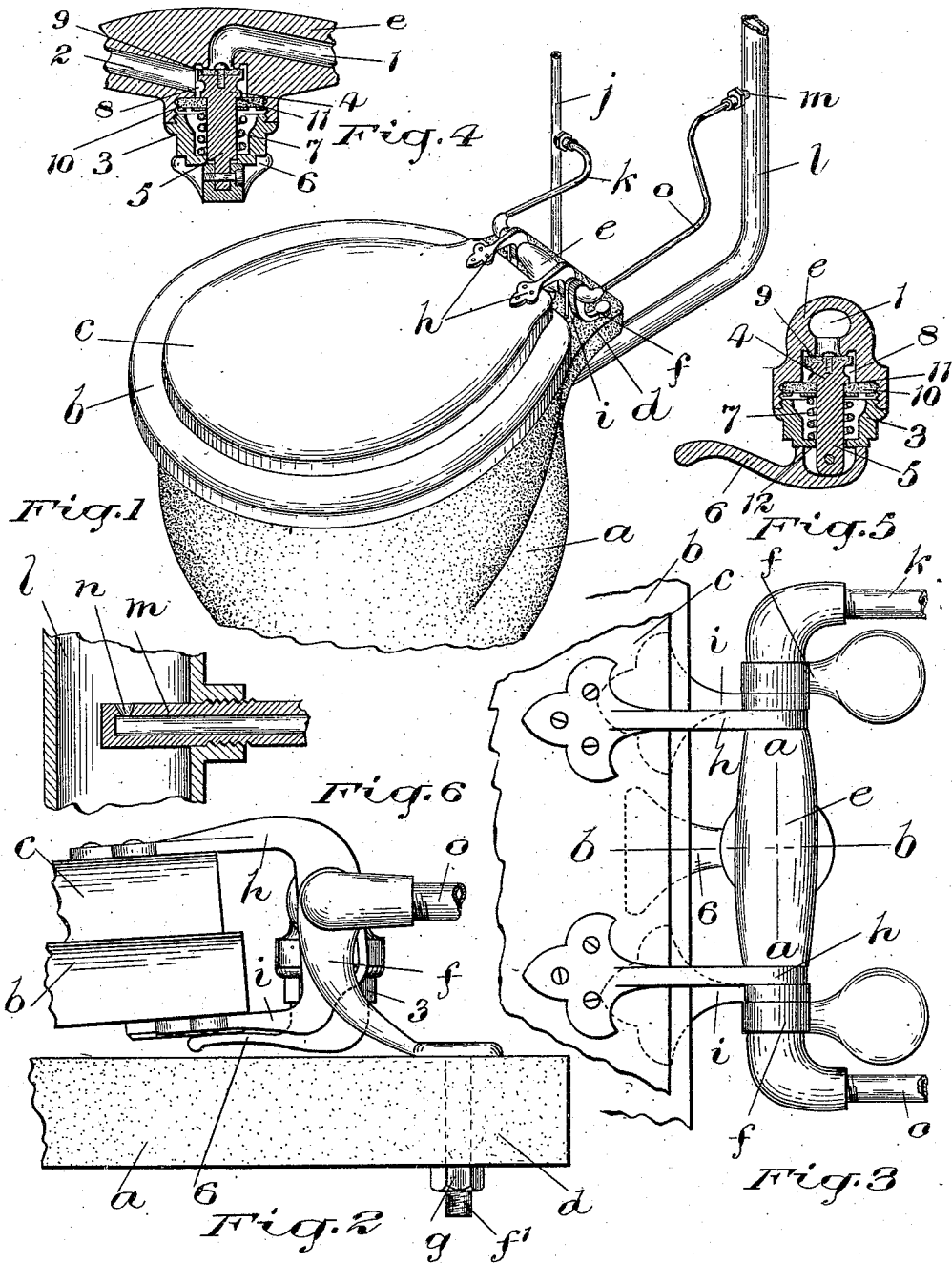


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VENTILATING WATER CLOSET.
APPLICATION FILED JAN. 23, 1909.

940,833.

Patented Nov. 23, 1909.



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VENTILATING WATER-CLOSET.

940,833.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CECIL HOLMES THOMPSON, a subject of the King of Great Britain, residing in the city of Toronto, in the county of York, in the Province of Ontario, Dominion of Canada, have invented a new and useful Improvement in Ventilating Water-Closets, being an improvement on my United States Patent No. 858,427, dated July 2, 1907, of which the following is a specification.

