3 Sheets—Sheet 1.

R. D. O. SMITH.

VENTILATION OF COMMODES OR CLOSE STOOLS.

No. 169,490. Patented Nov. 2, 1875.

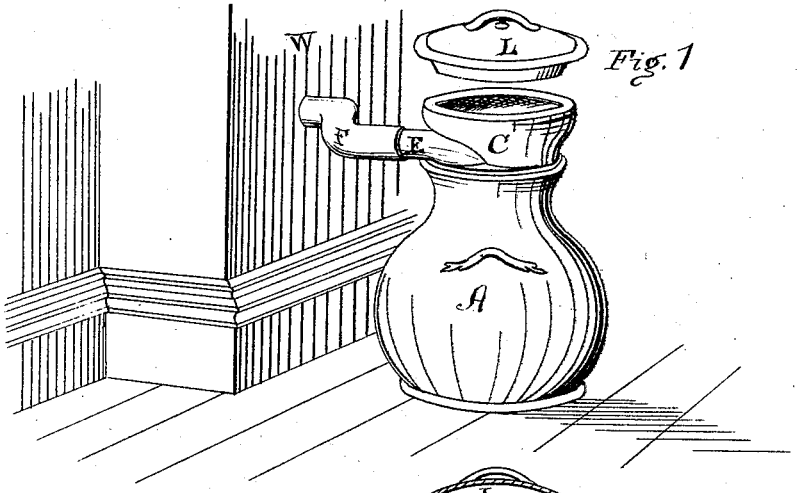


Fig. 1

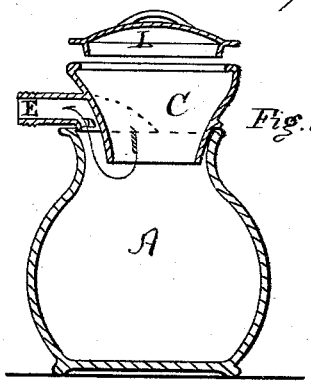


Fig. 2

Fig. 3

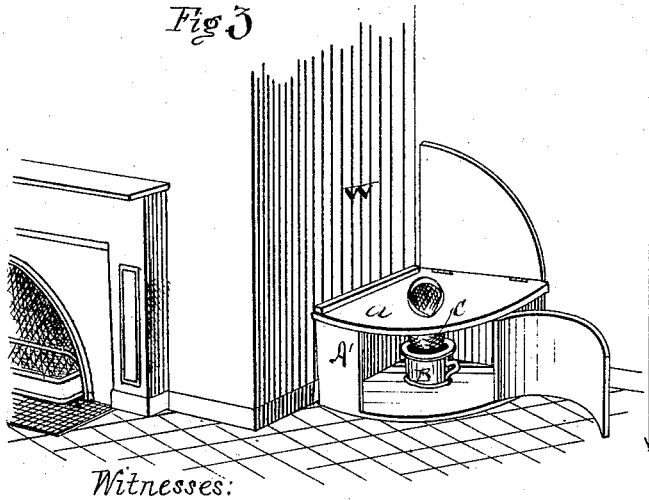
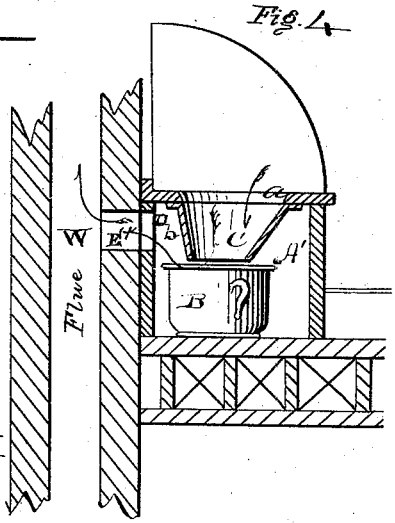


Fig. 4



Witnesses:
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3 Sheets—Sheet 2.

