J. CALLICOTT.

STEAM TRAP.

APPLICATION FILED MAY 6, 1918.

1,334,079. Patented Mar. 16, 1920.

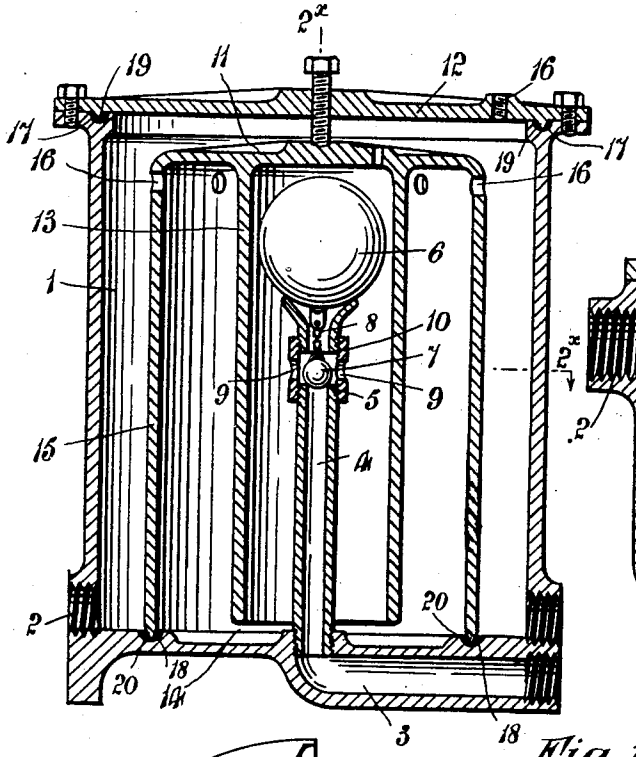


Fig. 1

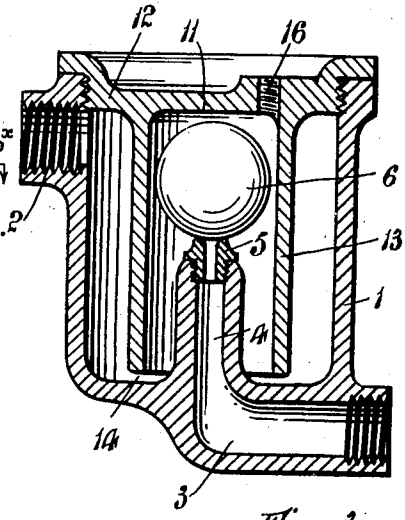


Fig. 3.

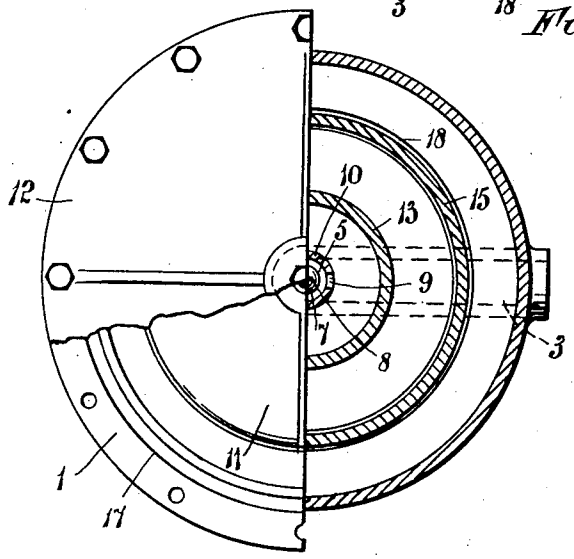


Fig. 2.

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STEAM-TRAP.

1,334,079. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed May 6, 1918. Serial No. 232,830.

To all whom it may concern:

Be it known that I, JOHN CALLICOTT, of the city of Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Steam-Traps, and do hereby declare that the following is a full, clear, and exact description of same.

This invention relates to steam traps and has for its objects to provide, in a trap, a construction adapted to simple manufacture and easy assembling, while being particularly reliable in operation, and to provide readily detachable baffle means adapted to inclose a ball valve to prevent direct steam access thereto, and to act as a guide for the said ball.

Further objects subsidiary to or resulting from the aforesaid main objects, or from the construction and operation of the invention as it may be carried into effect, will become apparent as the same is more particularly described hereinafter.

In carrying the said invention into effect, I may provide a casing having an inlet and an outlet and a valve seat at the said outlet, adapted to receive a float valve, and a further casing or structure comprising a cover or having a cover supplementary thereto, adapted to be inserted within the said first mentioned casing, to divide the same into a plurality of compartments opening alternatively at their upper and lower ends, one into the other, the walls of the foremost compartment forming a guide for the valve and protecting the said valve from direct steam access thereto; all of which is more particularly described and ascertained, by way of example, in the following description of the accompanying drawing, in which—

Figure 1 is a vertical section of a steam trap for large installations, embodying my invention.

