

C. P. ZIMMERMAN.
Water-Cocks.

No. 148,542.

Patented March 10, 1874.

Fig. 1.

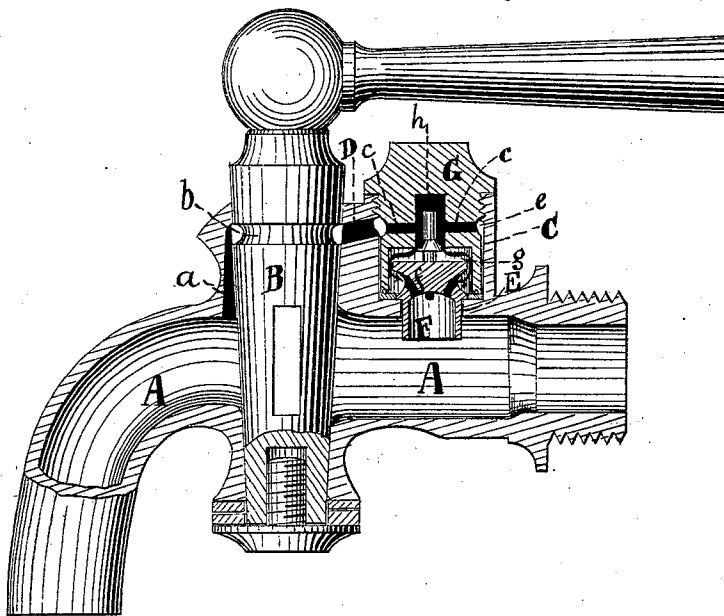


Fig. 2.

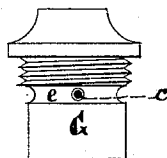
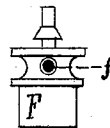


Fig. 3.



Witnesses:
G. Matting.
Isaiah Fearing.

Inventor:
Chas. P. Zimmerman,
by his attys,
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UNITED STATES PATENT OFFICE.

CHARLES P. ZIMMERMAN, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS RIGHT TO ISAAC P. BROWN, JR., OF SAME PLACE.

IMPROVEMENT IN WATER-COCKS.

Specification forming part of Letters Patent No. 148,542, dated March 10, 1874; application filed February 14, 1874.

To all whom it may concern:

Be it known that I, CHARLES P. ZIMMERMAN, of Newark, in the county of Essex and in the State of New Jersey, have invented certain new and useful Improvements in Water-Cocks; 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.

The nature of my invention consists in providing an air-passage in addition to the usual water-way in a cock, to be opened or closed by a valve as the water-pressure is off or on the said valve, as will be more fully hereinafter illustrated.

My invention has for its object the prevention of the collapsion of the water-"reservoir," at present extensively used as a part of the water-fixtures of buildings when a vacuum has been created in the reservoir by its supply-pipe from the exhaustion of the water in the "street-main" which supplies said reservoir, as in case of fire in the neighborhood, also supplied by the same street-main; and this accident to the reservoir is effectually prevented by attaching one of my improved water-cocks to an outlet-pipe of the reservoir.

To enable others skilled in the art to make and use my invention, I will now proceed to give a more specific description of its operation and construction.

In the drawings, Figure 1 is a vertical section of my invention, and Figs. 2 and 3 detail views.

A is the case of an ordinary water-cock, with a common frusto-conical stopper, B, secured in place. A groove is cut around the stopper at *b*, Fig. 1. A narrow vertical channel, *a*, in the case A next to the stopper B, is cut from a point opposite the groove *b* to the water-way of case A. In an enlargement of the case A, on its upper surface, I provide a vertical cylindrical chamber, C, which has communication through passage D with groove *b*, and through opening E with the water-way of case A, as shown in Fig. 1. Opening E serves as the seat for valve F, whose construction is clearly indicated in the drawings, be-

ing shown in vertical section in Fig. 1, and side elevation in Fig. 3. Chamber C is closed at top by means of a screw-plug, G, which snugly fills this chamber. (See Fig. 1.) This plug G has a recess or chamber, *g*, in which valve F can have the requisite play, and recess *g* communicates with the small central chamber *h*, and the several passages, *c*, which extend from it to the groove E cut around the plug G, and so with the passage D.

From this construction, I am able to obtain an air-passage which extends from the channel *a* through groove *b*, passage D, groove *c*, passages *c*, chambers *h* and *g*, through holes *f*, in valve F, to the inlet side of the case A.

When my invention is thus constructed and applied to an outlet-pipe of a reservoir, the water will at once lift the valve F up into the recess *g*, and fit it closely against the roof of this recess or chamber *g*, and so cut off communication with the inlet side of the case A, and the air-passage just described; and as long as the water-pressure continues so long will this air-passage be closed, and thus prevent the escape of water; but should there be a fire in the neighborhood, which is supplied by water from the same street-main that supplies the water-fixtures to which my invention is applied, and the said street-main be exhausted by the rapid and copious demands of the fire, the water in said water-fixtures, with their reservoir, will be emptied, and then withdrawing the water from the pipe to which my water-cock is applied, the valve F will automatically drop down into its seat E, and the air will rush in through the air-passage before described, fill the reservoir and water-fixtures, and so prevent the formation of a vacuum and consequent collapsion of any of the water-fixtures.

As fires occur frequently in the night-time, when no one, because of sleep, can open the usual water-cock to prevent the accident of collapsion, or those whose duty it is to attend to this may not do so at the proper moment, although conscious of a fire in the vicinity, it is a great advantage to have my valve to act automatically, as described.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

The valve F, in combination with screw-plug G, passage D, groove *b*, and channel *a*, to automatically control the air-passage, constructed and operating substantially in the manner set forth.

In testimony that I claim the above-de-

scribed certain new and useful improvements in water-cocks, I have hereunto signed my name this 27th day of December, 1872.

CHARLES P. ZIMMERMAN.

Witnesses:

ABRAHAM MANNERS,

WM. M. LITTELL.