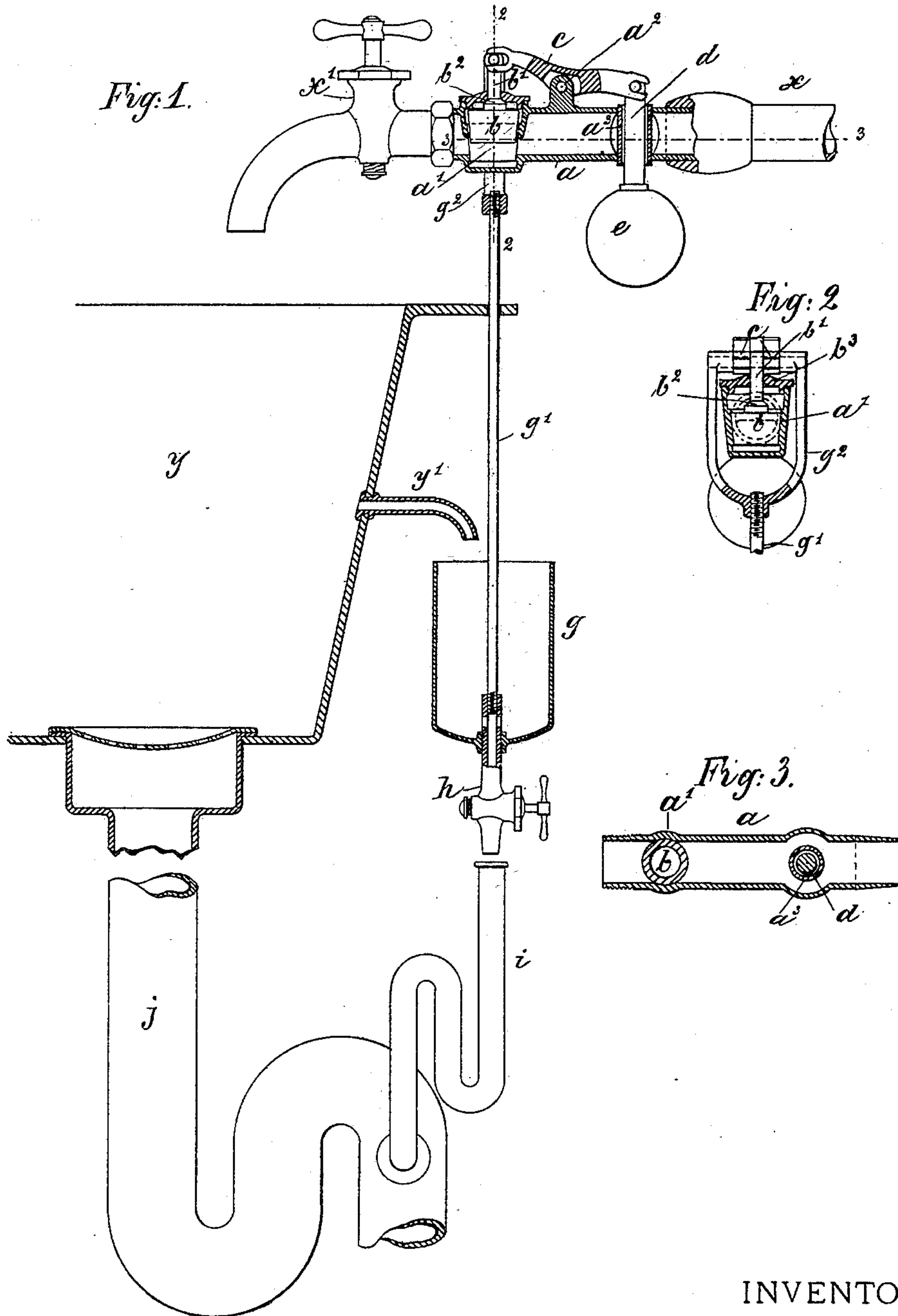


(No Model.)

A. W. KNOX.  
AUTOMATIC OVERFLOW CUT-OFF.

No. 462,844.

Patented Nov. 10, 1891.



INVENTOR:

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By

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WITNESSES:

J. K. B. *[Signature]*  
Mayer Goldman

# UNITED STATES PATENT OFFICE.

ANDREW W. KNOX, OF NEW YORK, N. Y.

## AUTOMATIC OVERFLOW CUT-OFF.

SPECIFICATION forming part of Letters Patent No. 462,844, dated November 10, 1891.

Application filed November 25, 1890. Serial No. 372,632. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW W. KNOX, a subject of the Queen of England, residing in the city, county, and State of New York, have  
5 invented certain Improvements in Automatic Overflow Cut-Offs, of which the following is a specification.

My invention relates to that class of automatic devices employed to arrest the flow of a  
10 liquid into a receptacle after the liquid therein has reached a predetermined level; and the object of my invention is to prevent the overflow of a receptacle, such as a sink, for example.

15 It is a matter of common experience that the waste-outlet of a sink will sometimes become clogged, or will from some cause be unable to carry off all the water running into it from the faucet, and under these conditions  
20 if the water be left turned on an overflow will ensue and serious damage result. My cut-off automatically arrests the flow of water from the faucet as soon as the water in the sink shall have risen to a predetermined level, but  
25 without in any way actuating the faucet or interfering therewith.

