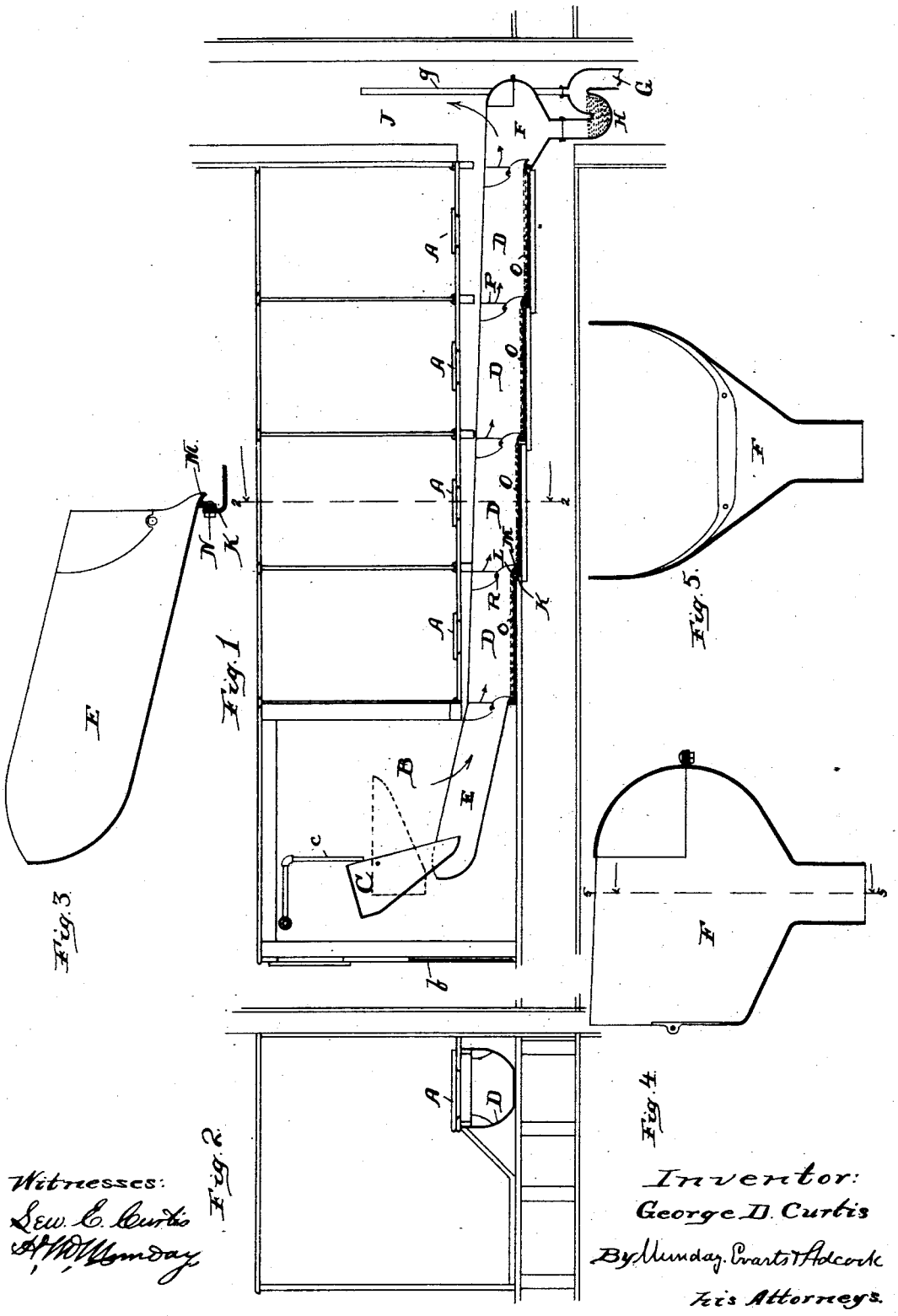
(No Model.) 2 Sheets—Sheet 1.

G. D. CURTIS.

VENTILATED FLUSHING CLOSET.

No. 525,759. Patented Sept. 11, 1894.



Witnesses:
Lew. C. Curtis
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Inventor:
George D. Curtis
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His Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 6.

