

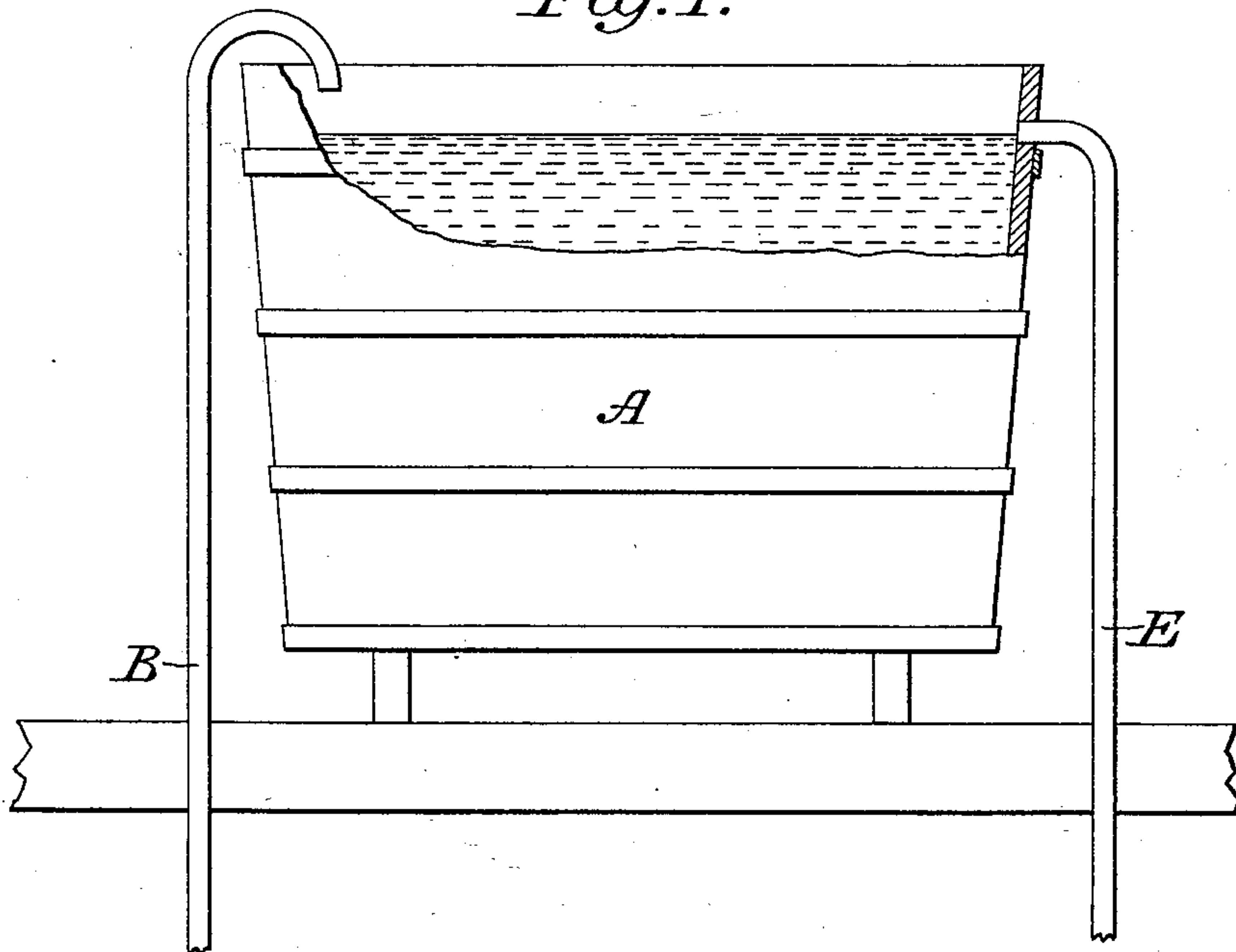
(No Model.)

