

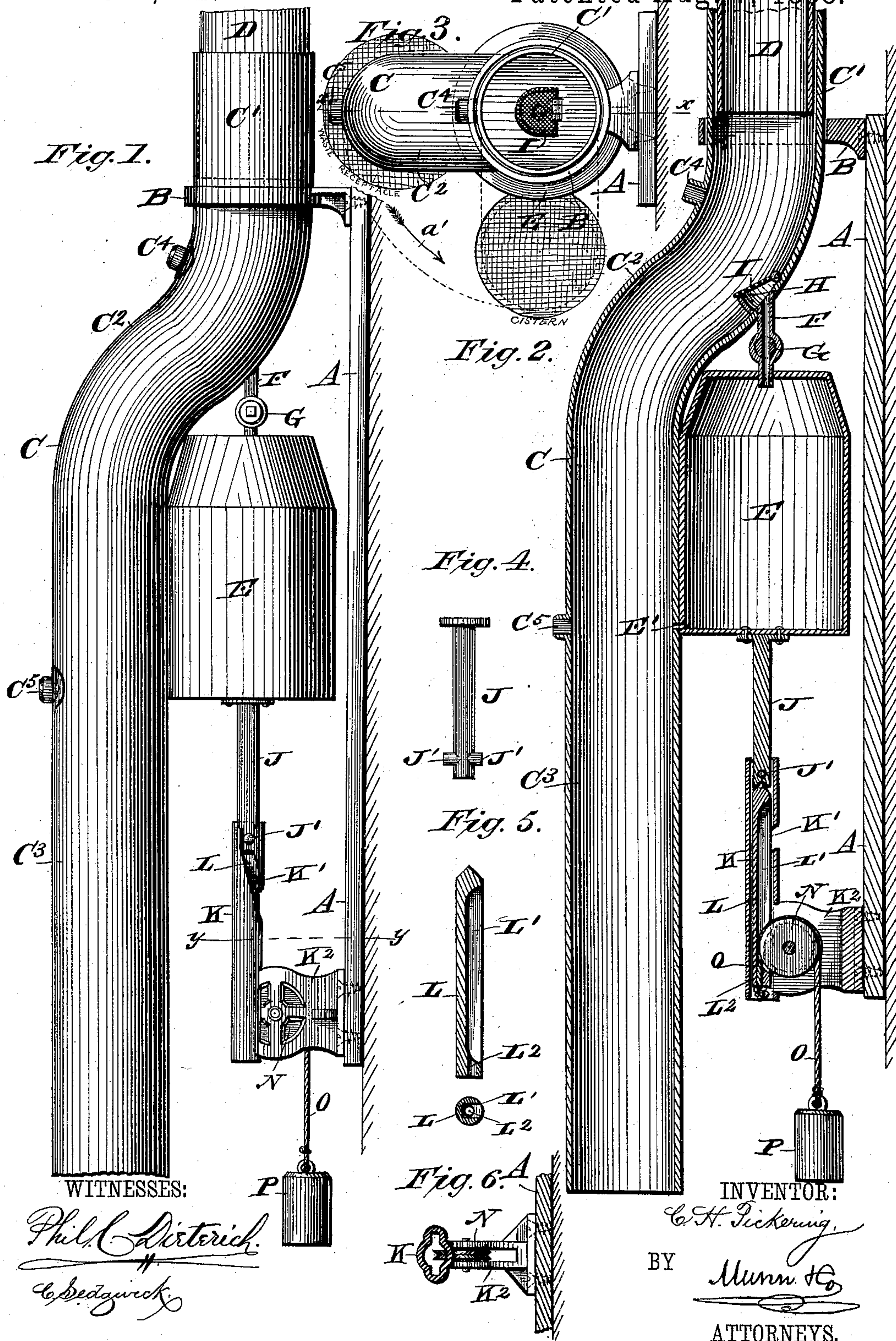
(No Model.)

C. H. PICKERING.

AUTOMATIC WATER TRAP FOR CISTERNS AND OTHER RECEPTACLES.

No. 387,442.

Patented Aug. 7, 1888.



UNITED STATES PATENT OFFICE.

CHARLES H. PICKERING, OF HOUSTON, TEXAS, ASSIGNOR TO HIMSELF AND
JOHN H. B. HOUSE, OF SAME PLACE.

