(No Model.) 2 Sheets—Sheet 1.

W. H. MILLER.

SPRINKLER HEAD AND VALVE THEREFOR

No. 475,244. Patented May 17, 1892.

Fig. 1.

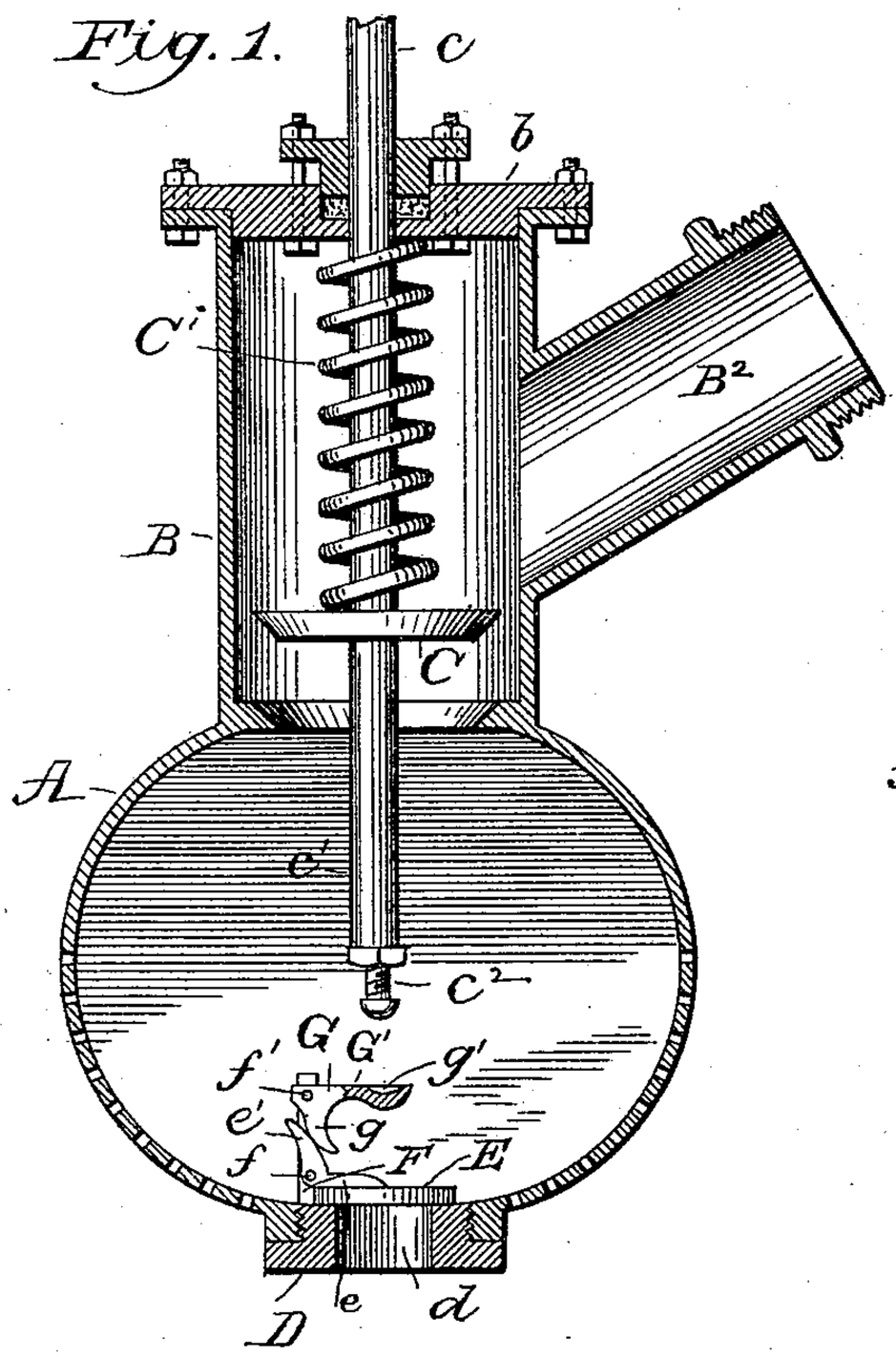


Fig. 2.

