W. D. HOOKER.

Valves for Pumps.

No. 147,004. Patented Feb. 3, 1874.

Fig. 1.

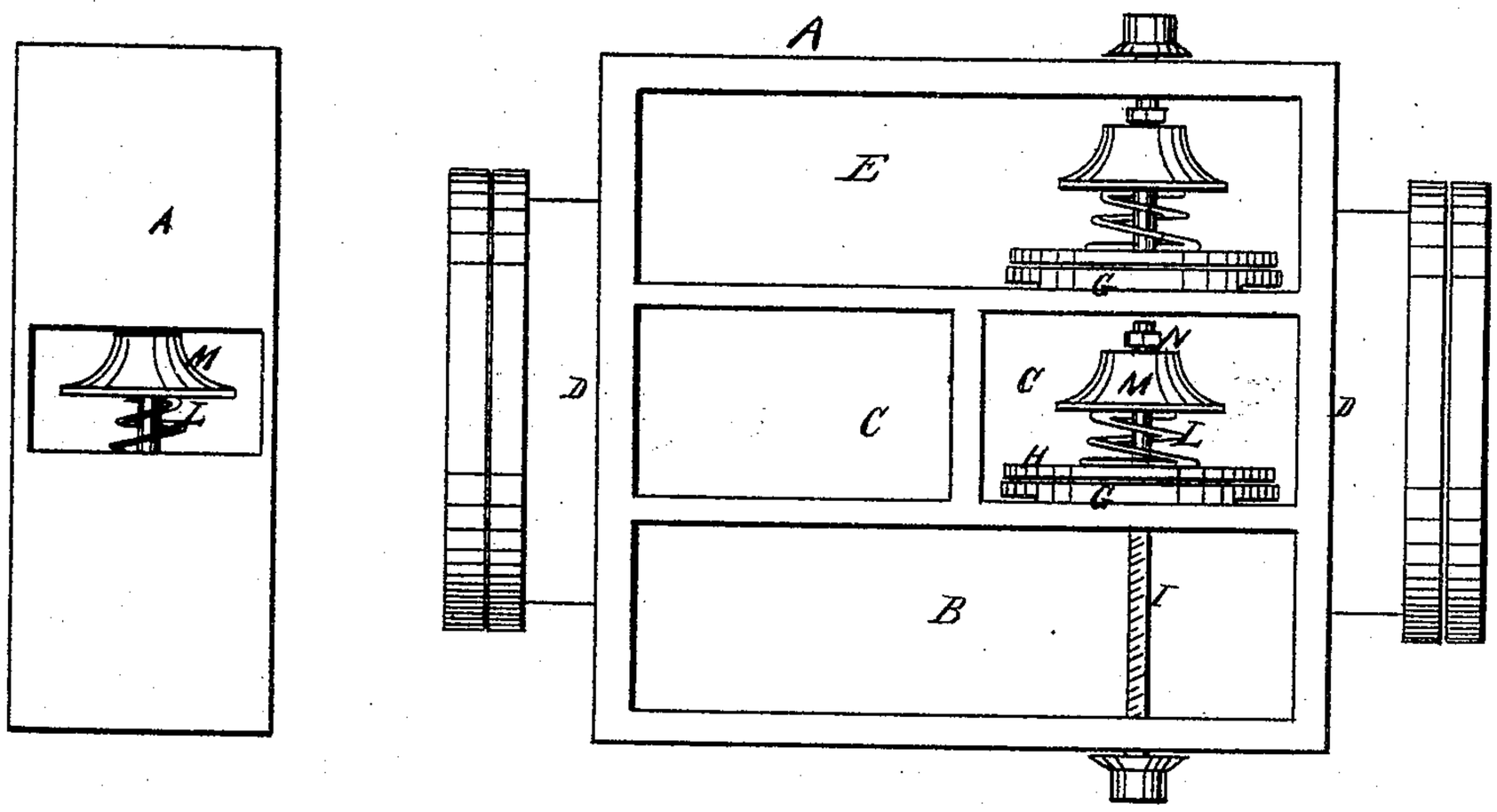


Fig. 2.

