

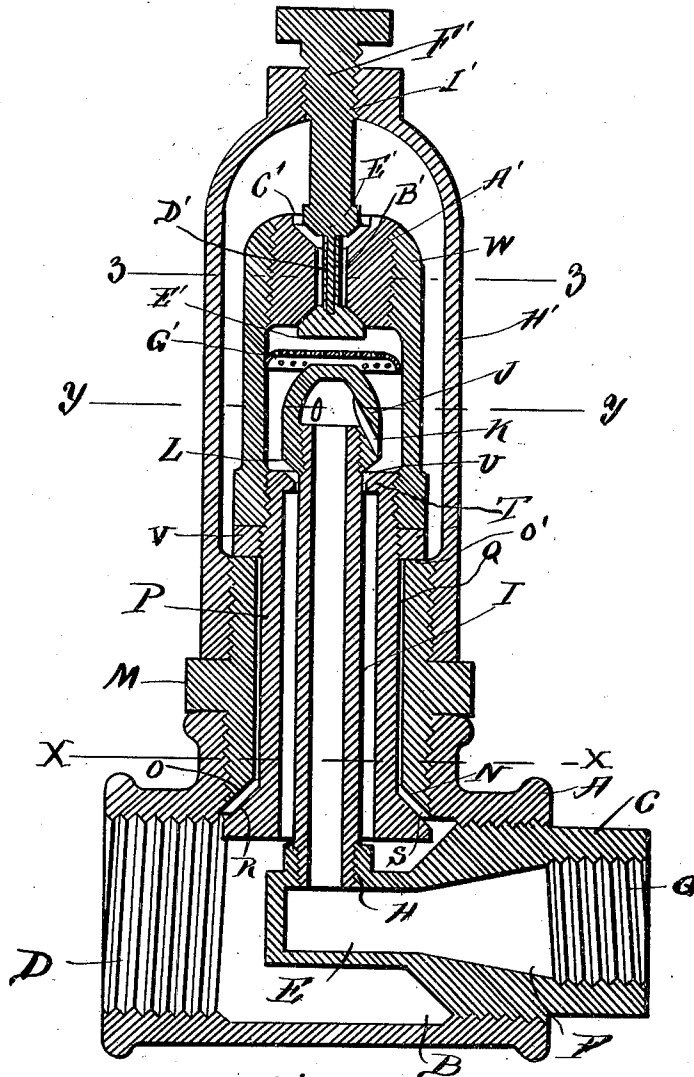
A. WERTS.
STEAM TRAP.

APPLICATION FILED OCT. 9, 1908.

997,885.

Patented July 11, 1911.

2 SHEETS—SHEET 1.



WITNESSES

Fig. 1.

Francis A. Pocock
E. W. Schufeldt

INVENTOR
Albert Werts
BY

W. P. Williamson ATTORNEY

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2 SHEETS—SHEET 2.

