

JOSEPH DANIELS.

Foul-Air Escape for Waste Pipes.

No. 124,666.

Patented March 19, 1872.

Fig. 1.

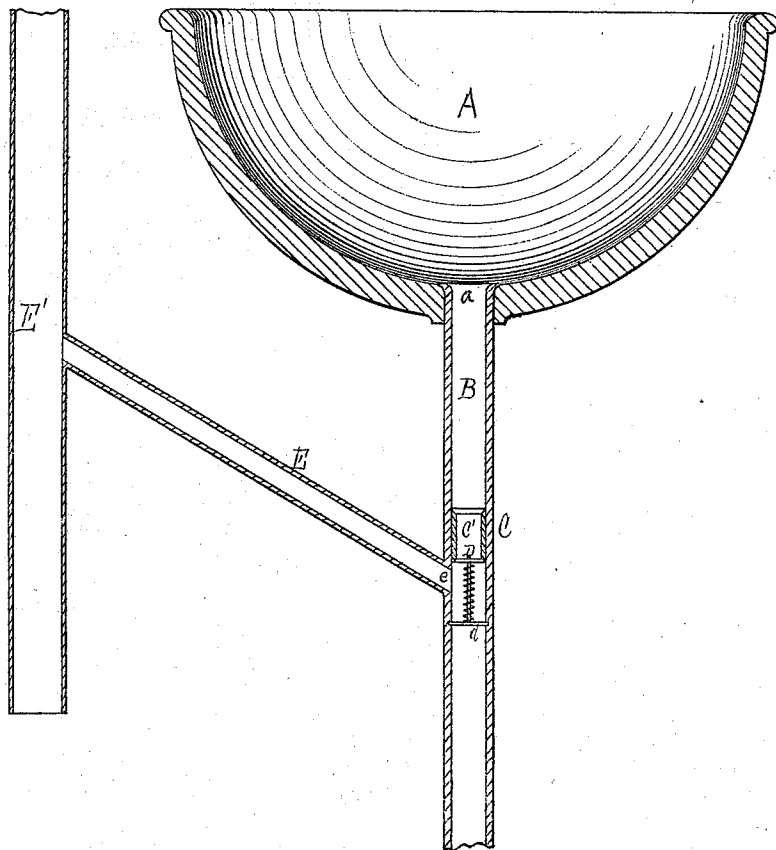


Fig. 4.

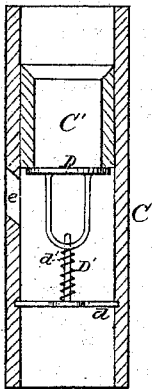


Fig. 2.

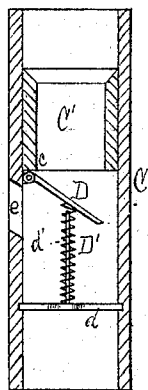
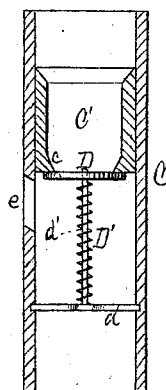


Fig. 3.



Witnesses:

J. C. Brecht.
Edwin James.

Inventor:

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UNITED STATES PATENT OFFICE.

JOSEPH DANIELS, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN FOUL-AIR ESCAPES FOR WASTE-PIPES.

Specification forming part of Letters Patent No. 124,666, dated March 19, 1872.

To all whom it may concern:

Be it known that I, JOSEPH DANIELS, of Washington city and District of Columbia, have invented an Improved Attachment for Waste-Pipes; of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon making part of this specification, in which—

Figure 1 is a vertical sectional view of a waste pipe, with my improvement attached, secured to a basin. Fig. 2 is a vertical sectional view of my improvement, one form of valve being shown. Fig. 3 is a vertical sectional view of my improvement, another form of valve being shown. Fig. 4 is a vertical sectional view of my improvement, another form of valve being shown.

