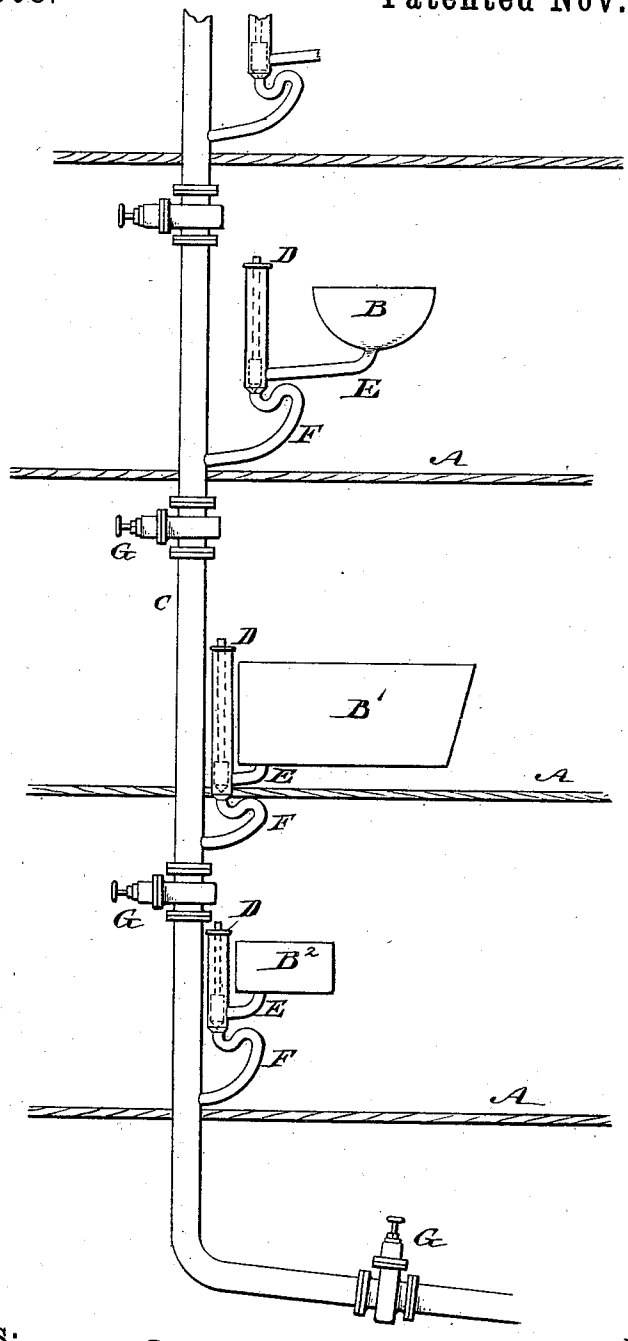
(No Model.)

W. D. SCHUYLER.

CLEANSING, DISINFECTING, AND TESTING DRAIN PIPES IN DWELLINGS AND OTHER STRUCTURES.

No. 374,008. Patented Nov. 29, 1887.



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WILLIAM D. SCHUYLER, OF NEW YORK, N. Y.

CLEANSING, DISINFECTING, AND TESTING DRAIN-PIPES IN DWELLINGS AND OTHER STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 374,008, dated November 29, 1887.

Application filed March 31, 1887. Serial No. 233,159. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. SCHUYLER, of the city, county, and State of New York, have invented a new and useful Improvement in Cleansing, Disinfecting, and Testing Drain-Pipes in Dwellings and other Structures, of which the following is a full, clear, and exact description.

This invention has mainly for its objects the cleansing and disinfecting of drain-pipes and their connections used to carry off the waste and foul water or matter from wash-bowls, water-closets, bath-tubs, sinks, and other like stationary receptacles on the different floors or stories of a building, and also for detecting leakage in said drain-pipe and its connections, and to afford additional protection against the escape of sewer-gas into the apartments of the building.

The invention consists in a novel method and means for accomplishing these ends or any of them, substantially as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawing, which represents a diagram or skeleton view in elevation of the invention as applied to a wash-bowl, bath-tub, and sink upon different floors of a building.

A A A indicate the floors of different stories or apartments, one above the other, of a building, and B B′ B² certain water fixtures or receptacles therein, and which are here represented as consisting of a wash-bowl, B, a bath-tub, B′, and a sink, B². These receptacles, however, may be substituted by others, and the usual or any suitable pipe-connections and faucets are or may be provided for supplying them with hot or cold water, or both.

C is the waste or drain pipe, running up through the building and designed to connect below with the sewer or cess-pool, as the case may be.

D D D are the valves for discharging the contents of said receptacles B B′ B² into the drain-pipe C and for preventing sewer-gas from passing into the apartments through said receptacles. These valves D may be of any suitable description; but I prefer to use a weighted hand trap-valve similar to that described in Letters Patent No. 337,445, issued to me on March 9, 1886.

