

JAMES H. BLESSING.

Valve for Steam-Heaters.

No. 128,206.

Patented June 25, 1872.

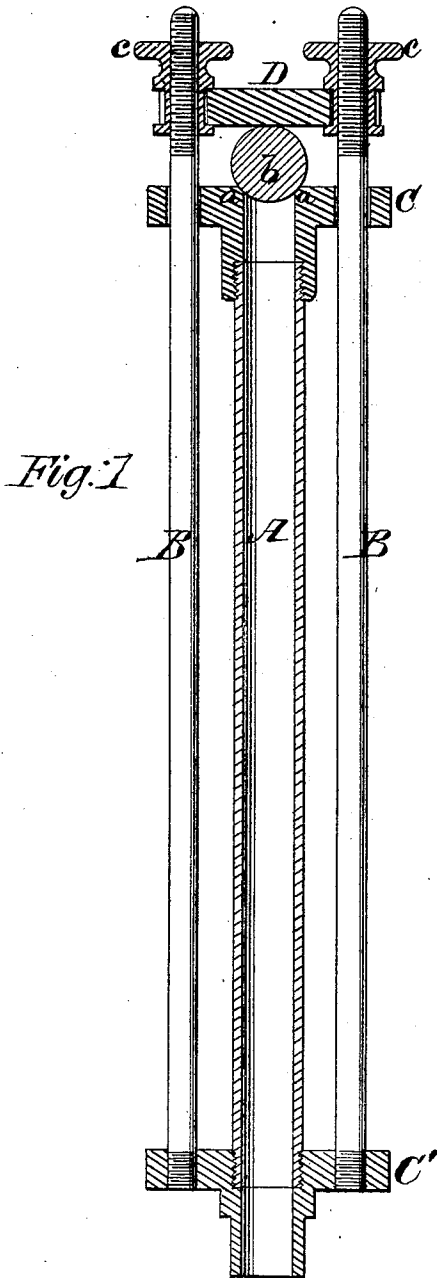
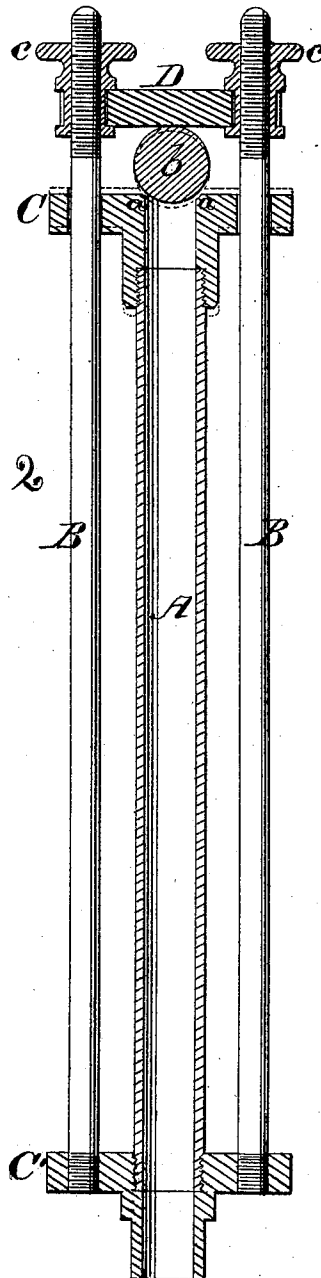


Fig. 1

Fig. 2



Witnesses,  
R. F. Campbell  
J. K. Campbell.

Inventor,  
James H. Blessing  
by  
Messrs. Penick & Lawrence.

# UNITED STATES PATENT OFFICE.

JAMES H. BLESSING, OF ALBANY, NEW YORK, ASSIGNOR TO HIMSELF AND  
FREDERICK TOWNSEND, OF SAME PLACE.

## IMPROVEMENT IN AIR-VALVES FOR STEAM-HEATERS.

Specification forming part of Letters Patent No. 128,206, dated June 25, 1872.

*To all whom it may concern:*

Be it known that I, JAMES H. BLESSING, of Albany, in the county of Albany and State of New York, have invented a new and Improved Automatic Valve; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a diametrical section of the device, showing the valve shut. Fig. 2 is a similar view of the same parts, showing the valve open.

This invention relates to an improved device which is especially applicable to the automatic gravitating traps of heating apparatuses, but which may be applied at different points to the pipes of such apparatuses, for the purpose of automatically allowing the escape of air therefrom, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents a tube of brass or other suitable metal, which is to be secured into a steam-trap at or near its highest point, or which may be applied to the pipes communicating with such a trap, or to any other steam-vessel or passage within which it is desired to prevent accumulations of air. Near the lower end of the tube A, and rigidly secured to it, is a cross-head, C', from which rise two bars, B B. These bars are parallel to the tube A, and their lower ends are permanently secured to the cross-head C', as shown in the drawing. These bars are longer than the tubes, and they pass loosely through a cross-head, C, which is rigidly secured to the upper end of the tube, and in which a seat, *a*, is formed for a valve, *b*. The said bars are provided on their upper ends with thumb-nuts, the grooved stems of which receive the forked

ends of a head, D, which is adjustable vertically toward and from the valve-seat *a*.

It will be seen that the tube A can extend and contract lengthwise by heat without changing the distance between the heads C' D; consequently when heat is applied to said tube its head C will approach from the head D, and when heat is withdrawn from the tube its head C will recede from the head D. It will be seen from the foregoing description that when the head D is adjusted above the valve, and with reference to the degree of expansion of the tube A, the valve *b* is free to rise and allow the escape of air, as indicated in Fig. 2. But when all the air has escaped through the tube, and steam follows, the tube will expand and compress the valve *b* between its seat and the fixed head D, and thus prevent the further escape of air, as represented in Fig. 1. The thumb-nuts *c c* allow the adjustment of the fixed head D, according to the degree of expansion of the tube A.

I prefer the use of a spherical valve, *b*, but a circular beveled valve may be employed in its stead.

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

1. An expansion tube, A, provided with a valve-seat at its upper end, above which is a valve, *b*, and a fixed but adjustable abutment, D, the latter being connected to a cross-head near the lower end of the said tube by means of bars B B, substantially as described.

2. The adjusting-nuts *c c* on rods B B, in combination with the cross-head D, a valve, *b*, and a valve-seat in the upper end of an expansion or extensible tube A, substantially as described.

JAMES H. BLESSING.

Witnesses:

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