My invention relates to the arrangement of a cut-off valve forming part of the hinge by which the seat and cover is fastened to the bowl of the closet. The valve part of the device is situated between an inlet, and outlet passage formed in the hinge part, and to the inlet passage is coupled a feed pipe, and to the outlet passage is coupled a spray pipe. The feed pipe is for the purpose of conveying a supply of water to the valve and the valve is arranged to be operated or opened when weight is placed upon the seat which will allow the water to pass through the valve into the spray pipe and through the spray pipe and out through the nozzle coupled to the outer end and projecting into a vent pipe coupled to the bowl of the closet. When weight is placed upon the seat the valve opens and the water passes through the valve and into the vent pipe and by the spray from the nozzle a suction is created by which the odors are drawn from the closet and forced out through the vent pipe. The spraying action continues as long as weight is placed upon the seat, but the moment the weight is removed the valve closes and discontinues the spraying action. The valve mechanism and arrangement of the supply of water to the valve is entirely separate from the flushing arrangement of the closet, but if I so desire the parts may be arranged in combination to operate together. After the valves are closed and the spraying discontinues the water in the vent pipe flows back into the bowl and aids in the flushing of the closet. I attain these objects by the device as illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a section of the closet showing the parts in position; Fig. 2 is a side elevation of the device with details of the bowl, seat and cover; Fig. 3 is a top plan view of Fig. 2; Fig. 4 is a sectional view on lines *a-a* Fig. 3; Fig. 5 is a cross sectional view on lines *b-b* Fig.

3; Fig. 6 is a detail sectional view of the spray nozzle and vent pipe.

Like characters refer to like parts throughout the drawings and the specification.

a is the bowl of the closet, *b* the hinged seat, and *c* the hinged cover.

Extending rearwardly from the top plane of the bowl is an extension *d* on which is bolted the valve mechanism. *e* designates the valve casing which also constitutes a part of the hinge, and at each end of the valve casing *e* is a fastening post *f*, formed with a screw threaded stem *f'* adapted to pass through an opening formed in the extension *d* of the bowl; and on the end of each of the stems *f'* is a fastening nut *g*, by which the fastening posts are firmly held in position on the bowl. Pivotally connected to the valve casing *e* are hinged parts *h* by which the cover is hinged to the bowl, and *i* designates other hinged parts by which the seat section is hinged to the bowl.

j represents the water supply pipe, and coupled between the inlet end of the valve casing and the feed water supply pipe is a coupling pipe *k*.

l designates a vent pipe coupled over the top or to side of the bowl and adapted to be carried and extended through the roof or chimney of the buildings in which the closet is set up. Extending into the vent pipe is a spray nozzle *m*, the spray nozzle *m* may be of any suitable form but for all practical purposes the form as shown in the drawings consisting of an ordinary tube with the end closed with a small flaring opening *n*, formed through the top, is the most practical for the purpose. Coupled between the outlet end of the valve casing and the spray nozzle is a coupling pipe *o*, by which the water is carried from the valve casing to the spray nozzle *m*, to be discharged into the vent pipe.

The valve consists of the casing *e* having formed in it an inlet port 1 and an outlet port 2.

3 is a plug, screw threaded, and adapted to be screwed into the valve casing for the purpose of maintaining the piston 4 of the valve in position. The piston is formed with a spindle 5, adapted to extend through the bottom of the plug 3, and pivoted to the projecting end of the spindle 5 is a lever arm 6. Surrounding the spindle within the plug 3 and adapted to engage between the web of the plug, and a washer surrounding

the spindle adjacent to the piston head is a helical compressible spring 7 adapted to maintain the piston head against the seat of the inlet port to keep the valve closed and also to return the piston to its normal position after the valve has been opened for the purpose of spraying.

The lever arm 6, extends forwardly from the valve, and is adapted to engage under the closet seat *b*, and by reference to Fig. 2 in the drawings it will be noticed that the lever arm supports the back end of the seat slightly raised from the bowl, in which position it remains until such time as weight is placed upon the seat, the back end of the seat lowers as sufficient latitude is provided by the connection between the hinged parts *i* and *h*, and the valve casing as each of the hinged sections are formed with elongated slots at the point of coupling with the valve casing to provide for the adjustment of the seat with the back end of the bowl. By the lowering of the back end of the seat which is supported raised on the lever arm, the lever arm will be forced downward with it, by which action the lever arm draws downward a piston head 4, away from the seat of the inlet port 1, and allows the water to pass through the pocket 8.