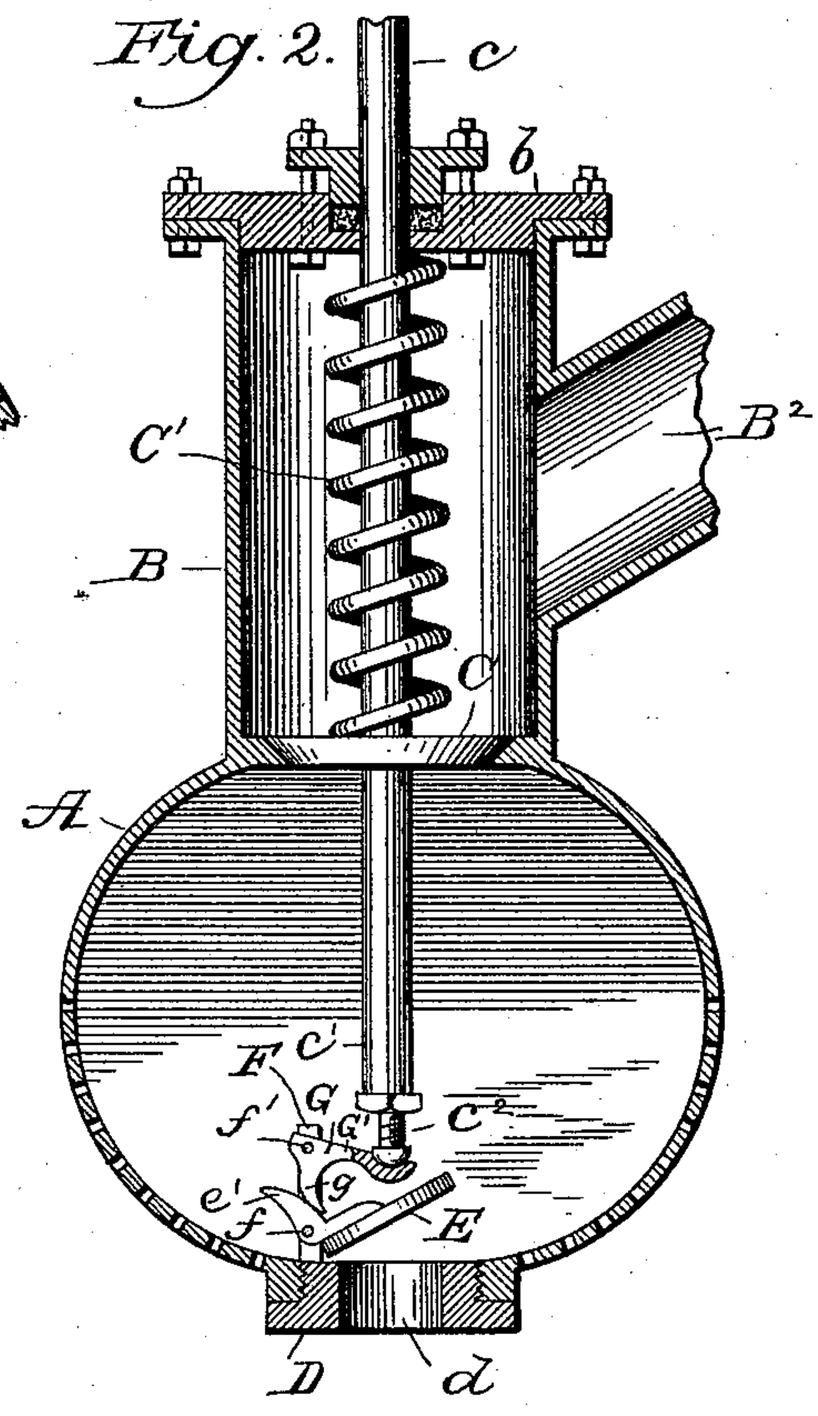
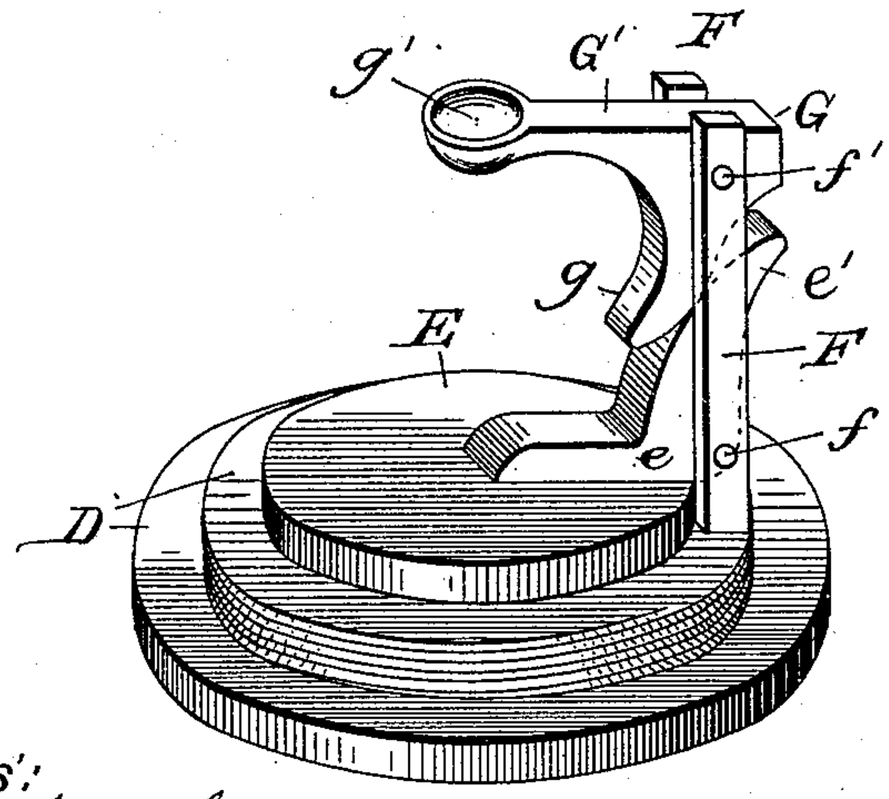


