(No Model.)

W. W. TAYLOR.

STEAM TRAP.

No. 326,347. Patented Sept. 15, 1885.

Fig. 1.

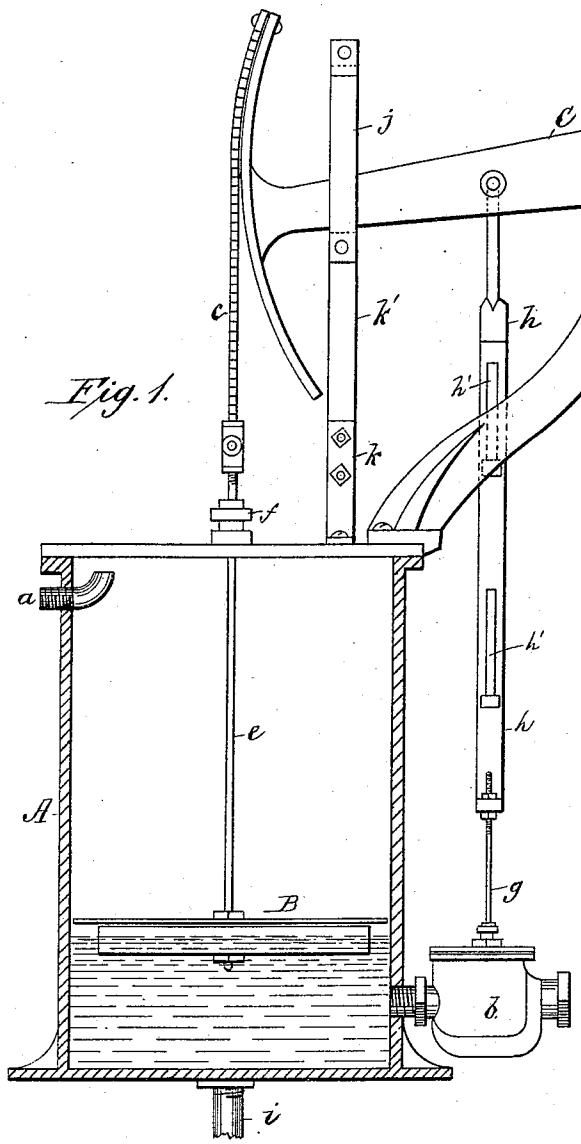
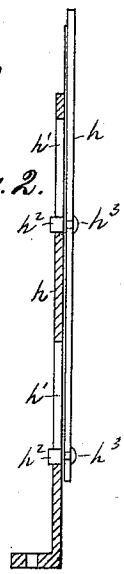


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM W. TAYLOR, OF NEW ORLEANS, LOUISIANA.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 326,347, dated September 15, 1885.

Application filed February 26, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. TAYLOR, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Steam-Trap, of which the following is a full, clear, and exact description.

My invention relates to a new and improved steam-trap for steam-heating apparatus; and the invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional elevation of my new steam-strap. Fig. 2 is a detailed sectional elevation thereof.

A is a receiver, preferably of cast iron. This receiver is connected by a suitable coupling, *a*, to the steam-coil, and fitted in one side of the receiver, some distance from the bottom thereof, is the outlet-valve *b*. The space in the receiver below the valve *b* serves as a trap for sediment that may enter the receiver with the water of condensation from the steam-coils.

Within the receiver A is placed the weighted float B, which is connected with the lever C by the chain *c* and connecting-rod *e*, that passes through the stuffing-box *f*, and is connected at its inner end to the float.

The lever C is fulcrumed upon the upright D, bolted to the receiver A, and the lever C is provided with the counterbalance-weight E, that may be adjusted upon the lever C to balance the float B.

The stem *g* is connected to the lever C intermediately of the fulcrum and actuating end of the latter by means of an extensible or sliding connection comprising two flat bars or rods, *h h*, the lower end of one rod or bar being bolted or connected to the upper end of said valve-stem, while at suitable points in its length said latter referred-to bar is provided with two slots, *h' h'*, one slot being near its upper end and the other slot being near its lower end. The slots receive shouldered and squared blocks h^2, into which are screwed headed bolts h^3, passed through and connecting the other bar or rod *h* to said blocks, whereby a sliding or extensible connection is effected between the said bars or rods *h h* to permit one bar to slide upon the other bar or rod a limited extent before the lever C, through said rod or bar connection, is allowed to act upon the valve *b*. The upper end of the upper rod or bar *h* is pivotally connected to the lever C, as shown.

For preventing the lever C from moving too far upon its fulcrum, I provide the guide and stop rod or plate *j* through an opening, in which the lever passes, and the plate *j* in this instance is secured to the top of the receiver by the leg *k*, bolted to top of the receiver, and the arm *k'*, bolted to the leg *k*.

In operation, the weight E being properly adjusted upon the lever C, the water of condensation entering the receiver will raise the float B until it is lifted to the upper dotted-line position, the upper water-level, which is some distance above the cock *b*, at which point the valve *b* will begin to open by the further movement of the lever C, caused by the continued formation of the water of condensation, effecting the further lifting of the float B and the opening of the cock full way, which will permit the surplus water in the receiver to pass out the cock *b*, and faster than the formation of the water of condensation, the water continuing to be discharged until the float has again descended in the receiver to its former lowered position, about four inches above the cock, until another surplus of water accumulates in the receiver, when the action will be automatically repeated.

From the foregoing it will be seen that the float will be kept in a constant state of movement to prevent the liability of the float "sticking," as in practice is found to occur when the float is at any time in a state of rest, which is the case where the action of the parts is such that a gradual or continuous discharge of the water of condensation takes place. Further, by means of my improvement the cock is always closed at a point below the low-water level to prevent the escape at any time of steam, whereby, together with the maintenance of the float in a constant state of action, not allowing it an opportunity to become wedged or clogged, nor at any time to be exposed to the action or pressure of the steam, the valve will be preserved for a longer period of time in active use.

The valve *b* being arranged above the bottom of the receiver A furnishes space in the receiver for the trapping out of the water of condensation all sediment and foreign matter, which can be discharged from the receiver by opening the blow-off pipe *i*.

By using a heavy float, B, counterbalanced by a heavy weight, E, I get a positive action of the trap, as the water in receding from the float B will give a great difference in weight over the counterbalance E, and vice versa, thus securing a positive action of the trap.

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

1. In a steam-trap, the combination, with the lever, the float connected to the lever, and the valve arranged below the low-water level of the two-part extensible connection between the valve and lever whereby the float is permitted to rise and open the valve below the low-water level, the valve opening until full way open, and to discharge the water, the valve closing also below the low-water level, substantially as and for the purpose set forth.

2. In a steam-trap, the combination, with the tank, the float, the lever connected to said float, and the valve, of the bars or rods, one bar or rod connected at one end to the valve-stem, and having slots, one near each end, and the other bar or rod having shouldered squared blocks which fit in slots of the aforesaid bar or rod, substantially as and for the purpose set forth.

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