10 designates a rubber washer fitted on the spindle 5 of the piston which engages against a shoulder 11 formed by the formation of the piston head and spindle. The washer is interposed between the web of the plug 3 and the shoulder of the pocket 8 formed in the valve casing, and is for the purpose of preventing the water from escaping down through the opening 12 through which the spindle 5 passes in the plug 3.

As illustrated and described the valve arrangement in my invention is of the lift valve nature, but I may so arrange the combination that a slide valve may be adapted for the purpose, the main object of my invention lying in the arrangement of a valve to open and close the flow of water to a spray nozzle in the vent pipe.

When the spray is being made in the vent pipe it will strike against the inner surface, and as it condenses, a certain amount will trickle back through the spray by its own weight, and when the pressure is entirely cut off, the condensation in the vent pipe will drain itself back into the bowl, and will aid in flushing.

What I claim as new and desire to secure by Letters Patent is:—

1. In a ventilating water closet, a valve casing, inlet and outlet passages in the said valve casing, hinge members pivotally connected to said valve casing, fastening posts formed with said valve casing and fastening means for securing said valve casing to closet bowl, substantially as specified.

2. In a ventilating water closet, a valve

casing, inlet and outlet passages in said valve casing, hinge members pivotally connected to said valve casing, a valve chamber formed in said valve casing, a piston valve contained within said valve chamber, a screw plug adapted to maintain said piston valve within said valve chamber, a lever arm pivotally connected to said piston valve, fastening posts formed with said valve casing, and means for securing said valve casing to closet bowl, substantially as specified.

3. In a ventilating water closet, a valve casing, inlet and outlet passages in said valve casing, hinge members pivotally connected to said valve casing, a valve chamber formed in said valve casing, a piston valve within said valve chamber, an operating lever arm connected with said piston valve, fastening posts formed with said valve casing, said fastening posts adapted to secure said valve casing to closet bowl, substantially as specified.

4. In a ventilating water closet, a valve casing, hinge members connected to said valve casing, a valve chamber formed within said valve casing, inlet and outlet passages communicating with said valve chamber, a piston valve contained within said valve chamber, a removable screw plug in the bottom of said valve chamber, the end of said piston valve adapted to extend through an opening in said screw plug, an operating lever arm pivoted to said projected end of said piston valve, fastening posts formed with said valve casing, and fastening means for securing said fastening posts, and valve casing to said closet bowl, substantially as specified.

5. In a ventilating water closet, a valve casing, hinge members pivotally connected to said valve casing, a valve chamber formed in said valve casing, a piston valve contained within said valve chamber, a removable screw plug screwed into the bottom of said valve chamber, an operating lever arm pivoted to said piston valve, a helical compressible spring surrounding said piston valve within said valve chamber, inlet and outlet passages within said valve chamber, a feed water tubular connection coupled to said inlet passage, a tubular discharge connection to said outlet passage, a spray nozzle formed on the end of said tubular discharge connection, fastening posts formed with said valve casing, and means for securing said fastening posts to said closet bowl, substantially as specified.

6. In a ventilating water closet, a valve casing, suitably connected to back of said closet bowl, hinge members pivotally connected to said valve casing for connecting the seat and cover to said closet, a valve chamber formed within said valve casing, a piston valve contained within said valve chamber, a screw plug in the bottom of said

valve casing, the end of said piston valve adapted to extend through an opening in said screw plug, a compressible helical spring surrounding said piston valve within
5 said valve chamber, an operating lever pivoted to the extended end of said piston valve, inlet and outlet passages in said valve casing adapted to communicate with said valve chamber, a feed water tubular connection coupled with said inlet passage, a
10 tubular discharge coupled with said outlet passage, a spray nozzle formed on the end of said tubular discharge connection, substantially as specified.

15 7. In a ventilating water closet, a valve casing, said valve casing adapted to be secured to the closet bowl, hinge members for pivotally connecting seat and cover to said valve casing, a valve chamber formed within
20 said valve casing, a piston valve contained

within said valve casing, a screw plug in the bottom of said valve chamber, the end of said piston valve adapted to extend through an opening in the said screw plug, a lever arm pivotally connected to extended
25 end of said piston valve, said lever arm adapted to extend under the said closet seat, inlet and outlet passages communicating with said valve chamber, a tubular feed water connection coupled with said inlet
30 passage, a tubular discharge connection coupled with said outlet passage, a nozzle formed on the end of said tubular discharge connection, substantially as specified.

Signed at Toronto this fifteenth day of 35
October 1908.

C. H. THOMPSON.

In the presence of—

A. A. ADAMS,

JENNIE DERRETT.