AUTOMATIC WATER-TRAP FOR CISTERNS AND OTHER RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 387,442, dated August 7, 1888.

Application filed December 3, 1887. Serial No. 256,882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. PICKERING, of Houston, in the county of Harris and State of Texas, have invented a new and Improved Automatic Water-Trap for Cisterns and other Receptacles, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved water-trap for obtaining pure rain-water for cisterns and other receptacles.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improvement. Fig. 2 is a sectional side elevation of the same on the line *xx* of Fig. 3. Fig. 3 is a plan view of the same. Fig. 4 is a side elevation of a turning-pin. Fig. 5 is a sectional elevation of the grooved rope-pin, and Fig. 6 is a sectional plan view on the line *yy* of Fig. 1 with the rope-pin and rope removed.

A suitably-constructed bracket, A, adapted to be secured to the wall of a building, is provided at its upper end with a fixed ring, B, in which is guided the upper straight end, C', of the main pipe C. Into the part C' projects the lower end of a leader, D, held in the usual manner alongside of the house and connected with the gutter of the roof. The part C' continues downward into the bent part C², which continues into the downwardly-extending part C³, held parallel with part C', and adapted to connect at its lower end alternately with the waste-pipe and with the cistern or other receptacle into which the pure water is to be discharged.

On the straight part C³ of the main pipe C is secured a receptacle, E, of suitable size, and provided in its wall, near the bottom, with an aperture, E', leading into the interior of the part C³ of the pipe C. The top of the vessel or receptacle E connects by a pipe, F, with the interior of the bent part C² of the main pipe C, and in the said pipe F is held a cock, G, for regulating the amount of water flowing from the main pipe C into the receptacle or

vessel E. In the interior of the bent part C² of the main pipe C a ring, H, is formed around the opening of the pipe F, and the top edge of the said ring H is inclined downward and covered by a hinged sieve or strainer, I, which permits only pure water to pass into the ring H and the pipe F, and on account of its inclined position causes trash and other impurities coming down the pipe C to be carried off. The sieve I and the ring H can be cleaned, if necessary, through an opening, C⁴, formed in the bent part C² of the main pipe C opposite and above the ring H. In a similar manner the aperture E' in the vessel E can be cleaned through a like aperture, C⁵, formed in the straight part C³ of the main pipe and opposite the said aperture E'. The openings C⁴ and C⁵ can be closed by a cap.

To the bottom of the vessel or receptacle E is secured a pin, J, extending into a sleeve, K, rigidly connected with a bracket, K², fastened on the lower end of the bracket A. From the lower part of the pin J project the short pins or lugs J', engaging a spiral groove, K', formed on the sleeve K and extending at right angles, so that when the said pin J descends the spiral groove K turns the pin J on its axis about ninety degrees. In the sleeve K is held to slide a pin, L, provided at its upper end with a point engaging a corresponding recess formed in the bottom of the pin J. In the pin L is also formed a vertical slot, L', into which projects a pulley, N, mounted to rotate on the bracket K², and over the said pulley N passes a rope, O, secured by one end to the lower end of said pin L, and the other end of said rope carries a weight, P. The rope O is generally secured to the pin L by being passed through an aperture, L², in the lower end of said pin L, and then the rope is formed into a knot, which rests against the bottom of the said pin.

As shown in Figs. 1 and 2, the receptacle E is empty and the main pipe is in its uppermost position, and is held in this position by the weight P acting against the rope O and against the pin L in its uppermost position, and the said pin L supports the pin J, fastened on the lower end of the receptacle E.

The operation is as follows: As shown in Figs. 1, 2, and 3, the main pipe C is in its uppermost position and the lower end of the

straight part C³ of the said pipe connects with a waste-pipe or other means for carrying off the first and impure water coming down from the roof of the house through the leader D.

