T. R. WHITTAKER & G. W. LEITH.

STEAM TRAP.

APPLICATION FILED MAY 25, 1909.

1,030,697. Patented June 25, 1912.

Fig. 2.

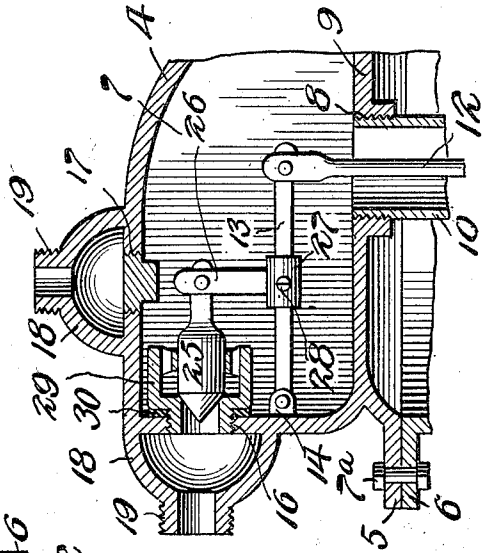
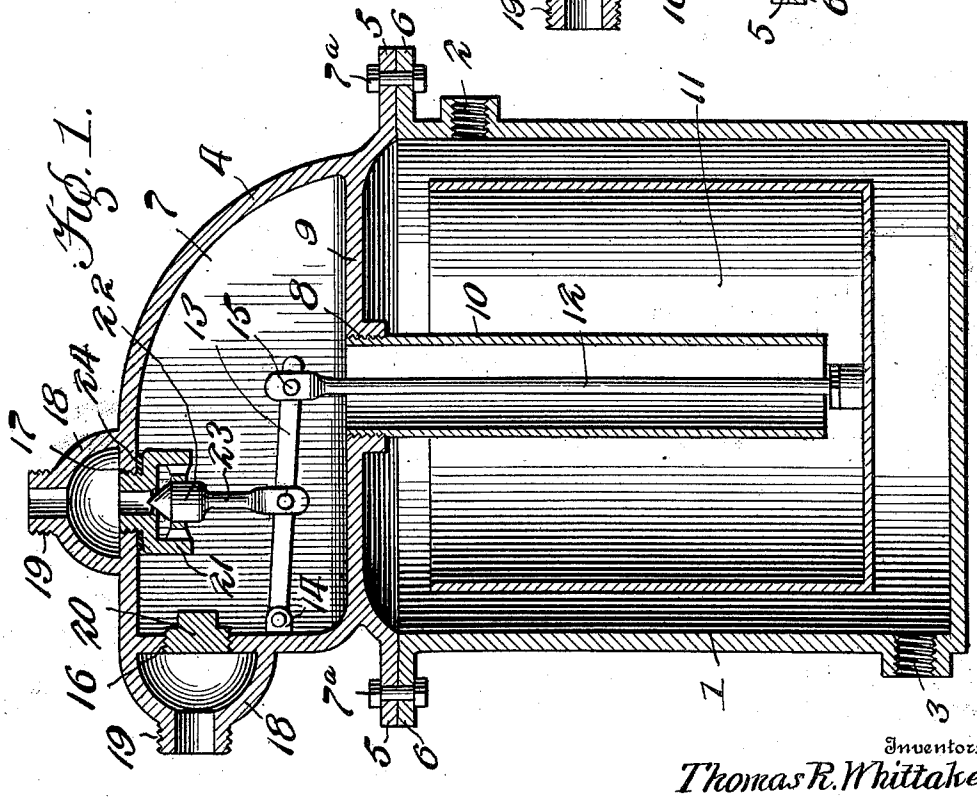


Fig. 1.



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STEAM-TRAP.

1,030,697. Specification of Letters Patent. Patented June 25, 1912.

Application filed May 25, 1909. Serial No. 498,216.

To all whom it may concern:

Be it known that we, THOMAS R. WHITTAKER and GEORGE W. LEITH, citizens of the United States, residing at Methuen, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Steam-Traps, of which the following is a specification.

Our invention relates to improvements in steam traps.

The principal object of the invention is the provision of a device of this character which shall be simple, durable and efficient of construction, which shall be positive in operation, and which may be manufactured and sold at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described and claimed.

The invention is disclosed in the accompanying drawing, wherein:—

Figure 1 is a sectional view taken on a plane extending vertically and centrally through the trap, and Fig. 2 is a sectional view illustrating a slightly modified construction.