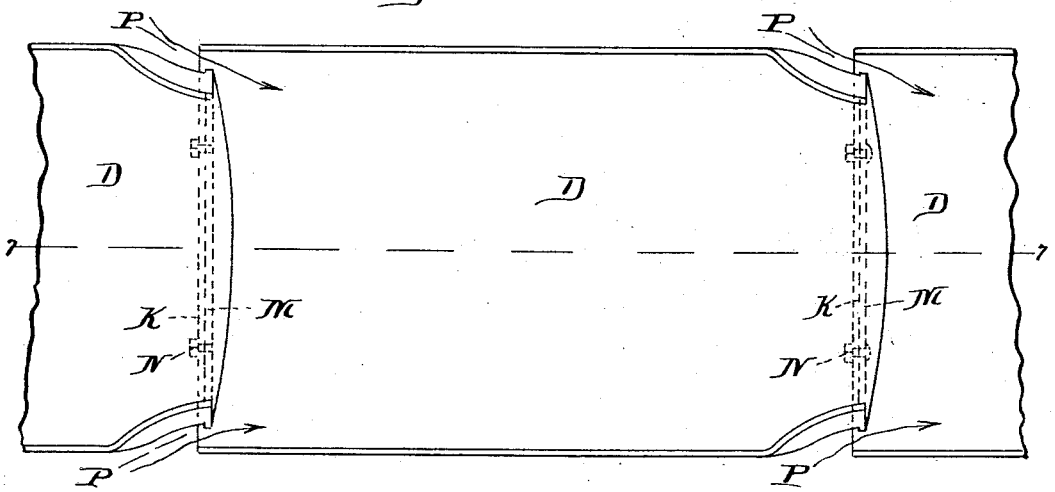


Fig. 7.

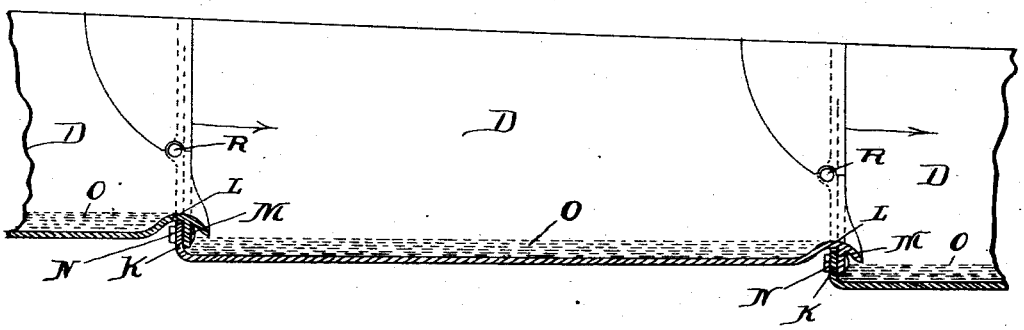


Fig. 8.

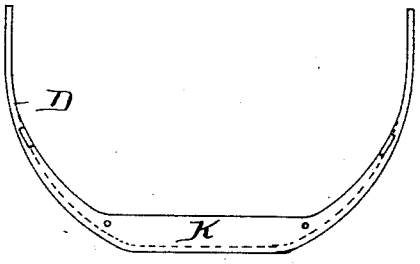
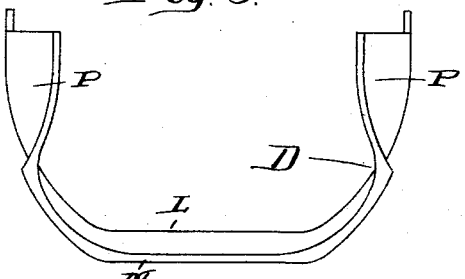


Fig. 9.



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UNITED STATES PATENT OFFICE.

GEORGE D. CURTIS, OF DENVER, COLORADO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILLIAM S. EVANS, OF SAME PLACE.

VENTILATED FLUSHING-CLOSET.

SPECIFICATION forming part of Letters Patent No. 525,759, dated September 11, 1894.

Application filed October 22, 1892. Serial No. 449,580. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. CURTIS, a citizen of the United States, residing in Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Improvement in Ventilated Flushing-Closets, of which the following is a specification.

This invention relates to certain improvements in that class of apparatus for the disposition of fecal matter known as ventilated flushing closets.

The improvement relates to the special construction of the apparatus, and will be understood by those skilled in the art from the subjoined description and claims taken together with the accompanying drawings which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section taken through the apparatus. Fig. 2 is a vertical cross section of the apparatus taken on line 2—2 of Fig. 1. Fig. 3 is a longitudinal section upon a larger scale of the initial or water receiving end of the trough. Fig. 4 is a similar section of the discharge hopper at the final end of the trough. Fig. 5 is a cross section taken on line 5—5 of Fig. 4. Fig. 6 is a plan view of a single section of the trough with fragments of the adjoining section. Fig. 7 is a vertical longitudinal section taken on the line 7—7 of Fig. 6. Fig. 8 is an end view of the receiving end of the part or section shown at Figs. 6 and 7, and Fig. 9 is an end view of the discharging end of the same.

