Sept 8, 1925. 1,553,171

F. P. JONES

VALVE SEAT PULLER

Filed Dec. 29, 1924

Fig. 1.

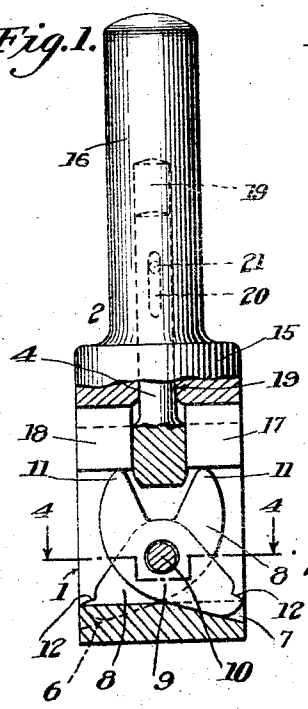


Fig. 2.

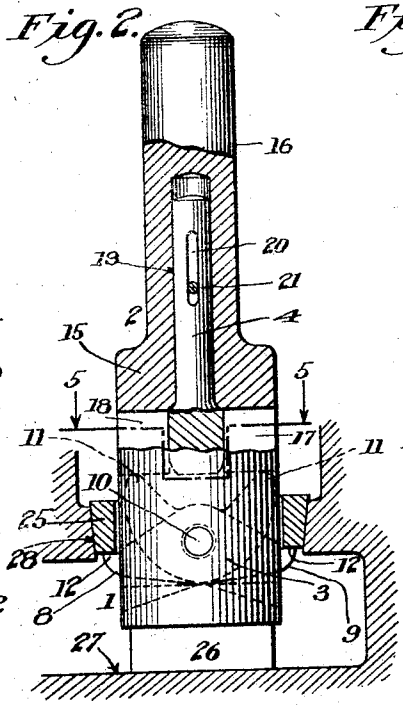


Fig. 3.

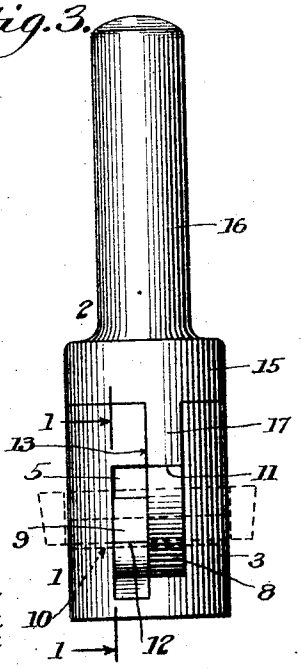


Fig. 4.

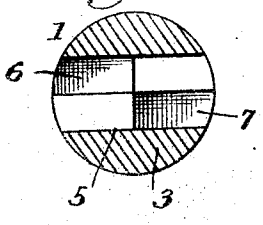


Fig. 5.

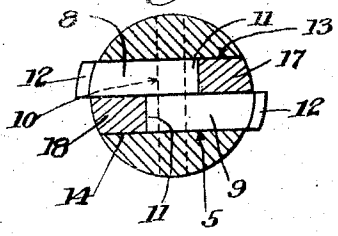
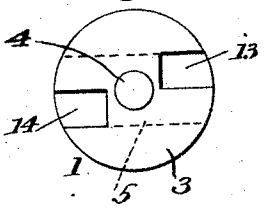


Fig. 6.



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UNITED STATES PATENT OFFICE.

FLOYD P. JONES, OF TORRANCE, CALIFORNIA.

VALVE-SEAT PULLER.

Application filed December 29, 1924. Serial No. 758,647.

To all whom it may concern:

Be it known that I, FLOYD P. JONES, a citizen of the United States, residing at Torrance, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Valve-Seat Pullers, of which the following is a specification.

My invention relates to a valve seat puller and the general object thereof is to provide a simple device for effectively pulling worn valve seats, such as used in water pumps or slush pumps, without injuring the pump in any way.

My invention consists in the features of construction, combination of elements and arrangement of parts hereinafter described and pointed out in the claims.