Fig. 3.



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(No Model.)

2 Sheets—Sheet 2.

W. H. MILLER.

SPRINKLER HEAD AND VALVE THEREFOR

No. 475,244. Patented May 17, 1892.

Fig. 4.

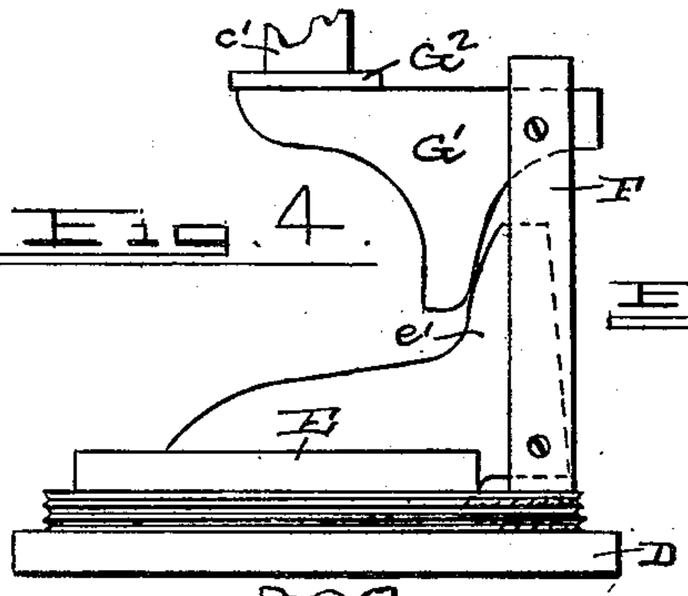


Fig. 5.

