(No Model.)

2 Sheets—Sheet 1.

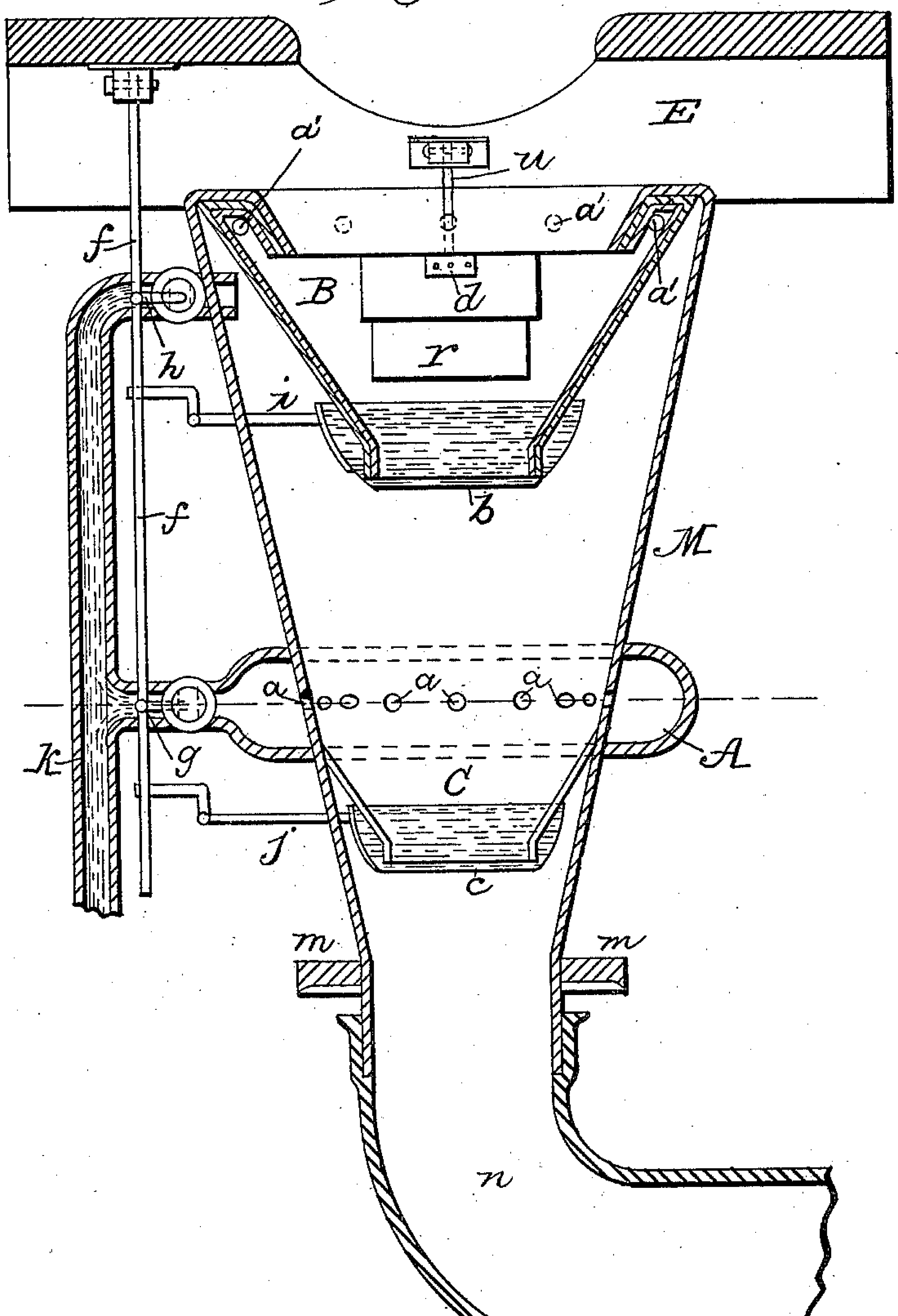
W. H. McANDREWS.

WATER CLOSET.

No. 307,668.

Patented Nov. 4, 1884.

Fig. 1.



