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L. F. WELLS ET AL

VALVE FOR OIL PUMPS

Filed May 10, 1924

Fig. 1.

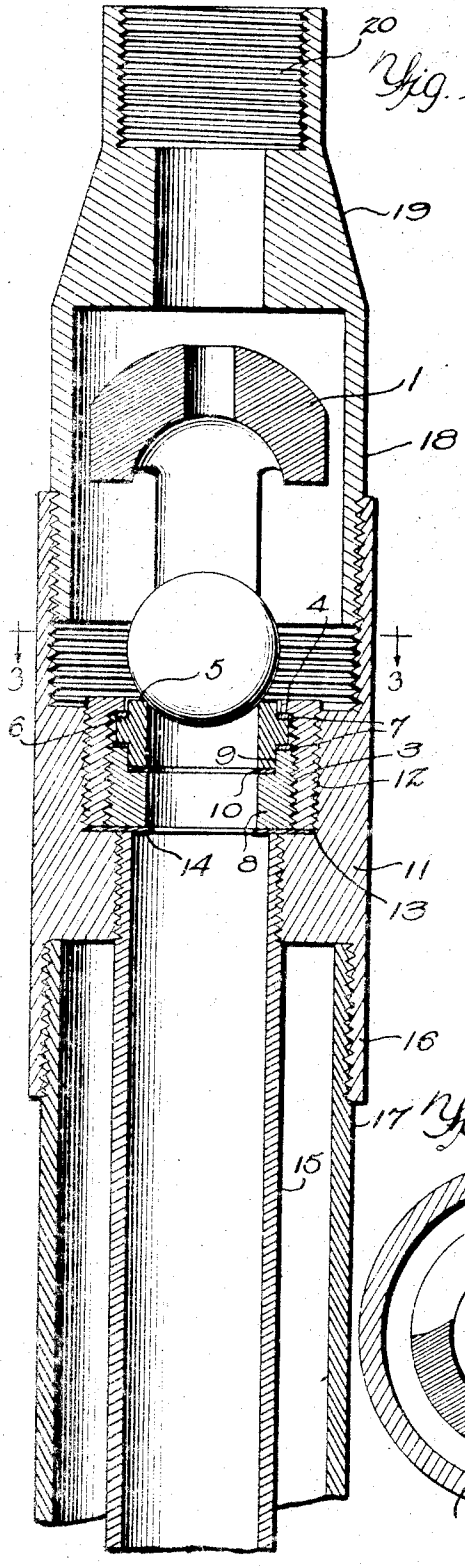



Fig. 2.

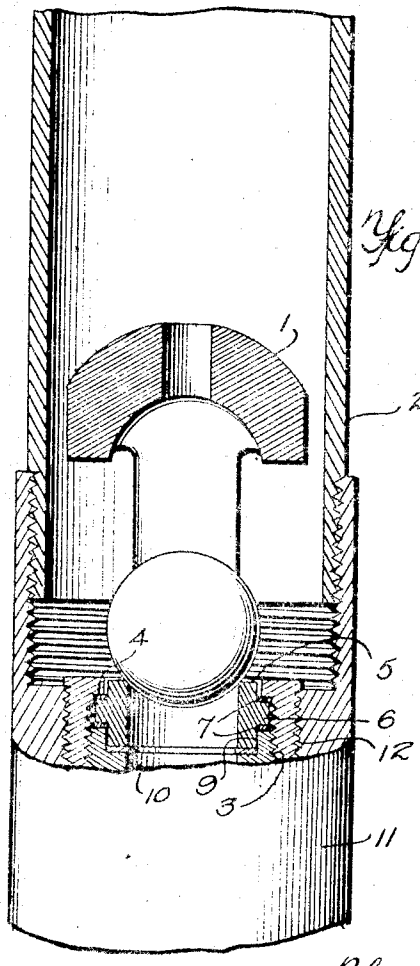



Fig. 4.

