C. P. CROSSMAN & A. H. SOMES.

Sink-Valve.

No. 215,887. Patented May 27, 1879.

Fig. 1.

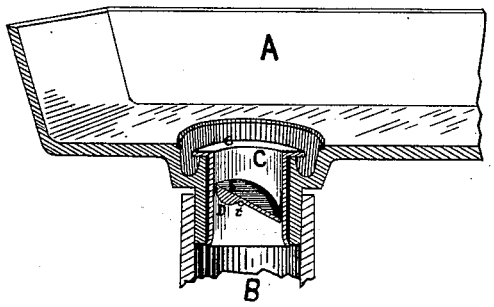


Fig. 2.

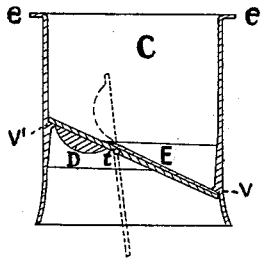


Fig. 3.

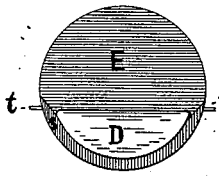
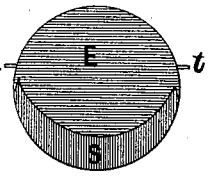


Fig. 4.



Witnesses:

H. S. Talbot

W. R. Marble

Inventors:

Charles P. Crossman.

Arthur H. Somes.

By Sylvenus Walker

Atty

UNITED STATES PATENT OFFICE.

CHARLES P. CROSSMAN AND ARTHUR H. SOMES, OF WEST WARREN, MASSACHUSETTS.

IMPROVEMENT IN SINK-VALVES.

Specification forming part of Letters Patent No. **215,887**, dated May 27, 1879; application filed February 8, 1879.

To all whom it may concern:

Be it known that we, CHARLES P. CROSSMAN and ARTHUR H. SOMES, of West Warren, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Automatic Valves for Sinks, of which the following is a specification.

The object of our invention is to provide a cheap, simple, and efficient automatic valve to be applied to sink-pipes, water-closet pipes, bath-room pipes, and all waste-water pipes connecting with drains and sewers in such a manner as to allow the waste-water to open the valve and pass downward freely, and permit the valve to close again automatically, so as to prevent all gases and foul odors from ascending or passing upwardly through the valve, and thence into dwellings or apartments, as now is universally the case wherein the common traps are employed for the purpose, as it is found the pressure of the gases formed is so great as to pass readily upward or through the trap and water contained therein, greatly to the detriment of health, being the prime cause of many diseases as well as the disagreeable odors arising from such causes, all of which objections our invention is designed to fully obviate.

It consists in the construction, combination, and arrangement of the weighted, oblique, or inclined valve, with its tube, with the waste-pipe of a sink or other desired waste-pipe, as hereinafter more fully described and set forth.

Figure 1 shows a vertical section of our invention as applied to a sink-trap and waste-water pipe, the sink-strainer being removed. Fig. 2 is a similar view of the device removed. Fig. 3 is a view of the under side of the valve, showing the weighted portion. Fig. 4 is a view of the upper or opposite side, showing the line of packing.

A represents a portion of a cast-iron sink of usual construction, and provided with a waste-water pipe, B, as heretofore. C represents a short metal tube provided with a rim or flange, *e*, projecting outwardly from the top of the same at a right angle to the body, as shown. E represents a circular metal valve, having pivots *t* arranged at opposite edges thereof, and on a diametrical line passing a short distance one side of the center of the valve, as shown, leaving the surface of the valve unequally distributed from the pivots *t*, which serve as bearings by being fitted into suitable corresponding holes formed in nearly opposite sides of the short tube C, which may have grooves extending from its top vertically downward to the said holes prepared to receive the pivots *t* of the said valve E, by which means the valve may be easily removed for cleaning, repairs, &c., and readily replaced.

D represents a weight or a thickened portion of the valve, extending on the lower surface of the same to near the edge on the shortest or narrowest portion of the valve, measuring from the bearings or pivots *t*. This unequal distribution of weight is sufficient to more than counterbalance the unequal area relative to the surface of the valve and its pivot-bearings, so that if a stream of water strikes upon the top of the valve, it being seated at an angle of about forty-five degrees, the water will seek the lowest surface of the valve, and thus overcome the slight weight which holds it closed, and thereby automatically open the same, as shown by dotted lines in Fig. 2.

In order to provide for the tight closing of the valve against the gases pressing upward, we apply any suitable thin packing, S, to each face or top and bottom side of the valve, in crescent shape, as shown in Figs. 3 and 4. This packing, when the valve is closed, contacts with a projecting flange or flanges, V, extending upon the inner surface of the tube from the pivots each way, so as to form a stop at opposite sides of the valve on an incline, as shown, one of the flanges, V, being faced downward, and the other, V′, being faced upward, so as to allow the valve to be tilted by the action of water, and be closed air-tight, or nearly so, when the water has ceased to flow through the same, as shown in Fig. 2.

This device or automatic valve is adapted to be applied to the waste-water pipe of sinks, as shown in Fig. 1, the usual perforated strainer

or plate being removed or omitted in the drawings; but our invention is designed to be used in connection with the usual strainer.

Having thus described our invention, what we claim is—

In combination with the short metal tube C, provided with the inclined interior flanges, V V′, the automatic valve E, provided with pivots *t*, as described, and having the weighted portion D and packings S upon opposite faces thereof, as and for the purposes set forth.

CHAS. P. CROSSMAN.
ARTHUR H. SOMES.

Witnesses:
JOS. F. HITCHCOCK,
DANIEL G. HITCHCOCK.