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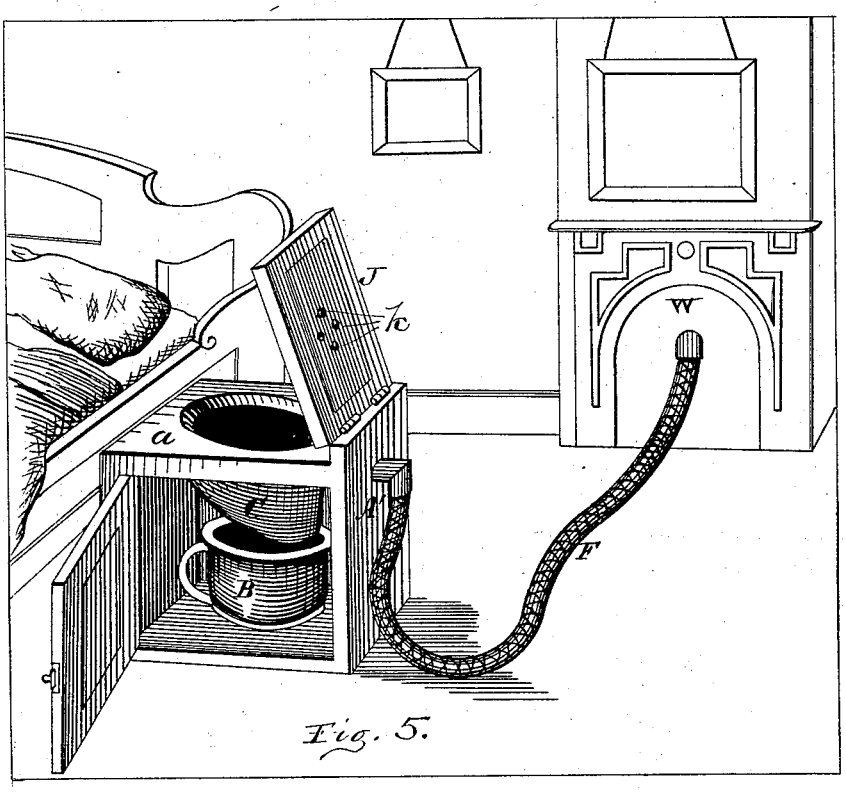

Fig. 5.

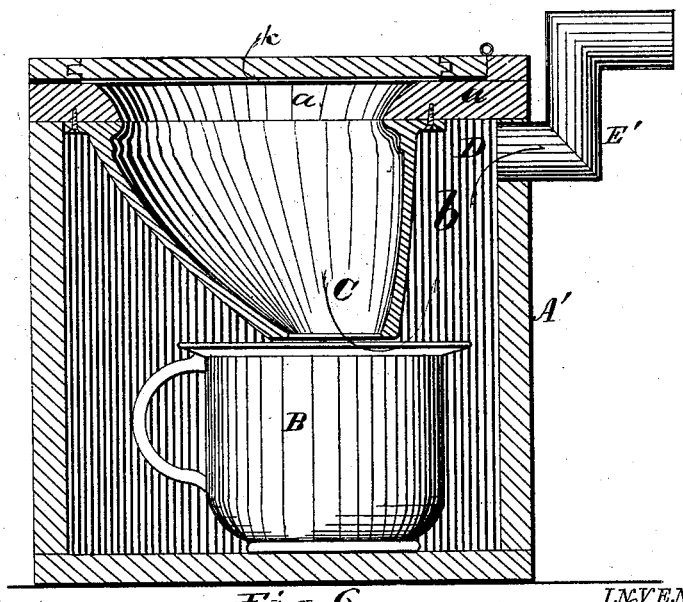

Fig. 6.

WITNESSES

F. B. Townsend.

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INVENTOR

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3 Sheets—Sheet 3.

R. D. O. SMITH.

VENTILATION OF COMMODES OR CLOSE STOOLS.

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Fig. 7.