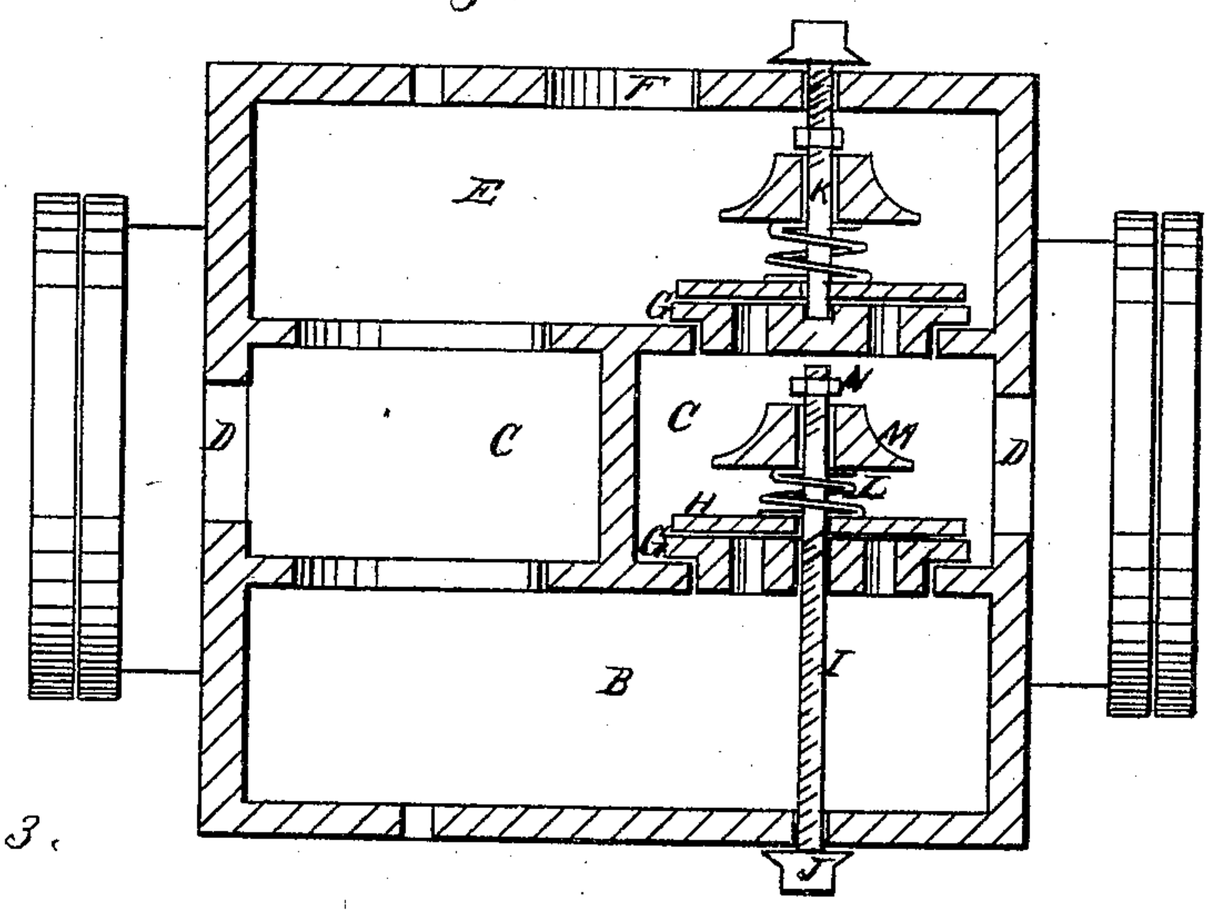
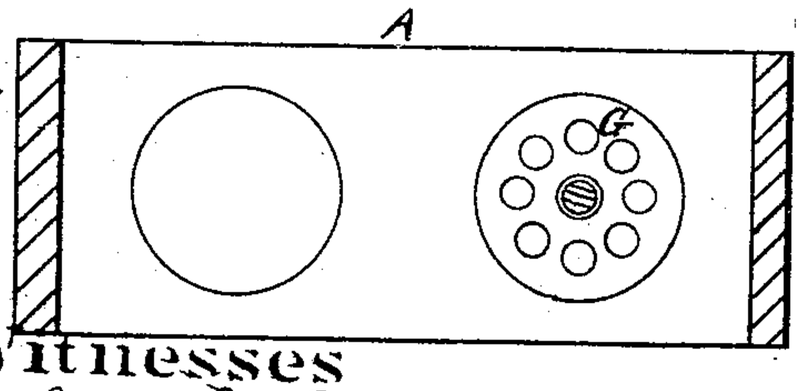


