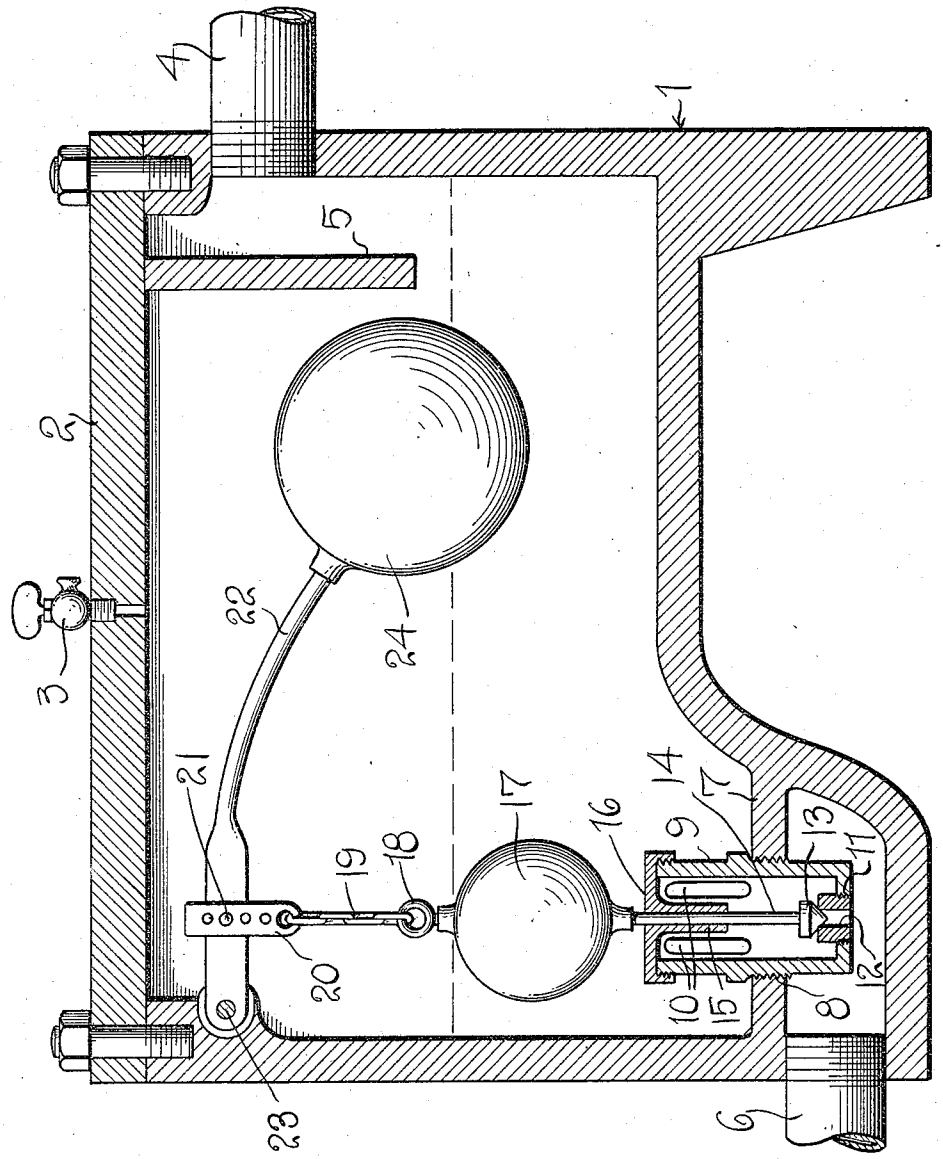
F. A. NISLEY.

STEAM TRAP.

APPLICATION FILED JAN. 16, 1915.

1,176,091. Patented Mar. 21, 1916.



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STEAM-TRAP.

1,176,091. Specification of Letters Patent. Patented Mar. 21, 1916.

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To all whom it may concern:

Be it known that I, FREDERICK A. NISLEY, a citizen of the United States, residing at Fairport Harbor, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Steam-Traps, of which the following is a specification, reference being had to the accompanying drawings.

This invention comprehends certain new and useful improvements in steam traps, and relates particularly to a double float high pressure trap.

