

Aug. 29, 1933.

A. M. PATTERSON

1,924,958

VALVE SEAT GRINDER

Filed Feb. 9, 1932

2 Sheets-Sheet 1

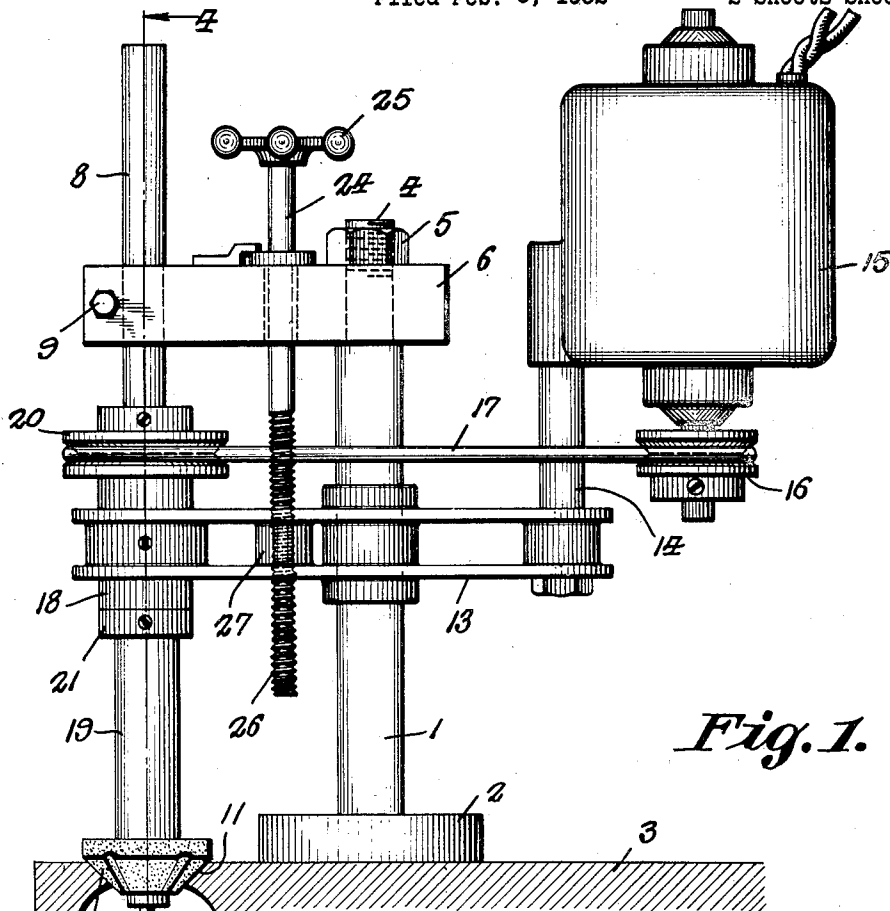


Fig. 1.

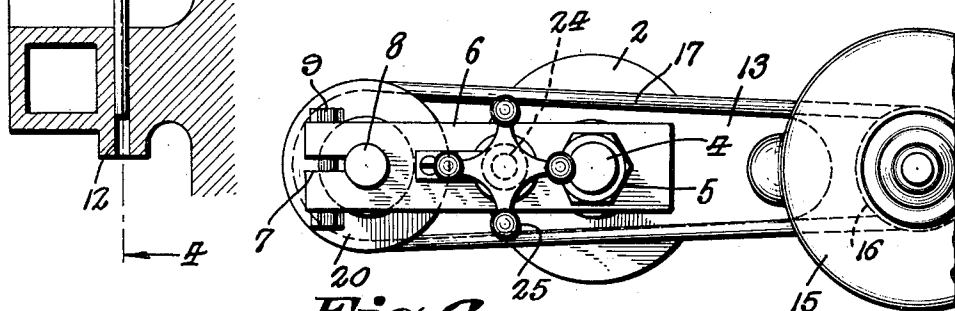


Fig. 2.

A. M. Patterson,

INVENTOR

BY Victor J. Evans & Co.