The object of my invention is by a simple and cheap attachment, arranged in connection with the ordinary waste-pipes of a building, to furnish the means whereby the injurious and unhealthy odors, fumes, or gases which are generated in sewers shall be arrested and carried off. It is conceded by all who are familiar with malarial diseases and their origin or cause that there is no more fruitful source than the one traceable directly to this species of impure air, and which is received from the sewer through the waste-pipes and discharged into the apartment, there to infect with its poisonous miasma the entire atmosphere. To remedy this, as I have said, is the object of my present invention, which consists in securing in a short section of pipe, which I propose to furnish to the trade as a manufactured article, a short sleeve, the lower section of which is to serve as a seat for a spring-valve, in connection or in combination with an auxiliary pipe, which receives and carries off the foul air and odors that may enter the waste-pipe from the sewer. The section or piece of pipe, with my improvements attached, is to be inserted at any desired point or position, as a section of the waste-pipe, so that the fall of water through the waste-pipe shall, by means of its gravity, overcome the tension of the spring, so as to open the valve and allow the water to pass off, the valve being automatically closed by the spring the moment the water ceases to run, and, then acting as a barrier, prevents the passage of any air or gas from the sewer into the apartment, and

thus compelling it to make its exit through the auxiliary or side-pipe into the open air or some suitable common receptacle or discharge-pipe.

The construction and operation of my invention is as follows: A represents the bowl of a wash-stand, the pan of a water-closet, or any other like household feature, which is now provided with a waste-pipe, B, for the discharge of water. B is the waste-pipe, and is connected to the bowl or pan A in the ordinary way. These waste-pipes B are all invariably connected with the sewer, and through them is constantly received and discharged into the various apartments of the building the poisonous and health-impairing gases and odors which the filth in the sewer generates. With my improvement this evil is entirely remedied. At any desired point, in the ordinary waste-pipe, I substitute for a short section of the same a piece of pipe, C, with my improvement attached. This short pipe C may be constructed of metal or any other suitable material. In this pipe C is secured a cylindrical tube, C', which is to be of such thickness as to leave a decided shoulder at c, which is to serve as a seat for the valve. The upper section of this tube is angular, so as to cause it at this point to offer no obstruction, whereby sediment, &c., might be collected and retained. D is a valve and is of such dimensions that, while it shall close the mouth c of the cylindrical tube C', still its diameter shall be such as to allow of its free movement in the pipe C, so that when depressed by the gravity of the waste-water there shall be left between the valve and pipe an annular passage for the water to pass off. This valve D is so secured to a spring, D', as to allow of its direct vertical movement, as shown in Figs. 1, 3, and 4, or it may be pivoted by a hinge-joint, as shown in Fig. 2. This spring D' rests and works on an inverted T-shaped rod secured in the pipe, the short arm d being secured across the pipe, and the long arm d' acting as a guide-stem for the spring. This rod d' may be of such length as to extend through the entire length of the spring D', and thence through a small orifice in the valve, or it may be shorter than the spring, as clearly shown in Fig. 2. E is an auxiliary pipe, which is secured to a lateral opening, e, of the pipe C', and conveys the odors or gases received from the sewer

to a pipe, E', or other common receptacle. Or this pipe E' may have its outlet through the wall of the house. I desire it distinctly understood that about the relative position of this auxiliary pipe there is nothing definite, its function being to carry off the odors, fumes, and gases that are now invariably discharged into the apartment; consequently the pipe may be arranged in any manner that will accomplish this result. Nor is there anything arbitrary about the arrangement of the valve or style of spring shown in connection therewith, as any valve and any spring that will permit the valve to be opened through the gravity of the water, and then to automatically close it, will answer all the purposes which this portion of my invention aims to accomplish.

From the foregoing full and detailed description, the working of my improvement will be readily understood. The tube C', valve D, and spring D', are arranged in an independent piece of pipe, or if desired, may be secured directly in the waste-pipe B. I prefer the former plan because it can then be readily manufactured, and, as a finished article, offered to the trade.

Suppose the bowl or pan A to be filled with water that you desire to discharge. Remove the stopper or other obstruction from the opening *a*, and the waste water will, as usual, flow

down the pipe B, passing through the tube C'. Its gravity, overcoming the tension of the spring D', will consequently open the valve D and permit the water to flow over the valve, continuing its course down to the sewer. So soon as the water has passed off, the tension of the spring instantly and automatically drives the valve against its seat *c*, securely closing the same, and preventing all gases, odors, and fumes generated in the sewer from entering the apartment where the basin or bowl is situated. These foul gases and odors being arrested by the valve and having no other outlet, pass off through the pipe E. Practical experience has fully attested the entire practicability of the improvement herein described.

What I claim as new and desire to secure by Letters Patent of the United States, is—

The waste-pipe B C, tube C', or its equivalent, valve D, spring D', and pipe E, combined and arranged so as to operate substantially as described, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH DANIELS.

Witnesses:

JOS. T. K. PLANT,
EDWIN JAMES.