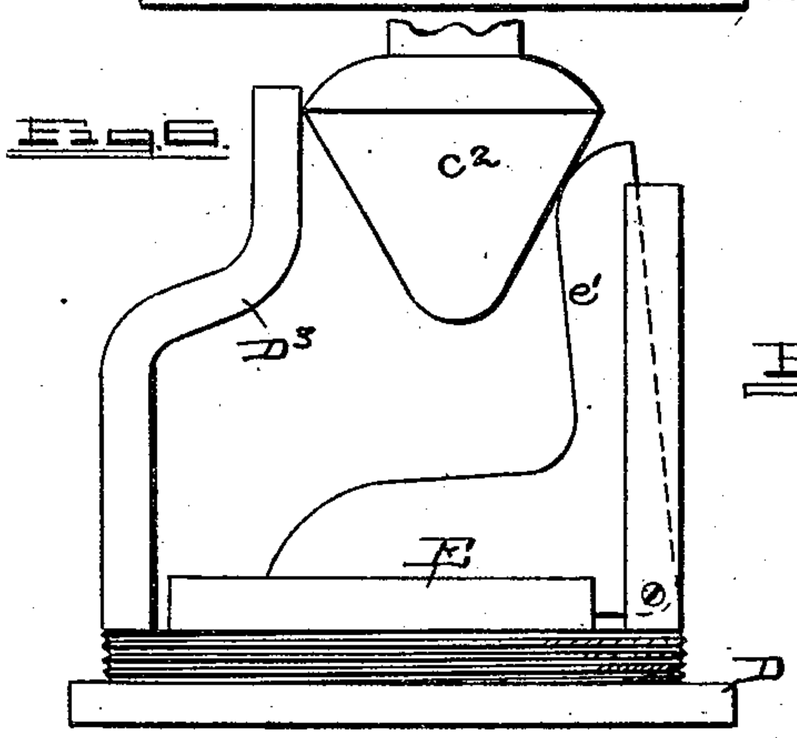


Fig. 6.

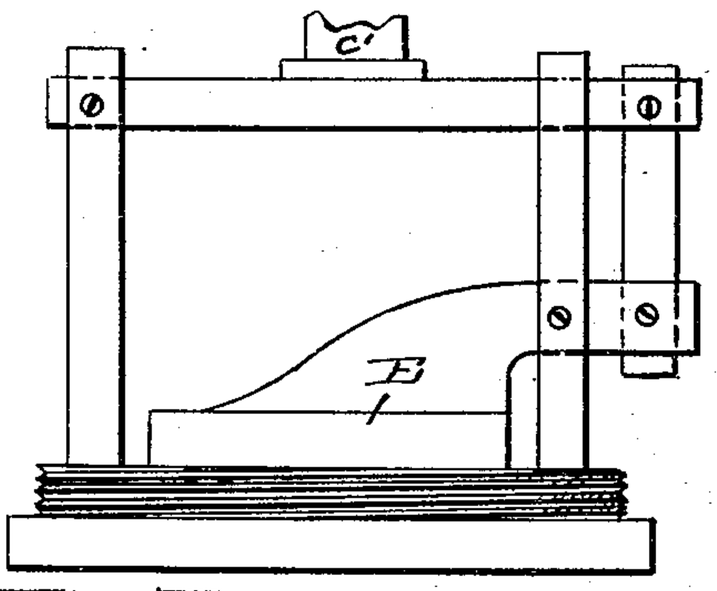


Fig. 7.

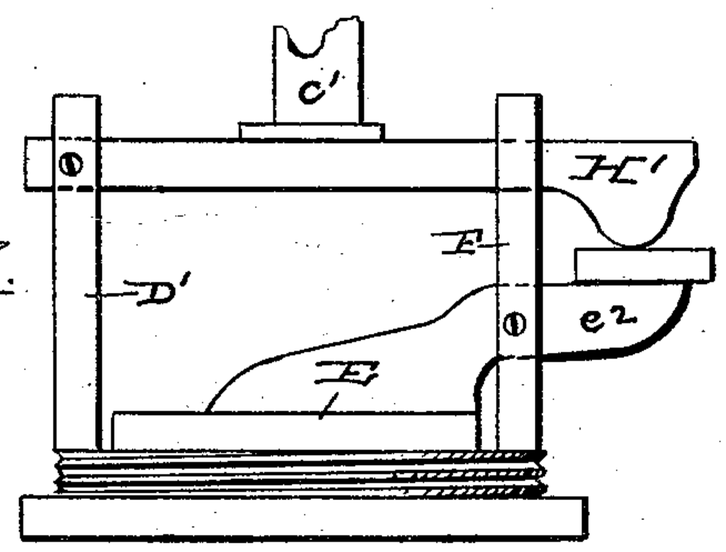


Fig. 8.