My invention will be fully described hereinafter, and its novel features carefully defined in the claim.

30 In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional side elevation of my improved cut-off device, showing it applied in practice. Fig. 2 is a cross-section of the same in the plane of  
35 the line 2 2 in Fig. 1. Fig. 3 is a horizontal axial section of the cut-off.

$a$  represents the service-pipe for supplying water to a sink or other receptacle  $y$ , and  $a'$  is the faucet, which normally controls the flow  
40 of water into the sink. Back of the faucet, by preference, and interposed between it and the point where the service-pipe enters the room, is situated my automatic cut-off, which I will now describe.

45  $a$  is the tubular body of the cut-off, which has or may have substantially the form of a short section of pipe. In this body is formed a valve-chamber  $a'$ , in which is a somewhat conical plug-valve  $b$ , provided with a stem  $b'$ ,  
50 which passes out through an aperture in the removable cover of the valve-chamber. This valve  $b$  when depressed closes the passage

through the body  $a$  and cuts off the flow of water therethrough, and when raised a lesser valve  $b^2$ , formed on the stem  $b'$  or on the back  
55 of the valve  $b$ , finds a seat  $b^3$  in the cover of the valve-chamber and effectually prevents the escape of water around the stem. The purpose of this upwardly-seating lesser valve is to avoid the necessity of packing the valve-  
60 stem  $b'$ , which would create friction.

The upper extremity of the valve-stem is coupled to one arm of a rocking lever  $c$ , which has a fulcrum  $a^2$  on the body  $a$ , and to the  
65 other extremity of said lever is coupled a rod or suspender  $d$ , to the lower end of which is secured a weight  $e$ . This weight acts through the lever  $c$  to keep the valve  $b$  elevated normally and the valve  $b^2$  seated.

$g$  is a cup attached to a suspender  $g'$ , and  
70 this suspender is coupled through the medium of a yoke  $g^2$  with the extremity of the lever  $c$  at the point where the valve-stem  $b'$  is coupled thereto. From the sink  $y$  an over-flowsput  $y'$  leads out over the cup  $g$ , and when the water  
75 rises in the sink to the level of said spout the water will flow into the cup, and when the weight of water in the cup is sufficient to overcome the weight  $e$  and the other opposing elements said cup will descend and de-  
80 press the valve  $b$  firmly to its seat and cut off the water flowing through the service-pipe. The weight  $e$  must suffice to lift the empty cup  $g$ , its suspender, and the valve  $b$ , and in  
85 order that it may have the proper weight to do this without undue surplus I prefer to make it in the form of a hollow ball, adapted to be screwed onto its suspender, and to put a  
90 sufficient amount or quantity of lead shot into it to give it the proper weight and no more. The stem suspending the weight is represented as passing through and playing in a tube  
95  $a^3$ , which passes transversely through an enlarged part of the bore in the body  $a$  and is fixed permanently in said body. In order that the cup  $g$  may be conveniently emptied after  
an overflow, it is provided at its bottom with a controlled outlet, preferably closed automatically. In the drawings I have shown this  
100 emptying-outlet provided with a cock  $h$ . Such cocks are a common article of trade and will require no special description. The purpose in employing an automatically-closing cock or valve is to avoid the liability of said valve



or cock being left open through the carelessness of the person whose duty it is to empty the cup.

The water may be drawn off from the cup into any convenient vessel, or, as herein shown, a receiving-pipe *i* may be placed under the cock to receive the water and lead it into the waste-pipe *j* of the sink. If such a receiving-pipe is employed, however, it will be well to arrange it so as to discharge into the waste-pipe *j* below the sink-trap therein and to trap the pipe *i*. The latter should discharge below any obstruction likely to exist in the waste-pipe and should be trapped to cut off gases from the sewer.

The weight *e* and cup *g* may have any suitable form.

I am aware that it is not new in devices for conducting rain-water to cisterns to provide a slide adapted to open a passage either to a waste-outlet or to the cistern and to actuate such slide so as to automatically close the waste-outlet and open the outlet to the cistern through the medium of a close-topped vessel, which descends when filled and moves the slide. This device, however, is not designed to cut off the flow of water, but merely to divide it, and its construction necessitates the employment of a closed weight-vessel, into which the feed-pipe enters through a packed aperture. My apparatus, on the contrary, is designed to cut off the flow of water

entirely after the latter has reached the overflow-level in the sink or receiver, and as the water is wholly cut off I am enabled to employ a simple open cup to receive the overflow, the cup being entirely independent of the overflow-spout.

Having thus described my invention, I claim—

The combination, with a liquid-receptacle *y*, having an overflow-spout *y'*, a service-pipe *x*, leading to said receptacle and adapted to supply it, a cock or faucet *x'* in said pipe and controlling the flow of liquid through the same, a body *a*, forming a part or continuation of said service-pipe, said body having a passage through it for the flow of the liquid, a normally-open valve in said body and adapted to close the liquid passage through the same, a weight and lever which hold said valve off its seat normally, and an open cup suspended from the lever and arranged under the overflow-spout *y'*, said cup being adapted to close said valve and stop the flow when it fills and descends, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANDREW W. KNOX.

Witnesses:

WM: DUNN,  
STEPHEN E. EVANS.