ATTORNEY

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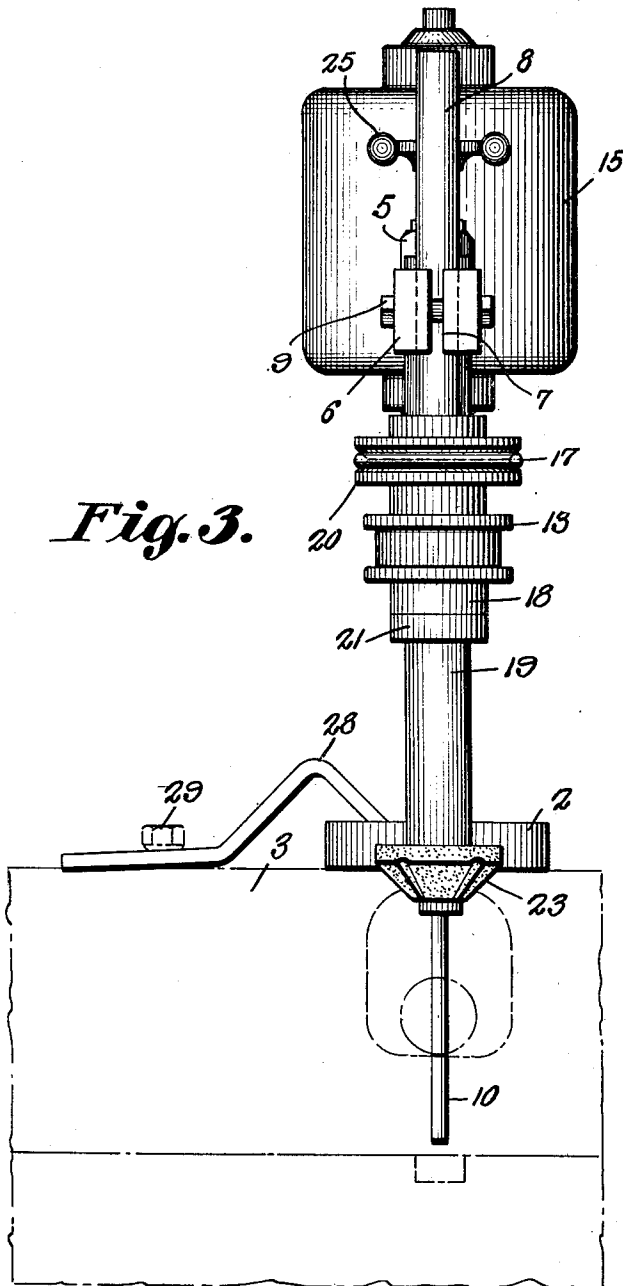
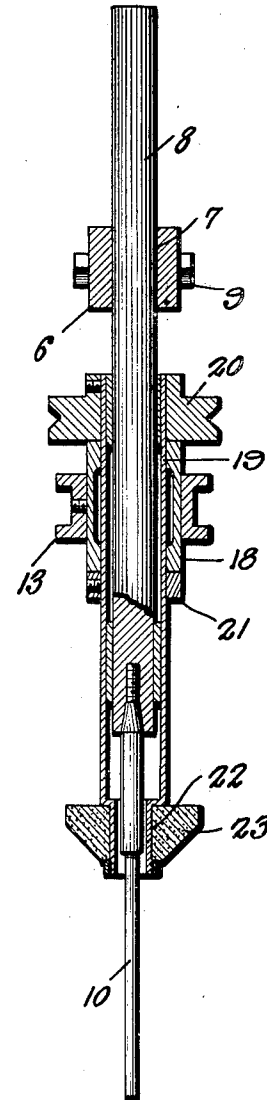


Fig. 4.

A. M. Patterson,

INVENTOR

BY *Victor J. Evans & Co.*

ATTORNEY

UNITED STATES PATENT OFFICE

1,924,958

VALVE SEAT GRINDER

Augustus M. Patterson, Seneca, S. C., assignor of
one-fourth to J. W. Byrd and one-fourth to
J. L. Byrd, both of Seneca, S. C.

Application February 9, 1932. Serial No. 591,863

2 Claims. (Cl. 51-241)

This invention relates to valve seat grinders of the portable motor driven type and has for the primary object, the provision of a device of the above stated character which may be easily and quickly placed in position on a cylinder block or the like and having means whereby the grinding element thereof will be caused to refinish and true a valve seat so that proper seating of the valve thereagainst will be assured.

Another object of this invention is the provision of a pilot element for the grinding element and extending through the valve seat into the valve guide, whereby the grinding element will be compelled to grind a true seat in proper alignment with the valve guide.