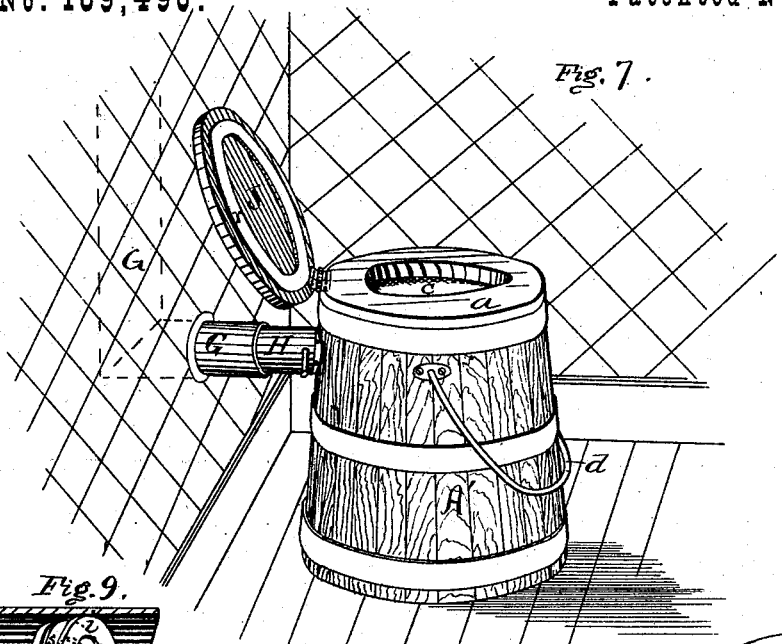


Fig. 9.

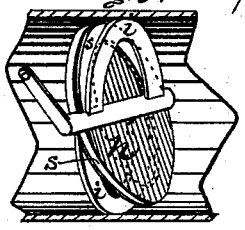


Fig. 10.

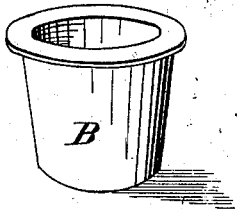
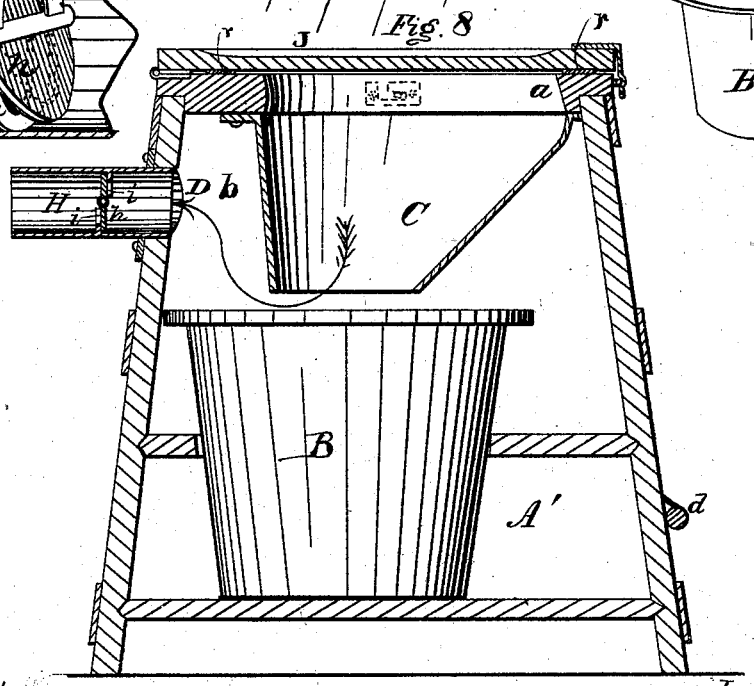
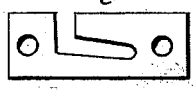


Fig. 8



Witnesses:
F. B. Townsend
E. McGallaher

Fig. 11.



Inventor:
R. D. O. Smith

UNITED STATES PATENT OFFICE.

ROBERT D. O. SMITH, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN VENTILATION OF COMMODES OR CLOSE-STOOLS.

Specification forming part of Letters Patent No. **169,490**, dated November 2, 1875; application filed October 5, 1875.

