

No. 896,815.

PATENTED AUG. 25, 1908.

C. E. FAGAN.
STEAM TRAP.

APPLICATION FILED DEC. 10, 1907.

2 SHEETS—SHEET 1.

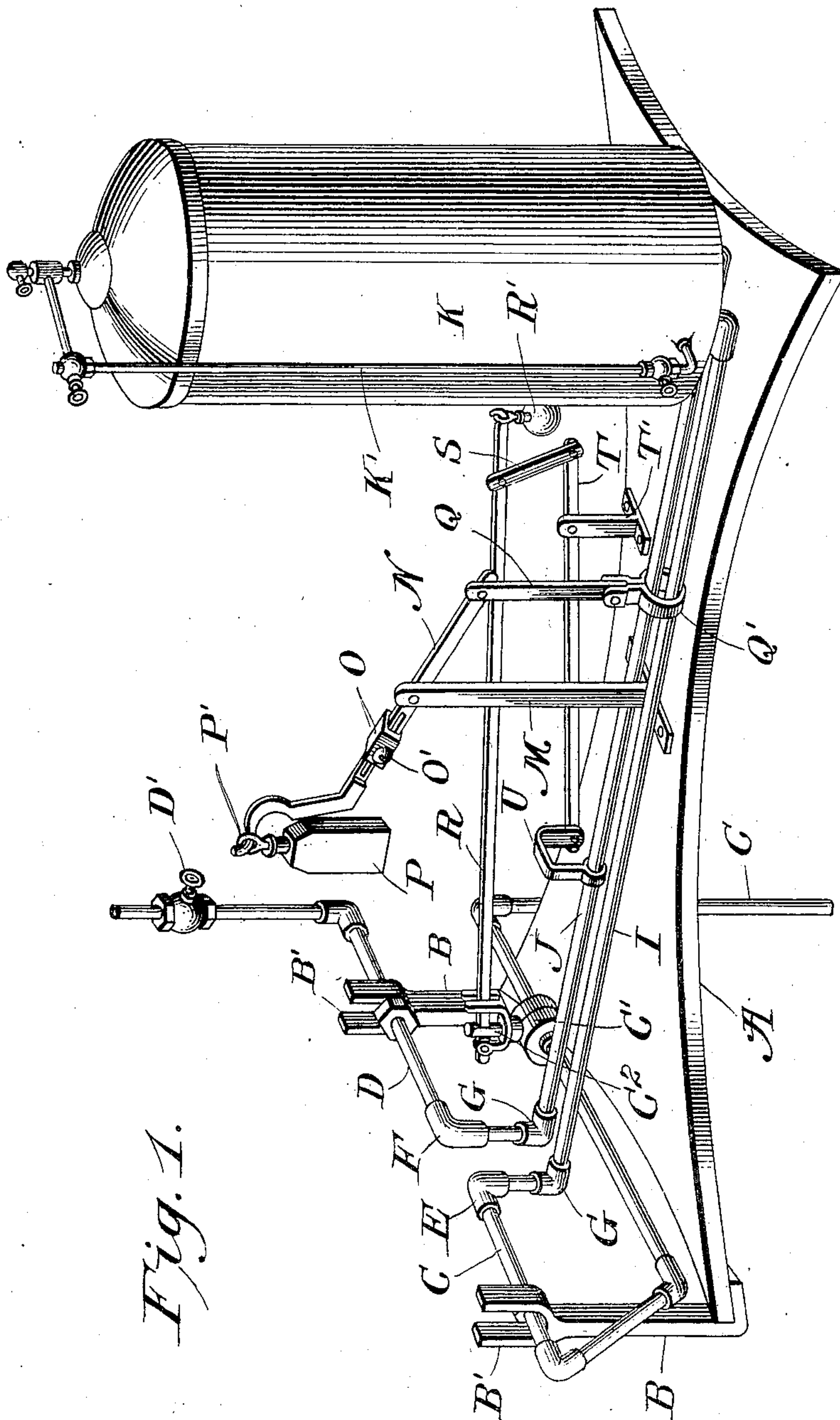


Fig. 1.