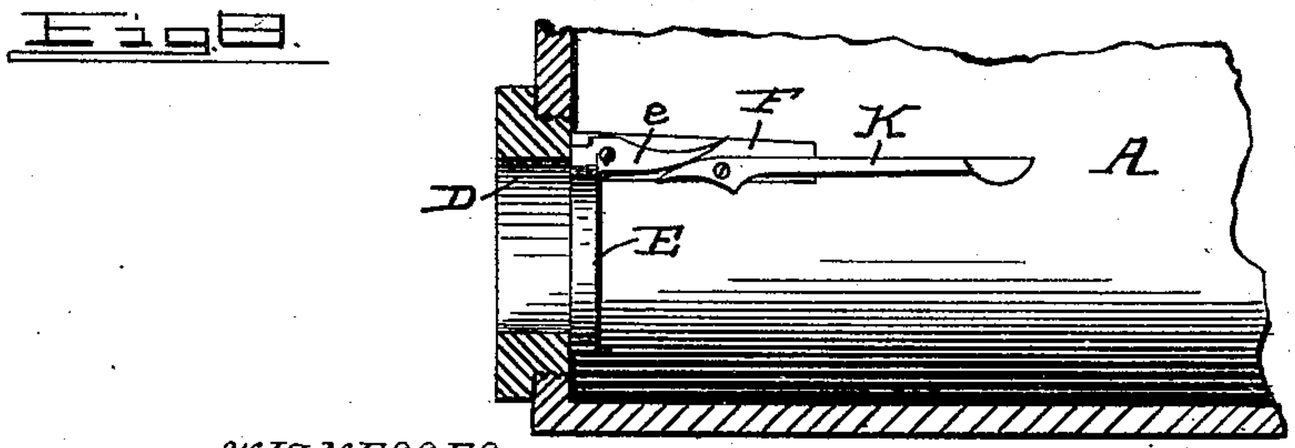


Fig. 9.

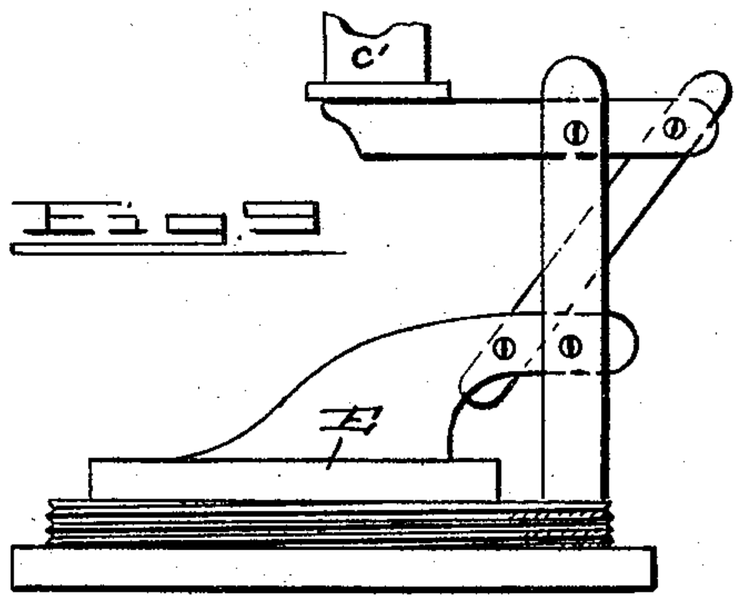
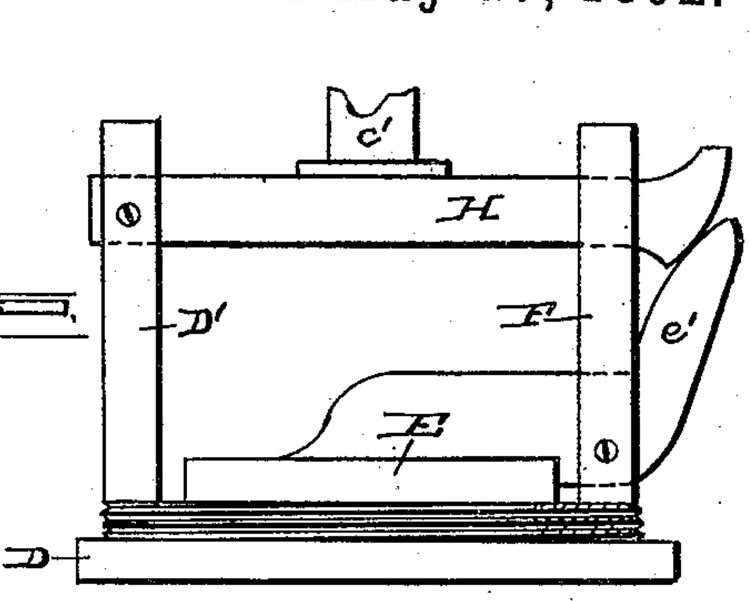


