

JOHN PORTEOUS.

Improvement in Combined Pressure and Vacuum Valves.

No. 115,982.

Patented June 13, 1871.

Fig. 1.

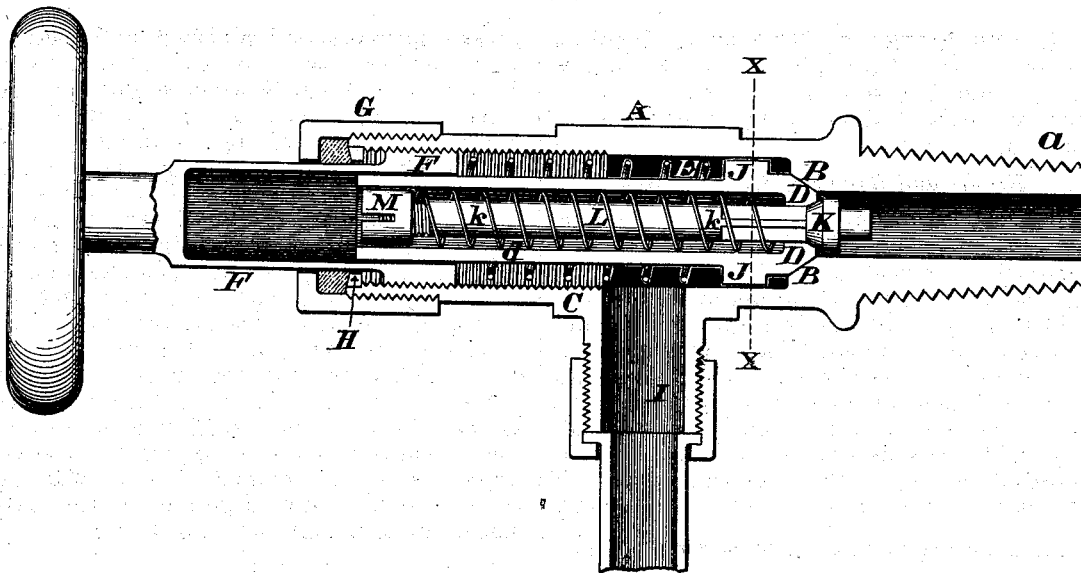
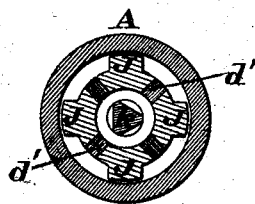


Fig. 2.



Attest.
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By Knight Bros
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JOHN PORTEOUS, OF CINCINNATI, OHIO.

IMPROVEMENT IN COMBINED PRESSURE AND VACUUM VALVES.

Specification forming part of Letters Patent No. 115,982, dated June 13, 1871.

I, JOHN PORTEOUS, of Cincinnati, Hamilton county, State of Ohio, have invented a new and useful Pressure and Vacuum Cock or Safety-Valve, of which the following is a specification:

Nature and Objects of the Invention.

The subject of this invention is a safety device or appendage for steam-generators, and especially for the form of them known as kitchen-boilers; and comprises an outlet-valve which is held to its seat by a spiral spring, adjustable from without, which valve operates to relieve the vessel of any redundant pressure, and which incloses an inlet-valve, similarly held and adjusted, and which operates to admit atmospheric air so as to prevent collapse of the vessel whenever the pressure of its contents falls below that of the atmosphere.

General Description with Reference to the Drawing.

Figure 1 is an axial section of a safety-valve embodying my invention. Fig. 2 is a transverse section at the line X X.

A is a hollow plug or barrel, adapted to be screwed into the vessel or generator at its screw-threaded portion *a*. A suitable distance from its point of insertion the barrel A is enlarged interiorly to form a seat, B, and chamber C, for an outlet or pressure valve, D, which valve is confined to its seat with any desired force by means of a spiral spring, E, whose

stress is increased or diminished by the screwing inward or outward of a tubular follower, F, confined by a cap, G, which screws onto the outside of the barrel. A ring or gland, H, and the cap G constitute a stuffing-box. A nozzle, I, which opens from the side of the barrel, permits the escape of steam or water, as the case may be. Wings J serve to guide the valve D to an axial path in opening and closing. The valve D is hollow, and terminates below in a flaring opening to form a seat for an inlet or vacuum valve, K, that is held to its closed position by a small spring, L, that bears against the interior extremity of the valve D at one end, and at the other end bears against a nut or follower, M, that is screwed down upon the valve-stem *k* until the desired stress of spring is obtained. Orifices *d'* in the side of the valve-stem *d* permit the free passage of air to the interior of said stem.

Claim.

I claim herein as new and of my invention—

The described arrangement, in a suitable barrel, A B C I, of the outlet and inlet valves D *d* *d'* and K *k*, springs E and L, and followers F and M, for the objects set forth.

In testimony of which invention I hereunto set my hand.

JOHN PORTEOUS.

Witnesses:

GEORGE H. KNIGHT,
JAMES H. LAYMAN.