

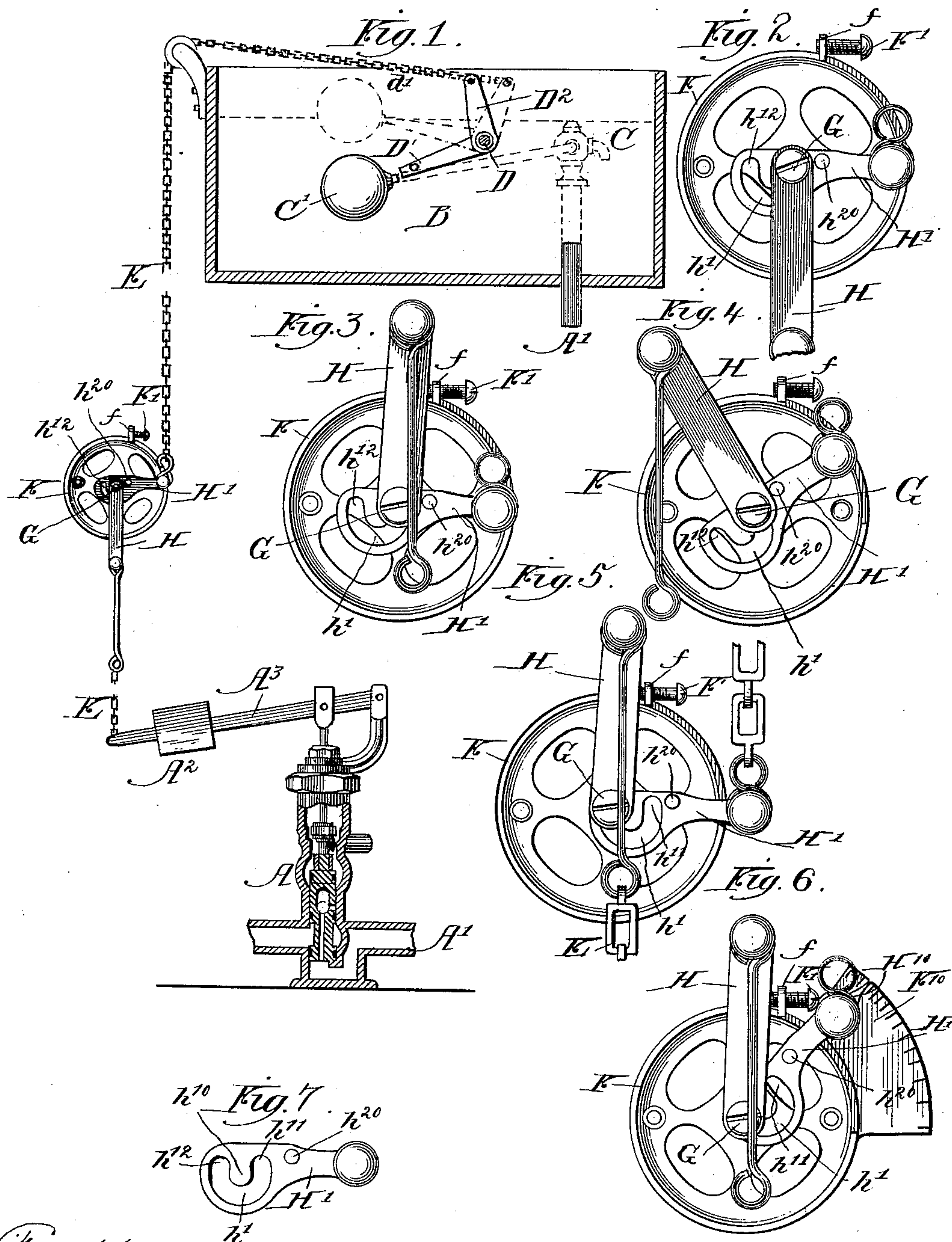
(No Model.)

P. HARVEY.

TANK OPERATING CONNECTION FOR STOP AND WASTE VALVES.

No. 372,617.

Patented Nov. 1, 1887.



Witnesses:
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UNITED STATES PATENT OFFICE.

PATRICK HARVEY, OF CHICAGO, ILLINOIS.

