

2 Sheets—Sheet 1.

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No. 568,881.



Fig. 5.

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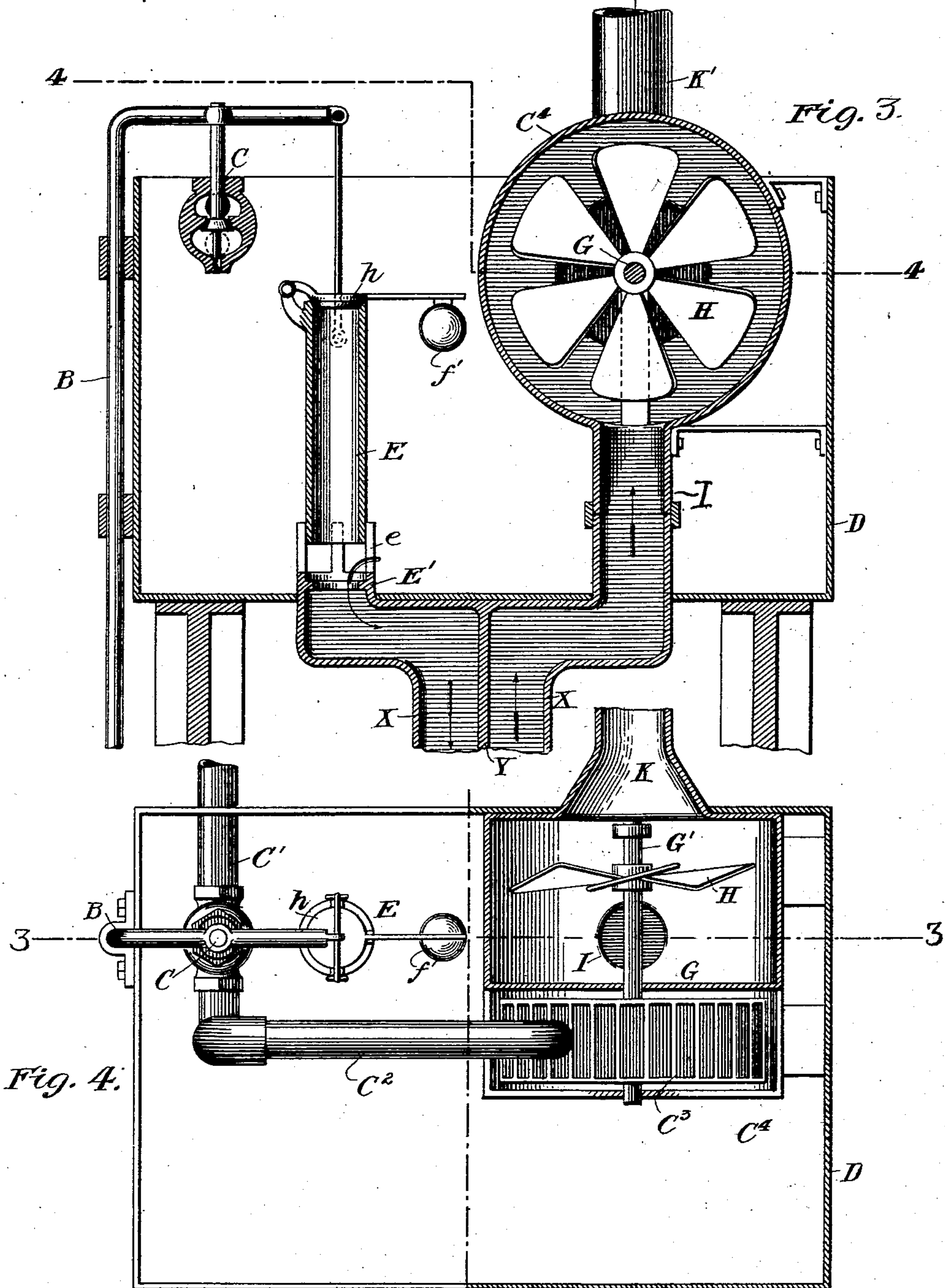
(No Model.)

