

(No Model.)

C. H. HARKINS.

AUTOMATIC VALVE FOR WATER TANKS.

No. 379,159.

Patented Mar. 6, 1888.

Fig. I

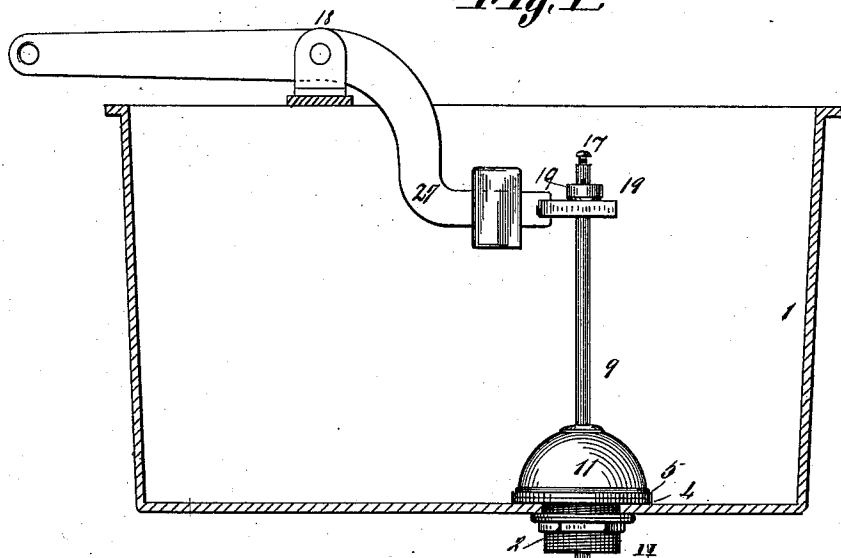


Fig. II.

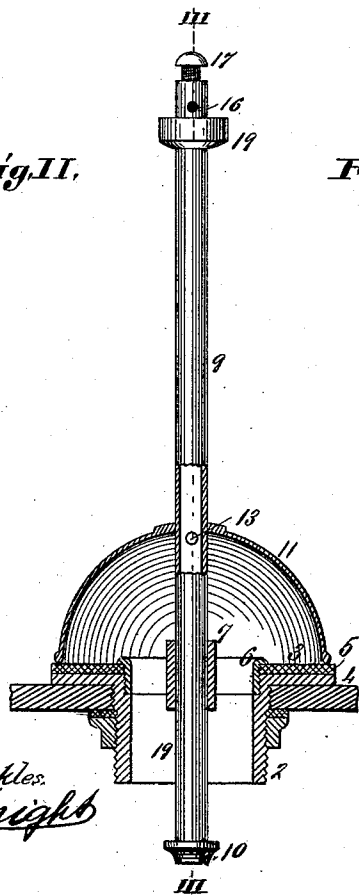
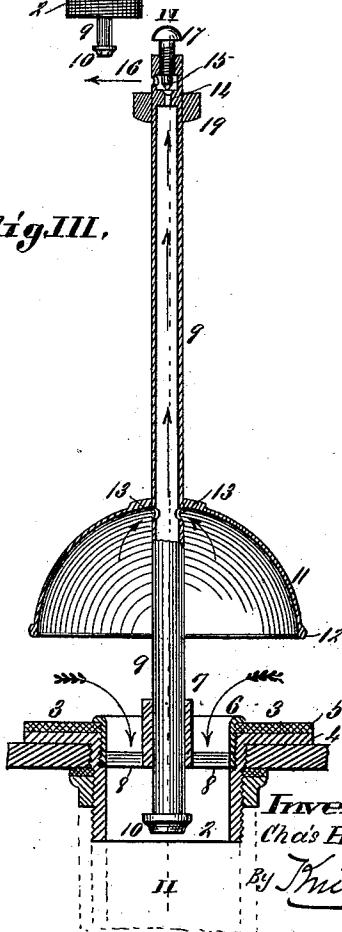


Fig. III.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC VALVE FOR WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 379,159, dated March 6, 1888.

Application filed October 4, 1887. Serial No. 251,454. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. HARKINS, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful
5 Improvement in Automatic Valves for Water-Tanks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

10 Figure I is a section through a water-tank showing the part to which my invention relates in side view. Fig. II is a vertical section taken on line II II, Fig. III. Fig. III is a similar view taken on line III III, Fig. II.

15 My invention relates to an improved valve mechanism for automatically closing the outlet of water-tanks; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

20 Referring to the drawings, 1 represents a tank, to the bottom of which is connected an outlet-pipe, 2. Around the mouth of this pipe, within the tank, is arranged a suitable seat, 3, for the valve. I have shown the seat
25 composed of an outturned flange, 4, on the upper end of the pipe 2, over which is placed a leather or other suitable ring, 5, held in place by a ring, 6, screwing into the pipe 2. The ring 6 is provided with a central tube, 7, connected to it by means of arms 8. Through the
30 tube 7 fits a hollow pipe, 9, with an enlargement, 10, on its lower end to prevent its entire withdrawal from the tube 7. Secured to the pipe 9, some distance above its lower end, is
35 a bell-shaped valve, 11, the lower edge, 12, of which comes in contact with the seat 3 when the valve is closed. The pipe 9 is hollow, as stated, and immediately beneath the valve 11 it has one or more perforations, 13. At the
40 upper end of the pipe 9 there is an opening, 14, leading into a chamber, 15, and from the chamber 15 there is an opening, 16, through the side of the pipe.

17 represents a valve consisting of a conical
45 pointed screw, which passes through the upper end of the pipe and seats in the upper end of the opening or port 14.

27 represents a lever pivoted to the top of the tank at 18, and which engages at its inner
50 end beneath a collar, 19, on the upper end of the pipe 9.

The operation is as follows: When it is desired to let a supply of water into the pipe 2, the outer end of the lever 27 is pulled down, and as soon as this takes place the valve 11 is
55 slightly raised from its seat 3, and the water commences to pass into the pipe 2. As soon as the valve commences to rise from its seat the pressure of the water beneath it causes it to rise rapidly from the position shown in Fig. 60 II to the position shown in Fig. III. The lever is now released and the valve will automatically close. It will not close, however, until the air which is in it has escaped. This air escapes through the openings 13 up the
65 hollow pipe, through the opening 14 to the chamber 15 and opening 16, as indicated by the featherless arrows in Fig. II. As the air escapes, the valve gradually lowers to its seat, and the length of time it takes to close the
70 valve is regulated by the time it takes the air to escape from the valve. This latter is regulated by means of the valve 17. The flow of water from the tank may thus be regulated at will.

It will be observed that the valve 11 is not closed at its lower end, thus avoiding any difficulty from foreign matter settling in the valve, as is the case with such valves having
75 closed lower ends.

I claim as my invention—

The combination of the outlet-pipe 2, having the annular flange 4 and a screw-threaded mouth, a cushioning-ring, 5, resting upon said flange, exteriorly-screw-threaded ring 6,
85 screwed into the outlet pipe and having an overhanging flange resting upon ring 5, the vertical tube 7, the arms 8, integral with ring 6 and tube 7, a hollow valve stem having perforations 13 in said tube, a downwardly-flaring open bottom valve secured to said stem
90 above said perforations, a valve and outlet in said stem above the water-level, a collar, 19, on said stem, and a lever engaging said collar for operating the valve, substantially as set
95 forth.

CHAS. H. HARKINS.

In presence of—

GEO. H. KNIGHT,
JAS. E. KNIGHT.