TANK-OPERATING CONNECTION FOR STOP AND WASTE VALVES.

SPECIFICATION forming part of Letters Patent No. 372,617, dated November 1, 1887.

Application filed January 24, 1887. Serial No. 225,371. (No model.)

To all whom it may concern:

Be it known that I, PATRICK HARVEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tank-Operating Connections for Stop and Waste Valves, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

Figure 1 is a partly sectional elevation of a tank and a stop and waste valve which controls the admission of water to the pipes which supply the tank and the devices which operate the stop and waste valve and the immediate induction-valve of the tank, the position being with the supply closed. Fig. 2 is an enlarged detail elevation of valve-operating device which is connected with the stop and waste valve and the tank induction-valve, the position being the same as shown in Fig. 1. Fig. 3 is a detail elevation of the same device set in position to hold the stop and waste valve open to the supply and to be operated by the rise of water in the tank to close said stop and waste. Fig. 4 shows in elevation the same device in the process of closing the stop and waste valve. Fig. 5 shows in elevation the same device set so as to be unaffected by the condition of water in the tank, the position being as when the tank is empty. Fig. 6 shows the same device set as in Fig. 4, but the position being as when the tank is full. Fig. 7 is a detail elevation of one of the levers constituting said device.

This invention is an improvement on one which was patented to me December 21, 1886, No. 354,700.

A is the stop and waste valve, which is shown in the position to cut off the supply and allow the pipes A', leading to the tank B, to empty. In the tank B is the immediate supply-controlling valve C, with which is connected the float C', which causes it to open and close by the fall and rise of the water in the usual manner.

D is a lever which is pivoted on the tank B, having an arm, D', having a pin, d', extending over the float-arm c', so that the rise of the float will lift said lever-arm, and having an arm, D², connected by the chain E to the controlling device, which will be further described.

The form of the stop and waste valve illustrated is one which is closed by a weight, A², on the lever-arm A³, and opened by lifting said lever-arm, as by drawing on the chain E'. As thus far described, the construction is the same, substantially, as shown and described in my said patent No. 354,700.

I will now describe the controlling device in which this invention consists. A plate, F, is arranged to be secured at any convenient place on the walls of the house. It is provided with a lug, f, on the edge and an adjustable stop-screw, F', set through said lug, and the plate should be secured in such position that the said lug will stand a little to one side of a vertical line through the center of the plate. At the center is fixed a screw-stud, G, which is the pivot of a lever, H, the end of which is connected by the chain E' to the valve-operating lever-arm A³, which actuates the stop and waste valve.

H' is a lever, which is also pivoted on the stud G and connected at the end to the chain E. It is constructed so that its bearing on the pivot G may be at either one of two points of its length, and so that it may be shifted from one to the other at will. This is preferably accomplished by providing it with the semi-circular slot h', whose course is concave upward, so that the tongue h¹⁰ stands down between the two extremities of the slot and forms a separation between them. The lever may thus hang on the stud G at either extremity of said slot, and make a quarter of a revolution thereabout without liability to shift its bearing to the other end. Said lever has the stud or abutment h²⁰ projecting from its face in such position that when the pivot-bearing is at the end h¹¹ of the slot h the said abutment is close to the edge of the lever H, so that any movement of the lever H' upward from its horizontal position will cause said abutment to engage and operate the lever H; but when the lever H' is shifted so that it hangs on the pivot G by the engagement of the end h¹² of the slot h' on said pivot the stud or abutment h²⁰ stands so far from the lever H that the movement of the lever through the entire range which is permitted to it will not bring the said abutment against the lever H.

The features above described constitute the improvement over the structure shown in my

said patent, No. 354,700. In its general action, except as modified by the above peculiarities, it is substantially similar to that shown in said patent. I will now describe its
5 action in full, including the particulars in which it is the same and those in which it is changed.

