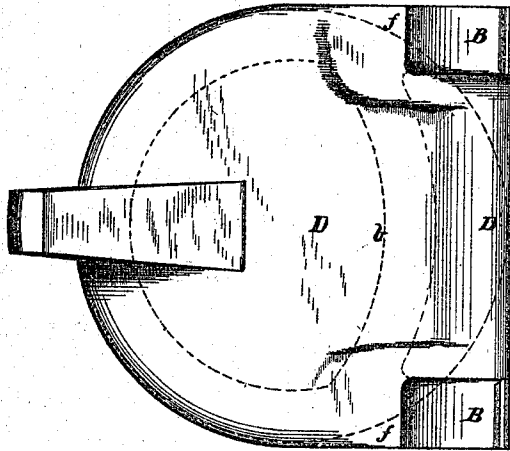


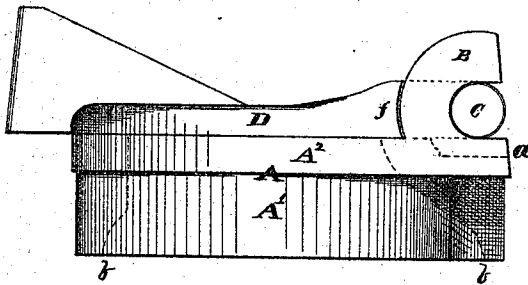
L. J. KNOWLES.  
VALVE FOR STEAM AND OTHER PUMPS.

No. 105,813.

Patented July 26, 1870.



*Fig. 1*



*Fig. 2*

*witnesses*

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# United States Patent Office.

LUCIUS J. KNOWLES, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 105,813, dated July 26. 1870.

## IMPROVEMENT IN VALVES FOR STEAM AND OTHER 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, LUCIUS J. KNOWLES, of the city and county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Valves for Steam and other Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan view of my improved valve, and

Figure 2 represents a side view of the same.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists in a valve for pumps, the parts of which are constructed and arranged as hereinafter described.

In the drawing—

The part marked A is the valve-seat, the lower part A' of which is of cylindrical shape, to fit the cavity formed in the chamber of the pump for its reception.

The upper part A<sup>2</sup> of the seat is extended in a rectangular form at its rear side, and is provided with ear-pieces B near each corner, in which work the pivots C of a valve-cover, D, as shown.

The ear pieces B are open at the back, so that by raising the valve-cover D to a vertical position it can be readily taken off from the seat.

The pivots C are formed in one piece with the valve-cover D, and the corners *ff* are formed to fit the outside edges of the ear-pieces B in the manner indicated, so that the valve-cover D cannot be displaced excepting when it is raised to a vertical position, as before stated.

The upper rear part of the seat A is reduced, as indicated by dotted lines at *a*, fig. 2, so as to leave a clear space beneath the back or rolling part D' of the valve-cover D, thereby insuring its free action, and preventing it from becoming clogged with any sediment which might be drawn in with the water.

The opening or passage through the valve is indicated by the dotted lines *b*, figs. 1 and 2.

By making the different parts of the valve as herein shown and described, the valve-cover D can at any time be readily swung back and lifted from its seat A after the cap has been removed, without the trouble of driving out the pivot-pin, as in the ordinary valve, or removing bearing caps.

From the foregoing description it will be seen that my improved valve is of very simple construction, being composed of only two pieces, is durable, and not liable to derangement during the operation of the pump.

Having described my improved valve for steam and other pumps,

What I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

The combination with the valve-seat A, provided with the open ear-pieces B and recess *a* of the valve D, having curved shoulders *ff*, and journals or pivots C C, substantially as described and as shown in the accompanying drawing.

Also, the combination with the valve D of the curved open ear-pieces B B, substantially as shown and described.

LUCIUS J. KNOWLES.

Witnesses:

THOS. H. DODGE,  
GEO. H. MILLER.