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VALVE FOR STEAM TRAPS AND THE LIKE.  
APPLICATION FILED AUG. 13, 1909.

957,469.

Patented May 10, 1910.

Fig. 1.

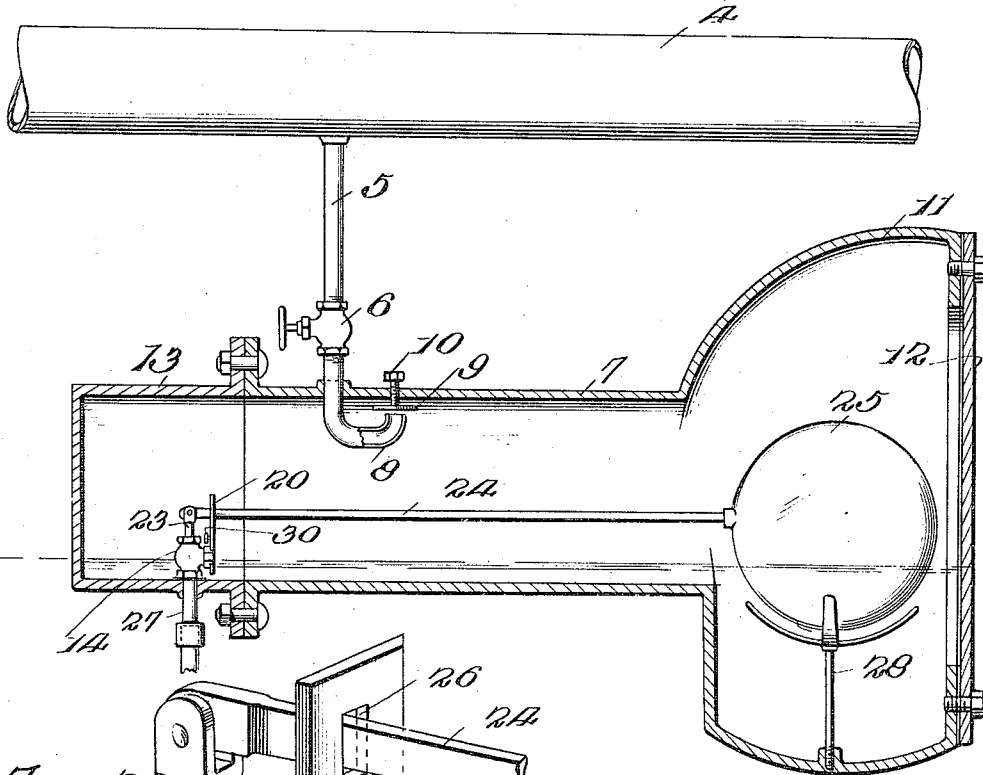


Fig. 2.

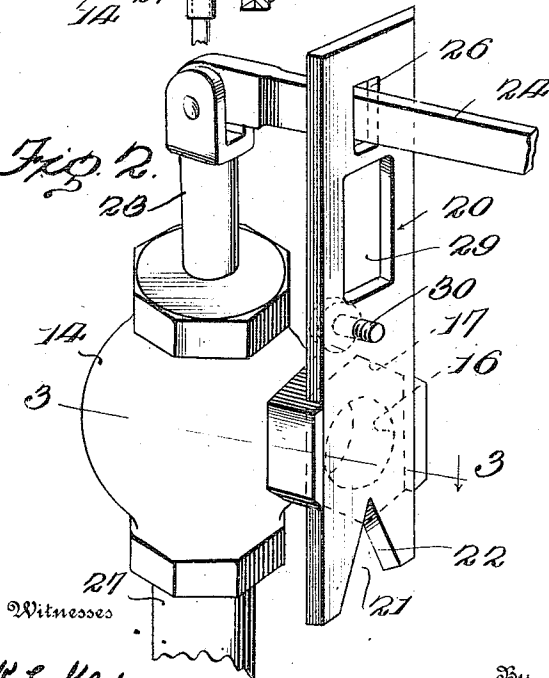
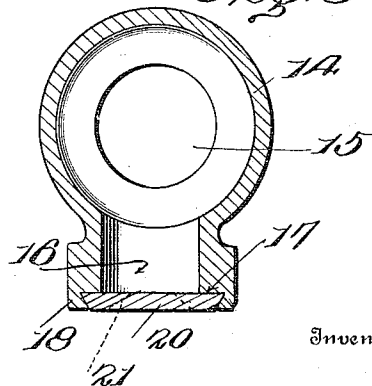


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## VALVE FOR STEAM-TRAPS AND THE LIKE

957,469.

Specification of Letters Patent. Patented May 10, 1910.

Application filed August 13, 1909. Serial No. 512,722.

*To all whom it may concern:*

Be it known that I, CHARLES J. MACKEREY, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented certain new and useful Improvements in Valves for Steam-Traps and the Like, of which the following is a specification.

