E. E. REED.

VALVE GRINDER.

APPLICATION FILED MAY 15, 1917.

1,268,617. Patented June 4, 1918.

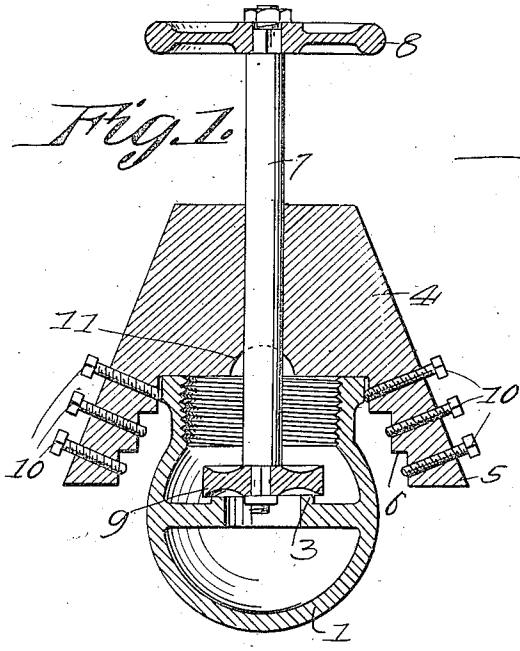


Fig. 1.

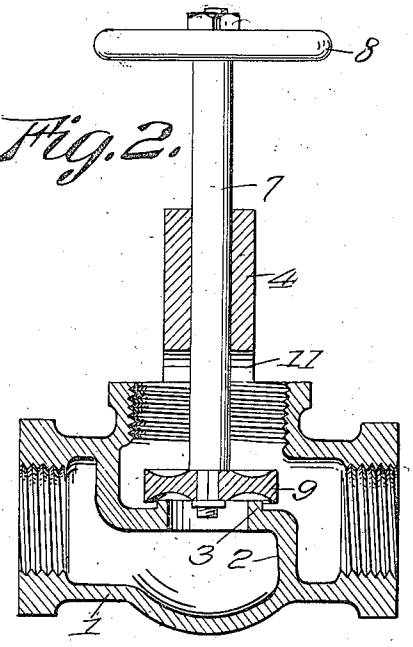


Fig. 2.

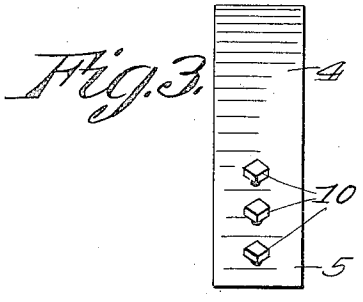


Fig. 3.

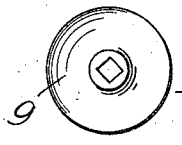


Fig. 4.

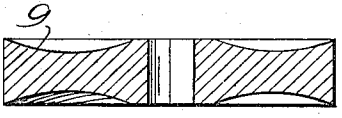


Fig. 5.

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VALVE-GRINDER.

1,268,617. Specification of Letters Patent. Patented June 4, 1918.

Application filed May 15, 1917. Serial No. 168,711.

To all whom it may concern:

Be it known that I, EDWIN E. REED, a citizen of the United States, residing at Guthrie, in the county of Logan and State of Oklahoma, have invented certain useful Improvements in Valve-Grinders, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to valve grinders.

This invention aims to provide novel means whereby steam valves or the like may be quickly, easily and accurately ground by persons not particularly skilled in the mechanical arts and one which will grind the valve seats in such a manner as will insure a tight engagement of the valves therewith irrespective of continued exposure to steam and water and the various sediments carried thereby and apt to accumulate within valve housings.

With the above and other objects in view the present invention consists in the combination and arrangements of parts hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit of the invention.

In the drawings:

Figure 1 is a sectional end elevation of the invention;

Fig. 2 is a sectional side elevation of the invention;

Fig. 3 is an end view of the support, with the shaft and grinding disk removed;

Fig. 4 is a top plan view of the grinding disk removed;

Fig. 5 is an enlarged sectional side view of the grinding disk.

Referring now more particularly to the accompanying drawings, like characters of reference indicate like or similar parts throughout the several views.

The numeral 1 designates a common type of valve housing having a partition 2 upon which a valve seat 3 is formed. The usual valve, valve stem and valve cap are removed for the insertion of the valve grinder, which is an embodiment of this invention.

A support having a body 4 and diverging legs 5 internally stepped, as at 6, to receive varying valve housing sizes is provided with a vertical bore intermediate the legs 5 for the reception of a vertically movable, rotatably mounted shaft 7 upon one of the squared ends of which is mounted the hand wheel 8. Upon the opposite squared end of the shaft 7 is mounted the double concave emery disk 9 for grinding the valve seat 3. A plurality of thumb screws 10 operative within screw threaded bores in the legs 5 are provided to rigidly secure the support upon the housing.

In order to permit inspection of the process of grinding the support is formed of less thickness than the width of the valve cap opening which it straddles and has a recess 11 formed therein and communicating with the bore to further the accomplishment of this end.

Heretofore it has been customary to grind flat valve seats in valves of this character, but such a grinding of the valve seat has been found unsatisfactory in that the seat becomes quickly inapt for use due to the action of steam and sediment. Therefore, particular attention is called to the double curvature of the emery disk embodied in this invention which grinds a curved contact face upon a valve seat and may be reversed when one side has become worn.

In operation, the usual valve, valve stem and valve cap are removed and the support is mounted astraddle the valve cap opening, with the emery disk 9 resting upon the valve seat 5. The shaft 7 moves downwardly as the valve seat is ground away by rotation of the emery disk 9.

It is obvious that the invention herein set forth is susceptible to changes and modifications involving mechanical skill may be made within the scope of the claims without departing from the spirit thereof. I do not, therefore, desire to be understood as limiting myself to the precise construction of the parts as shown in the drawings.

Having thus described my invention, I claim:

1. In a means for grinding valve seats, the combination with a valve housing, of a support for the valve grinding means engaging said housing, diverging legs on said support for embracing the valve housing, steps on said legs for adjusting the support to various sizes of valve housings, and means carried by said legs for binding the support to the housing.

2. A valve seat grinder comprising a relatively narrow support adapted to be straddled over a valve housing, legs depending from the support, steps on the legs for adjusting the support to various sizes of valve housings, means mounted on the legs for binding the support to a valve housing, a vertically movable rotatable shaft in the support, an abrasive element mounted on the shaft, means for operating the shaft, and the support being provided with a recess on its under face to facilitate inspection of the valve seat during operation of the grinder.

In testimony whereof I affix my signature.

EDWIN E. REED.