The invention has for its primary object a simple, durable, and efficient construction of device of this character in which an improved construction and arrangement of main and auxiliary floats are employed, the parts being so formed, arranged, and assembled in relation to each other, that they will not be liable to get out of order or require repeated adjustments or attention. And the invention also aims to generally improve devices of this class so as to render them more useful and commercially desirable.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which, the figure is a longitudinal vertical section of my improved steam trap.

Referring to the drawing, the numeral 1 designates the tank of my improved trap, said tank being supplied with any suitable form of cover 2, secured to the body portion of the tank by stud bolts or the like, and provided with a vent 3. The tank 1 is provided at one end with an inlet 4 in proximity to which is a baffle plate 5, and the tank is further formed at its opposite end with an outlet 6, near which a horizontally disposed web 7 is formed in the bottom of the tank. The web 7 is formed with a threaded opening 8 extending therethrough and engaged in and extending through this opening is a preferably cylindrical casing 9, the casing being formed above the web with any desired number of ports 10 and in its bottom and below the web, with a threaded opening 11 in which a valve seat 12 is adjustable and detachably secured. The seat 12, has an opening extending therethrough, and in order to control the passage of the water through said opening, I provide a valve 13 which is also preferably interchangeable and which is secured in any detachable manner to the lower end of a vertically disposed valve rod 14. This rod is guided in its vertical movements by passing through an opening formed in the depending portion 15 of the threaded top or cap 16 of the casing 9. The upper end of the valve rod 14 is screw-threaded to engage a threaded socket formed on the lower side of a relatively small spherical float or ball 17 which is preferably formed of copper, and, of course, hollow. Detachably secured to the other side of the float 17, as by screw-threaded connection, as shown, is a ring 18 which is secured to the lower end of a chain or similar connecting member 19, the uppermost link of the chain being secured in an opening formed in the lower end of a link 20 which is formed with any desired number of openings arranged in a vertically disposed series and any one of which is designed to receive a pin 21, whereby the link may be secured in an adjustable manner to the arm or lever 22, which is fulcrumed at one end to a lug formed on the inner wall of the tank 1, as at 23, and which is secured to and carries at its other end a relatively large float or ball 24. The float 24 constitutes the main float of the apparatus in contradistinction to the float 17 which may be termed the auxiliary float.

From the foregoing description, in connection with the accompanying drawing, the operation of my improved double float high pressure steam trap will be apparent. When in operation, the auxiliary float 17 is so small that the steam pressure on the upper face of the disk or valve 13, will overcome or overbalance the floating capacity of said float and maintain the valve in closed position, until the main float or ball 24 is floated as high as the water level, indicated in the drawing. Upon the further rise of the main float 24, the float 17 with the valve suspended therefrom will be raised and the discharge port opened, whereupon the ball 17 will float until the water is all gone. Then, as is manifest, the ball or float 24 will be in its lowermost position and the ball or float

17 will lower and permit the valve to seat again. This operation will be repeated automatically at intervals whenever the water in the tank exceeds a predetermined level such, for example, as indicated in the drawing.

It will be seen that the body portion of the trap has a depressed bottom at the discharge end and that the web 7 produces underneath the same a bottom discharge chamber so that the trap will discharge at the bottom through a bottom discharge opening which lies in a plane below the main or remaining portion of the bottom wall.

While the accompanying drawing illustrates what I believe to be the preferred embodiment of my invention, it is to be understood that the invention is not limited thereto, but that various changes may be made in the construction, arrangement and proportions of the parts without departing from the scope of the invention as defined in the appended claims.

What I claim, is:

1. A steam trap of the character described, including a body portion having a discharge end and a depressed bottom at said discharge end, and a web above the depressed portion of the bottom and producing underneath the web a depressed bottom discharge chamber, a valve casing mounted in said web and provided below the same with a valve seat, a valve movable toward and from said seat, an auxiliary float connected to said valve, an arm pivotally mounted in said body portion, a main float connected to said arm, and a loose suspension connection between said auxiliary float and the arm.

2. A steam trap of the character described, provided with a discharge port, a valve adapted to control said port, a rod secured to said valve and movable vertically within the tank, means for guiding the rod in its movement, an auxiliary float secured to the upper end of said rod, a main float of greater buoyancy than the auxiliary float, an arm pivotally mounted in the tank and secured to the main float, a link having a vertically adjustable connection with said arm, and a member connecting said link with the auxiliary float.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FREDERICK A. NISLEY.

Witnesses:
G. W. ELLIS,
ALBERT JENKINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."