Witnesses

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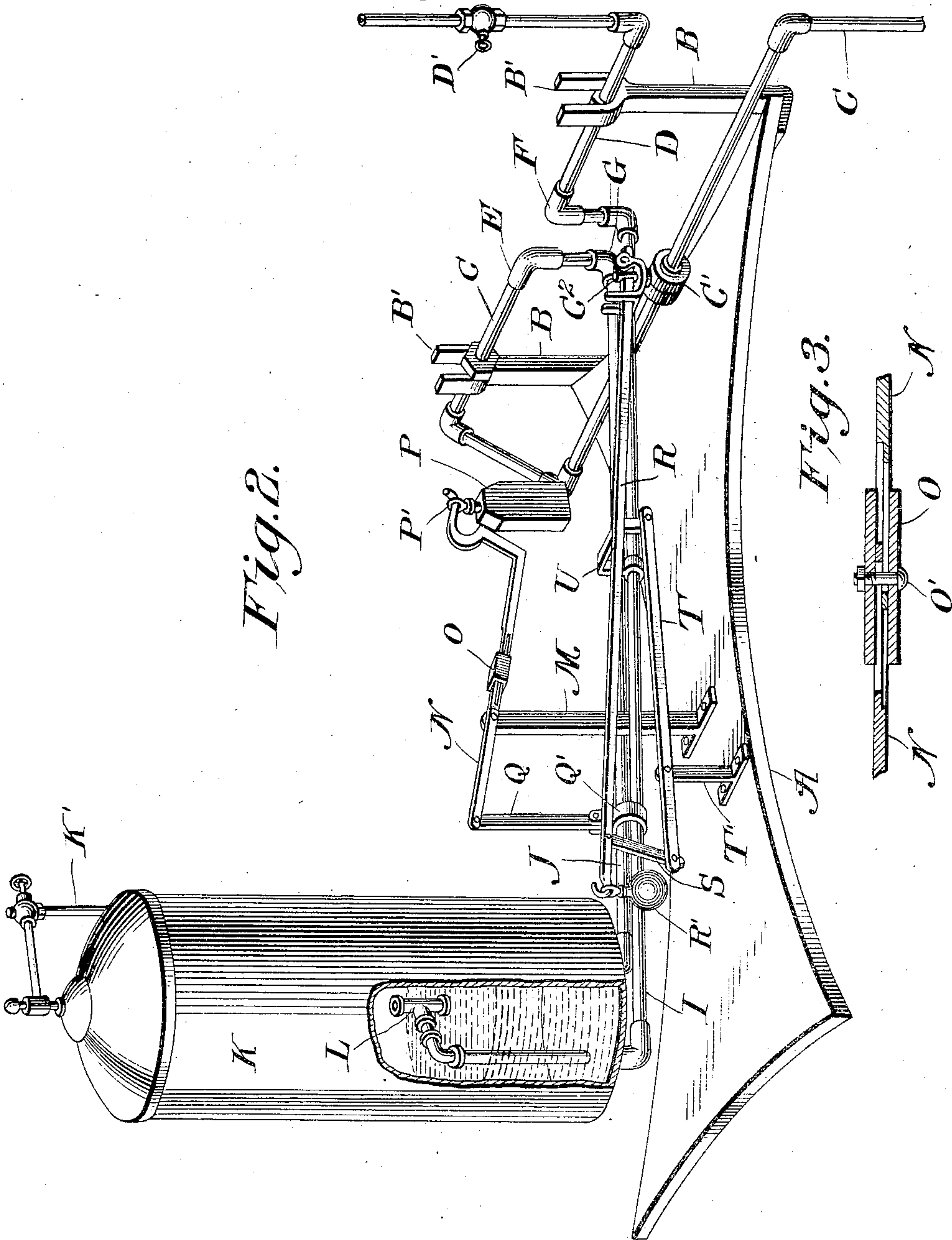
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CHARLES E. FAGAN, OF LEBANON, NEW HAMPSHIRE.

