(No Model.)

M. J. ALTHOUSE.

PUMP.

No. 384,185. Patented June 5, 1888.

Fig. 1.

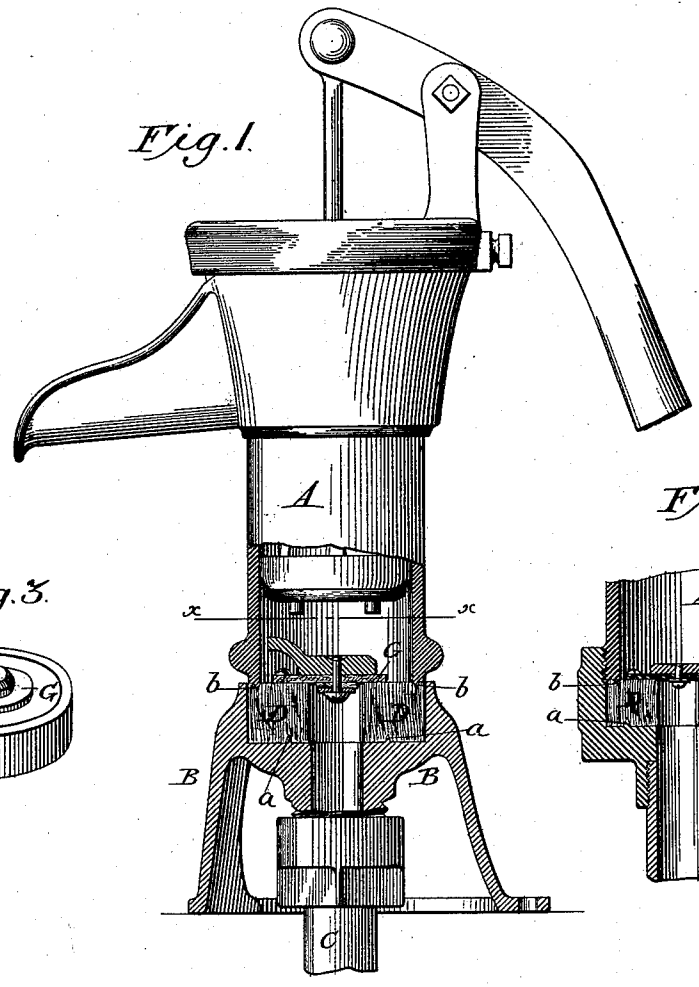


Fig. 3.

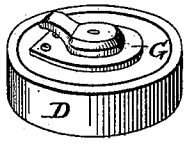
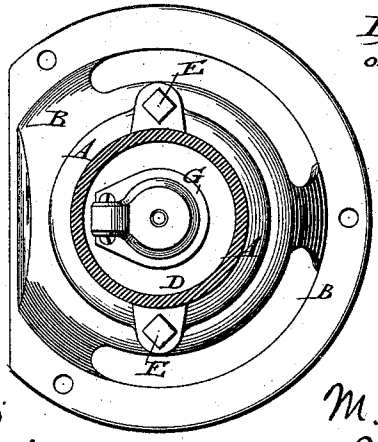


Fig. 4.

Fig. 2
on x – x



WITNESSES.

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UNITED STATES PATENT OFFICE.

MILO J. ALTHOUSE, OF WAUPUN, WISCONSIN.

PUMP.

SPECIFICATION forming part of Letters Patent No. 384,185, dated June 5, 1888.

Application filed January 20, 1885. Renewed November 21, 1887. Serial No. 255,731. (No model.)

To all whom it may concern:

Be it known that I, MILO J. ALTHOUSE, of Waupun, in the county of Fond du Lac and State of Wisconsin, have invented certain Improvements in Pumps, of which the following is a specification.

My invention has reference more particularly to that class of lift-pumps in which a metal body is combined with a leather valve.

The aim of the invention is to provide a cheap and simple valve-seat, which may be quickly replaced by another, if necessary, which will insure a tight joint, and which shall be without tendency to cause a hardening or stiffening of the valve.

To this end it consists, essentially, in a wooden seat constructed and applied in the manner hereinafter described.