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Att'y.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

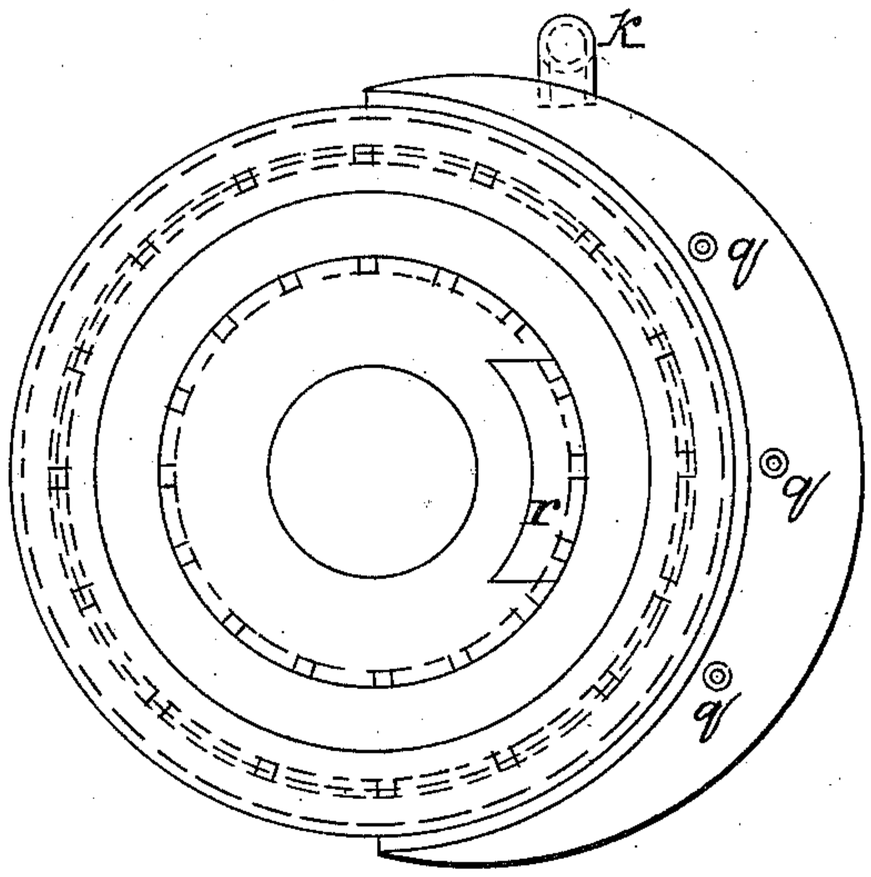


Fig. 3.