2 Sheets—Sheet 2.

W. SIMMONDS & C. LINEGAR.
WATER CLOSET.

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UNITED STATES PATENT OFFICE.

WILLIAM SIMMONDS AND CHARLES LINEGAR, OF YONKERS, NEW YORK.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 568,881, dated October 6, 1896.

Application filed June 14, 1893. Serial No. 477,531. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM SIMMONDS and CHARLES LINEGAR, citizens of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Water-Closets, of which the following is a specification.

The object of our invention is to provide an organization wherein means for ventilating the bowl may be thrown into action by the weight of the person occupying the closet and remain in operation during the time of occupying, thereby insuring complete ventilation when most required. To this end we provide a ventilating apparatus and throw it into action by the weight of the person standing on a platform in front of the closet or occupying the seat thereof. To avoid having to provide a special source of power other than that which may be obtained from the pressure of the water admitted to the closet from the main, and to utilize the power of such pressure or head of water which otherwise would be wasted, we prefer to effect the ventilation by the power derived from the water admitted to the flushing-tank, and this constitutes a special feature of our invention. The water entering the flushing-tank may be utilized in several ways. For instance, it may be discharged through one or more orifices, and by an aspirating action, after the manner of an injector, draw air from and through the bowl and discharge it into a ventilating-shaft, the water, after having expended its power, being conducted to the flushing-tank, or it may be caused on its way to the flushing-tank to operate a water-wheel that drives a ventilating-fan. The arrangement is in all cases such that when the closet is occupied the water-controlling valves are operated to admit water under the pressure in the mains. When the weight of the occupant is removed, the water accumulated in the tank, and the fall of which has effected a complete ventilation of the bowl, as above suggested, is utilized to flush the bowl in the ordinary manner.

In the accompanying drawings, Figure 1 is a side elevation of our organization, partly in section; Fig. 2, an enlarged view, partly in side elevation and section, of the flushing-tank,

showing the water-wheel therein; Fig. 3, a transverse section through the flushing-tank on the line 3 3 of Fig. 4; Fig. 4, a view, partly in plan and partly in section, on the line 4 4 of Fig. 3; and Fig. 5, a detail view showing an arrangement in which the water acts directly to cause the desired circulation of air.

In Figs. 1 to 4, A indicates an ordinary bowl, the discharge-pipe A' of which leads to the ordinary water seal or S-trap. (Not shown.) At the front of the bowl is a hinged step or platform, so arranged that a person about to use the bowl will stand upon it. A water-valve-operating rod B is connected with the platform and extends upward to the tank, being provided with suitable guides, as shown. The platform is held in the normally-raised position by a pivoted lever and weight B'. To maintain the weight of the person when seated upon the platform, we hinge the seat and interpose between its front under surface and the rear end of the platform a loose vertical rod B², having guides b on the frame inclosing the bowl.

When a person stands upon the platform A², the valve-rod B is drawn down, thus operating the valve C in the water-supply pipe C' and admitting water under pressure from the main through pipe C², from whence it discharges upon a small water-wheel C³, inclosed in a boxing or casing C⁴, shown arranged in the water-tank D. As seen in Fig. 2, the water thus discharged upon the wheel enters the tank D at D'. The water continues to so discharge after the seat is occupied. At the same time that the depression of the rod B opens the valve C it also lowers a short section of pipe E, the overflow-pipe, upon its seat over the flushing-outlet E', leading from tank to the bowl. The overflow-pipe may be guided by vertical fingers e, arranged around the outlet E'. The top of the pipe E is closed by a valve F, carried by a lever pivoted thereto and having a float F', and when the tank becomes filled to such extent as to raise the float the water commences to overflow at F and passes down through E' to the bowl. The casing C⁴ is divided into two compartments by a partition G, in one of which is placed the water-wheel, and the shaft G' of the water-wheel extends through both compartments, having its bearings in the sides of the casing

