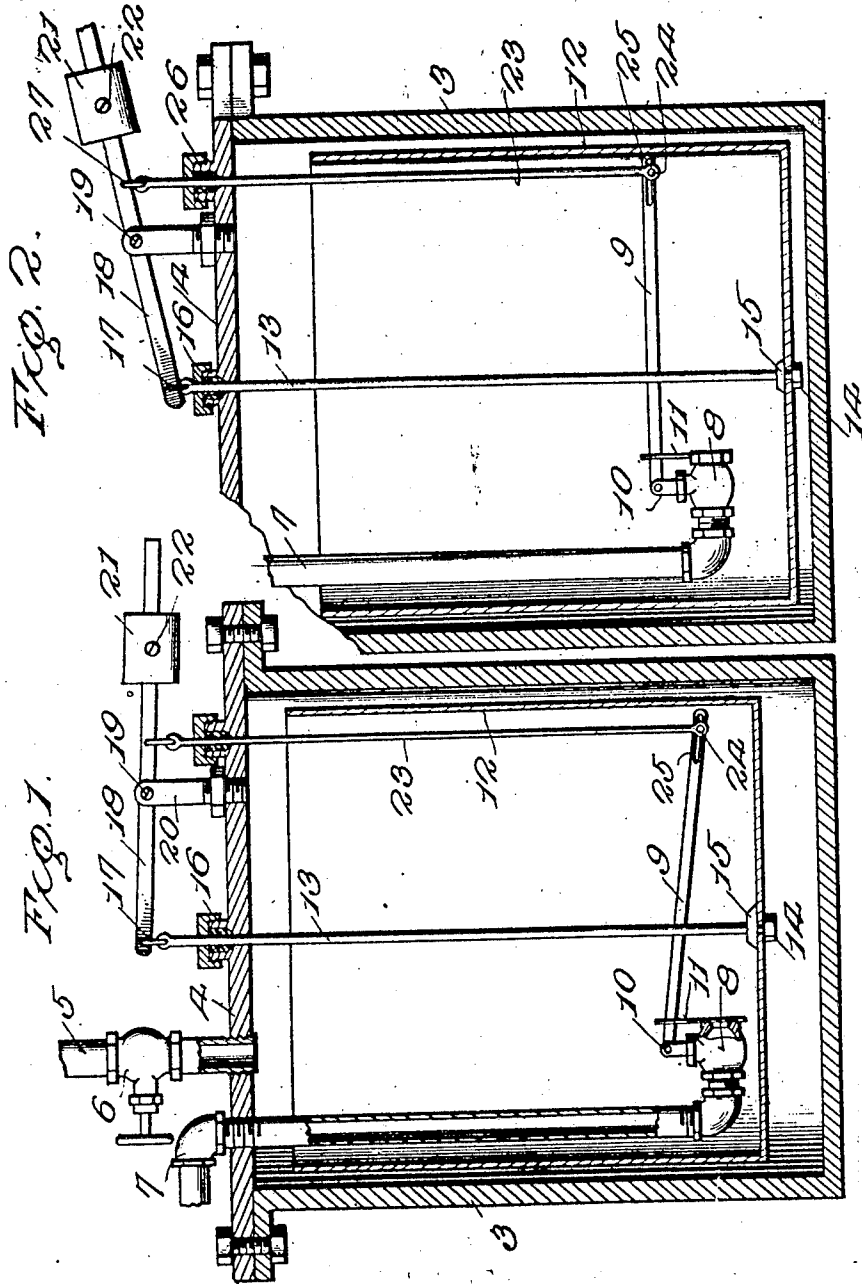


C. J. MACKEREY.  
VALVE FOR STEAM TRAPS.  
APPLICATION FILED DEC. 17, 1909.

Patented May 10, 1910

957,470.



Inventor

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# UNITED STATES PATENT OFFICE.

CHARLES JOSEPH MACKEREY, OF THE UNITED STATES NAVY.

## VALVE FOR STEAM-TRAPS.

957,470.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed December 17, 1909. Serial No. 533,621.

*To all whom it may concern:*

Be it known that I, CHARLES J. MACKEREY, a chief machinist's mate, U. S. Navy, 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 improvement in steam traps, and the object of my invention is to provide a trap of this character which will be simple in construction, positive and accurate in its operation, composed of but few parts and not likely to get out of order.