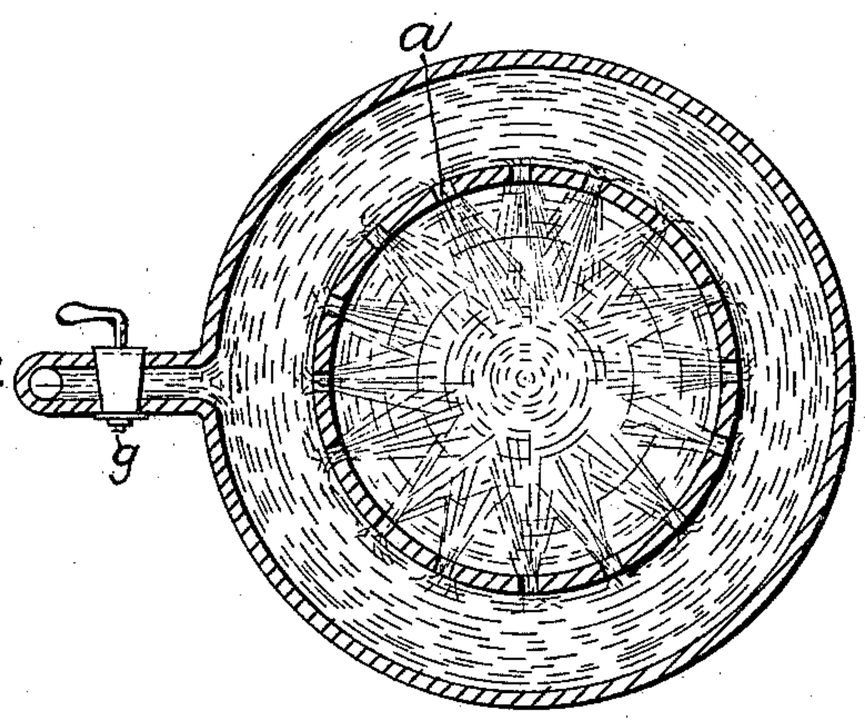
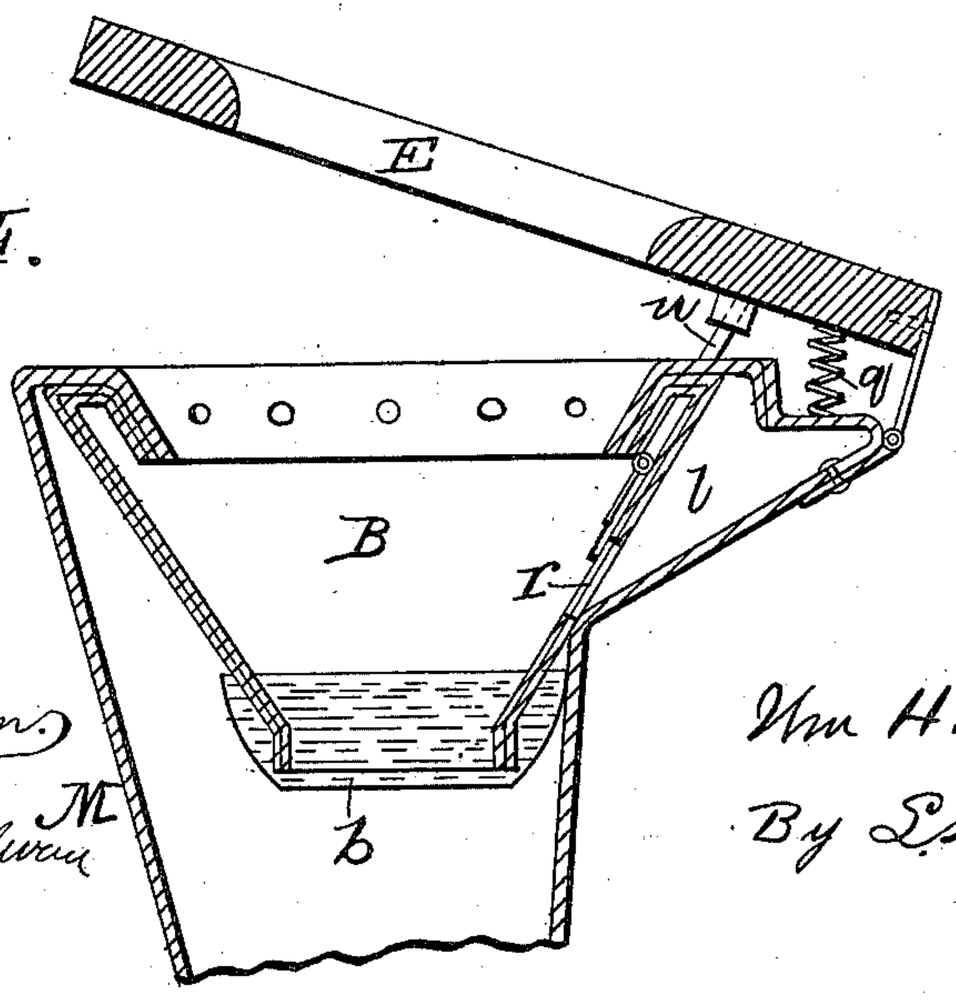


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. McANDREWS, OF BRADFORD, PENNSYLVANIA.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 307,668, dated November 4, 1884.

Application filed January 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. McANDREWS, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Water-Closets; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in water-closets which connect with sewers or other outlets.

The object of my invention is to provide a water-closet with valved connections and water seals, which will dispense with the ordinary S-trap, and at the same time effectually prevent the escape of gases from the sewer into the apartment.

My invention consists in providing an unobstructed channel or duct from the seat of the closet to the sewer when in use, and in injecting streams of water into said duct or channel in such a manner as to form a seal or pocket to prevent the upward passage of gas or foul air, while at the same time the excrement is free to pass into the sewer.

My invention consists, further, in providing the duct or channel with two or more pan-traps, which are adapted to close the basins of the main channel when the water-closet is not in use, said pans being adapted to be automatically filled with water, so as to form a water seal, and prevent the gases from rising from the sewer into the apartment when the closet is not in use.

My invention consists, further, in certain details of construction, which will be more fully set forth hereinafter, and pointed out in the claims.

Referring to the drawings, Figure 1 is a vertical sectional view of my improved closet. Fig. 2 is a top or horizontal sectional view with the seat removed. Fig. 3 is a top view, showing the water seal formed by the inward spraying of water. Fig. 4 is a vertical sectional view of the upper portion of the closet and valved connections with the seat elevated.

M is the shell or cone-shaped cylinder, which forms the duct or main channel from the seat and upper bowl to the pipe *n*, which connects directly with the sewer. The shell or cone-shaped cylinder M is provided with an external water-chamber, A, which extends entirely around the same and connects with the interior of the shell by means of a series of perforations, *a*, the office of which will be more fully hereinafter described. The upper portion of the shell or cylinder M is also provided with a water-chamber, *l*, which extends part way round and connects with the bowl of the closet by means of an aperture, *r*, near the bottom of said chamber, and also by means of a series of perforations, *a'*, near the top thereof, the functions of which will more fully be described.

