W. H. Keep,

Steam Pump.

No. 81,648. Patented Sep. 1, 1868.

Fig. 9.

Fig. 10.

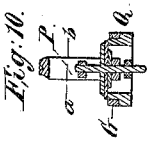


Fig. 7.

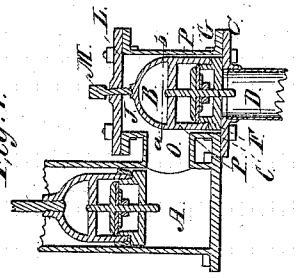


Fig. 8.

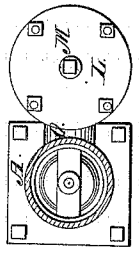


Fig. 1.

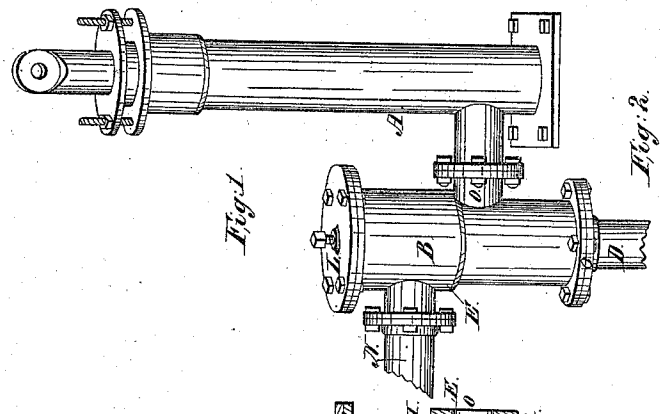


Fig. 2.

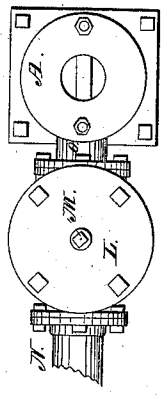


Fig. 3.

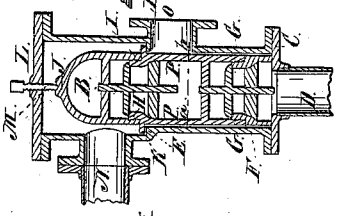


Fig. 5.

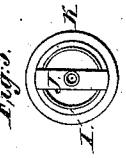


Fig. 4.

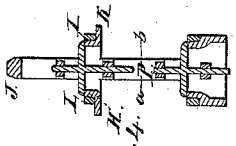
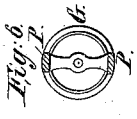


Fig. 6.



Witnesses:

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WILLIAM H. KEEP, OF STOCKTON, CALIFORNIA.

Letters Patent No. 81,648, *dated September* 1, 1868.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. KEEP, of the city of Stockton, of the county of San Joaquin, and State of California, have invented a new and useful Improvement in the Mode of Constructing and Securing the Valve-Chambers and Valve-Seats of Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation in perspective of a force-pump, with my improved valve-chamber attached.

Figure 2, a top view of same.

Figure 3, a longitudinal section of valve-chamber, valve-seat, and valves.

Figure 4, a vertical transverse section of valve-seats and valves.

Figure 5, a top view of same.

Figure 6, a horizontal transverse section of valve-seat and valve at line *a–b*.

Figure 7, a longitudinal section of a lift-pump with improved valve-chamber, valve-seats, and valve.

Figure 8, a top view of same.

Figure 9, a top view of valve-seat and valve.

Figure 10, a vertical transverse section of valve-seats and valve for lift-pump.

Similar letters of reference indicate corresponding parts in all of the figures.

To enable those skilled in the art to make and use my invention, I will proceed to describe the construction and operation of the same.

For a force-pump, the cylinder or barrel A, figs. 1, 2, with plunger or piston, &c., is constructed in any of the known forms. To this barrel or cylinder I attach, by any known method, my valve-chamber B, figs. 1 and 3, having the suction-pipe D and discharge-pipe N attached.

On the inside of the chamber, at any point between the discharge-pipe N and the connection O between the chamber and barrel or cylinder, I form a shoulder or flange, E, figs. 1 and 3. At the bottom of the chamber I form a flange, C, figs. 1 and 3, either on the inside of chamber or separately, and connect it to the chamber by bolts or otherwise.

The chamber also has a bonnet or cover, L, figs. 1, 2, and 3, on the top, secured by bolts or otherwise. The lower or suction-valve seat F rests upon the flange C, with or without packing, but so as to form a water-tight joint. Around the upper edge of valve-seat is a shoulder, which receives the ring G, figs. 3 and 4, which is connected by a skeleton-frame or bars P, figs. 3, 4, and 6, to the upper valve-seat H, figs. 3 and 4. Around this valve-seat, on the outside, is a flange, K, figs. 3, 4, and 5, which forms a water-tight joint on the shoulder E of valve-chamber, thus compelling the water, when passing from the barrel or cylinder, to raise the discharge or upper valve before it can pass to the discharge-pipe N. Around this valve-seat, and above the flange K, is a ring, I, figs. 3 and 4, which is connected by a skeleton-frame or bars to the cross-bar J, figs. 3, 4, and 5.

In the bonnet or cover L, I put a screw-bolt or set-screw, which, pressing upon the cross-bar J, secures the valve-seats in their position. The valves are of any of the usual forms known as poppet-valves or clapper-valves.

My mode of adjusting and securing the valve-seats in the chamber is as follows:

I place the valve-seat F upon the flange C, with rubber, leather, lead, or any other known packing between, so as to form a water-tight joint.

I then place the suction or lower valve in its position, and place the ring G upon the shoulder of the valve-seat F, which will bring the flange K to a bearing on the shoulder E, fig. 3, so as to form a water-tight joint. I then place the upper or discharge-valve in position, then place the ring I upon the flange K.

I then secure the bonnet or cover L in its position, and insert the screw M, so as to bear upon the cross-bar J, and by forcing that down, I secure the valve-seats firmly in their place.

For a lift-pump, I construct my barrel or cylinder A, fig. 7, with a piston or plunger containing a valve, in any of the known forms, and connect my valve-chamber B, figs. 7 and 8, in the same manner as for a force-pump.

I construct my valve-chamber B, fig. 7, in any of the known forms, with a flange, C, fig. 7, on the inside,

or connected by bolts or otherwise to the bottom, and a bonnet or cover, L, fig. 7, at the top. The valve-seat F, fig. 7, rests upon the flange C, with rubber, leather, or other known packing, so as to form a water-tight joint. The upper edge of the valve-seat has a shoulder which receives the ring G, which is connected by the skeleton-frame or bars P with the cross-bar J. The screw M passes through the bonnet or cover L, and, pressing upon the cross-bar J, secures the valve-seat in its position; or this water-tight joint may be constructed as the upper joint in fig. 3, by shoulder E and flange K.

The valve-seats and skeleton-frames or bars for both force and lift-pump are made sufficiently smaller than the inside of the chambers, so that they will not come in contact with the body of the same.

It will be seen that by this peculiar method of constructing and securing the valve-chambers and valve-seats, the valve-seats or valves may be taken from the chambers, when necessary to do so for repairs or duplication, by simply removing the bonnet or cover, thus avoiding the necessity of breaking the joints of either suction or discharge-pipe.

I do not claim the cylinder or barrel, nor the piston or plunger, nor the valves, for they are all well known, and have long been in use; but

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

The bail J, in combination with the ring I, the valve-seat H, the frame P, the ring G, and the valve-seat F, as and for the purpose set forth.

WM. H. KEEP.

Witnesses:

W. E. GREENE,

MELVILLE COTTLE.