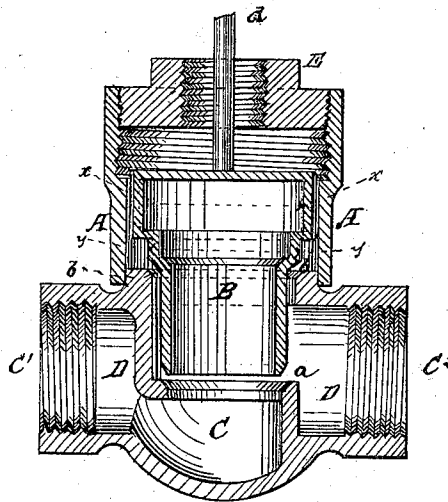


W. STEPHENS.
Balanced-Valves.

No. 147,997.

Patented Feb. 24, 1874.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM STEPHENS, OF PITTSTON, PENNSYLVANIA.

IMPROVEMENT IN BALANCED VALVES.

Specification forming part of Letters Patent No. **147,997**, dated February 24, 1874; application filed February 5, 1874.

To all whom it may concern:

Be it known that I, WILLIAM STEPHENS, of Pittston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Balanced Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which forms part of this specification.

The nature of my invention consists in the construction and arrangement of a water-escape and balanced puppet-valve combined, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

A represents the chamber in which the valve B works. This valve is hollow and cylindrical, and constructed substantially in the form shown in the drawing, so that the inside diameter at *x x* and the outside diameter at *y y* will be equal, thereby balancing the valve. The chamber A is formed upon the side of a tube, C, which is provided with an interior diaphragm or angular partition, D, forming the valve-seat *a*, another valve-seat, *b*, being formed in the chamber A, and the valve B constructed to fit in both seats. C¹ is the in-

let, and C² the outlet, of the tube C. *d* is the stem of the valve B. E represents a connection with the steam-chest to admit a supply of steam into the chamber A on top of the valve B, to keep the same closed.

The end C¹ of the tube C being fastened to any convenient point on the cylinder, and communicating with the interior thereof, this device will relieve the water with a greater ease without the necessity of lifting the working-valve, for as soon as the water in the cylinder exerts a greater pressure than the steam in the steam-chest, the valve, being so evenly balanced, at once opens and relieves the cylinder of its water, whence it passes away into the atmosphere, or to any place convenient to receive it.

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

The balanced valve B constructed as described, in combination with the chamber A, tube C, with diaphragm D, and valve-seats, *a b*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM STEPHENS.

Witnesses:

JAMES HELM,
ADRIAN MERRITT.