F. E. KERNOCHAN.

WATER-CLOSET.

No. 193,410. Patented July 24, 1877.

Fig. 1

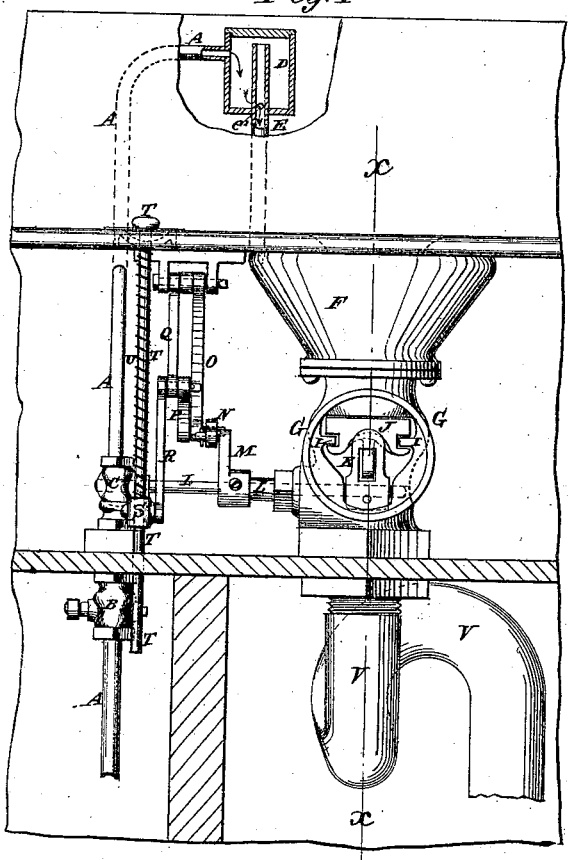


Fig. 2

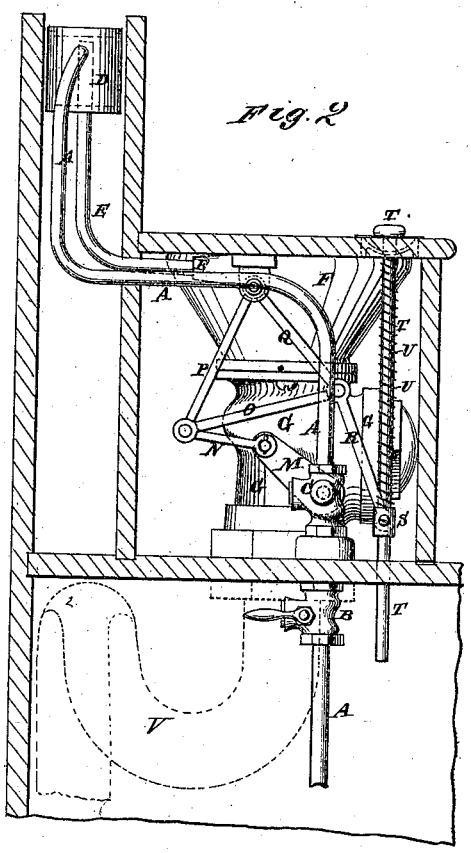
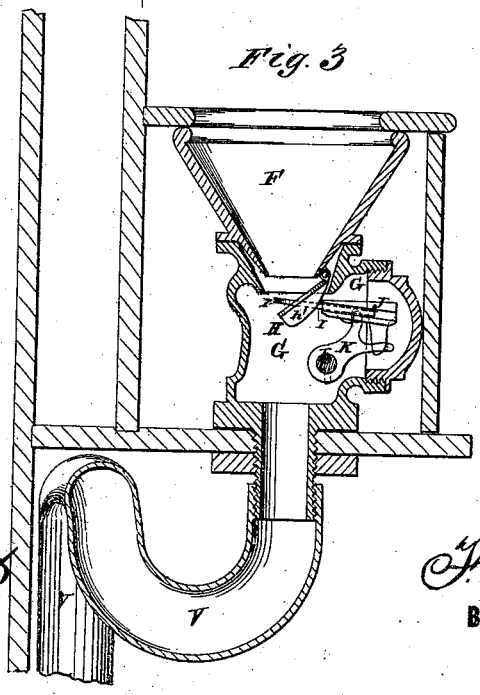


Fig. 3



WITNESSES:

A. W. Almquist

J. H. Scarborough.

INVENTOR:

F. E. Kernochan.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANCIS E. KERNOCHAN, OF PITTSFIELD, MASSACHUSETTS.

IMPROVEMENT IN WATER-CLOSETS.

