J. L. PARRY.

Steam-Trap.

No. 208,630. Patented Oct. 1, 1878.

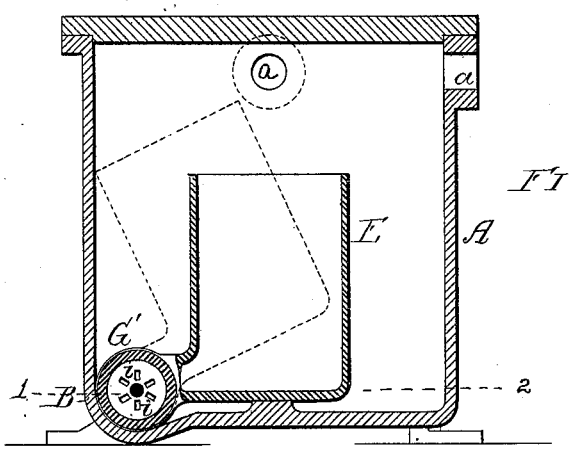


FIG. 1.

FIG. 4.

FIG. 5.

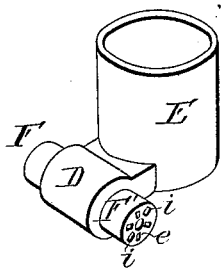
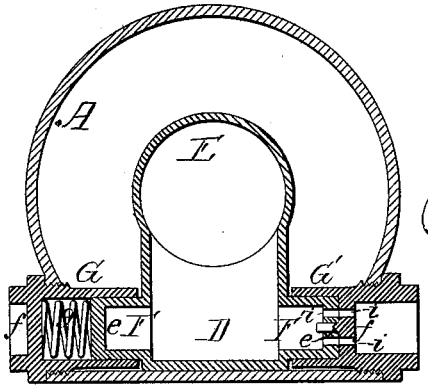
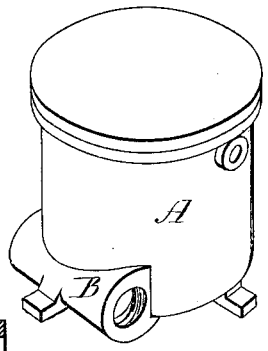


FIG. 2.





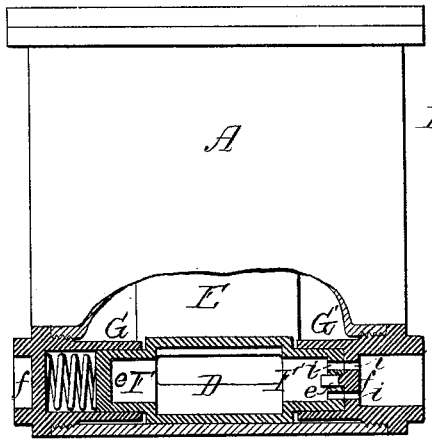


FIG. 3.

Witnesses

John A. Reimer.

Harry Smith

Inventor,

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by his Attorneys

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UNITED STATES PATENT OFFICE.

JOSEPH L. PARRY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. **208,630**, dated October 1, 1878; application filed August 29, 1878.

To all whom it may concern:

Be it known that I, JOSEPH L. PARRY, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Steam-Traps, of which the following is a specification:

My invention relates to a certain improvement in that class of steam-traps in which a hollow float, caused to vibrate by being alternately filled with water and then emptied, is connected to and operates a valve, by which communication is opened between the interior of the float and the discharge-pipe of the trap, the object of my invention being to simplify and cheapen the construction and to insure the effective operation of a trap of this class. 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 longitudinal vertical section of my improved steam-trap; Fig. 2, a sectional plan on the line 1 2, Fig. 1; Fig. 3, a rear view, partly in section; and Figs. 4 and 5, perspective views of the casing and float, respectively, drawn to a reduced scale.

A is a vessel, made in the present instance of cylindrical form, and having at the top openings *a*, with which communicate the steam-pipes to be drained.

At and near the lower corner of the vessel is a hollow projection, B, adapted for the reception of a hollow projection, D, at the lower corner of a cup-shaped float, E, and from the opposite ends of said projection D extend tubular projections F F′, closed at the outer ends *e*, and communicating through the projection D with the interior of the float E.

The projections F F′ fit so as to turn freely in tubular plugs G and G′, on which are formed external threads adapted to the internally-threaded ends of the projection B of the vessel A.

Across the interior of each of the plugs G G′ extends a partition, *f*, and between the partition *f* of the plug G and the end *e* of the tubular projection F intervenes a spiral spring, *g*, the tendency of which is to force the end *e* of the projection F′ against the partition *f* of the plug G′.

The adjoining faces of the end *e* of the projection F′ and the partition *f* of the plug G′ are trued, so that they form a tight joint, and in both the said partition *f* and end *e* are formed ports *i*, which, under the circumstances described hereinafter, open communication between the interior of the plug G′ and the interior of the hollow float E.

The operation of the device is as follows: When the vessel A is partially filled with water and the float E is empty, the buoyancy of the latter causes it to rise, the projections F F′ turning in the plugs G G′ as bearings until the rear edge of the top of the float touches the casing of the vessel A, as shown by dotted lines in Fig. 1. When the float is in this position the ports *i* of the partition *f* of the plug G′ and those of the end *e* of the projection F′ are out of line with each other. As the water accumulates in the vessel A it rises above the top edge of the float E and gradually fills the latter until its weight overcomes the buoyancy of the float and causes it to sink, as shown by full lines in Fig. 1. This movement of the float causes the two sets of ports *i i* to coincide, and thus opens a free passage for the discharge of the contents of the float through the hollow plug G′. Before the entire contents of the float are discharged, however, the buoyancy of the latter causes it to again rise to the position shown by dotted lines, thus closing the ports *i* and cutting off the discharge of water.

In the present instance the partition *f* of the plug G′ has a central projecting pin adapted to a central opening in the end of the projection F′; but this is not essential, and may be dispensed with.

If desired, the plug G may be constructed in the same manner as the plug G′, and the ends *e* of both of the projections F F′ may be provided with ports *i*, so as to provide for the discharge of the contents of the float through both plugs; or in some cases the plug G might be dispensed with and the projection F adapted to a socket formed in the casing of the vessel A, a spring being interposed, if desired, between the end of the socket and the end of the projection, or water under pressure from the vessel A being introduced between the two to act in place of the spring.

The projections F F′ might also be arranged

to surround the plugs G G′ instead of fitting within the same. The arrangement shown in the drawing, however, is preferred.

The main advantages of my improved trap are, first, its economy and simplicity of construction; second, the readiness with which it can be taken apart or put together; third, its ease of operation, owing to the small amount of friction, due to the limited area of the valve-faces in contact with each other; and, fourth, its freedom from leakage, due to the fact that the float can yield laterally, so that it accommodates itself to the wear of the valve-faces and preserves a tight joint between the two.

I claim as my invention—

1. The combination of the vessel A, the pivoted float E, having a tubular projection, F′, with the ports *i* in the end thereof, and the plug G′, having a partition in which are formed ports *i*, for acting in conjunction with the ports in the end of the projection F′, all substantially as set forth.

2. The combination of the vessel A, the float E, having projections F F′, the plugs G G′, the ports *i i*, and the spring *g*, all arranged substantially as described.

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

JOSEPH L. PARRY.

Witnesses:

HARRY A. CRAWFORD,

HARRY SMITH.