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 central longitudinal section of the trap constructed in accordance with my invention, showing the parts in the position they assume when the draw off valve is closed; Fig. 2 is a similar view showing however the draw off valve open.

It is desirable in steam traps of the type in which my invention is embodied that a certain amount of water be retained in the trap at all times, and that as soon as the water passes a predetermined level it be drawn off until said level is again obtained.

3 designates a casing for the trap which is closed at its upper end by the head 4.

5 designates a pipe which extends from any main or other vapor carrying part from which the condensed liquid is to be trapped. This pipe is shown as being provided with a valve 6 and extends into the top of the head 4.

7 is a draw off pipe which extends through the head 4 down near the bottom of the casing 3. This pipe at its lower end is provided with any desired form of valve structure 8, that shown for the sake of illustration being the same as illustrated in my pending application No. 512,722, filed August 13, 1909, it only being necessary that this valve be of such a type that it can be opened and closed by the oscillation of an arm 9 pivoted

at one end to a standard 10 formed on the valve 8. As shown the valve is provided with a reciprocating gate or plate 11 which is connected to the rod 9, so that when the rod is raised the plate will be raised and the valve opened, and when the rod is lowered the valve will be closed.

12 designates an open top receptacle which is smaller than the casing 3. Connected to this receptacle is a rod 13 which, in the particular construction shown, is connected to the bottom of the receptacle by a nut 14 clamping the bottom of the receptacle between it and a collar 15 formed at the lower end of the rod.

The rod extends out through the stuffing box 16 in the head 4 of the casing, and is connected by a link 17 to one end of a lever 18 pivoted at 19 to a standard 20, projecting from the cover 4, said lever also carrying the adjustable weight 21 which can be slid along the lever and secured in position by any desired means as a set screw 22. The receptacle 12, as will be seen from the drawings, receives all liquid flowing into the trap through the pipe 5.

23 is a rod pivotally connected at its lower end by means of a pin 24 passing into a slot 25 formed adjacent the end of the lever 9. This rod at its upper end passes through a stuffing box 26 formed in the head 4 and is connected by means of a link 27 to the lever 18 on the opposite side of the pivot 19 from that to which the rod 13 is connected.

From the foregoing description of my preferred form of construction it will be seen that water entering the trap through the pipe 5 is received in the receptacle 12, which is held in the position shown in Fig. 1 until the accumulation of water therein counterbalances the weight 21, whereupon the receptacle will move down, pulling down the lever 18 which will pull up on the rod 23 and through the lever 9 open the valve, permitting the accumulation of water in the trap to pass out through the pipe 7. As soon as the weight of water in the receptacle is insufficient to counterbalance the weight 21 the parts will be returned to their original position, as shown in Fig. 1, and will remain in such position until there is a sufficient accumulation of water in the receptacle to again move the parts to the position shown in Fig. 2, opening the valve 8.

I realize that considerable variation is possible in the details of construction and ar-

rangement of parts without departing from the spirit of my invention, and I therefore do not intend to limit myself to the specific form shown and described.

5 What I claim as new and desire to secure by Letters Patent is:

1. In a steam trap, the combination with a closed casing, of a receptacle within the casing and separated therefrom, a gated  
10 valve within the receptacle and out of contact therewith, a lever within the receptacle and connected to the gate of said valve for operating it, an overflow pipe leading from said valve, a lever exterior to the casing, a  
15 rod connecting the exterior lever with the receptacle, and a second rod connecting the exterior lever with the valve lever.

2. In a steam trap, the combination with a closed casing, of a receptacle within said  
20 casing and separated therefrom, a valve within said receptacle and out of contact therewith, an overflow pipe leading from said valve, a lever mounted on the outside

of the casing, a rod extending from the receptacle and secured to the lever, a second  
25 lever connected to the valve and adapted to operate the same, and a second rod connecting said lever outside the casing with said valve operating lever, and a counter-  
weight on said lever outside the casing. 30

3. In a steam trap, the combination with a closed casing, of a receptacle within the casing and separated therefrom, a valve  
within the receptacle and out of contact therewith, means for operating said valve,  
35 an overflow pipe leading from said valve, a lever, a rod connecting said lever with the receptacle and a second rod connecting said lever with said operating means, and a  
weight adjustably mounted on said lever. 40

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

CHARLES JOSEPH MACKEREY.

Witnesses:

JAMES DELANEY,

WHITNEY J. COLLINS.