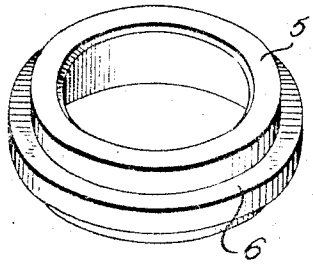
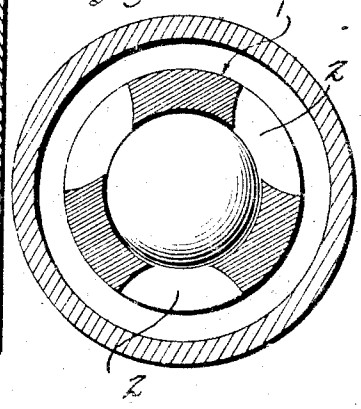



Fig. 3.




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# UNITED STATES PATENT OFFICE.

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## VALVE FOR OIL PUMPS.

Application filed May 10, 1924. Serial No. 712,482.

This invention relates to valves for oil pumps, and more particularly to standing valves.

An object of the invention is the provision of a standing valve having a renewable valve seat.

A further object is the provision of a valve structure which will permit the use of a three-inch standing valve in connection with a two-inch barrel.

A further object is to provide a valve structure which may be readily assembled and disassembled.

In the accompanying drawings, we have shown one embodiment of the invention. In this showing:

Figure 1 is a vertical sectional view through a portion of a well casing showing the invention applied,

Figure 2 is a similar view showing the three-inch working barrel,

Figure 3 is a horizontal sectional view on line 3—3 of Figure 1, and,

Figure 4 is a perspective view of the valve seat removed.

Referring to the drawings, the reference numeral 1 designates a valve cage, the upper portion of which is of the usual construction, provided with elongated slots 2 through which the fluid is adapted to pass. The bottom of the cage is provided with a central opening having internal threads 3, extending partially through the opening and being further provided with a reduced portion, forming a shoulder 4. A valve seat 5 is adapted to be arranged in this opening and this seat consists of a ring, having a rib or flange 6 adapted to engage the shoulder. A gasket 7 may be arranged between the flange and the shoulder. A retaining member 8 is arranged in the opening in the bottom of the cage and this retaining member is provided with external threads adapted to engage the threads 3. The upper end of this retaining member is provided with an enlarged opening 9, adapted to receive the lower portion of the valve seat. A gasket 10 may be arranged between the valve seat and the top of the retaining member. The cage is externally screw-threaded and is adapted to engage threads formed in the central opening in a collar 11. As shown, the cage is received in the opening in the collar, as at 12, and the bottom of the cage is adapted to engage a shoulder 13. A gasket 14 may be arranged between the shoulder and the bottom of the cage. Beyond the cage, the collar is threaded to receive a section of tubing 15 and is provided with a depending skirt 16, adapted to receive an outer casing 17. An extension 18 is arranged in the collar around the cage and this extension is provided with a tapered portion 19 beyond which it is threaded, as at 20, for the reception of a section of tubing of smaller diameter than the lower section 18 of the extension.

In Figure 2 of the drawings, we have shown the valve cage employed in connection with a section of tubing 21 of the same size as the collar and in this instance, the extension 18 is not employed.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

We claim:

In a well pump, the combination with a collar having an internally threaded bore enlarged at its upper end defining a stop shoulder, of a standing valve including a sleeve externally threaded in the enlarged portion of the bore and having its lower end seating against the shoulder and a cage above the sleeve, the sleeve being internally reduced at its upper end definining a stop shoulder and provided with internal threads below the shoulder, a removable valve seat including a ring and an outwardly extending rib at a point equidistant its ends fitted against the shoulder in the sleeve, a tubular retaining member threaded into the sleeve against the rib and having an enlarged opening at its upper end to snugly receive the portion of said ring below the rib, the lower end of said retaining member being seated on the shoulder of said collar, and a ball valve for the seat.

In testimony whereof, we affix our signatures.

LOUIE F. WELLS.
OLIVER C. WHITLING.