A further object of this invention is the provision of a portable mounting for a pilot element, grinding element and the power means whereby the grinding element may be properly positioned relative to the valve seat and may be easily and quickly moved toward and from said seat as desired.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which

Figure 1 is a side elevation partly in section illustrating a valve seat grinder associated with the seat of a cylinder block and constructed in accordance with my invention.

Figure 2 is a top plan view illustrating the same.

Figure 3 is an end elevation illustrating the device associated with and anchored to the cylinder block.

Figure 4 is a sectional view taken on the line 4-4 of Figure 1.

Referring in detail to the drawings, the numeral 1 indicates a supporting post formed integrally with a base 2 adapted to rest upon a cylinder block 3 as clearly shown in Figure 1. The upper end of the post is reduced to form a stem 4 having screw threads to receive a securing nut 5. A supporting arm 6 is mounted on the stem 4 between the end of the post and the nut 5 and carries at its free end a split bearing 7 to receive a pilot shaft 8. The split bearing 7 is provided with an adjusting bolt 9 whereby the pilot shaft may be adjusted upwardly and downwardly relative to the supporting arm 6. The lower end of the pilot shaft 8 is provided with a screw-thread-

ed socket to receive the screw threaded end of a pilot stem 10 adapted to extend through a valve seat 11 into a valve guide 12 of the respective seat. The valve seat 11 and guide 12 forming part of the cylinder block 3.

A supporting table 13 is slidably mounted on the post 1 and carries at one end a vertical stem 14 to which an electric motor 15 is attached and the armature shaft of the latter has secured thereto a grooved pulley 16 over which is trained an endless belt 17.

The other end of the table 13 is secured to an outer sleeve 18 surrounding the pilot shaft 8. An inner sleeve 19 is journaled within the outer sleeve 18 and upon the pilot shaft 8 and has secured thereto a grooved pulley 20 over which the endless belt 17 is trained and which rests upon the upper end of the outer sleeve 18, while the lower end of the sleeve 18 rests upon a collar 21 secured to the inner sleeve 19. The lower end of the inner sleeve is reduced to form a bearing neck 22 surrounding the pilot stem 10 and on which is removably mounted a suitable grinding element 23 with the pilot stem 10 projecting below the same.

An adjusting rod 24 is journaled to the arm 6 and provided at its upper end with a finger piece 25 while its lower portion is provided with feed threads 26 to mesh with feed threads formed in a bearing 27 carried by the table 13 whereby the table 13 may be moved upwardly and downwardly of the post 1 for the purpose of adjusting the grinding element 23 relative to the valve seat 11.

In operation, the device is positioned on a cylinder block as shown in Figure 1 and the pilot stem 10 is passed through the valve seat 11 into the valve guide 12 and the grinding element is adjusted to the seat 11 by manipulating the adjusting rod 24 and when brought in proper contact therewith, the electric motor 15 is set in operation by closing the switch (not shown) so that the grinding element will re-finish the seat 11 and in such a manner that the seat will be in proper alignment with the valve guide 12, assuring proper seating of the valve to the seat and preventing cocking of the valve when in operation and undesirable valve slaps due to the seat 11 not being in proper alignment with the valve guide.

To prevent creeping of the base 2 on the block 3 a suitable anchoring plate 28 is provided, one end of which bears upon the base 2 and the other end secured to the block by a stud bolt 29 usually

employed for securing the head of the cylinder block in position.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of my invention, as claimed.

Having thus described my invention, what I claim is:

1. A valve seat grinder comprising a supporting post, a table slidable on the post, means for adjusting the table upwardly and downwardly on the post, power means carried by the table, a pilot shaft adjustably secured to the post, a grinding element secured to the table with the

pilot shaft extending therein, and a pilot stem carried by the shaft and extending through the grinding element and adapted to pass through a valve seat into a valve guide.

2. A valve seat grinder comprising a support, a table adjustably mounted on the support, a sleeve secured to said table, a grinding element secured to the sleeve, power means carried by the table for rotating the sleeve, a pilot shaft extending into the sleeve and adjustably secured to the support, and a pilot stem carried by said shaft and extending through the grinding element and adapted to pass through a valve seat and into a valve stem guide.

AUGUSTUS M. PATTERSON.

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