Fig. 10.

Fig. 3.



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C. M. Seville.

INVENTOR
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UNITED STATES PATENT OFFICE.

WILLIAM H. MILLER, OF SOUTH BEND, INDIANA, ASSIGNOR TO THE MILLER-KNOBLOCK WAGON COMPANY, OF SAME PLACE.

SPRINKLER-HEAD AND VALVE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 475,244, dated May 17, 1892.

Application filed February 2, 1892. Serial No. 420,057. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MILLER, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sprinkler-Heads and Valves Therefor; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a central vertical sectional view through my improved sprinkler-head for street-sprinkling machines, &c., showing my improved waste-valve therein and devices for operating the same, the main valve being open and the waste-valve therefore closed. Fig. 2 is a similar view showing the main valve closed and the waste-valve consequently open. Fig. 3 is a perspective view of the waste-valve detached. Figs. 4, 5, 6, 7, 8, 9, and 10 are detail side views of modified forms of the waste-valve.

This invention is an improvement in sprinkler-heads for street-sprinkling machines and for other purposes; and its objects are to improve the construction of the heads, to provide the head with a waste-valve which will be opened by the closing of the main valve, so that the head will be washed out each time the main valve is closed, if there is any water therein, and finally to improve the construction of the waste-valve; and the invention therefore consists in the novel construction of the head, the novel combination and arrangement of main and waste valves therein, and in the novel construction of the waste-valve, and in certain other novel details of construction and combination of parts hereinafter clearly described and claimed.

Referring to the drawings by letter, the sprinkler-head A is cylindrical and is connected to the lower end of a short tube B, in the bottom of which is formed a seat for the main valve C and the top of which is closed by a removable cap *b*, through which passes the upper end of the stem *c* of the main valve C, which may be connected to any suitable devices for reciprocating the stem, thereby unseating or seating the main valve. A helical spring C′ may be placed on the stem between the valve and cap *b* to assist in closing the main valve. The tube is preferably suspended in a vertical position in any suitable manner beneath the tank (when used on a street-sprinkling machine) with the head lowermost, and is connected to the tank by a hose attached to an inlet-joint B^2 in the side of tube B, so that the water enters above the main valve and escapes therethrough into the sprinkler-head. The head is perforated, so as to let the water escape therefrom in numerous small jets. In the lowest part of the head is a large opening, in which is screwed or otherwise secured a bung D, having a central opening *d*, which is closed by a flap-valve E, which has an ear *e* on its perimeter, that is pivoted by a pin *f* between uprights or lugs F F, formed on or rigidly connected to the inner face of bung D at one side of the opening.

e′ is an upstanding finger rising from the ear *e* and may be formed integral therewith, having its inner edge (adjoining the valve) rounded or beveled off, so as to form a cam-surface, and lying between uprights F F, as shown.

G is a bell-crank lever pivoted at its bend by a pin *f′* between uprights F F above finger *e′* and having a depending beveled or rounded arm *g*, which contacts with the inner edge of finger *e′*, and also having a horizontal arm G′, which extends at right angles to arm *g* and terminates in a cup-shaped socket *g′*, which lies directly below or in line with the valve-stem *c*.

c′ is an extension of the valve stem or rod attached to the main valve extending into head A, which when the valve C is closed strikes arm G′ and rocks lever G, thereby lifting or opening valve E by contact of finger *e′* against arm *g*.

