

(No Model.)

E. T. JOHNSON.

WATER CLOSET.

No. 376,744.

Patented Jan. 24, 1888.

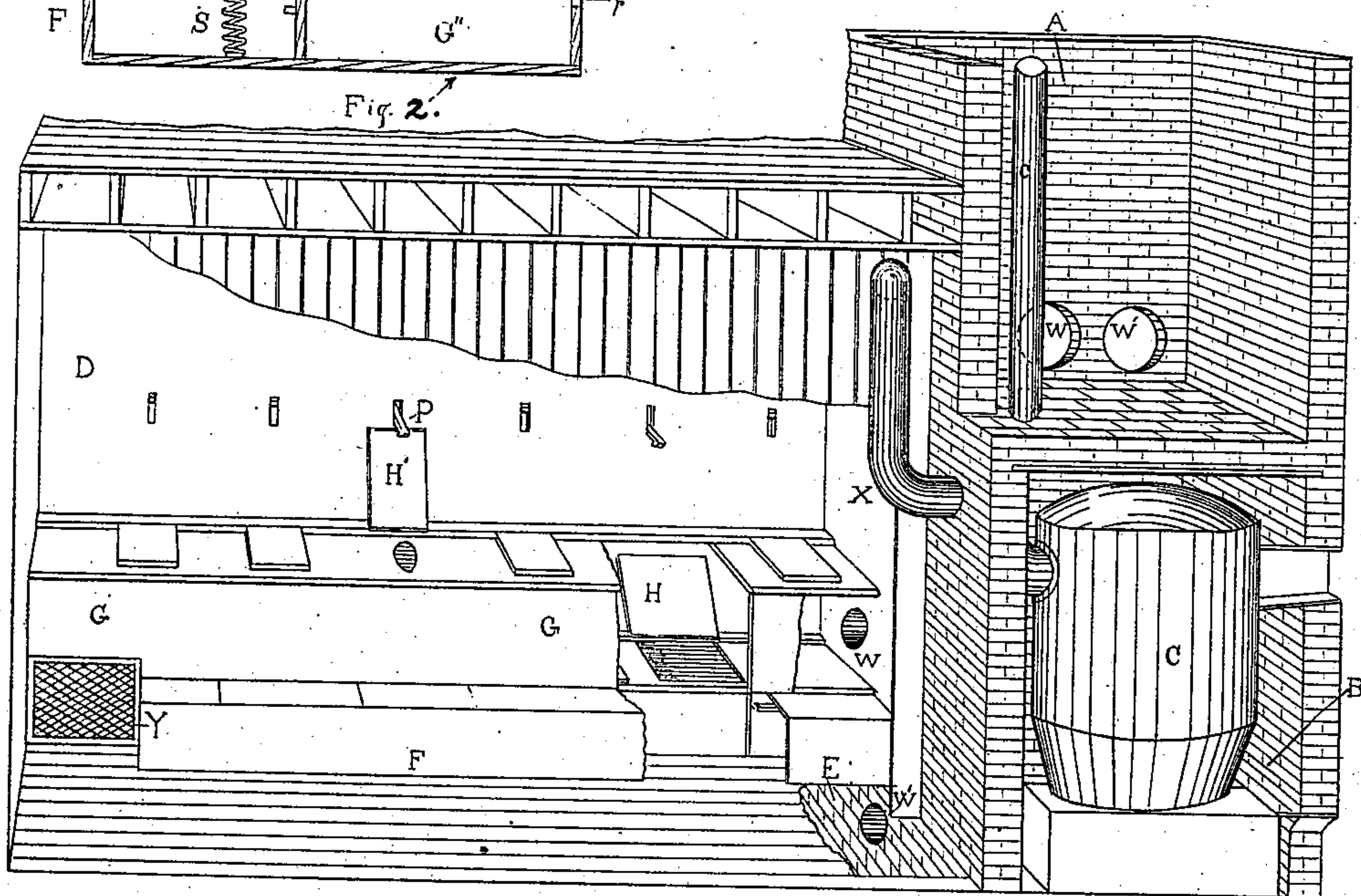
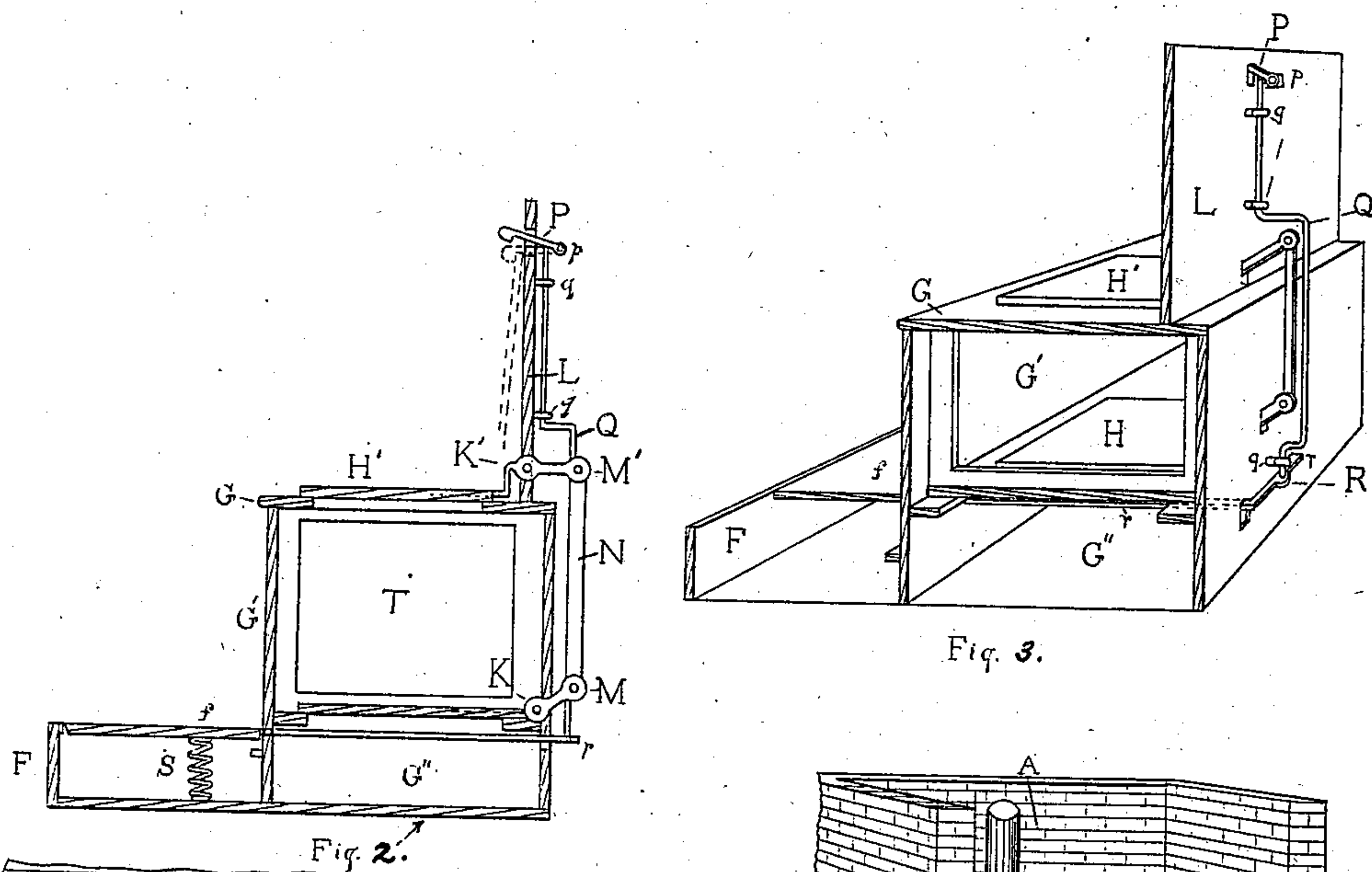


