S. Bonser,
Steam Trap.

No. 96541. Patented Nov. 9 1869.

Fig. 1.

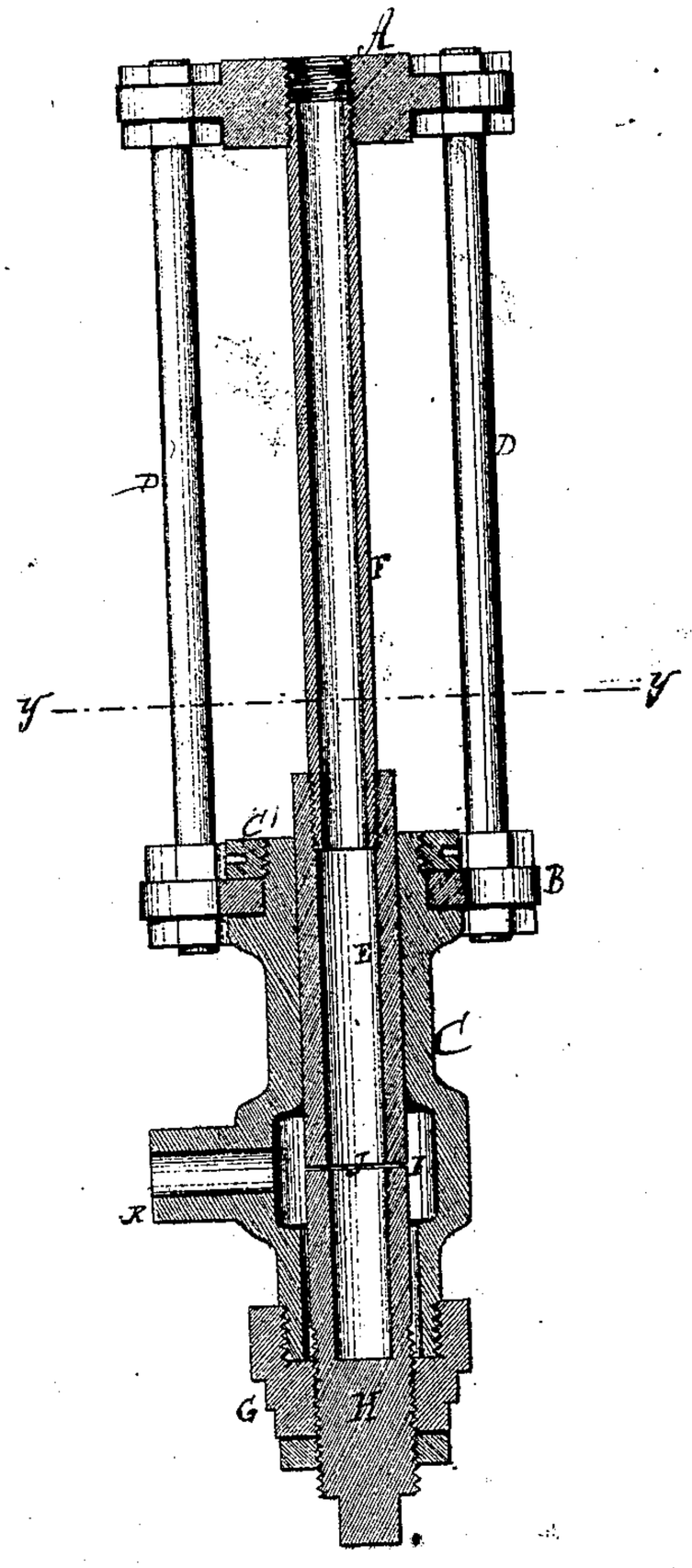
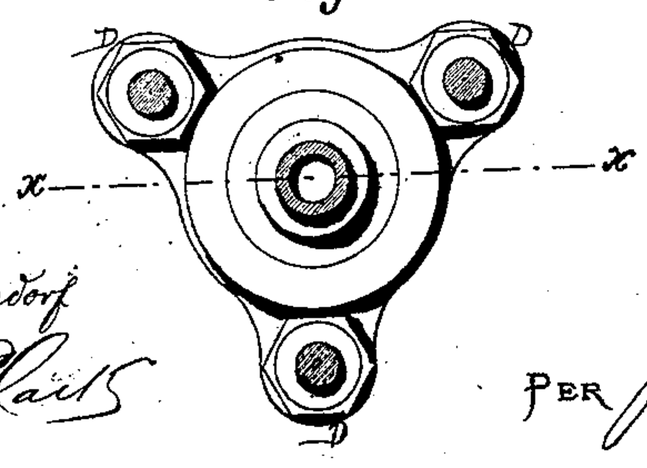


Fig. 2.



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United States Patent Office.

SAMUEL BONSER, OF DOVER, NEW HAMPSHIRE.

Letters Patent No. 96,541, *dated November* 9, 1869.

STEAM-TRAP.

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, SAMUEL BONSER, of Dover, in the county of Strafford, and State of New Hampshire, have invented a new and useful Improvement in Steam-Trap; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a device for discharging the water of condensation from a steam-heating or other steam-apparatus, and consists in the arrangement hereinafter described.

In the accompanying plate of drawing—

Figure 1 represents a vertical section of the trap, through the line *x x* of fig. 2.

Figure 2 is a horizontal section, through the line *y y* of fig. 1.

Similar letters of reference indicate corresponding parts.

A is a triangular head at the top of the instrument.

B is a similar triangular plate, which is screwed to the cylinder C by the nut *c'*.

These triangular plates are securely held together by means of the three rods D, which have screw-nuts at each of their ends, as seen in the drawing.

E is a tube within the cylinder C; and secured to the tube E is another tube, F, which is screwed into the triangular head-piece A. These tubes are made of copper or other suitable metal.

On the lower end of the cylinder C there is a thimble-nut, G, which holds, within the lower part of the cylinder, the tubular spindle H.

The upper end of this tubular spindle, and the lower end of the tube E, are square, flat surfaces, forming a joint, J, surrounded by the chamber I, which chamber is in communication with the outlet-pipe K.

The water of condensation enters the tubes E and F, and is discharged, between the ends of the tube and the spindle, into the chamber I, and from the pipe K.

When the water has been thus discharged, and steam enters and takes its place, the tubes E and F will expand downward from the head-pipe A, in length, sufficiently to close the aperture or joint J. When water again accumulates and becomes cold, those tubes, or one of them, contracts, and the water is again discharged, and so on indefinitely.

The thimble-nut G allows the tubular spindle H to be adjusted with the greatest nicety, so that the joint J will close when the tube contains steam, and open when it contains water, or when the temperature falls.

It will thus be seen that the temperature governs the operation of the instrument with perfect precision when it is properly adjusted The operation will be the same if the steam only enters the tube F, but the longer the tube is exposed to the variations of temperature, the more will be the expansion and contraction.

I am aware that a patent was granted, July 7, 1863, for a steam-trap, exhibiting some similarity of construction to mine, but I desire to disclaim any and all peculiarities therein shown.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

The arrangement of the tubes E F, and the tubular spindle H, in combination with the cylinder G, triangular pins A and B, and the rods D, substantially as and for the purposes described.

SAMUEL BONSER.

Witnesses:

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