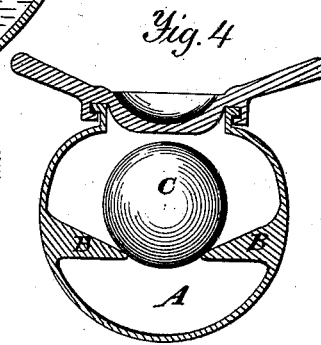
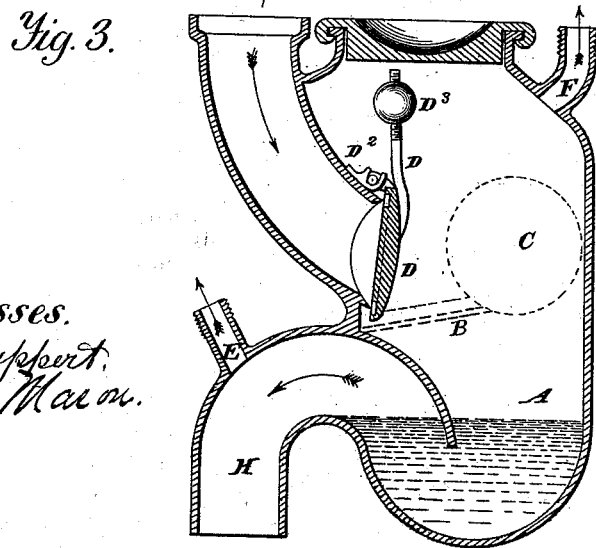
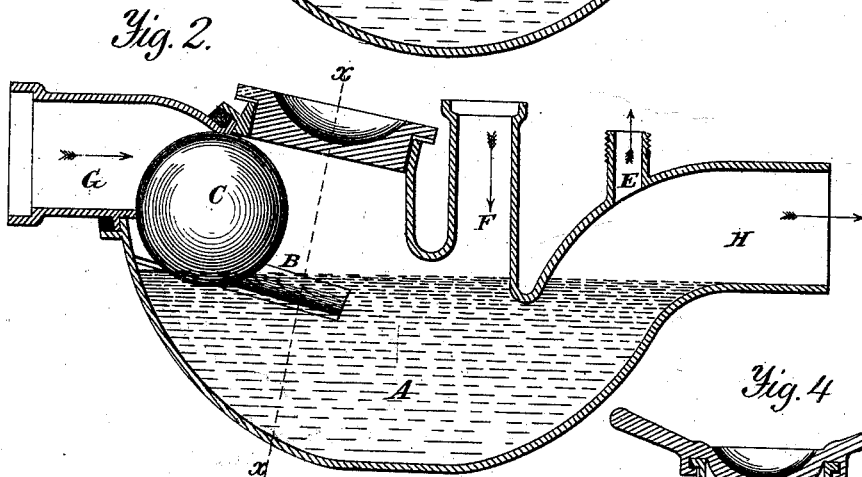
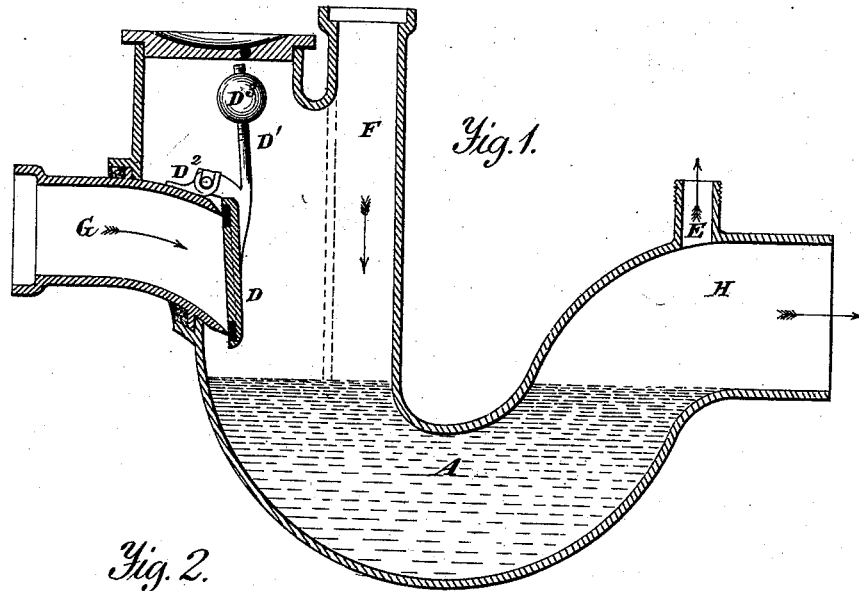


W. F. DOWNEY.
Sewer and other Traps.

No. 201,758.

Patented March 26, 1878.



Witnesses.
A. Ruppert.
J. G. Mason.