Fig. 2 is a sectional plan of the same, the section being taken on the line 2^x—2^x, Fig. 1, and the cover of the trap being shown as partly broken away, and—

Fig. 3 is a section of a trap embodying my invention, suitable for smaller installations.

Similar characters of reference indicate similar parts in the several figures of the drawing.

1 is a body or an outer casing having an inlet 2 and an outlet 3, the outlet 3 extending upwardly within the casing, as in a branch 4, and terminating in a valve seat 5, which may be detachable or otherwise, to permit valve seats having various sizes of openings to be used according to the amount of water to be taken care of in the trap.

6 is a float or valve effecting the normal closing of the outlet of the trap, Fig. 1 illustrating said valve as being of a compound nature, in which a smaller ball or valve proper, 7, is shown connected with the float 6 of the valve by a chain 8, where it may be desired that the height of the water required to raise the valve may be substantially above the valve seat. 9 are orifices in a valve casing 10, surrounding the said valve proper, 7, in the example shown in the said Figs. 1 and 2.

11 is a casing adapted to insertion in the said casing 1 (in Fig. 3 being shown as flanged and threaded to provide a cover for the said casing 1, and in Figs. 1 and 2 as supplementary to a cover 12), the said casing 11 having a partition 13 extending downwardly around the valve or float 6 and inclosing the same, to provide a vertical guide for the said float, the said partition 13 terminating within a short distance of the base of the outer casing 2, whereby an entrance 14 to the chamber inclosed by the said partition is provided; and in Figs. 1 and 2 a further partition 15 is provided, extending to the base of the said casing, which is orificed, as at 16, near its upper end to provide an entrance to the chamber inclosed thereby.

The partition or partitions are readily removable upon, or with, the removal of the cover of the casing 1, and unobstructed access to the valve is thus permitted, as well as to all parts of the interior of the said casing, which is desirable. The partition or partitions when in position insure the requisite water seal within the trap, the partition 13 also insuring correct reseating of the float or valve after same has been lifted by the water within the chamber having risen to an extent effecting such opening lifting of the said valve. The partition 13 also serves to protect the ball or float 6 from direct contact with steam or surges of steam, which might displace the said ball 6 and thus permit undesirable escape of such steam through the outlet of the trap.

16 indicates an air outlet which may be provided to receive a petcock, or air valve, if thought necessary or desirable, and 17 and

18 indicate recesses in the casing 1 adapted to contain gaskets, such for example as of lead, into comparatively sharp wedges 19 and 20, formed on the cover or on the lower edges of the partitions 15, may be compressed.

This invention may be developed within the scope of the following claims without departing from the essential features of the said invention and it is desired that the specification and drawing be read as being merely illustrative and not in a limiting sense, except as necessitated by the prior art.

What I claim as my invention is,—

1. A steam trap comprising a casing including a bottom and a vertical tubular wall, a removable cover for said casing, a steam inlet orifice provided in the wall of the casing, a water outlet pipe connected to the central portion of the casing bottom and extending upwardly to a point adjacent said cover, a tubular baffle located in the casing and spaced away from the tubular wall to form an inner and outer chamber, said baffle having a closed upper end and having its lower end engaging the casing bottom, ports placing the upper ends of said chambers in communication, a second tubular baffle arranged within the first baffle, surrounding said pipe and spaced away from the wall of the first baffle, said second baffle forming a chamber closed at the top and open at the bottom, and a float valve arranged within the second baffle for normally effecting the closing of the outlet orifice, said valve being guided by the second baffle.

2. A steam trap comprising a closed casing having a steam inlet, a water outlet conduit extending upwardly in said casing and having a flared upper end, ports provided in said conduit below its upper end and a valve seat arranged in the conduit, a tubular baffle arranged in said casing, surrounding said conduit and spaced away from the wall of the casing, a ball float guided by said baffle and being adapted to seat on the flared end of the conduit, a valve located in the conduit and normally engaging the valve seat for closing the outlet conduit, and a flexible connection between the ball float and said valve.

3. In a steam trap, an outer casing having inlet and outlet orifices, said outlet orifice extending upwardly in a branch within said casing, a valve seat in the upper end of said branch, a float valve normally effecting the closing of said outlet, an inner casing inserted in said outer casing, said inner casing being closed at the upper end and having an outer tubular wall of smaller diameter than said outer casing and an inner tubular wall of still smaller diameter, said outer tubular wall being orificed at the upper end and forming, with said outer casing, inner and outer chambers, and said inner wall being open at the lower end and forming a further chamber inclosing said outlet orifice branch, and means securing said inner casing in position within said outer casing.

Signed at Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada, this 2nd day of May, 1918.

JOHN CALLICOTT.