My invention relates to certain new and useful improvements in valves particularly adapted for use in connection with steam traps, and the like.

The object of my invention is to produce a valve of this character which will be simple and direct in action, composed of but few parts and constructed so as to prevent clogging and if clogged to clear itself.

With these and other objects in view my invention consists in certain constructions, combinations and arrangements of parts the preferred form of which will be first described in connection with the accompanying drawings and then the invention particularly pointed out in the appended claims.

Referring to the drawings wherein the same part is designated by the same reference numeral wherever it occurs, Figure 1 is a view partly in section showing the application of my valve to a steam trap to control the flow of water therefrom; Fig. 2 is a detail perspective view of the valve and Fig. 3 is a section taken on line 3, 3 of Fig. 2 looking in the direction of the arrow.

Referring to the particular embodiment of my invention shown 4 designates a steam pipe carrying steam for any purpose.

5 is a pipe extending from the bottom of the steam pipe and provided with a valve 6 intermediate its ends, the valve being of any preferred construction. The pipe passes into the casing 7 of the steam trap, said pipe within the casing being preferably turned up to form a U 8, as shown in Fig. 2.

9 designates a baffle plate mounted within the casing 7 and over the open end of the pipe at the end of the U, said baffle plate being adjustable toward and away from the mouth of the U by means of the screw 10 on the end of which the baffle plate is mounted. The casing 7 is preferably enlarged at one end, as shown at 11, closed by means of a head plate 12. The other end of the casing is closed by the head 13, said head 13 being preferably formed as shown, thereby providing an extension of the casing. Preferably mounted in the extension 13 is the valve

structure shown in perspective in Fig. 2. This valve consists of a head 14 having an opening 15 in its lower portion and an opening 16 in its side. The body of the valve around the opening 16 is preferably ground off to form a seat 17 for the sliding plate 18. Formed at the sides of the valve seat 17 are the overhanging portions 18 adapted to engage and guide the valve plate 20. As shown the guides 18 are undercut and the sides of the valve plate 20 are beveled, so that the plate will be held in position against its seat. Formed in the sliding plate 20 is a V-shaped opening 21, said opening being shown as located at the lower end of the plate. The opening 21 must be so positioned that when the plate is moved in one direction it will uncover the opening 16, whereas when moved in the other direction will cover the same. As shown at 22 the edges of the opening 21 are preferably beveled, so that they operate with the edge of the valve opening as a knife to cut off any material which may attempt to force its way through when the parts are opened and become lodged in the opening.

In a steam trap such as here illustrated it is desired that a certain amount of water be retained therein at all times, and that as soon as the water passes a given level it be drawn off until the desired level is again obtained. In order to effect this result I provide a pillar 23 which extends up from the head of the valve in which is provided one end of an arm 24 carrying at its outer end a float 25 which is shown as being a hollow ball. The arm 24 passes through an opening 26 in the upper portion of the plate whereby the raising of the ball, due to an increase in height of the water level will operate to raise the valve plate 20 and permit the water to escape through the pipe 27 leading from the opening 15 in the valve.

28 is a support for the ball to prevent the same from exerting its full weight on the arm 24 should the water for any purpose be withdrawn to a low level.

Preferably, and as shown at 29, the upper portion of the plate 20 is perforated to prevent the valve from being pressed unevenly to its seat by the pressure in the trap.

30 is a stop which limits the downward movement of the plate.

From the foregoing description of the construction of my invention it will be apparent that I have provided a valve in which

the exit opening will increase rapidly as the same is opened, and one in which the opening may be closed down to a very minute area, so that the amount of water in the trap  
5 can be accurately regulated and held at a constant height irrespective of the variation in the amount of water passing into the trap. It will further be noted that by reason of the knife edge construction on the sides of  
10 the V-shaped opening any particles of solid matter adhering to the sides of the opening in the head will be cut off in the movement of the valve and the valve will thus not become clogged.  
15 I realize that considerable variation is possible in the details of construction and arrangement of parts without departing from the spirit of my invention, and I therefore do not intend to limit myself to the specific  
20 form shown and described.

I claim—

1. A valve having a sliding gate consisting of a plate provided with a V-shaped opening therein, and the sides of said opening being  
25 beveled to cutting edges to cooperate with

the edge of the valve seat for the purpose set forth.

2. A valve for steam traps and the like, comprising a head, an opening formed through the head, a seat surrounding the  
30 opening, a plate adapted to slide on the seat, said plate provided with a V shaped notch having beveled edges whereby a slicing cut between the parts is obtained.

3. A valve for steam traps and the like, 35 comprising a head, an opening formed through the head, a seat surrounding the opening, a plate adapted to slide on the seat, guides for the plate, said plate being provided with a V shaped notch having beveled  
40 edges formed in the end of the plate whereby a slicing cut between the parts is obtained.

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

CHARLES J. MACKEREY.

Witnesses:

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