Fig. 3.



Witnesses
John L Borne
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UNITED STATES PATENT OFFICE.

WILLIAM D. HOOKER, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN VALVES FOR PUMPS.

Specification forming part of Letters Patent No. **147,004**, dated February 3, 1874; application filed November 21, 1873.

To all whom it may concern:

Be it known that I, WILLIAM DAVIS HOOKER, of San Francisco city and county, State of California, have invented an Improvement in Valves for Pumps; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to the employment of a buffer and check-nut, by which I am enabled to regulate the lift of the valves, as will be more fully described in the following specification, in which—

Figure 1 is a side elevation of the valve-chamber with the cover removed, showing the valves. Fig. 2 is a sectional elevation. Fig. 3 is a view of the valve-seat.

A is the valve-box of a force-pump, having the vacuum-chamber B, above which are the suction-valve chambers C C, which connect with either end of the pump-cylinder at D. Above those, again, is the delivery-valve chamber E, which discharges at F, as shown. The valve-seats G are formed as shown, and turned to fit into openings made for them in the bottom of the chambers. Upon these seats the valves H are placed. In the present case, the valves are made circular, and of some elastic material. The seats G are perforated, as shown, around the center, so as to allow the water to pass freely. In order to guide the valve in its movements, I employ a spindle, I, which, in the case of the suction-valve, extends to a point just below the upper or discharge valve seat. This spindle enters from below the vacuum-chamber, and has a screw-thread cut upon it, so that, as it passes through the seat G, this thread enters the thread cut in the seat, and when the head or flange J at the outer end of the spindle reaches the bottom of the vacuum-chamber, it will, when turned close, draw the seat G firmly down, and hold it to its place, any suitable packing being used around its flange. A packing can also be placed under the head or flange J, and this serves to make a tight joint where the spindle passes into the vacuum-chamber. The upper or discharge valve is guided, and its seat is kept in place, by means of a spindle, K, which enters the chamber from the top, and presses upon the top of the seat, a hole in the valve allowing it to pass. The upper part of this spindle has also a thread, which turns in the top plate, this spindle having also a head, which can be packed like the lower one. In order to regulate the lift of the valve, a coiled spring, L, surrounds the spindle, and a plate or buffer, M, is formed to rest upon it. A thread is cut upon the top of the spindle to receive a check-nut, N, which forces the buffer and spring down, and thus regulates the tension of the valve.

By this means I am enabled to easily adjust any of my valves independently of the others, and any one of them can be taken out without interfering with the others.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with the threaded valve-seat G, threaded valve-spindle and guide I, valve H, and pump-chamber, the valve-buffer M and check-nut N, substantially as and for the purpose described.

In witness whereof I hereunto set my hand and seal.

WM. D. HOOKER. [L. S.]

Witnesses:

JOHN L. BOONE,

C. MILTON RICHARDSON.