Fig. 1.

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WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 376,744, dated January 24, 1888.

Application filed March 15, 1887. Serial No. 230,944. (No model.)

To all whom it may concern:

Be it known that I, EDWIN T. JOHNSON, a citizen of the United States, and a resident of the city of Minneapolis, county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Water-Closets and Means for Ventilating the Same, of which the following is a specification, reference being had to the accompanying drawings.

My invention was designed more especially for water-closets which are to be used in school and other public buildings, though it is generally applicable to closets used in residences and elsewhere; and it has for its object to provide a closet-room which is sealed from the rest of the building or living-rooms, and a cesspool which is sealed from the closet-room itself, whereby the escape of gases into adjacent rooms is entirely prevented, and the temporary occupant of the closet is protected from the same. This closet can therefore be placed within the building itself with perfect safety, and neither the occupants of the living-rooms or the temporary occupant of the closet will be in any danger of suffering from exposure to sewer-gas.

My invention consists in the construction shown in the drawings, and hereinafter fully described and particularly claimed.

In the drawings, Figure 1 is a perspective view of a part of the interior of a building, showing my invention in working position. Fig. 2 is a central vertical cross-section, and Fig. 3 is a perspective, of one of the closet-boxes.

A is a ventilating-shaft extending to the top of the building, which is provided with a closed chamber, B, at the bottom of the same. In the chamber B is located a fire-pot or small furnace, C, provided with a smoke and flame pipe, *c*, extending through the top of the closed chamber B and upward a considerable distance within the ventilating-shaft A.

D is the closet-room, which is preferably located adjacent to the ventilating-shaft, but which may be placed at any convenient point in the building. Under the floor of the room D is the cesspool E, either directly under the floor or at the bottom of an open channel from the closets. Through the floor of the closet-

room, along one side of the same, is a longitudinal opening or a series of smaller openings into the cesspool. Over this opening, by close joints with the floor, are built a series of closets, as shown. Each closet is composed of a foot-box, F, and a seat-box, G. The seat-box G is composed of two stories, or an upper and lower section, G' and G''. The lower section, G'', has an open bottom over the cesspool, and its other three sides are closed, (when the lids are down.)

The top section, G', is provided with a series of seat-holes on top, but is otherwise closed on all sides. The top of the lower section, G'', has cut out therefrom a series of lids, H, the rear edge of each of which is rigidly attached to a rock-shaft, K, so that when the rock shaft is turned backward the lid will be raised, and when down all the lids will lie flush with each other and their frames, making a continuous top and sealing the lower section, G'', from the upper section, G'. To the upper section, G', is attached a vertical extension, L, in the rear of the seat-holes, constituting the back of the seat. In L, near its point of attachment to G', is pivoted a rock-shaft, K'. To this rock-shaft K' is rigidly attached by its rear edge the seat-hole lid H'.

To the shaft K is rigidly attached a crank-lever, M, which extends rearward through a vertical slot in the back wall of G', and to the shaft K' is attached a similar crank-lever, M', which extends rearward through a vertical slot in the back plate, L. A link, N, pivotally connects the outer extremities of these crank-levers M M'. On a rearwardly-projecting lug, *p*, near the top of the back L, is fulcrumed a dog or catch, P, which extends forward through a vertical slot in the back L. To the back L and the rear wall of the section G' are also attached a series of staples, *q*, and in the same is set a vertically-sliding rod, Q, which is bent upon itself twice at right angles, as shown, in order to escape interference with the link N. This rod Q is so set that its upper extremity is, when in its uppermost position, in direct contact with the dog P, intermediate the fulcrum *p* and the back L, and it extends downward far enough to bring its lower extremity in contact with an operating-

lever, R. This lever R is composed of the rear cross piece, *r*, directly under and in contact at its central point with the rod Q, and the arms *r*, passing forward through a longitudinal slot in the rear wall of section G'', under and on opposite sides of the lid H, through slots in the front wall of section G', and extending to the under side of the top plate, *f*, of the foot-box F, to which they are rigidly attached. The foot-box F is placed in front of the lower section, G', of the seat G. Its top plate, *f*, is made in sections corresponding in size and location to the lids H and H', and each section is hinged at its front edge to the front wall of the foot-box. Under the top plate, *f*, is placed the spiral resistance-spring S, which serves to keep the plate *f* and the dog-operating lever R in their uppermost position. The function of this lever mechanism described in the foregoing paragraph is to close the lids automatically after use the instant that the occupant steps from the foot-box. Its operation is as follows: The instant the individual steps on the foot-plate *f* the lever R is depressed and the rod Q drops in its bearings, allowing the dog P to fall by its own weight. The occupant raises the lid H' by hand, turning the rock-shaft K', and through the crank-levers M' and M and link N the lid H is also raised simultaneously therewith. The dog P catches over the edge of the lid H', and both are held in their raised position until the occupant leaves the seat and steps from the foot-box F. The instant his weight leaves the foot-plate *f* the lever R is raised by the spring S pushing upward the rod Q against the dog P, which is thereby disengaged from the lid H', and both the lids close by gravity. Turning now to the ventilation, when a series of these closets are placed adjacent to each other and built together, as described, there is always a closed chamber, T, except when the seat is in use, between the seat-top and the cesspool-cover. From one end of this closed chamber T, I extend a foul-air conduit, W, to the ventilating-shaft A, and from the cesspool E, I extend another foul-air or sewer-gas conduit, W', to said ventilating-shaft.