Referring to the accompanying drawings, Figure 1 represents an elevation of a pump provided with my improvement, the lower portion being represented in vertical section through the center. Fig. 2 represents a horizontal section on the line *x x*, looking downward. Fig. 3 is a perspective view of the valve-seat and valve. Fig. 4 is a sectional view showing a modification.

Referring to the drawings, A represents the upper portion or barrel of the pump, which will be provided with the usual plunger, operating-lever, and delivery-spout, as shown.

B represents the base portion of the pump, provided at the bottom with a neck to receive the suction-spout C, and at the top with a pocket or receptacle to receive the valve seat D, which is constructed of wood, and preferably of a flat circular form, as plainly represented in Fig. 3. It is made of suitable size to fit snugly within the pocket or cavity in the base, and is usually constructed with the grain of the wood standing in a vertical direction. The grain may run in a horizontal direction, if desired; but it is found that the vertical direction is highly advantageous. The pocket in the base is provided with an annular lip, *a*, rising therefrom, as plainly represented in Fig. 1, and the lower end of the pump-body, which is adapted to enter the upper portion of the base and seat itself on the valve-seat, is formed with a sharp edge or lip, *b*. Bolts E are inserted through ears on the body into the base for the purpose of drawing the two firmly together. The tightening of these bolts has the effect of forcing the body downward and causing the lip or flange *a* to seat itself tightly in the under side of the wooden seat and drawing the lip *b* into the top of the seat in like manner. As soon as water is introduced into the bottom it has the effect of causing a radial expansion of the wooden seat, the effect of which is to insure a perfectly-tight joint between the body and seat and the base and seat, so that leakage is effectually prevented.

I prefer to employ a valve, G, consisting of a flat sheet of leather secured at one edge to the top of the valve-seat, so as to close over the central port or opening therein. This valve is of ordinary form and is commonly weighted in the usual manner, as shown in the drawings. The use of the wooden seat in connection with the leather valve is highly advantageous in that it permits the leather to remain soft and pliable, a result which cannot be secured when metallic seats are employed, for the reason that becoming oxidized they have the effect of hardening the leather, so that the valve fails to close tightly.

It will of course be understood that my combined valve-seat and packing may be used in pumps of various forms, the only requirement being that the wood shall be confined between the two parts which are to be connected, and said parts adapted, as described, to form close joints therewith.

The improvement is applicable to force-pumps and pumps with what are commonly known as "detached cylinders," in which the suction-pipe is coupled directly to the end of the cylinder. In the latter case the wood is seated in a cap on the end of the pipe, as shown in Fig. 4.

It is to be noted as a valuable feature of my construction that the wooden seat is completely encircled by the metal, and thus prevented from splitting or breaking as the lips of the body and base are forced therein. The wooden seat is also free from the liability which would otherwise exist of its cracking or checking in a radial direction, so as to permit leakage.

I do not claim, broadly, a wooden valve-seat

for a pump, being aware that wooden seats have been heretofore constructed in various forms and applied in various connections. I believe myself, however, to be the first to confine a wooden seat, the grain of which extends in a vertical direction, forcibly between the metal body and the metal base in such manner that they form close joints with its top and bottom surfaces.

What I claim as my invention is—

1. As an improvement in the construction of metallic pumps, the combination of the metallic body, the metallic base, and the intermediate wooden seat having a vertical grain, located between the two metal parts, and the bolts, whereby the latter may be forcibly seated against opposite sides of the wood.

2. In a pump, the combination of metallic body and base portion provided with annular lips on their opposing faces, with the intermediate wooden seat, and the bolts or fastening devices, whereby the metallic parts are bound together and seated into the wood, substantially as described and shown.

3. The pump-base provided with the recess or pocket in its top and with a lip, *a*, therein, and the metal body provided with the lip *b*, in combination with the intermediate wooden valve-seat having its grain arranged vertically, as described and shown, whereby the wood is encircled and confined in position and the metallic parts brought into intimate contact with its upper and lower surfaces.

In testimony whereof I hereunto set my hand, this 22d day of December, 1884, in the presence of two attesting witnesses.

MILO J. ALTHOUSE.

Witnesses:

C. E. HOOKER,

ELI HOOKER.