J. M. MEHARG.

Steam-Trap.

No. 162,567. Patented April 27, 1875.

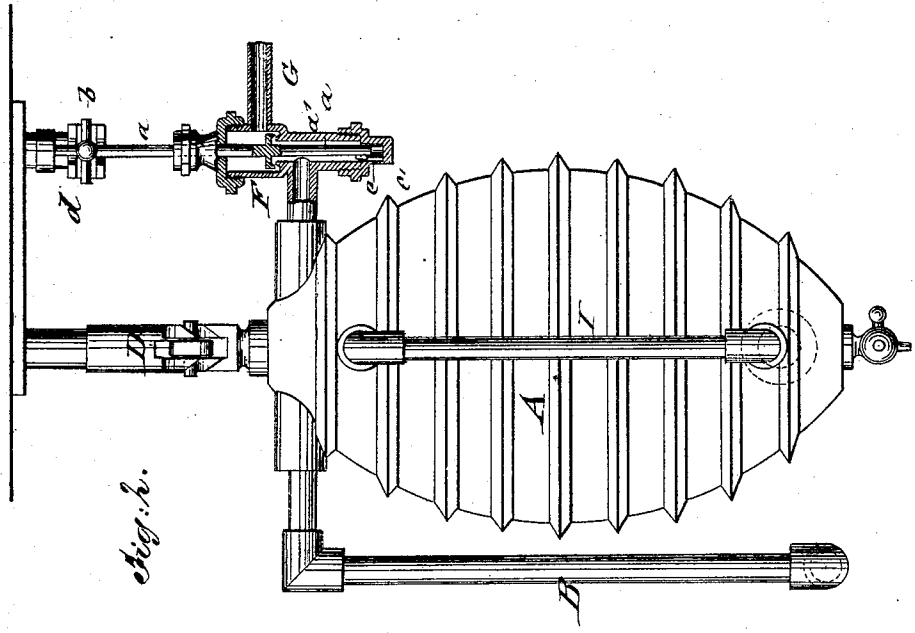

Fig. 2.

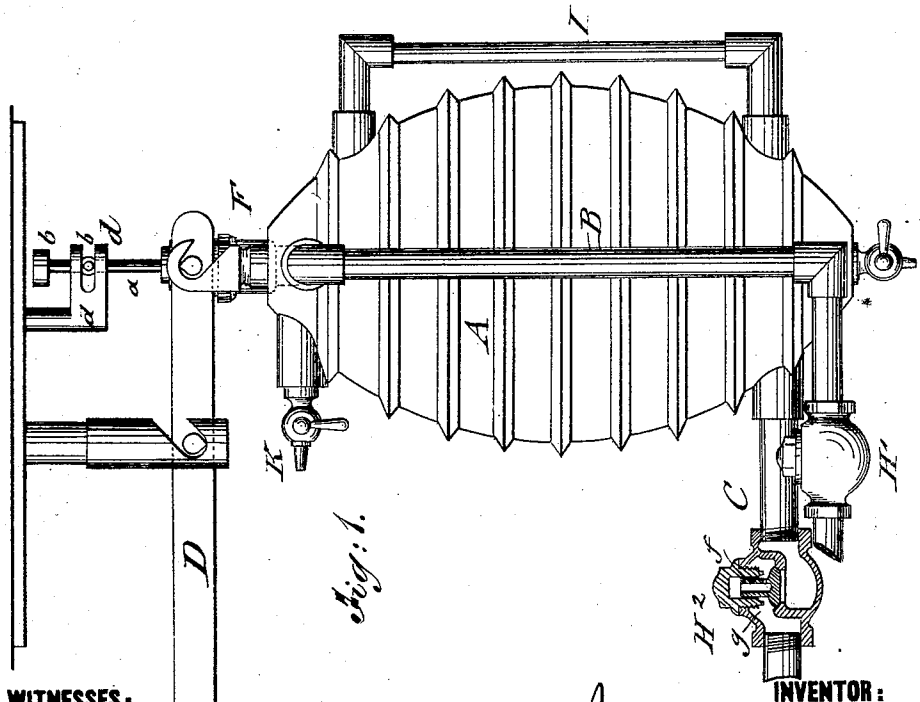

Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES M. MEHARG, OF MONTREAL, CANADA, ASSIGNOR TO RICHARD PATTON, OF SAME PLACE.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. **162,567**, dated April 27, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that I, JAMES M. MEHARG, of Montreal, in the Province of Quebec and dominion of Canada, have invented a new and Improved Steam-Trap, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation, and Fig. 2 an end elevation, of my improved steam-trap.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved steam-trap, by which the condensed water from the steam-pipes used for heating buildings and other purposes may be returned hot to the boiler by the automatic action of the steam-trap.

The invention consists of a hollow vessel balanced on a weighted lever, and connected with the boiler and a water-collecting receiver. A weighted steam-valve of the vessel, with cross-head at upper end of spindle, produces, by the rising and the falling of the vessel, the closing and opening of the valve, in connection with the stationary fork, so as to admit the steam and force the condensed water through the discharge-pipe to the boiler.

In the drawing, which illustrates the invention, A represents a hollow vessel of the customary construction in steam-traps, which is connected, by a section-pipe, B, to a receiver, where the condensed water is collected, and to the boiler by a discharge-pipe, C, at the lower part. The vessel A is hung on one extremity of a fulcrumed lever, D, and balanced by a weight, E, on the other end. To the top of the vessel is attached a steam-valve, F, which is also connected to the boiler by a pipe, G. The valve F has a lead-filled recess at the under side, fitting closely on a raised seat, in the usual manner, the lead or other packing substance being readily renewed when worn out. The valve is attached to a spindle or stem, *a*, extending above and below it. On the upper end of this spindle is a cross-head, *b*, extending crosswise between the prongs of the forks *d*. The lower end of the spindle works in a guide, *a'*, and is provided with a projecting pin, *e*, sliding in a recess, *e'*, to prevent the turning of the spindle and the displacement of its cross-head, preventing also the valve from changing on its seat. The upper end of the spindle is weighted to keep the valve securely to its place. The prongs *d* engage the cross-head and open the valve F as soon as the main vessel is lowered by the increase of water therein, the valve closing again on the rising of the vessel.

The suction and discharge pipes B and C are provided with check-valves H^1 and H^2, whose spindles *f* are made hollow and placed in communication by a small hole, *g*, to the steam or vacuum that surrounds the spindle, so as to prevent the sticking of the same. A glass gage, I, is applied to the vessel A, to observe the quantity of water in the same.

An expansion air-valve, K, is furthermore arranged at the top part for the escape of the air when the trap is first started for work.

The mode of operation is as follows: Steam is admitted into the receiver, in which the condensed water is collected, so that the water is forced out to pass through the suction-pipe B into the vessel A, the air escaping through the air-valve.

As soon as the vessel becomes sufficiently full to counterpoise its balance-weight, it falls a distance sufficiently to cause the fork to open the valve F, and admit the steam entering by pipe G to pass into the upper part of vessel A, and force the water out through the pipe C and valve H^2 into the boiler.

The vessel A, being thus relieved of its charge of water, is caused to rise by the weight E, valve F being closed by the action of the fork on cross-head *b*. The steam-trap performs its functions in regular, reliable, and automatic manner, and supplies the condensed water with great facility to the boiler.

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

The combination of reservoir A, having check-valved receiver suction-pipe B, valve-seated steam-connection G, and check-valved boiler-pipe C, with a weighted lever, D, and a valve, F, suspended from a fixed bracket, *d*, all substantially as shown and described, for the purpose specified.

JAMES METIER MEHARG.

Witnesses:
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