J. WATSON.

Valve-Box for Pumps.

No. 222,217. Patented Dec. 2, 1879.

Fig-3.

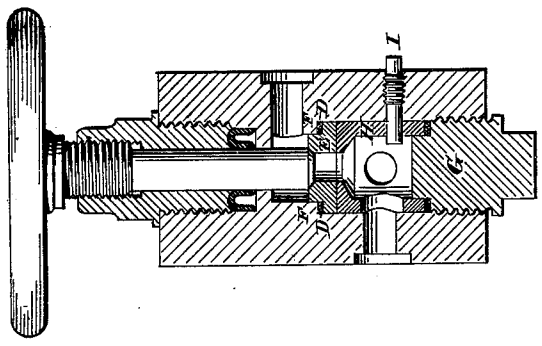


Fig-1.

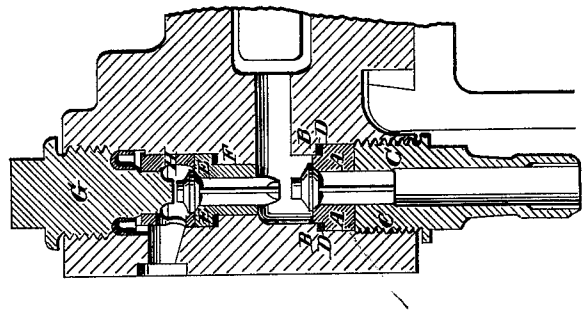
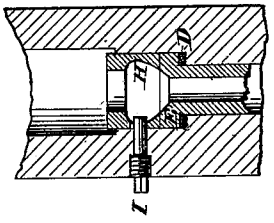


Fig-2.



ATTEST=

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JAMES WATSON, OF LONDON, ASSIGNOR TO WILLIAM THOMPSON MANN, JAMES GREGSON CHAPMAN, ALFRED CHAPMAN, HENRY SHIELD, AND ALEXANDER SPEIRS, OF LIVERPOOL, ENGLAND.

IMPROVEMENT IN VALVE-BOXES FOR PUMPS.

Specification forming part of Letters Patent No. **222,217**, dated December 2, 1879; application filed September 5, 1879.

To all whom it may concern:

Be it known that I, JAMES WATSON, of London, England, have invented or discovered certain new and useful Improvements in Valve-Boxes for Hydraulic Presses and Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures marked thereon—that is to say:

My invention relates to the combination, with a removable or shifting valve-seat, of a detached cage or part arranged to fit the bore or cavity of the valve-chamber, provided with openings to coincide with those in the wall of the chamber, and interposed between the seat and the plug or part which holds the seat in place. It also relates to the means whereby the cage is retained in its proper relative position.

In the annexed drawings, Figure 1 represents my invention applied to the valve-box of a hydraulic pump.

A shows the shifting seat of the supply-valve, in the form of a disk or cheese, held up against the flange or part B by the screw-threaded plug C, D being a leather washer.

E is the shifting seat of the delivery-valve, held against the flange or part F by the screw-threaded plug G, a cage or shell, H, being interposed. The proper position of this cage is insured by means of a peg, I, as shown in the transverse section, Fig. 2.

Fig. 3 is a vertical section, representing the valve-box of a hydraulic press with a shifting seat and retaining-cage in accordance with my invention. E is the shifting seat, held up against the flange F of the box by means of a screw-threaded plug, G, which is screwed up against the cage or shell H. Leather washers are inserted at D D.

The cage H is fitted into the bore of the chamber, and is provided with suitable openings arranged to coincide with the openings in the wall of said chamber for the ingress or egress of fluids; and it is held from turning, so as to destroy this coincidence by means of the screw-peg I before mentioned. This peg is screwed through the chamber-wall, and its inner end engages a hole or slot in the cage.

In setting the valve-seat and parts, a packing-ring is first inserted, and the valve-seat placed on that. The cage H is then inserted and adjusted, and the peg I screwed in to hold it in place. Another packing-ring is now placed in position, and the plug G screwed firmly down upon all.

I am aware that removable valve-seats have been employed, and I make no claim to such seats, broadly; but I am not aware that such have been employed in connection with a detached cage, as I have herein shown.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the removable valve-seat E, the detached cage or part H, and the plug or part G, the cage H being disconnected from the plug and arranged to be non-rotative, substantially as set forth.

2. The combination of the removable valve-seat E, the detached and removable cage H, arranged to fit the bore of the valve-chamber, and provided with openings to coincide with corresponding openings in the walls of the valve-chamber, the plug or part G, and the valve-chamber, all arranged substantially as set forth.

3. The combination of the valve-chamber, the removable valve-seat, the detached cage H, the plug or part G, and the screw-pin I, arranged substantially as and for the purposes set forth.

In witness whereof I, the said JAMES WATSON, have hereunto set my hand this 30th day of June, 1879.

JAMES WATSON.

Witnesses:
J. C. NEWBURN,
GEO. C. BACON.