To all whom it may concern:

Be it known that I, ROBERT D. O. SMITH, of Washington city, in the District of Columbia, have invented an Improved Ventilated Commode or Close-Stool, of which the following is a specification:

In the sick-room there is no source of greater annoyance, both to invalid and attendant, than the necessary use of the chamber-vessel or close-stool, and, aside from the discomfort attending such use, the odors and gaseous emanation from the fecal discharge and from urine have a deleterious effect upon the health of those who are exposed to it. This is very marked in contagious diseases, such as cholera, small-pox, &c. This emanation, which escapes from the person in a gaseous form, as well as from the fecal deposit, is well recognized as a vehicle for the dissemination of disease, and there is no practicable method by which it may be entirely neutralized except by ventilation, whereby it may be removed, and, if necessary, its noxious qualities entirely destroyed, by passing through flame before being discharged into the atmosphere. If permitted to escape into the apartment entire removal is impossible, because the walls, hangings, and furniture all offer absorbent surfaces, which, under different conditions as to temperature or moisture, may expel them again in a more active condition than when first generated.

The object of my invention is to obviate all danger and discomfort arising from excreted matter in the bed-chamber, hospital, prison-cell, or other apartment, by a method of applying ventilation to the close-stool, commode, or receptacle which receives the fecal deposit.

My invention, essentially and principally, consists of a case or receptacle to receive and hold the excreted matter, a ventilating-outlet located at or near the top of said receptacle, and a hopper, preferably funnel-shaped, extending down into the case or receptacle below the upper side of the ventilating-outlet, so that there will be at the side of or around the lower end of the hopper a chamber or space, and a ventilating-outlet leading from the same; second, in a flexible ventilating-pipe, whereby the commode may be movable without disturbing the ventilation; third, in a removable commode vessel or receptacle; fourth, in bucket-shaped commode or close-stool, provided with a handle, a hopper, a ventilating neck or outlet provided with a valve, and a cover; fifth, in a removable seat and the hopper attached thereto; sixth, in a damper provided with ledges or ribs to close against and make a tight joint; seventh, in permanent openings for the admission of a continuous draft.

For convenience I will first describe my invention in its simplest form, and afterward successively in the more complex forms in which I propose to construct it, having reference to the accompanying drawings, wherein—

Figure 1 represents in perspective my invention as a combined commode and slop-jar. Fig. 2 is a vertical central section of the same. Figs. 3 and 4 represent in perspective and sectional elevation my invention as a permanent structure. Fig. 5 is a perspective view of my movable commode designed for the use of invalids. Fig. 6 is a sectional elevation of the same. Fig. 7 is a perspective view of my hospital commode or close-stool. Fig. 8 is a sectional elevation of the same. Fig. 9 represents in sectional perspective my damper-valve. Fig. 10 is a perspective view of the commode vessel or receptacle. Fig. 11 is the bayonet-joint for attaching the seat.

A is a vessel or jar made of any suitable material, say earthenware, and C is a hopper, which may be of the same material, fitted to rest upon the open mouth of the vessel A. The upper edge of the hopper C may be fashioned to constitute a seat, or any suitable covering may be applied for that purpose. At the back of the hopper C is an outlet, D, to receive the end of a ventilating-pipe, F, whereby it will be connected to some suitable flue, chimney, or ventilator; or said outlet may be provided with a neck, E, to receive said pipe. The outlet D communicates with the interior of the receptacle A, and when properly connected to a flue, W, there will be an uninterrupted flow of air downward through the hopper C into said receptacle, and thence into the flue, and however feeble said air-current may be all odors or gaseous emanations from the excreted matter will thereby be deflected away from the orifice of said hopper, and caused to

go into the outlet D, and thence into the flue, and to the air above the housetop. A cover, L, may be made to fit both the seat and the mouth of the jar, so that when not required for use as a commode the hopper may be removed, and the vessel A may be used as an ordinary slop-jar.