Like numerals of reference designate the same parts in the several figures of the drawing.

The steam trap comprises a hollow cylindrical body 1 which is fully open at its upper end and which is provided with an inlet opening 2 and a blow off opening 3. The inlet opening 2 is located at a point adjacent the upper end of the body, while the blow off opening 3 is located at a point adjacent the lower end thereof, the walls of the openings being screw-threaded to permit the application of the necessary pipes. The open end of the body 1 is closed by a head 4 which is provided with a horizontally disposed flange 5 resting upon a flange 6 formed at the upper end of the body. The head 4 is secured to the body 1 by bolts 7^a which pass through the flanges 5 and 6. The head 4 is provided with a chamber 7 through which the water of condensation passes on its exit from the trap. An opening 8 located in the bottom wall 9 of the chamber 7 establishes communication between the chamber and the interior of the body 1. The wall of the opening 8 is screw-threaded for the reception of the upper end of a tube 10 depending from the wall 9 and located in the body 1, the lower end of the tube 10 terminating above the bottom wall of the body. A hollow cylindrical float 11, which is fully open at its upper end, is mounted in the body 1 for vertical movement and incloses the tube 10. A rod 12 is secured at its lower end to the bottom wall of the float 11 and passes through the tube 10 into the chamber 7. The free end of a lever 13, which is pivotally secured to and between ears 14 formed on one end wall of the chamber 7, is pivotally connected as at 15 to the upper end of the rod 12. This end wall and the top wall of the chamber 7 are provided with outlet openings 16 and 17, respectively, about which are formed casings 18 which terminate in threaded nipples 19. The outlet openings 16 and 17 are of different sizes and arranged at right angles with relation to each other, and the lever 13 is horizontal and located wholly below the openings. The structure is such as to permit one or the other of the outlet openings to be used. As shown in Fig. 1 of the drawing the outlet opening 17 is used, while the outlet opening 16 is closed by a plug 20 having threaded engagement with the wall thereof. A valve seat and casing 21 has threaded engagement with the outlet opening 17 and slidably receives a valve 22 which is connected to the lever 13 through the medium of a stem 23. A suitable packing 24 is interposed between the valve seat and casing 21 and the top wall of the chamber 7.

The connection between the valve 22 and the float 11 is such that it is seated by the upward movement of the float and unseated by the downward movement thereof, whereby to control the discharge of water from the trap. When the outlet opening 16 is used a size larger valve can be employed, and such valve 25 is connected to the lever 13 of a stem 26. The stem 26 is provided with a sleeve 27 which is adjustably mounted upon the lever 13 and which is secured in such position by a set-screw 28. A valve seat and casing 29 has threaded engagement with the opening 16 and a suitable packing 30 is interposed between the seat and casing and the adjacent wall of the chamber 7.

The operation of the steam trap may be stated to be as follows: The initial accumulation of water in the body 1 will raise the float 11 and seat the valve, preventing the escape of steam from the trap. When sufficient water has accumulated in the body 1

it will flow into the float 11, and when sufficient water has accumulated in the float it will move the float downwardly and unseat the valve permitting the escape of water from the trap through the tube 10 and the outlet opening of the chamber 7.

From the foregoing description, taken in connection with the accompanying drawing, it should be apparent that we provide a steam trap which is simple, durable and efficient, and which may be manufactured and sold at low cost.

While we have described the method of operation of the invention, together with the apparatus which we now consider to be the best embodiment thereof, we desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claim.

Having thus described the invention, what we claim as new is:—

A steam trap comprising a hollow body provided with an inlet, a head for the body provided with a chamber having an outlet opening in one wall thereof, a casing formed on the outer side of said wall about said outlet opening and provided with a threaded nipple, a combined valve seat and casing located within the chamber and having threaded engagement with the wall of said outlet opening, a valve slidably mounted in said casing, a horizontal lever pivotally secured at its outer end to one wall of the chamber at a point below said outlet opening, a sleeve adjustably mounted upon said lever, a set screw carried by the sleeve and engaging said lever, a vertical stem secured at its lower end to said sleeve and having its upper end secured to the inner end of said valve, a rod pivotally secured at its upper end to the inner end of said lever and extending into the body, a float secured to the rod and located within the body, and a tube secured to the head and extending into the body, said tube establishing communication between the body and the chamber and surrounding said rod.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS R. WHITTAKER.
GEORGE W. LEITH.

Witnesses:
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JOSEPH E. LOUGHRAN.