To the inward projecting and downturned upper end of the shell M is secured the basin B, the outer walls of which form the inside wall of the chamber *l*, and, as before intimated, connects with said chamber by means of an opening, *r*, said opening being closed when the seat of the closet is depressed by means of a sliding valve, *d*, which is connected to the seat by a rod, *u*. The interior of the shell or cylinder M is also provided with a cone-shaped or contracted portion, C, located at or near the bottom of the water-chamber A, the lower ends of the bowl B and cone C being provided with tilting pans, which, when the closet is not in use, are automatically filled with water, so as to form a water trap or seal for the bowl and cone, and thus prevent the upward passage of gas from the sewer. The water-chambers A and *l* are connected to the water-supply pipe *k* in any suitable manner, and are provided with stop-cocks *g h*, which are connected to a vertical rod, *f*, said rod *f* being connected to the seat E in such a manner that by depressing the seat the water will be turned on, and by raising the seat the water will be turned off. The tilting pans which form the water seal for the basin B and cone C are pivoted in any suitable manner to the shell M, and are also connected to and operated by the rod *f*, so that when the closet is in use and the seat depressed the pans will be removed from the mouth of the basin B and cone C, and permit all matter to readily fall into the sewer-

pipe, while at the same time the water will be turned into the chambers A *l*. The water entering the chamber A under pressure escapes through the perforations *a* in horizontal jets into the interior of the shell M, which, by striking against each other and the opposite walls of the shell, forms a spray-strap, through which liquids and solids will readily pass downward, but prevents the upward passage of the gases. More than one row of perforations may be made in the walls of the chambers A *l* to form a more compact and solid spray seal, but one row is sufficient for ordinary purposes.

As before stated, when the seat is depressed, the water is turned into the chambers A and *l*, the slide-valve *d* is forced over the opening *r* and allows the water to accumulate in the chamber *l* until it reaches the perforations *a'*, formed in the upper portion of the basin B, when it is forced therethrough and escapes down the sides of the bowl, removing therefrom the excrement, paper, or other accumulated matter. The seat E is hinged at the back part, and is provided with a series of springs, *q q*, which serve to hold the front edge or side of it in an elevated position, so that when the weight of the operator is removed therefrom the valve *d* will be raised and the water which has accumulated in the chamber *l* permitted to escape into the pans or traps below, and thus form a seal to prevent the escape of gas from the sewer.

In order that the valve *g* may be opened by the descent of the rod *f* an instant in advance of the downward movement of the seal-pans *c b*, I connect the rods *i* and *j* of the pans to the rod *f* by means of a slotted connection, or in any other suitable manner, so that the spray seal will be formed before the pan *c* is removed from the cone C, thus making it impossible for the gas to escape during the periods of change.

I do not limit myself to a single spray seal within the main duct or channel, as it is obvious that any number may be used without departing from the spirit of my invention.

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

1. A water-closet provided with a water-chamber in its upper portion, which communicates with the bowl of the closet by means of an opening, *r*, and a series of apertures, *a'*, in combination with the sliding valve *d*, rod *u*, seat E, and springs *q*, whereby when the seat is depressed the water-chamber will be filled and overflow into the bowl, and when the seat is raised the bowl will be flushed and the pans filled to form water seals, as set forth.

2. In a water-closet, the chamber A, encircling the main shell or cone-shaped cylinder M, and communicating with the interior thereof by a series of holes or perforations, in combination with a suitable water-supply, as described, whereby a spray seal is formed in the closet and the gases prevented from rising while the closet is in use, as set forth.

3. In a water-closet, the perforated water-chamber A, communicating with a suitable water-supply, in combination with the funnel or contracted portion C, as set forth, and for the purpose described.

4. A water-closet provided with movable water-traps, adapted to be opened when the seat is depressed to admit of the free downward passage of extraneous matter, in combination with a water spray seal to close the main channel of the closet and arrest the upward flow of gas from the sewer, as set forth.

5. A water-closet provided with pivoted pans or bowls which are tilted when the closet is in use to form a free and unobstructed passage for extraneous matter, said pans being elevated into a horizontal position and automatically filled with water to form a seal or trap by the upward movement of the seat when free from the weight of the sitter, as set forth.

6. A water closet provided with a water-chamber communicating with the bowl of the seat, a supplemental water-chamber, A, communicating with the main shell or cone-shaped cylinder M of the closet, said water-chambers being connected to the water-supply pipe, and devices, substantially such as described, connected to the spring-actuated seat of the closet, and to the water-supply for turning the water on or off, as set forth.

WILLIAM H. McANDREWS.

Witnesses:
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