STEAM-TRAP.

No. 896,815.

Specification of Letters Patent.

Patented Aug. 25, 1908.

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To all whom it may concern:

Be it known that I, CHARLES E. FAGAN, a citizen of the United States, residing at Lebanon, in the county of Grafton and State of New Hampshire, have invented certain new and useful Improvements in Steam-Traps, of which the following is a specification.

This invention relates to steam traps, the object being, to provide a trap which is automatic in operation, the water therein being allowed to escape at a predetermined time.

Another object of my invention is, to provide a trap which is exceedingly simple and cheap in construction, and one which is very effective in use, the parts being so arranged that they are not liable to get out of order, and the discharge opening being normally sealed by the water therein, whereby all danger of steam escaping is prevented.

A further object of my invention is, to provide very novel means for counterbalancing the tank, whereby the discharge valve can be regulated so as to discharge the contents of the tank when the water therein reaches a predetermined height.

Another object of my invention is, to provide very novel means for opening the discharge valve, when the water in the tank reaches a predetermined height, so as to allow the same to escape together with means for closing the same when the water has been discharged.

These objects are obtained by the novel arrangement and construction of parts herein after fully described and shown in the accompanying drawings in which:

Figure 1, is a perspective view of my improved trap, showing it in the position it assumes when the discharge valve is open. Fig. 2, is a perspective view of the same taken from the other side showing it in its normal position, and, Fig. 3, is a detail sectional view of the counterweight lever showing its adjustment.

In the drawings, A indicates a base preferably formed of metal of any desirable size, having standards B at one end at each corner, which are provided with forked upper ends B', in which are mounted the horizontal portions C and D of the feed and the discharge pipes. The pipe D is provided with a valve D', and the pipe C with a valve C'. Arranged over the horizontal portions of the pipes C and D are L couplings E and F, which are loosely mounted thereon, whereby they can turn on the same, and connected to

the couplings E and F are L couplings G, carried by spaced parallel inlet and outlet pipes I and J on the outer ends of which is secured a tank K, which communicates with the pipes I and J, whereby the steam can pass into the same and the water be allowed to drain out. The pipe J extends up into the tank K and has a tee nozzle L on its end through which the steam and water is adapted to be deposited into the tank. The tank is provided with a gage K' of the ordinary construction.

Secured on the base A is a standard M which extends up between the pipes I and J and on the upper end of which is pivotally mounted a lever N, which is formed of two sections, one end of each section being reduced and slotted. Over them is mounted a sleeve O through which passes a set screw O', whereby the two sections can be adjusted so as to lengthen or shorten the lever. One section of the lever is provided with a bowed portion having a hooked end, on which is mounted the eye P' of a weight P. A link Q, is pivotally connected to the end of the other section and carries a ring Q', at its free end, through which the pipes I and J, extend, so that by adjusting the sections of said lever to lengthen or shorten the same, the tank can be made to discharge when any desired amount of water has been deposited therein.

Pivotally mounted on an arm carried by the valve C', is a lever R, which works through a bifurcated arm, carried by the valve and has connected thereto the stem C², of the valve, whereby when the lever is raised or lowered the valve will be opened and closed. The outer end of the lever R, is provided with a hook on which is mounted a weight R'. A link S, is pivotally connected to the lever R, adjacent its outer end, the lower end of which lever is pivotally connected to the lever T, mounted on a standard T', secured on the base, the other end of the lever T, being pivotally connected to a bracket U which is provided with a sleeve, which is secured to the pipe J, so as to operate the lever when the pipe is raised and lowered, whereby the valve will be also operated.