C. F. DE ARDEN.  
AUTOMATIC SHUT-OFF FOR ROOF TANKS.

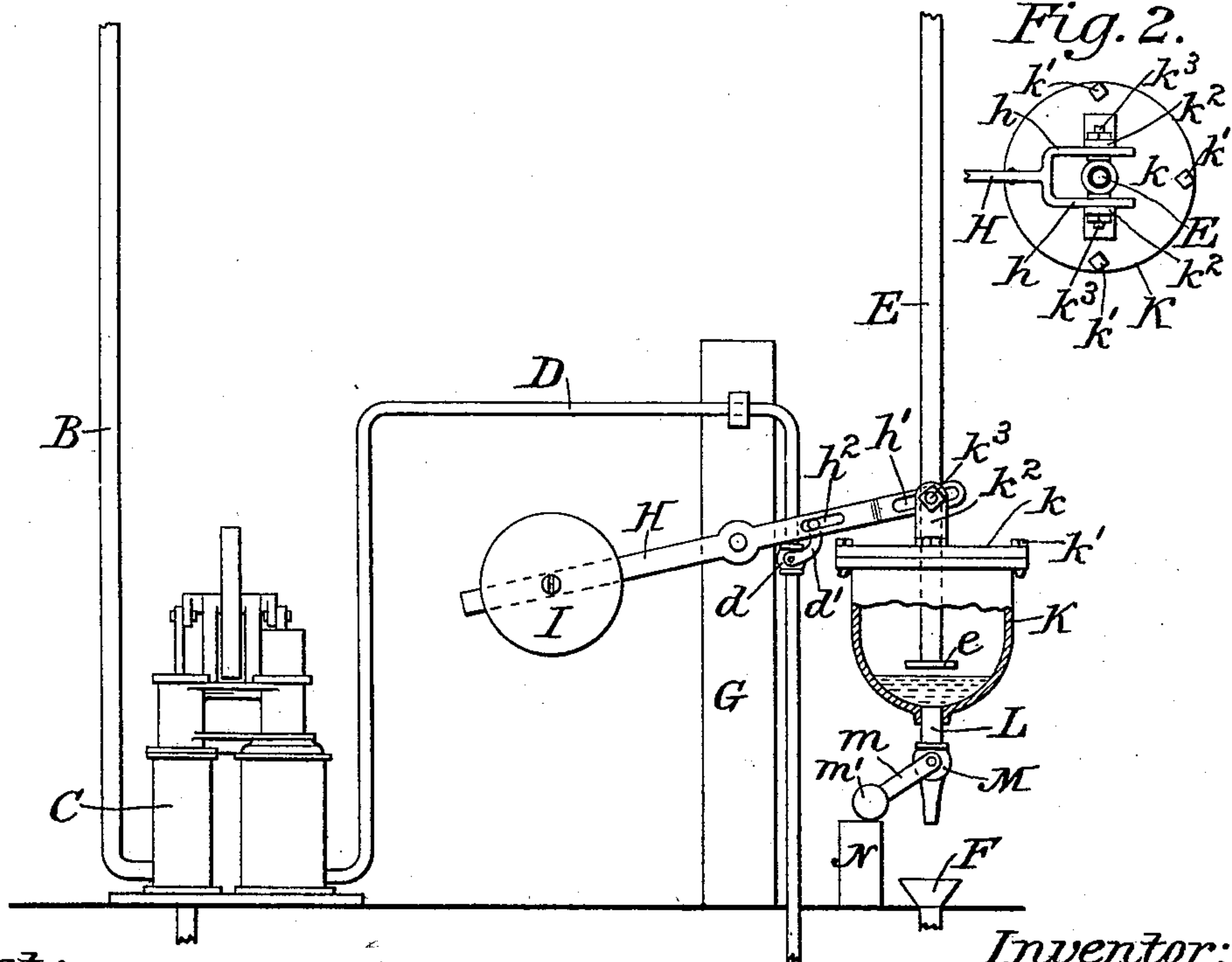
No. 521,336.

Patented June 12, 1894.

*Fig. 1.*



*Fig. 2.*



*Attest:*

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# UNITED STATES PATENT OFFICE.

CHARLES F. DE ARDEN, OF NEW YORK, N. Y.

## AUTOMATIC SHUT-OFF FOR ROOF-TANKS.

SPECIFICATION forming part of Letters Patent No. 521,336, dated June 12, 1894.

Application filed August 31, 1893. Serial No. 484,428. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. DE ARDEN, of New York, in the county and State of New York, have invented certain new and useful  
5 Improvements in Automatic Shut-Offs for Roof-Tanks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference  
10 marked thereon, making a part of this specification.

In large buildings where much water is used it is customary to rely for the supply of water for immediate consumption upon tanks  
15 placed upon the roofs of the buildings and filled by means of a pump placed in the basement of the building and under the control of the janitor. It often happens that the janitor sets the pump in operation for the purpose  
20 of filling the tank and then occupies himself about something else, leaving the pump in operation; through absence of the janitor at the time when the tank is full, as indicated by the running of water through the waste  
25 pipe, the pump is not stopped at the proper time and much water runs to waste. This is particularly undesirable when the water supply is low or when water is supplied to the building through a meter.

30 It is the object of my invention to provide a simple and effective device for automatically cutting off from the pump the supply of gas or steam, as the case may be, as soon as the tank is filled to overflowing.