Fig 1

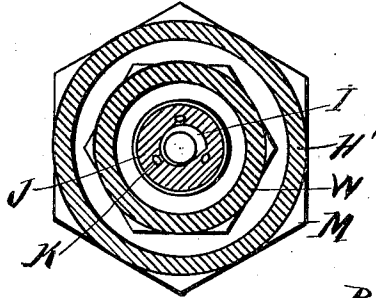


Fig 5

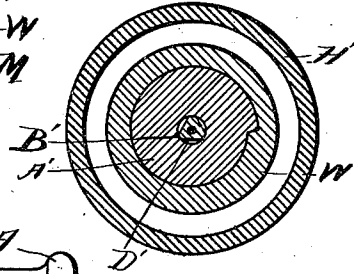


Fig 2

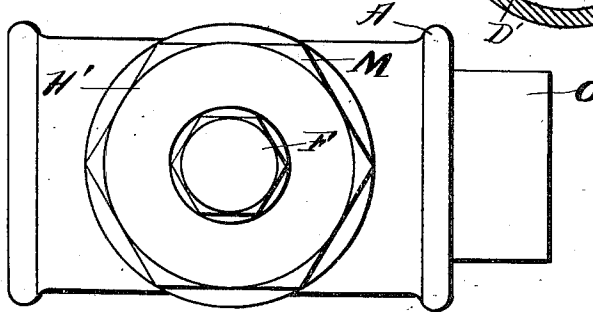
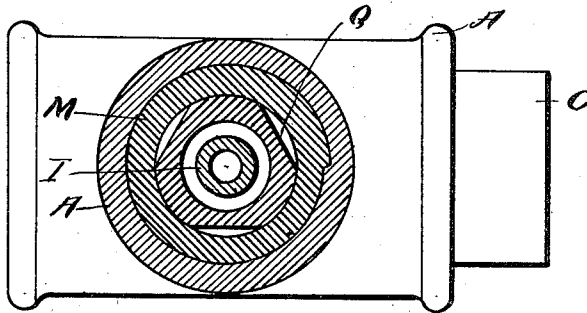


Fig 3



WITNESSES

Francis A. Pocock
E. N. Schiffield

INVENTOR

Albert Werts

BY

W. P. Williams ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT WERTS, OF CAMDEN, NEW JERSEY.

STEAM-TRAP.

997,885.

Specification of Letters Patent. Patented July 11, 1911.

Application filed October 2, 1908. Serial No. 456,853.

To all whom it may concern:

Be it known that I, ALBERT WERTS, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a certain new and useful Improvement in Steam-Traps, of which the following is a specification.

My invention relates to a new and useful improvement in steam-traps, and has for its object to provide an exceedingly simple and effective device of this character whereby the water may be separated from steam under pressure.

A further object of my invention is to provide a device of this character which will be comparatively small and inexpensive in the cost of manufacture.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by letter to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a longitudinal sectional view of my steam trap. Fig. 2, a plan view thereof. Fig. 3, a sectional view at the line $x-x$ of Fig. 1. Fig. 4, a similar view at the line $y-y$ of Fig. 1, Fig. 5, a section at the line $z-z$ of Fig. 1.

In carrying out my invention as here embodied, A represents a T-coupling, having an inlet B, in which is threaded the steam inlet C and an outlet D in order that the water may pass off.

The steam inlet has a longitudinal opening E running from one end to within proximity of the other, a portion of the sides of said opening flaring outward from the inner toward the outer portion thereof, as indicated by F.

On the inside surface of the steam inlet are formed the threads G whereby the steam pipe may be connected thereto.

In the steam inlet C in proximity to its inner end is formed the threaded opening H, in which is placed the tube I, on the upper end of which is threaded the head J, provided with a plurality of diagonal perforations K, the lower edge of this head being

conical in shape, as indicated by L for the purpose to be hereinafter described.

M denotes a double end nipple, having the lower portion of its inner side walls beveled, as indicated by O. Within this nipple is slidably secured the outer tube P, having a number of its sides squared, as indicated by Q, and with the lower end of this outer tube is formed the flange R, having conical side walls, as indicated by S. With the upper end of said tube is formed the inwardly projecting flange T, which has a conical side formed therewith, as shown at U, so as to conform with the lower edge of the head J. In proximity to the upper end of this tube is formed the outwardly projecting flange V, whereby the outer tube P may rest upon the shoulder O' formed by the double end nipple M. On the upper end of this outer tube is threaded the dome W, and in the upper end of this dome is threaded the plug A', having a vertical opening B' running through it, both ends of which are flared as indicated at C'. Running through this vertical opening is a stem D' on both ends of which is placed a valve E' said valve engaging with the flared portions C' of the vertical opening and formed with or secured to these valves and stem is a threaded adjusting rod F'.

G' is a screen placed inside of the dome W between the head J and the valves E', thus preventing foreign substances from passing from one side to the other.

H' represents a casing threaded to the upper end of the double nipple M, in the end of which is a threaded opening I' for the reception of the adjusting rod F'.

In practice the steam enters the inlet C, passing upward through the tube I into the head J, from which it passes to the dome V through the diagonal openings K. When the steam fills the dome the pressure thereof upon the under side of the top of said dome, will force the latter upward and with it the several moving parts connected therewith, and this upward movement will close the vertical opening B by means of the stationary valve E', thus shutting off the escape of steam through this opening to the casing.