5 A certain quantity of rain-water passing down the leader D into the main pipe C passes through the strainer I into the ring H, and from the latter through the pipe F into the receptacle or vessel E. The water slowly ac-
10 cumulates in the said vessel or receptacle E until the weight of the main pipe, the vessel or receptacle E, and the water contained therein overbalances the weight P, so that the main pipe C and its vessel E descend. The main
15 pipe C is in this downward motion turned at right angles on account of the projections J' of the pin J engaging the spiral groove K' in the fixed sleeve K. The lower end of the straight part C³ of the main pipe C is thus discon-
20 nected from the waste-pipe, and now connects with an opening leading to the cistern or other receptacle. The main pipe C in its lowermost position is shown in dotted lines in Fig. 3. The water now passing down through the
25 leader D passes into the cistern or other receptacle. The pipe C remains in its last position as long as the vessel or receptacle E is full of water—that is, as long as it continues to rain. When the rain stops, the water in the vessel or
30 receptacle E drains slowly out into the main pipe C through the aperture E', and as soon as the vessel E is empty the weight P again descends, thus moving the grooved pin L and the pin J upward, so that the vessel E and the
35 main pipe C are likewise moved upward and turned again by the action of the pins J' in the groove K' to the position illustrated in Figs. 1, 2, and 3. I prefer to make the upper and lower parts of the spiral groove K' straight, so
40 that the lower end of the main pipe C is fitted into the opening leading into the cistern or other receptacle.

It is understood that the rain-water passing through the pipe C carries off all trash
45 and impurities that have been collected on the roof of the building until the position of the main pipe C is changed, as above described. The aperture E' is considerably smaller than the pipe F, and the water ac-
50 cumulates slowly in the vessel or receptacle E. The time in which the vessel or receptacle E will fill is regulated by the cock G, and consequently the amount of water discharged as waste water through the pipe C is regulated.
55 Thus it will be seen that the machine requires no attention whatever, all that is necessary being to keep it clean. The main pipe C will swing to the right or left, as desired, according to the direction of the spiral groove K.

60 Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a water-trap, the combination, with
65 a bent main pipe connected at its upper end with the leader and connected at its lower end alternately with a waste-pipe and a cistern, of a vessel secured on the said main

pipe and connected with the same, a pin held on the under side of the said vessel, and a fixed sleeve provided with a spiral groove
70 engaging said pin, so that when the said vessel and the main pipe descend they are turned, substantially as shown and described.

2. In a water-trap, the combination, with
75 a support, of a bent pipe fitted to turn and slide in the said support, a vessel secured to and communicating with the bent pipe, a counter-balance for the said vessel and pipe, and a cam-connection between the said ves-
80 sel and support, substantially as described, whereby the pipe will be automatically lowered and turned when the weight of the pipe, the vessel, and the water contained therein overbalances the counter-balance, as set forth.

3. In a water-trap, the combination, with a
85 bent pipe fitted to slide and turn in its support, of a vessel secured to the pipe, a pipe connecting the top of the vessel with the bent pipe, a ring having an inclined top edge held on the inside of the bent pipe and surround-
90 ing the opening, a screen on the top of the said inclined ring, and means for turning the vessel and bent pipe as they descend, substantially as herein shown and described.

4. In a water-trap, the combination, with
95 a bent main pipe, of a vessel secured on the said main pipe and connected with the same, a pin held on the under side of the said vessel, a fixed sleeve provided with a spiral groove engaged by the said pin, and a coun-
100 ter-balance connected with the said pin, substantially as shown and described.

5. In a water-trap, the combination, with
105 a bent main pipe, of a vessel secured on the said main pipe and connected at its top with the interior of the said main pipe, a pin held on the bottom of the said vessel, a fixed sleeve provided with a spiral groove and engaged by said pin, a grooved pin held in the said fixed sleeve and resting at its top end on the bot-
110 tom of the said pin, a rope connected with the said grooved pin, and a weight held on the said rope to counterbalance the said main pipe and vessel, substantially as shown and described.

6. In a water-trap, a bent main pipe, a ves-
115 sel secured on the said main pipe and connected at its top with the interior of the said main pipe, and a pin secured to the bottom of the said vessel and provided at its lower end
120 with lugs or pins, in combination with a fixed sleeve provided with spiral grooves engaged by the said lugs on the pin, a grooved pin held in the said sleeve and resting at its top on the bottom of said pin, a rope connected
125 with the said grooved pin, a pulley held to rotate in the said fixed sleeve and over which said rope passes, and a weight secured to the lower end of said rope, substantially as shown and described.

CHARLES H. PICKERING.

Witnesses:

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H. CABANISS.