From the heating-chamber B, I extend a fresh warm-air flue, X, to the interior of the closet-room. At the end of the seat and foot boxes F G most remote from the foul-air outlet-conduit W, I place an inlet-register, Y. The closet-room D has no connection whatever (save only by the person-admitting door) with any of the living-rooms.

The operation of the ventilating apparatus is follows: Fire is made in the fire-pot C. This, through smoke-pipe *c*, will create an exhaust in the ventilating-flue A, and also heat fresh air (admitted from outside the building) in the space B and pour it into the closet-room D. The exhaust in A will draw the air in D down into the closed chamber T through register Y when the lids are closed, into and through the foul-air conduit W, and up the

shaft. Simultaneously therewith and continuously it will draw off the sewer-gas from the cesspool. When the closet is in use by an occupant and the lids are open, the air from the closet-room will be drawn into the chamber T through the seat-holes, (always taking the shortest road,) and by a downward draft will be carried along with all the foul gases into the conduits *w* and *w'*.

In the summer time, when no fire is used, or at other times, if by any accident the fire goes out, the natural current through the space B, closet-room D, and up the shaft A will carry off the foul gases and effect the ventilation. Complete and perfect ventilation is thus always effected.

There is no danger of the gases escaping into the living-rooms under any circumstances, and the closet itself is ventilated, the temporary occupant being protected from sewer-gases and supplied with an abundance of fresh pure air.

My improved closet can therefore be placed within public buildings and residences with perfect safety to the health of the occupants.

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

1. A seat-box for water-closets, composed of an upper and a lower section, with a closed space between the tops of the two sections when not in use, and provided with lids over coincident openings in the same vertical plane for exposing a continuous channel from the seat-hole to the cesspool when in use, in combination with a ventilating-shaft and a conduit leading from one end of the closed space between the two sections to said ventilating-shaft, substantially as described, whereby the closet-room is sealed from the cesspool by the current of air drawn downward into and through said space between the said sections and the foul air and gases are carried outward into the ventilating-shaft, as set forth.

2. In combination, ventilating-shaft A, closed air-heating chamber B, fire-pot C, provided with smoke-pipe *c*, warm-air-supplying flue X, two-story-closet seat-box G, with closed air-space between the tops of its two sections, G' G'', and provided with the lids H H' over coincident openings to the vault E, foul-air conduit W, sewer-gas conduit W', and register or grate Y, substantially as and for the purpose set forth.

3. In combination, shaft A, heating-chamber B, fire-pot C, provided with pipe *c*, warm-air flue X, two-story-closet seat G, with space T between the tops of its two sections, G' G'', lids H and H' over openings to the vault, rock-shafts K K', lever-arms M M', the link N, seat-back L, dog P, lever Q, foot-box F, provided with pivoted foot-board *f*, spring S, lever-bar R r r', foul-air conduit W, sewer-gas conduit W', and the register or grate Y, all substantially as described, for the purpose set forth.

4. In a water-closet, in combination, the two-story seat-box G, consisting of upper section, G', and lower section, G'', provided with

closed air-chamber between the tops of the two sections and coincident openings to the cess-pool, the rock-shafts K K', the lids H H', rigidly connected at their rear edges to said rock-shafts, the crank-levers M M', rigidly connected to said rock-shafts, the link N, pivotally connecting said crank-levers, the seat-back L, the dog P, fulcrumed to said back, the vertically-sliding lever Q, suitably attached to the seat

body and back, the foot-box F, provided with the pivoted foot-board f, the resistance-spring S, and the lever-bar R r r', attached to said pivoted foot-board, all substantially as described, for the purpose set forth.

EDWIN T. JOHNSON.

In presence of—

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