When by condensation the pressure of the steam has been reduced upon the under side of the top of the dome, and the water of condensation has increased sufficiently within the dome, the combined weight of this water

and the dome and parts carried thereby, will cause the movable members to drop which will open the outlet between the head J and the projecting flange T, thereby permitting the water accumulated in the dome and the pipes leading thereto through the tube I, to flow out through the outer tube and exhaust D. This downward movement of the dome also closes the vertical opening B by means of the lower valve E', thus preventing the escape of water into the casing.

When the steam has forced all the water from the dome and taken the place thereof, the dome will again be forced upward as before described, shutting off the outlet to the outer tube and again closing the vertical opening by means of the upper valve E'. During these changes in the position of the dome and the parts carried thereby, the vertical opening B' will be open for short spaces of time, at which times the steam will momentarily pass through this opening and into the casing. The steam thus escaping to the casing will serve to blow any water of condensation in the casing, out through the double nipple to the exhaust D.

When the pressure is such that it will balance the dome and the parts movable therewith so that neither the upper or lower valve E' is closed upon the plug A', the wet steam and drippings will be free to flow upward through the vertical opening B' into the casing H', and downward through this casing over the shoulder O, then through the opening formed in the squared sides Q of the outer casing and the nipple into the T-coupling A, and then out through the exhaust outlet D.

Having thus fully described my invention, what I claim as new and useful, is—

1. In a steam trap a stationary tube connected with a supply, a head carried upon the upper end of said tube; a movable tube surrounding the stationary tube; a dome attached to the movable tube and surrounding the head, a passage way formed between the movable tube and head, passage ways leading from the head to the interior of the dome; a plug fitted in an opening in the top of the dome, said plug having valve seats formed upon each end thereof; and an opening through the center, a valve stem passing through the said opening; a valve carried upon each end of said stem, an adjusting rod to which the valve stem is attached; a casing surrounding the dome in which the adjusting rod is threaded; and an exhaust outlet through which the water may be forced from the trap as shown and described.

2. In a device of the character described, a T-coupling, a steam inlet threaded in one

end thereof, a nipple threaded in said T-coupling, a casing threaded on the upper end of said nipple, an outer tube adapted to fit within the nipple, a dome threaded on the upper end of said outer tube, an inner tube over which the dome slides, a head carried by the upper end of said inner tube, as specified.

3. In a device of the character described, a T-coupling, a steam inlet threaded in one end thereof, a nipple threaded in said T-coupling, a casing threaded on the upper end of said nipple, a tube fitted within the nipple, a dome threaded on the upper end of said tube, passage ways leading from the dome to the tube, and a second tube for conveying the steam or water from the steam inlet to the dome for automatically opening or closing the passage ways, as and for the purpose set forth.

4. In a device of the character described, a T-coupling, a steam inlet threaded in one end thereof, a nipple threaded in said T-coupling, a casing threaded on the upper end of said nipple, a tube fitted within the nipple, a dome threaded on the upper end of said tube, passage ways leading from the dome to the tube, a second tube for conveying the steam or water from the steam inlet to the dome for automatically opening or closing the passage ways and a head having a plurality of diagonal openings formed therein for injecting the steam downward into the dome, substantially as shown and described.

5. In a device of the character described, a T-coupling, a steam inlet threaded in one end thereof, a nipple threaded in said T-coupling, a casing threaded on the upper end of said nipple, a tube fitted within the nipple, a dome threaded on the upper end of said tube, passage ways leading from the dome to the tube, a second tube for conveying the steam or water from the steam inlet to the dome for automatically opening or closing the passage ways, said tube being closed at its upper end and having a plurality of diagonal openings formed therein for injecting the steam downward into the dome, a plug having a vertical opening formed therein threaded in the upper end of the dome, valves adapted to open or close said vertical opening and means for adjusting said valves, as specified.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses.

ALBERT WERTS.

Witnesses:

MARY MURPHY,
PRISCILLA DERHAM.