When it is desirable to have the service pipes leading from the stop and waste valve
10 empty and the said valve closed to cut off the supply, except only during such short time as may suffice to fill the tank, the lever H' will be set as shown in Figs. 2, 3, and 4, with the pivot G at the end h^{12} of the slot h' . The stop and
15 waste valve will be set to cut off the supply and allow the service-pipes to empty when the lever H hangs down as in Fig. 1. If the tank is empty, the float C' and the lever D and the lever H' will be in the position shown in Fig.
20 1 in full lines. When it is desired to use water from the tank, and for that purpose to open the stop and waste valve A to allow the tank to fill, the handle of the lever H will be moved around to the position in Fig. 3. This posi-
25 tion is such that said lever stands just past the center, overbalanced toward the stop formed by the adjustable screw F', and said stop should be set so that the lever will be arrested by it at the proper position. The parts will remain
30 in this position until the tank has filled and the float C' has thereby been caused not only to effect the closing of the valve C, but also to actuate the lever D and cause its arm D² to draw on the chain E and lift the lever H' to
35 the position shown in Fig. 4, and in so doing to cause the said lever H', by means of its abutment h^{20} , to rock the lever H over the center of its pivot G, and cause it thereupon to fall to the position shown in Fig. 1, whereby the
40 stop and waste valve A will be again closed and the supply to the tank cut off. The lever H' will remain in the position shown in Fig. 4 until water is drawn from the tank, and will return gradually to the position shown in Fig.
45 2, as the water falls in the tank, and it may therefore be provided with an index-finger, H¹⁰, and be utilized as a water-gage, a suitably-graduated scale, F¹⁰, being appended to the plate F.

50 When it is desired to open the stop and waste valve A, notwithstanding the fact that the tank may be full and not in need of supply, the lever H' will be shifted to the position shown in Fig. 5, the end h^{12} of the slot h' be-
55 coming the bearing of the pivot G. In this new position the abutment h^{20} is removed from the lever H so far that the said lever H is entirely unaffected by the position or movement of the lever H' about the pivot G, and the stop
60 and waste valve A will remain open or closed, according as it may be set by means of the lever H, and regardless of the condition of water in the tank. This is shown in Fig. 6, which represents the lever H' in position which would
65 be the result of the tank being full, but shows

the lever H, nevertheless, in position which would hold the stop and waste valve open.

The first position—viz., that illustrated in Figs. 1, 2, 3, and 4—may be called the “winter arrangement,” and the lever H' would be so
70 set in order that the stop and waste valve after being opened might remain open only long enough to fill the tank and then close automatically without further attention and allow the service-pipes to empty to prevent freezing. 75

The second position (illustrated in Figs. 5 and 6) may be called the “summer arrangement,” and the lever H' would be set as represented in said figures whenever there was no
80 necessity for the precaution above described. 80

I claim—

1. In combination with the tank, the supply-controlling valve A, the float C', the levers H and H', and the connections from said levers, respectively, to said valve and float, one of
85 said levers having an abutment whereby they become engaged to cause the lever H' to rock the lever H over its center, substantially as and for the purpose set forth.

2. In combination with the tank and the
90 supply-controlling valve, as A, the float B, the lever H, swinging in a vertical plane and connected to and operating the supply-controlling valve, and an adjustable stop to arrest the lever just beyond the vertical line through its
95 pivot, and a lever, H', operated by the float, one of said levers having an abutment whereby they become engaged to cause the lever H' to actuate the lever H to rock it away from the stop past such vertical line, substantially
100 as and for the purpose set forth.

3. In combination, substantially as and for the purpose set forth, with the tank, supply-controlling valve A, and float C', the levers
105 H and H', engaging by a suitable abutment on one of them, said abutment being movable to prevent such engagement.

4. In combination, substantially as and for the purpose set forth, with the tank, supply-controlling valve A, and float C', the levers H
110 and H', the latter having an abutment, h^{20} , to engage the former, and being adjustable on its pivot to remove said abutment out of range of said lever H.

5. In combination with the tank, the sup-
115 ply-controlling valve A, and float C', the levers H and H' and the connections from said levers, respectively, to said valve and float, the lever H' having an index-finger, H¹⁰, and a graduated scale, F¹⁰, fixed with reference to
120 the pivot of said lever, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chi-
125 cago, Illinois, this 14th day of January, A.D. 1887.

PATRICK HARVEY.

Attest:

CHAS. S. BURTON,
FRANCES W. PARKER.