Referring to the annexed drawing in which my invention is illustrated and which forms a part of this specification:

Fig. 1 is a view partly in side elevation and partly in longitudinal section on line 1—1 of Fig. 3 of my valve seat puller with the parts in position so that the puller may be inserted into a valve seat.

Fig. 2 is a view similar to Fig. 1 but with the puller inserted through a valve seat and with the dogs forced out by the plunger into engagement with the lower edge of the valve seat.

Fig. 3 is an elevation of the puller taken at right angles to Figs. 1 and 2.

Fig. 4 is a horizontal section of the puller taken on line 4—4 of Fig. 1.

Fig. 5 is a horizontal section taken on line 5—5 of Fig. 2.

Fig. 6 is a plan view of the plunger.

Similar reference numerals refer to similar parts throughout the several views.

My valve seat puller includes a base member 1 and a plunger 2.

The base member is formed with a cylindrical head 3 and a shank 4 extending upwardly from one end of the head, and the head is provided with a slot 5 extending diametrically therethrough. The slot 5 is provided with a pair of grooves 6 and 7 in its lower end, which extends from the center of the head in opposite directions through the opposite sides of the head, the grooves being half the width of the slot 5 and located adjacent the opposite side walls respectively of the slot. A pair of dogs 8 and 9 are loosely pivoted in the slot 5 adjacent each other and above the grooves 6 and 7 respectively on a pin 10 which extends diametrically through the head 3. Each dog 8 and 9 is formed with a plunger engaging end 11 and with a valve seat engaging end 12. The head 3 is provided with a pair of plunger slots 13 and 14 in its opposite sides which extend downwardly from the upper end of the head to the upper end of the slot 5 at opposite sides thereof and directly over the dogs 8 and 9 respectively.

The plunger 2 comprises a head 15, a shank 16 extending upwardly from the head, and a pair of dog engaging members 17 and 18 depending from said head, the plunger being provided with an axial bore 19 extending upwardly through the head 15 and into the shank 16 in which bore fits the shank 4 of the base member 1. The shank 4 has a longitudinal slot 20 through which extends a pin 21 secured in the shank 16 whereby the base member 1 and plunger 2 are operatively connected together.

Before the plunger 2 is placed on the base member 1 the dogs 8 and 9 rest with their lower valve seat engaging ends 12 in grooves 6 and 7 and within the circumference of the head.

To pull a valve seat as indicated at 25 in Fig. 2 the valve being removed from the seat, my valve seat puller 1 is first introduced into the pump and the head 3 of the base member 1 is inserted through the valve seat so that the lower end of said head rests upon a block 26 of the required height placed upon the lower wall of the port 27 below said seat. The plunger 2 is then moved down on the base member 1, the shank 4 sliding in the bore 19 and the dog engaging members 17 and 18 sliding through the slots 13 and 14 onto the upper plunger engaging ends 11 of the dogs 8 and 9. The upper end of the plunger shank 16 is then struck with a hammer and the dog engaging members 17 and 18 swing the dogs 8 and 9 on their pivot so that their ends 12 engage the lower edge of the valve seat 25 and lift the seat out of the opening 28 in which it is fitted in the pump. In lifting the valve seat the lower edges of the dogs 8 and 9 engage the lower end of the slot 5 and take the strain off the pivot pin 10. My seat puller and the seat are then removed from the pump.

Having thus described my invention what I claim is:

1. A valve seat puller comprising a base

member formed with a head and a shank and including a pair of dogs mounted in said head, a plunger provided with a bore to receive said shank and formed with a pair of dog engaging members for swinging said dogs into engagement with the edge of a valve seat to remove the seat from the opening in which it is fitted.

2. A valve seat puller comprising a base member formed with a head and a shank and including a pair of dogs mounted in said head, the head having plunger slots, a plunger provided with a bore to receive said shank and formed with a pair of dog engaging members adapted to pass into said plunger slots and be guided upon said dogs for swinging said dogs into engagement with the edge of a valve seat to remove the seat from the opening in which it is fitted.

In testimony whereof I affix my signature.

FLOYD P. JONES.