an annular groove for purposes hereinafter made clear.

I have provided a large hand wheel for use

in turning the cutter head, and this is indicated generally by the reference numeral 22. This wheel has on its interior an angular opening to slidably receive the squared portion 17 of the stem 15, and projecting downwardly from the central portion of the hand wheel 22 are two arms 23 shaped to enter the sides of the annular groove in the cone 21, and when the hand wheel having the arms 23 is thus placed in the grooves and the cone and the squared portion 17 inserted into the squared opening in the hand wheel, then the hand wheel and the stem 15 will thereafter rotate in unison without turning the cone 21.

For the purpose of applying the desired amount of pressure in a downward operation upon the cutter head I have provided at the upper central portion of the hand wheel 22 an extension 24 having a screwthreaded opening on its interior, and mounted in this extension is a screw 25, and by turning the screw 25 downwardly any desired amount of pressure may be applied to the cutter head because the cone 19 prevents upward movement of the hand wheel 22, and as the screw 25 is turned downwardly, pressure upon the cutter head is increased.

In applying this device to a valve, the valve bonnet is first removed, then the valve stem 15 is extended upwardly through the bonnet until the cone 19 engages the interior of the screw-threaded opening in the bonnet, then the hand wheel 22 is applied to the cone 21 and the cone 21 is then screwed down into the opening in the stuffing box 13 until the squared portion of the stem 15 enters the opening in the hand wheel 22, then the hand wheel is moved downwardly until the squared portion 17 enters, and finally the screw 25 is adjusted.

With my improvement I have found that operators with only ordinary skill have no difficulty in applying the right amount of pressure to my improved tool to cause the valve to be quickly and easily reseated, and to produce curled shavings from the valve seat and leave the valve seat in a smooth and uniform condition without being gouged or grooved at any point.

I claim as my invention:

1. A valve reseating tool comprising a stem, a valve cutter head thereon, a sleeve loosely mounted on the said stem and having a member thereon to engage the lower portion of a valve bonnet and limit the upward movement of the sleeve, a cone detachably mounted on the upper end of the sleeve to engage the top of a valve bonnet and limit the downward movement of the sleeve, a handle member connected with said

cone in such manner as to be rotatable relative to the cone and connected to the cone for up and down movements, means for slidingly and non-rotatably connecting said handle member
5 with the said stem, and means carried by the handle member for applying downward pressure to the shank.

2. A valve reseating tool comprising a stem, a cutter head thereon, a sleeve slidingly mounted on
10 the stem, a cone fixed to the lower end of the sleeve, a second cone detachably and adjustably

mounted on the upper end of the sleeve and being formed at its upper end with an annular groove, a hand wheel slidingly and non-rotatably connected to the upper end of said stem and having downwardly and inwardly projecting
5 arms to enter opposite sides of said annular groove, and a pressure screw mounted in the hand wheel for engagement with the top of said stem.

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