The operation of the device is as follows: A steam pipe is connected to the inlet pipe D, and as the steam passes into the same, it will be carried through the pipe J, into the tank K, and as the water reaches a certain height which has been adjusted beforehand,

it of course, being understood that the tank is in position as shown in Fig. 2, the weight will be increased so as to counterbalance the weight of the lever and allow the tank to drop, and at the same time the levers T and R, will be operated, so as to open the valve in the discharge pipe and allow the water therein to pass out through the pipes I and J and be conveyed away by any suitable means. After the water has passed out of the tank the weight P will raise the same back into position, it of course being understood that a certain amount of water is to be left in the tank, so as to prevent the steam which is passing into the tank at all times from escaping through the pipe I.

From the foregoing description it will be readily seen that by adjusting the lever N so as to increase or decrease the leverage of the same, the discharge pipe can be opened when the water reaches any predetermined height therein.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a steam trap, the combination with oppositely disposed feed and discharge pipes, of inlet and outlet pipes provided with L couplings pivotally mounted on said pipes, a tank supported by said inlet and outlet pipes, a counterbalancing lever connected to said inlet and outlet pipes, a valve arranged in the discharge pipe and means connected to the inlet pipe for operating said valve.

2. In a steam trap, the combination with a base provided with standards of feed and discharge pipes, provided with horizontal portions supported by said standards, inlet and outlet pipes provided with L couplings pivotally mounted on said pipes, a tank supported by the ends of the inlet and outlet pipes, an adjustable lever connected to said inlet and outlet pipes provided with a counterbalancing weight, a valve arranged in the discharge pipe and means connected to the inlet pipe for operating said valve.

3. In a steam trap, the combination with a base, provided with forked standards, of feed and discharge pipes, provided with horizontal portions arranged in the forks of said standard, inlet and outlet pipes provided with L couplings, pivotally mounted on the ends of said horizontal portions of said pipes, a tank secured on the outer ends of said inlet and outlet pipes, an adjustable lever connected to said pipes provided with a weight, a valve arranged in the discharge pipe, a lever connected to said valve, a lever

mounted on the base connected to the lever, connected to the valve and connected to the inlet pipe, for the purpose described.

4. In a steam trap, the combination with feed and discharge pipes, of inlet and outlet pipes provided with L couplings, pivotally mounted on said feed and discharge pipes, a tank secured on the ends of said inlet and outlet pipes, a valve arranged in the discharge pipe, a lever connected to said pipes provided with a weight, a lever mounted on a standard secured to the base provided with a link at one end, a lever connected to said valve connected to said link, and a sleeve secured on the inlet pipe provided with a bracket connected to the lever mounted on the standard of the base, for the purpose described.

5. In a steam trap, the combination with a base of standards provided with forked upper ends secured on one end of said base, feed and discharge pipes provided with horizontal portions secured in said forked standards, a valve arranged in the discharge pipe, inlet and outlet pipes provided with L couplings, pivotally mounted on the feed and discharge pipes, a tank arranged on the outer ends of said inlet and outlet pipes, the inlet pipe extending into the said tank and provided with a tee nozzle, a standard secured on said base and an adjustable lever mounted on said standard, a link carried by one end of said lever, provided with a sleeve fitting over the inlet and outlet pipes, a weight carried by the other end of said lever and means connected to the inlet pipe for operating the valve of the discharge pipe.

6. In a steam trap, the combination with a base, of feed and discharge pipes, inlet and outlet pipes pivotally connected to said pipes, a valve arranged in the discharge pipe, a tank arranged on the inlet and outlet pipes, a lever carrying a weight connected to said inlet and outlet pipes, a standard mounted on said base provided with a lever connected at one end to a bracket secured to the inlet pipe, a lever carried by the valve connected to its stem, and a link connecting the lever carried by the valve to the lever mounted on the standard of the base, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. E. FAGAN.

Witnesses:

SCOTT SLOANE,
WILLIAM H. CAMPBELL.