In said drawings, A A, &c., represent the seats of the closet. B is an air-chamber or housing for containing the usual automatic flushing bucket, which in this case consists of the pivoted bucket C, which receives a stream of water from the water pipe *c*. The bucket is so balanced or pivoted, that when it has become full or nearly full of water, it will tip down and discharge the same with a rush, and when emptied, immediately resume its former position and fill again, so that the water is sent through the closet with a flushing action at regular intervals to wash away the deposits. The chamber B is connected to the outer air by an opening *b*, or may be connected to the air within the building, as preferred. Beneath each seat A, is placed a section D of the trough, which receives the deposits as they fall from said seats. All these sections D are alike in construction, and fit together so that the number of seats may be increased to any number required. To receive the water from the bucket and to lead the same into the sections D, is provided section E, placed at an incline so that the water will flow with a rush through the trough to produce the desired flushing action. At the other end is the receiving hopper F, connected at its lower end with the sewer or outlet pipe G.

H is a water trap in the sewer or soil pipe, and *g* the ventilating pipe from the soil pipe.

J is a ventilating flue which passes up out of the building, and which should be provided with some means for creating therein a constant upward current of air or draft, so that air will be constantly drawn from the hopper F, the trough and the region or space beneath the seats and the space surrounding the water bucket, so that all gases and emanations from the closet, as well as from the sewer connection, soil pipe or outlet, are carried constantly up and out of said vent flue.

The sections D are made of cast iron in the form of short, curved, open-ended troughs with flattened bottoms, the rear ends of these troughs being crossed at their lower portion by an upright flange K, extending upward from the bottom of the trough, and the front end of each section is at its bottom portion curved upwardly to form the lip or convexity L, beneath which is a depending flange M. The sections are put together by placing the lip L over the flange K, the flanges M and K being thus brought together as shown in Fig. 7. Bolts N are then inserted, and the sections are thus securely fastened together so that they will not loosen or separate by the settling of the building. The raised portions, that is to say the flange K at one end, and the lip L at the other end of each section, serve to retain always in the section, over the entire width and length of its floor or bottom, a small portion of water, indicated at O. This serves to prevent the fecal matter from sticking to the bottom of the troughs, and, as it is washed out and changed at each flushing, it acquires no offensive condition.

The rear flange and front lip of each trough section form a basin, which being cast in one piece, is perfectly water-tight without the necessity of calking. In the vertical walls of the trough section, at the discharge end of each section, I form air inlets P by incurving the upper portion of said walls for a short distance, as seen in the drawings. The purpose of these air inlets P is to admit the air freely into the trough at each section, and consequently along the whole extent of said trough, whereby the trough and the space around the same is constantly ventilated and kept in a pure condition by the continual draft of the vent flue J. Although the trough as a whole from end to end consists of an inclined water way, it will be noticed that each section of the trough is in itself a horizontal canal. In the drawings I have shown the floor of the building as though made in steps to fit the bottom of this compound trough, and this is a convenient way to construct the floor beneath the closets, provided the closets are put into the building while the building is being erected; but this construction of the floor is not necessary as the closets may, as will be readily understood, be easily put into a building already finished without disturbing the floor at all by simply placing beneath each section of trough suitable supports resting upon the floor.

The facility with which my improved closet may be applied to any building which has a vent shaft, is one of its chief advantages. It will be readily understood that it will be only necessary in such case to place the trough in position adjacent to the vent shaft, bring a soil pipe in from the sewer connection to the bottom of the vent shaft, connect the trough to the soil pipe by means of the hopper, apply the inclined trough and tipping bucket, and finally erect the necessary partitions and seats over and around the trough. The apparatus for a large school, for example, will thus require no more change in the building than an ordinary water closet requires, and the expensive vault construction which has been deemed necessary in these long flushing trough closets is thus entirely dispensed with.

The inclined section E of the trough has its front end made similar to the front end of the other sections, and joins the adjacent section D in the same manner as the sections D join each other. The final section D is joined to the hopper F also by the same method as the sections D are joined together. I prefer as a greater security in addition to bolting the sections together by the bolts N through the flanges M, K, to bolt them also to the sides by the bolts R.

I am well aware that flushing closets are old and well known, and also that such closets have been connected to a ventilating shaft for the purpose of ventilation; and also further that such closets have been constructed with a lengthened trough, so that a number of seats are located over a single trough in a row; and further, that it is customary in ordinary single seat water closets, to provide means for retaining in the bowl of the closet, a constant supply of water into which the fecal deposits fall in order to prevent the same from sticking to said bowl, and I do not lay claim to all or any of these things separately or connectedly.

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

1. The combination with the seats of a closet arranged in a row, of a flushing trough placed beneath the same and composed of a series of separate short sectional troughs, a sectional trough for each seat, each of said sectional troughs being furnished with a transverse raised flange and lip at its ends whereby it is adapted to retain a portion of the water, and the lower end of each section being adapted to fit within the upper end of the next lower section, substantially as specified.

2. The trough section, D, made with the flange, K, and the lip, L, and having the end where the lip L is located of the proper size to pass into the other end of a similar section, substantially as specified.

3. The sectional flushing closet trough composed of short sectional troughs united together, each with one end lying within the end of its adjacent section, and each section having incurved side walls forming ventilating apertures, substantially as specified.

GEORGE D. CURTIS.

Witnesses:
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