35 In the accompanying drawings, wherein I have illustrated a convenient embodiment of my invention: Figure 1 is a partial side elevation, partly broken out, showing a roof tank, a pump for supplying it with water, and my improved device combined therewith. Fig. 2 is  
40 a partial plan view to illustrate a detail of construction hereinafter referred to.

The usual roof tank A is represented as adapted to be supplied with water through a  
45 pipe B from a pump C. The latter may be of any usual or preferred variety, it being immaterial, so far as concerns my present invention, whether the pump be operated by steam or gas. At D I have indicated a pipe for conducting to the pump C the steam or gas or  
50 whatever may be used as the source of power, the pipe being provided at  $d$  with a valve

which controls the supply of gas or steam and by closing which at any time the pump may be stopped. The tank A is also provided with  
55 an overflow pipe E, which, as shown, conducts the waste water from the tank to the drain pipe in the basement, indicated at F, and is disposed in the vicinity of the pipe D. Upon a suitable standard G is pivoted a lever H  
60 which at one end is provided with a counterweight I and at the other end supports a bucket K, the counterweight being sufficient to hold the bucket in its highest position when the latter is emptied, but when the bucket is full  
65 it overbalances the counterweight and descends. I prefer to provide the bucket K with a cover  $k$ , which is secured in place by bolts  $k'$  or otherwise and receives somewhat loosely the pipe E. The latter is provided at its low-  
70 er end with a flange or collar  $e$  which will prevent the withdrawal of the bucket from the pipe. The cover  $k$  is provided with ears  $k^2$  in which are secured bolts  $k^3$  which enter loosely the corresponding slots  $h'$  formed in forked  
75 ends  $h, h$ , of the lever H. The lever H is adapted to operate the valve  $d$  during the descent of the bucket K and for this purpose the stem of the valve  $d$  is provided with an arm  $d'$ , which is shifted by the lever. If it  
80 is desired that the movement of the lever shall close the valve  $d$  but shall not open it when moved in the opposite direction, the end of the arm  $d'$  will be arranged so that it shall be struck by the lever in its movement; but if  
85 it is desired that the lever shall both open and close the valve the end of the arm  $d'$  will be engaged with a slot  $h^2$  formed in the lever H. It is obvious that the lever will remain in a position to keep the valve closed until  
90 the counterweight restores it to normal position after the emptying of the bucket K.

I provide means whereby the bucket shall be caused automatically to discharge its load  
95 when it has descended to its lowest position and whereby the discharge opening in the bucket shall be closed again as the bucket rises. The bottom of the bucket is provided with a discharge tube or nozzle L in which is placed a valve M. The stem of this valve is  
100 provided with an arm  $m$ , the outer end of which has a weight  $m'$  sufficient to close the valve when unsupported. In the path of the arm  $m$ , as it descends with the bucket K, is



placed a stop or projection N which checks the free end of the arm and thereby causes the valve to be turned sufficiently during the continued descent of the bucket K, to open  
5 the orifice through the pipe or nozzle L and permit the water to flow therefrom. Preferably the water is allowed to escape somewhat slowly in order that the return of the parts to normal position may not be too abrupt. As  
10 soon as the water has been discharged from the bucket the counterweight I will operate to restore the bucket to its normal position in readiness to receive the overflow when the tank is again filled. As before stated the  
15 valve *d* will be opened again if its arm be connected to the lever H.

It is obvious that in place of the weight *m'*, the end of the arm *m* might be caused to engage a slot or notch in the part N with the  
20 same result.

I claim as my invention—

1. The combination with a roof-tank or reservoir, an overflow pipe for the same, a pump and a pipe to conduct water therefrom to the  
25 roof tank, of a feed pipe to supply the source of power to said pump, a valve for said pipe, a lever to operate the valve, a counterweight upon one end of said lever, and a bucket sup-

ported by the free end of said lever and adapted to receive the overflow from the tank, a  
30 valve to control the discharge from said bucket, an arm connected to said valve, and a stop for the free end of said arm whereby said valve is opened during the descent of the bucket, substantially as shown and described. 35

2. The combination with a roof-tank or reservoir, an overflow pipe for the same, a pump and a pipe to conduct water therefrom to the roof-tank, of a feed pipe to supply the source of power to said pump, a valve for said pipe, 40 a lever to operate the valve, a counterweight upon one end of said lever, and a bucket supported by the free end of said lever and adapted to receive the overflow from the tank, a cover secured to said bucket and permitting 45 the overflow pipe to pass freely through the same, and a flange on the lower end of said pipe to prevent the withdrawal of the bucket, substantially as shown and described.

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

CHARLES F. DE ARDEN.

Witnesses:

A. N. JESBERA,  
A. WIDDER.