E and F are the discharge-connections, the latter one preferably in the form of a trap, between the receptacles, the hand discharge-valves D, and the drain-pipe C. Any other discharge-connections, however, with valves controlling the same between the receptacles and the drain-pipe may be used.

G G G are hand-valves in the drain-pipe C, arranged below where the discharge-connection from each receptacle communicates with the drain-pipe. These valves, which may be of any suitable construction, are designed to open and close the drain-pipe between the different floors and below them, but their normal condition is an open one when the different receptacles are in use. The lowest one of these valves G may be regarded as a general "shut-off," to give additional protection against the escape of sewer-gas into the different apartments when the building is not occupied, or all or any of these valves G may be used for the same purpose. Said valves G, however, have other and important functions. Thus, they may be used for detecting leakage in the drain-pipe, not simply by closing the lower one of said valves and flooding the drain-pipe throughout its height with water, which might expose said pipe to rupture by the pressure thrown upon it and would require a much stouter drain-pipe to be used than otherwise is necessary, but, by only partially flooding the drain-pipe, either from the receptacles in the apartments or otherwise, between any two of the valves G, kept closed for the purpose, any particular section or portion of the drain-pipe may be tested to indicate the apartment in which there is a supposed leakage from the drain-pipe or its connections, without flooding the whole drain-pipe or exposing it to an excessive head or pressure of water. The most important function, however, of these valves G is the facility which they afford for cleaning or washing out and disinfecting the drain-pipe and its connections, either throughout the whole length of the drain-pipe or only certain sections of it. Thus any one or a pair of said valves may be closed to flood the drain-pipe above it or between them, and disinfectants be introduced from one or more of the receptacles or water-fixtures into the drain-pipe by opening the supply valve or valves D control-

ling the discharge from the receptacle or receptacles into the drain-pipe, and afterward suitably opening the valve or valves G to wash out the drain-pipe; or the drain-pipe may be simply washed out in sections or throughout its whole length, if desired, without using disinfectants. When disinfectants, however, are used to purify the drain-pipe and its connections, the valvular division of the drain-pipe into sections corresponding with the different apartments will be found especially serviceable and economical, as only certain sections of the drain-pipe may require to be disinfected—as, for instance, when only one or more of the apartments or receptacles therein are used and not the others.

By this invention it will be observed that the drain-pipe C is readily convertible into a closed vessel, either throughout its length or in sections, by closing the lower end of the pipe or by dividing the pipe into closable sections.

The separate or individual connections between the wash-bowl, water-closet, or other receptacles may be closed by any suitable resisting-valve or by the weighted or automatic hand trap-valve D, hereinbefore mentioned, while the valves G, which may be hand-trap or any other kind, and of which there may be one or more, are arranged to conveniently close or cut off said drain-pipe at its outlet or in sections—that is, at different points in its length—and serve to convert said drain-pipe into a closed vessel either throughout its length or in sections, in order that such parts as desired may be conveniently filled with disinfecting water or agents and be both soaked with and flushed of all organic or other hurtful or dangerous substances, and the same thus be cleansed for the purpose of more effectually preventing the generation of sewage-gas and its escape within the building.

Each receptacle and its connection with the drain-pipe and the section of the drain-pipe with which it connects may be separately cleansed or disinfected by filling the receptacle with the necessary cleansing or disinfecting fluid, closing the valves G in the drain-pipe, or certain of them, and opening the valve D of said receptacle, and after the cleansing or disinfecting fluid has remained a sufficient length of time to accomplish the desired result the valve G below the receptacle may be opened to flush or run off the fluid, the valve D of the receptacle then remaining open.

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

1. In drain-pipe connections for wash-bowls, water-closets, and other like structures, the method herein described of cleaning and disinfecting the drain-pipe and of detecting leakage in it, which consists in dividing said pipe into opening and closing sections at different points in its height at or near its connection with different water structures or receptacles on different floors or stories of a building, essentially as specified.

2. In drain-pipe connections for wash-bowls, water-closets, and other like structures or receptacles, the combination of a series of receptacles arranged, respectively, in apartments one above the other, a drain-pipe common to all the receptacles, independent discharge-connections and independent valves controlling the same between the receptacles and the drain-pipe, and a series of independent hand-valves in the drain-pipe below the points of connection of the receptacles with the drain-pipe, substantially as specified.

3. In drain-pipe connections for wash-bowls, water-closets, and other like structures or receptacles, the combination of a series of receptacles arranged, respectively, in apartments one above the other, a drain-pipe common to all the receptacles, independent discharge-connections, and a series of independent hand-valves in the drain-pipe below the points of connection of the receptacles with the drain-pipe, substantially as specified.

4. The combination, with the several water fixtures or receptacles in a series of apartments one above the other, of the drain-pipe C, common to all the receptacles, the discharge-connections E F, with their independent hand-valves D between said receptacles and the drain-pipe, and the independent hand-valves G in the drain-pipe, essentially as shown and described, and for the purposes herein set forth.

WILLIAM D. SCHUYLER.

Witnesses:
EDGAR TATE,
E. M. CLARK.