

J. C. GETZ.
STEAM-TRAP.

No. 177,500.

Patented May 16, 1876.

Fig 1.

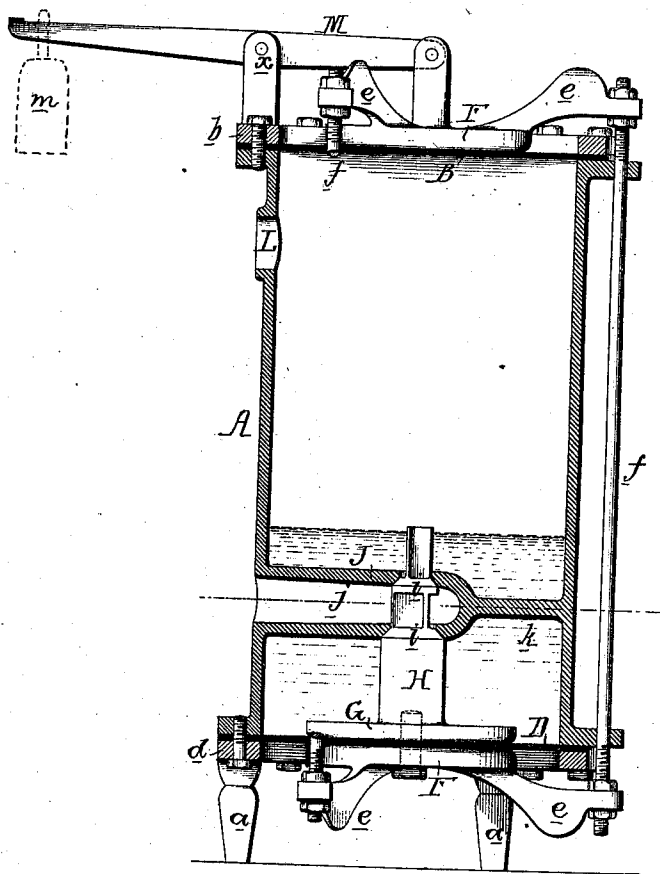
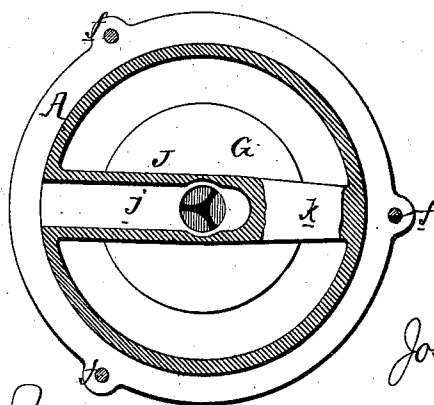


Fig 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH C. GETZ, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. **177,500**, dated May 16, 1876; application filed February 19, 1876.

To all whom it may concern:

Be it known that I, JOSEPH C. GETZ, of Philadelphia, Pennsylvania, have invented an Improved Steam-Trap, of which the following is a specification:

The object of my invention is to construct a simple, cheap, and effective steam-trap, and one not so liable to derangement as those of ordinary construction; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical sectional view of my improved steam-trap, and Fig. 2 a sectional plan on the line 1 2.

A is an upright casing, of cylindrical or other suitable form, mounted upon feet *a*, and closed, in the present instance, at both ends by means of two flexible diaphragms, B and D, which consist of disks of rubber, thin steel, or like material, secured at the edges to flanges of the casing by means of rings *b* and *d*. To each of these diaphragms is secured a disk, F, having arms *e*, the arms of one disk being connected to those of the other at their outer ends by vertical rods *f*, so that one diaphragm cannot move independently of the other.

The lower diaphragm, D, has an inner disk, G, which is connected to, or forms part of, a valve-spindle, H, having at the upper end two valves, *i i*, adapted to seats formed in the top and bottom of a tube, J, containing the passage *j*, and extending from one side of the casing A to within a short distance from the opposite side, to which the tube is connected by a web, *k*.

L is the inlet-opening, to which is connected the lower end of a coil of steam-pipes, the water of condensation from which flows into the interior of the casing A.

Attached to the disk F of the diaphragm B is the inner end of a lever, M, which is pivoted at *x* to a stud on the casing, and carries at its outer end a weight, *m*.

Owing to the fact that both of the flexible heads of the casing A are connected together, the pressure of steam on one head is neutral-

ized by that on the other, and the depression of the diaphragms, so as to open the valves *i*, is effected by the weight of the water of condensation contained within the casing, so that by properly adjusting the weight *m* the amount of water which is required to operate the discharge-valves may be governed at pleasure.

I prefer to so adjust the weight *m* that the water-level, when the valves close, shall be somewhat above the upper opening in the tube J, as shown in Fig. 1, so that the escape of steam may be prevented. Supposing this to be the water-level, any extra weight on the diaphragm D, caused by the accumulation of more water within the casing, will depress the diaphragm and open the valves *i*, and these will remain open until this extra water is discharged, when the weight *m* will be the medium of closing the valves.

It will be evident that the above-described device may be modified in various ways without departing from the main features of the invention. For instance, a spring, acting on the under side of the diaphragm D may be substituted for the lever and weight; or the diaphragms B and D may be made stiff enough to allow both spring and weight to be dispensed with.

A single valve may be used in place of the double valve *i i*, and the tube J may extend completely across the interior of the casing A, and have an outlet at both sides of the same.

In some cases, also, the upper head of the casing A may be rigid, and the lower head only flexible, a pressure upon the under side of the same, sufficient always to balance the pressure of steam within the casing, being maintained.

I claim as my invention—

1. A steam-trap consisting of a casing, A, having inlet and outlet openings and a yielding head, connected to the stem of a valve adapted to the outlet, the said head being operated by an excess of water accumulated upon it, all substantially as specified.

2. The casing A, having its opposite ends

closed by flexible diaphragms B and D, connected together, the latter being attached to the stem of the escape-valve, all substantially as set forth.

3. The combination of the casing A and the flexible diaphragms B and D with mechanism, substantially as described, for regulating the pressure on said diaphragms.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH C. GETZ.

Witnesses:

HARRY HOWSON, Jr.,
HARRY SMITH.