and in the partition. The other compartment contains an exhaust-fan H, mounted on the shaft G', and is connected on one side of the fan H by a passage I with the bowl and on the other by a passage K with a ventilating stand-pipe K'. When, therefore, water is discharged from C² upon the water-wheel, it is set in motion and drives the fan H, which draws a current of air up from the bowl and discharges it into the stand-pipe, the overflow-pipe E being closed at F. A perfect ventilation is therefore insured during the time the seat is occupied and the flushing-tank is being filled, and also even when the tank is filled and the valve F is lifted by the float from the overflow-pipe, because the opening for air there is very small compared to the area of the passage leading from the bowl to the fan, and to further insure a perfect ventilation at such time the flushing-passage and the ventilating-passage are independent of each other, except where they open into the bowl. This may conveniently be done by using separate pipes x, divided by a partition Y, the passage on one side of the partition connecting with the bowl and the flushing-tank and that on the other side with the bowl and the exhaust-chamber containing the fan.

When the occupant rises from the seat and steps off the platform, the weight (or a spring might be used) throws up the valve-rod B, closes the water-valve C, thus cutting off the water from the wheel, and lifts the overflow-pipe E from its seat E'. The water in the tank then discharges into the bowl and flushes it.

As shown in Fig. 5, the water admitted from the main through valve C to pipe C² discharges through a nozzle O, having multiple orifices and arranged in a pipe O', connecting with the ventilating-passage I, leading from the bowl. The jets of water discharging upwardly draw the air from below through the bowl, and it passes through openings o in an inverted cone O², forming the cover or top of a casing O³, inclosing the parts above described, and thence into the stand-pipe or ventilating-shaft K. The water is, however, thrown down by the cone and passes out of casing O³ through openings O⁴ into the flushing-tank D. It will be seen that with such an organization all odors are drawn from the bowl and discharged into the ventilating-pipe or outside the room or building.

As seen in Fig. 1, we provide a urinal consisting of a flexible tube P, connected with the casing X immediately above the neck of the bowl and having an enlarged receiving end P', preferably of metal, and provided with a handle by which it may be hung up upon a hook p out of the way when not required for use.

We have shown our invention in a form that has been used practically by us and found to be efficient, but obviously details may be varied without departing from the spirit of our invention.

We claim as our invention—

1. In a water-closet, the combination of the bowl and tank, a flushing-passage connecting them, a water-wheel so arranged as to be driven by water admitted to the tank, an exhaust-fan driven by the wheel and connected by a passage on one side with the bowl and by a passage on the other side with a ventilating pipe or outlet, a normally-closed valve for admitting water to the wheel and tank, an operating connection between the valve and seat of the closet whereby the valve is opened when the seat is occupied, a normally-unseated overflow-pipe arranged within the tank and that automatically closes the flushing-passage leading from the tank to the bowl when said valve is opened and water is admitted to the wheel and tank, a valve closing the mouth of the overflow-pipe and its controlling-float, substantially as set forth.

2. The combination of the tank, the bowl, the water-wheel, the fan, the connecting-passages, the water-inlet valve, the operating rod or device for opening and closing the valve, and the overflow devices controlled by said rod and consisting of a pipe normally unseated from the flushing-outlet of the tank but seated to close the same by the action of said rod and having an overflow-valve at its upper end controlled by a float, the combination being and operating substantially as set forth.

3. The combination of the tank, the bowl, the water-wheel, the fan, the connecting-passages, the water-inlet valve, the vertically-adjustable overflow-pipe having the float-valve, the rod or device for controlling the valve and overflow devices, and the hinged platform by which the rod is operated, the combination being and operating substantially as set forth.

4. The combination of the tank, the bowl, a connecting-passage between the bowl and the tank, an inlet-valve, an operating-rod connected therewith, a movable overflow-pipe, connections between the overflow-pipe and the valve-operating rod, and ventilating devices connected with the bowl and operated by water admitted to the tank.

In testimony whereof we have hereunto subscribed our names.

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Witnesses:

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