W. F. Downey,
Inventor.
D. P. Holway &
attys

UNITED STATES PATENT OFFICE.

WILLIAM F. DOWNEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN SEWER AND OTHER TRAPS.

Specification forming part of Letters Patent No. **201,758**, dated March 26, 1878; application filed January 25, 1878.

To all whom it may concern:

Be it known that I, WILLIAM F. DOWNEY, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Sewer and other Traps, of which the following is a specification:

This invention relates to improvements on a sewer-trap heretofore patented by me, and to which reference is here made for a more full description of whatever parts may not be fully described herein.

In the annexed drawing, making a part of this specification, Figure 1 is a longitudinal vertical section of trap, showing it when the flap-valve is used. Fig. 2 is a longitudinal vertical section of same, showing the ball-valve. Fig. 3 is a transverse vertical section of same, showing it as used in a perpendicular position, using either flap or ball valve. Fig. 4 is a transverse vertical section taken on the line *xx* of Fig. 2.

The same letters are employed in all the figures in the indication of identical parts.

A is the body of the trap, formed substantially as shown. B are the ways. C is the ball-valve. (Shown in said former Letters Patent.) D is a flap-valve, the face of which is formed with a recess to contain an elastic ring of india-rubber or other equivalent material. To this valve is attached a stem, D¹, and it is fitted with trunnions D², by means of which the valve is hung above the induction-pipe G upon bearings formed to receive the same. A thread is turned upon the upper end of the stem D¹, upon which a ball, D³, formed with a female screw, is fitted, so that by raising or lowering the ball the valve may be so balanced that it will yield in opening to whatever pressure may be desired when applied by the water in the inlet-pipe to the face of the valve D.

I have already secured by Letters Patent said valve when used in combination with the other parts of a sewer-trap, as set forth in said former Letters Patent dated February 13, 1877, No. 187,364, and my claim herein will therefore be limited to said valve in such combination when balanced adjustably.

It is to be understood that the valves C or D are to be used in the alternative, not both

together. These valves may be used in connection with an induction-pipe receiving the water horizontally or vertically, the induction-pipe being curved inside the valve, according to the circumstances under which the trap is to be applied.

E is a pipe attached to the outlet of said sewer-trap, which is intended to communicate with a chimney in the house, or the rain-water pipes thereof, so that the sewer-gases, which are lighter than the atmosphere, will rise and find exit over the top of the house, without tendency to force their way back through the pipes which have open communication with the interior of the house.

In my said former Letters Patent no adequate means were provided for carrying away sewage-water from the house flowing through the inlet-pipe against the resistance of back-water. One of the purposes of my present invention is to provide means by which the sewage-water from the parts of the house above the reach of backwater from floods may be freely discharged at all times; and to this end I introduce into the top of the trap a pipe, F, through which the sewage-water may be freely discharged through the trap without impediment from the valve, so that it shall, by its current coming from an elevated head, flow off freely, and operate to flush the trap, and wash out any solid matter which might otherwise lodge therein. This pipe opens above the water in the trap, which seals the pipe against the gases.

The rain-water pipe may be connected with the pipe F, so that the water flowing from the roof of the building will flow through the trap, and thus assist in flushing it.

In my said former Letters Patent the body of the trap was shown with parallel sides. I prefer, however, to curve the sides of the trap, so as to make a considerable enlargement in that part of its transverse diameter in which it is intended the ball shall operate, so that there shall be a free discharge through the trap between the walls thereof and the ball, so that the ball may be used without the ways, as, upon the incoming of backwater, the ball (which, in this case, must be light enough to float) will rise upon the surface of the water and close the induction-pipe G. In this case,

however, it will be necessary to interpose some obstruction into the interior of the trap, or so contract the outlet thereof that the ball cannot rise so as to interfere with the free inflow of water through the induction-pipe F.

In order to adapt this backwater-trap to drain-pipes already located without altering the latter, the outlet of the trap is curved, as shown, and an inclination is given to the seat of the ball-valve, so that as it rises with the incoming backwater the ball will be raised against the seat before the backwater has reached the inlet-pipe G, through which it could otherwise flow into the building.

In all cases I prefer to have the induction-pipe G separate from the body of the trap, thus allowing me to make a true valve-seat.

In the annexed drawing I have shown the trap when the flap-valve is used, also when the ball-valve is used, and in Fig. 3 it is shown when used perpendicularly.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the trap A and valve for preventing the inflow of water through the pipe G, the induction-pipe F, through which water may flow freely through the pipe when the pipe G is closed by the valve, substantially as set forth.

2. In combination with the trap A and induction-pipe G, the ball-valve C and the valve-seat thereof, having forward inclination, so that the valve shall close the induction-pipe before the backwater can flow back there-through, substantially as set forth.

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

WILLIAM F. DOWNEY.

Witnesses:

JOHN G. MASON,
BERNARD J. DOWNEY.