Preferably rod *c′* is made adjustable or is provided with an adjustable piece c^2 on its end, by which it can be lengthened or shortened and so the amount of opening imparted to valve E or the time of opening of said valve in relation to the main valve regulated.

From the foregoing it will be evident that as the main valve is closed, thus cutting off the water-supply to head A, the waste-valve E is opened, so that the water contained in head A can rush out, carrying with it sedi-

ment and impurities that have collected in the head and could not pass through the perforations, thereby cleansing the head. Of course the waste-valve remains open until the main valve is opened, when it immediately closes by gravity and by the pressure of water in the head. By reason of the cam surfaces or levers interposed between the main valve and the waste-valve the opening of the latter against the pressure of water therein is accomplished easily.

In Fig. 4 the cup g' is omitted and a washer-plate G^2 may be fixed or formed on the end of arm G′ or end of rod c'.

In Fig. 5, instead of employing the bell-crank piece G, a vibrating lever H is used, which is pivoted at one end between lugs D′ on annulus D opposite lugs F F and extends over the valve and its free end is beveled and bears against the oppositely-beveled face of finger e', so that when lever H is forced down by rod c' the valve will be opened.

In Fig. 6 the lower end of rod c is formed into a cone or double cam c^2, which comes in contact with finger e' and lifts the valve E, as is evident from the drawings, and in order to prevent the rod c' vibrating a bearing-lug D^3 may be formed on bung D, against which one side of cam c^2 bears when its opposite side contacts finger e'.

In Fig. 7 ear e is provided with a rearward extension e^2, upon which the free end of a lever H′, arranged like lever H, bears, so that when the lever H′ is depressed by the stem the valve is opened.

It will be observed that each and all the waste-valves described are mounted on the bung and can be removed therewith, thereby facilitating the adjustment of rod c' or piece c^2 thereon.

In Figs. 8 and 9 the valve is operated by link connections with the lever, and various other modifications may be made in the construction of the waste-valve-operating devices, provided it will be operated from and by the main valve, substantially as described, and it is not necessary that the waste-valve be directly below or in line with the main valve.

In Fig. 10 the waste-valve is set in the end or side of the head and is operated by an oscillating lever K, pivoted between lugs F, one end of which engages finger e' and the other projects beneath the stem in position to be struck thereby, substantially as described.

Having described my invention, what I claim as new, and desire to secure by Letters Patent thereon, is—

1. The combination of the supply-tube, the sprinkler-head, the main valve between said tube and head, the hinged waste-valve in said head, having an upstanding finger, and the rod connected to the main valve and adapted to cause the opening of the waste-valve when the main valve closes, substantially as described.

2. The combination of the supply-tube, the sprinkler-head, the main valve between said tube and head and the adjustable rod connected thereto, and the waste-valve for said head, arranged substantially as described, so that it is opened by said rod when the main valve closes, substantially as described.

3. The combination of the tube, the sprinkler-head connected thereto, the main valve between said head and tube and the waste-valve in said head below the tube, and mechanism, substantially as described, whereby the waste-valve is opened when the main valve closes, and vice versa, substantially as specified.

4. The combination of the tube, the sprinkler-head connected thereto, the waste-valve removably connected to said head, the main valve in said tube, and the rod connected to said main valve, adapted to cause the opening of the waste-valve when the main valve closes, substantially as described.

5. The combination of the tube, a perforated sprinkler-head connected to the lower end thereof, the water-inlet, the main inlet-valve, and a waste-valve in said head, substantially as specified.

6. The combination of the sprinkler-head, a hinged waste-valve therein having an upstanding finger and a lever pivoted above the valve and engaging said finger, with the reciprocating main valve and a rod connected thereto adapted to engage said lever and open the waste-valve when the main valve closes, all substantially as specified.

7. The combination of the sprinkler-head, the bushing secured in an opening therein and having a waste-opening and lugs rising beside said opening, a waste-valve having an ear hinged between said lugs and an upstanding finger and a lever hinged between said lugs and engaging said finger and adapted to open the valve when depressed, and means, substantially as described, for depressing said lever, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM H. MILLER.

Witnesses:
JAMES DUSHANE,
WILL G. CRABILL.