When adapted exclusively for the uses of a commode, I prefer to construct it with a box or case, A′, composed of wood or other suitable material, having a proper seat-opening in its top *a*, and a door on the side, for convenient access to the interior, for placing or removing a vessel, B, suitable to receive the excreted matter.

A hopper, C, is secured to the under side of the seat or top *a*, and projects downward therefrom, so as to form a chamber or space, *b*, between said hopper and the side of the case A, with an orifice or outlet in the side of the case, immediately below the top *a*, for the insertion of the ventilating-pipe E′, which is to be connected with some proper chimney, flue, or ventilating-pipe, and discharges therein any odors or foul air which may be within the case A′.

The case A′ may be permanently placed in the bed-chamber, as shown in Figs. 3 and 4, or it may be detached and movable, as shown in Figs. 5 and 6.

Under ordinary circumstances, a short length of suitable metallic pipe, E′, will suffice to form an effective connection with the chimney; but, if it is necessary or desirable to make the commode movable, or to place it at a considerable distance from the chimney, a flexible pipe, F, may be advantageously substituted for the pipe E′.

I prefer to make the hopper C about vertical at the back, and sloping backward from the front, to prevent, as much as possible, soiling the hopper in use.

The commode, in form above described, is most suitable for use in dwelling-houses; but, for use in hospitals or prisons, I prefer to make the case or box A′ in a circular or bucket form, as shown in Fig. 7, and provide the same with a suitable bail or handle, *d*, for its convenient transportation.

The seat *a* is removable, and may be secured by a bayonet-fastening, or any other suitable kind.

To effect the required ventilation, a pipe, G, should be laid in the wall of the hospital or prison, and the upper end made to communicate with some suitable shaft or outlet; or it may be continued until above the highest point of the roof, and provided with a proper exhaust-cap. Its lower end should project slightly from the wall, at a proper height to receive the ventilating-neck H.

A damper, *h*, or valve of some other suitable kind, is placed in the neck H, for the purpose of closing the same when the bucket A′ is being removed from place to place, and thus prevent the escape of odor.

I prefer a plain damper, such as shown, and two half-rings, *i i*, as shown, rigidly secured within the neck H, in such position that said damper will close against them; and, if faced with some elastic substance, as shown at *s*, it will close with an air-tight joint.

The shaft of the damper should be provided with a catch, to hold it either open or closed, as may be desired.

A cover, J, is hinged to the rear edge of the seat *a*.

When the commode is designed for use in dwellings, the lid J should not close tightly, as it is not desirable to cut off entirely the flow of air; otherwise foul air will accumulate in the hopper C, and escape into the apartment when the lid is raised. Therefore, the lid J is made thinner in the middle than at the ends, or perforated with holes, to form draft-openings *k;* but, for hospital or prison use, the lid should be provided with a packing-ring, *r*, to close air-tight, so that, while being carried away, no odors will escape.

If it is desirable, either for the convenience of the invalid, or to conceal the character of the case or box A′, the arms or back of a chair, &c., may be added, or it may be finished in any other suitable way.

Having described my invention, what I claim as new is—

1. A case or receptacle, A, hopper C, and ventilating-outlet D, combined to constitute a ventilated odorless commode, as set forth.

2. A movable commode combined with a flexible pipe, to connect the same with a proper ventilating-flue, substantially as set forth.

3. In combination, the case A′, hopper C, outlet D, and inclosed removable vessel B, substantially as set forth.

4. A case, A′, provided with a handle for easy transportation, a removable seat, *a*, and hopper C, attached thereto, a ventilating-outlet, D, neck H, and an inclosed removable vessel, B, substantially as set forth.

5. A case, A′, provided with a handle, *d*, and ventilating-outlet D, and neck H, provided with a valve or damper, combined with a hopper, C, attached to a removable seat, and an inclosed removable vessel, B.

6. Combined with a case, A′, hopper C, and ventilating-pipe, the permanent draft-openings *k*, to secure a continuous flow of air downwardly through the seat and hopper, and into the ventilating-flue, as set forth.

R. D. O. SMITH.

Witnesses:
F. B. TOWNSEND,
J. S. BROWN.