Specification forming part of Letters Patent No. 193,410, dated July 24, 1877; application filed June 11, 1877.

To all whom it may concern:

Be it known that I, FRANCIS E. KERNOCHAN, of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Water-Closets, of which the following is a specification:

Figure 1 is a front view of my improved apparatus, the valve being shown uncovered and the reservoir being shown in section. Fig. 2 is a side view of the same. Fig. 3 is a vertical section of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of water-closets in such a way as to prevent the escape of sewer-gas and enable the supply of water to be regulated and controlled as may be required.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

A is the water-pipe, which rises above the basin of the water-closet, and opens into a reservoir, D, placed at a suitable distance above said basin.

From the reservoir D a pipe, E, leads down to the basin F. The pipe A enters the reservoir D near its top, and the pipe E passes in through the bottom of said reservoir, and rises nearly to its top.

In the side of the pipe E, just above the bottom of the reservoir D, is formed a hole, *e'*, of about half the area of the inlet-pipe A, so that when the water is admitted a part of the water will flow out through the hole *e'* and pipe E into the basin F, and the rest of the water will tend to fill the reservoir D. Should the valves be kept open sufficiently long the reservoir D will be filled, and after that the water will flow out through the pipe E as fast as it enters through the pipe A.

The difficulties that may arise from the varying supply of water at different places, or at the same place at different times, may be met, either by the use of a self-filling tank controlled by a floating bulb, as at present used, or by a valve connected with a separate pipe used to supply the after-wash, so that that pipe shall be always closed when the inlet-pipe A, leading to the reservoir D, is open, and open when said inlet-pipe is closed, so that the only entrance of water to the basin F while the lifting-rod is raised will be through the overflow-pipe in the reservoir, and after the lifting-pipe is lowered through the after-wash pipe.

With the lower part of the basin F is connected a valve-case, G, in which is placed a valve, I J K, the gate J of which slides in ways I, and closes up air and water tight against a seat in the upper part of the case G as it is operated by the cams K.

I do not confine myself to working the valve by cams K, placed below the gate J, as the same result may be conveniently attained by placing the cams above the gate. Neither do I limit myself to the use of the valve I J K, which is an ordinary steam-valve, as valves of other construction may be used to effect the same result.

H is a plate, hinged at one end to the lower part of the basin F, or to the upper part of the case G, in such a position that it may shut up against the bottom of the basin F, out of the way of the valve-gate J, as it moves forward to its seat.

Upon the lower side of the plate H is formed a web, *h'*, against which the gate J strikes as it moves forward to its seat to raise the said plate out of the way.

The plate H does not shut water-tight against the bottom of the basin F, and, in fact, should not, its especial object being to serve as an apron to guide the contents of the basin F past the valve-gate J into the waste-pipe V, and prevent the said gate from being soiled or clogged by said contents.

The cams K are attached to the shaft L, which is also the stem of the valve C of the inlet water-pipe A, so that the valve C and the valve I J K may always be opened and closed together.

To the valve shaft or stem L is attached a crank-arm, M, to the outer end of which is pivoted the end of a short connecting-rod, N. The other end of the rod N is pivoted to the rear angle of a triangular frame or plate, O P Q, the upper angle of which is pivoted to the bench of the water-closet or some other suitable support.

To the forward angle of the triangular plate

or frame O P Q is pivoted the upper end of a short connecting-rod, R, the lower end of which is pivoted to the collar S, secured to the rod T. The rod T passes up through the bench of the water-closet, and has a knob attached to its upper end for convenience in operating it.

The rod T is forced down when released, and is held down until again raised by a spiral spring, U, coiled around it, or by a weight attached to or connected with it.

To the pipe A, a little below the valve C, is attached a hand-valve or stop-cock, B, to enable the passage of the water to be stopped should it be necessary to open the valve I J K to clean or repair it.

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

1. The after-wash reservoir D, having inlet-pipe A, and the outlet-pipe E, the latter open a little below the top of the reservoir, and just above the bottom thereof having an orifice half the diameter of the inlet-pipe, as shown and described, so that the reservoir may supply the after-wash when the inlet-pipe is closed.

2. The combination of the plate or apron H, provided with the web h', and the valve I J K, with the valve-case G and the basin F of the water-closet, substantially as herein shown and described.

3. The combination of the triangular frame or plate O P Q, the connecting-rods N R, and the crank-arm M with the valve-shaft L and the lifting-rod T, substantially as herein shown and described.

FRANCIS EDWARD KERNOCHAN.

Witnesses:

JAMES T. GRAHAM,

C. SEDGWICK.