No. 747,389. PATENTED DEC. 22, 1903

A. DROUILLARD.

VENTILATING DEVICE FOR WATER CLOSETS.

APPLICATION FILED JAN. 8, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

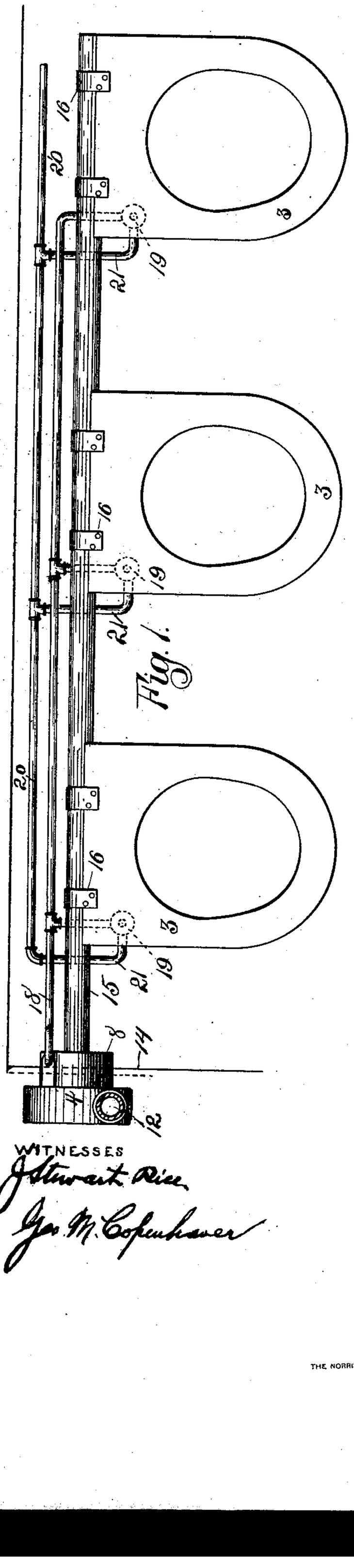


Fig. 1.

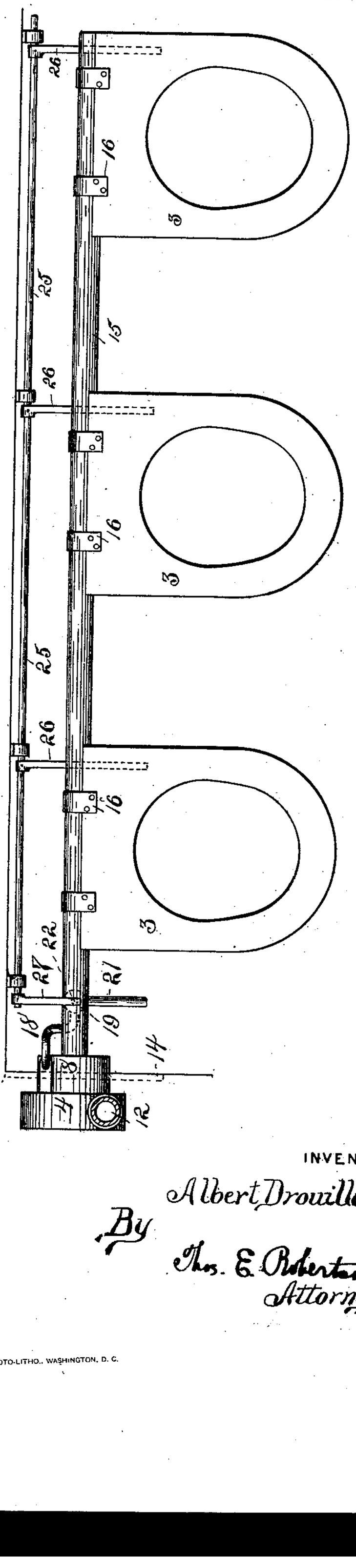


Fig. 2.

WITNESSES
J. Stewart Rice
Jos. M. Copenhaver

INVENTOR
Albert Drouillard,
By Thos. E. Robertson
Attorney.

No. 747,389. PATENTED DEC. 22, 1903.

A. DROUILLARD.

VENTILATING DEVICE FOR WATER CLOSETS.

APPLICATION FILED JAN. 8, 1901.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

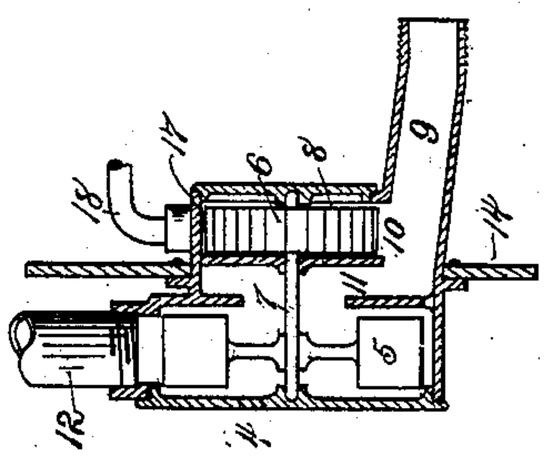


Fig. 4.

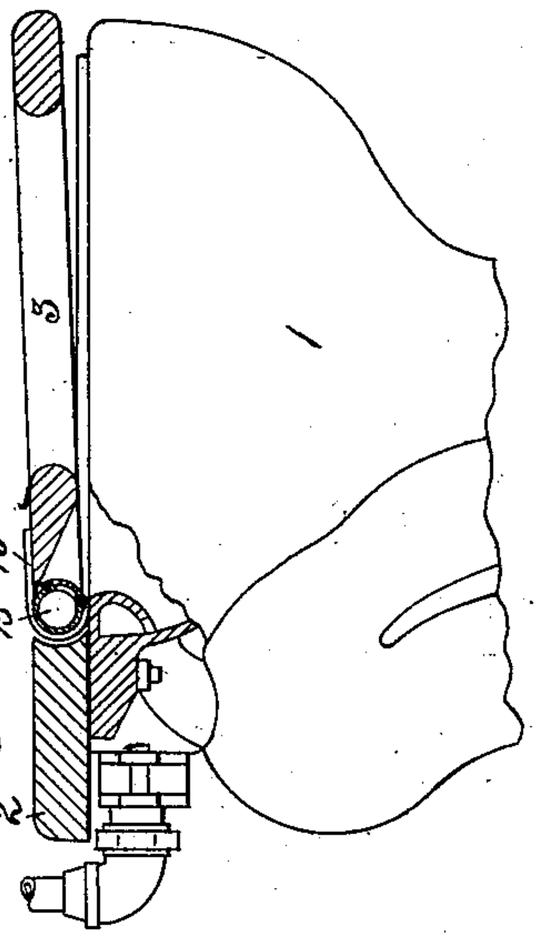


Fig. 5.

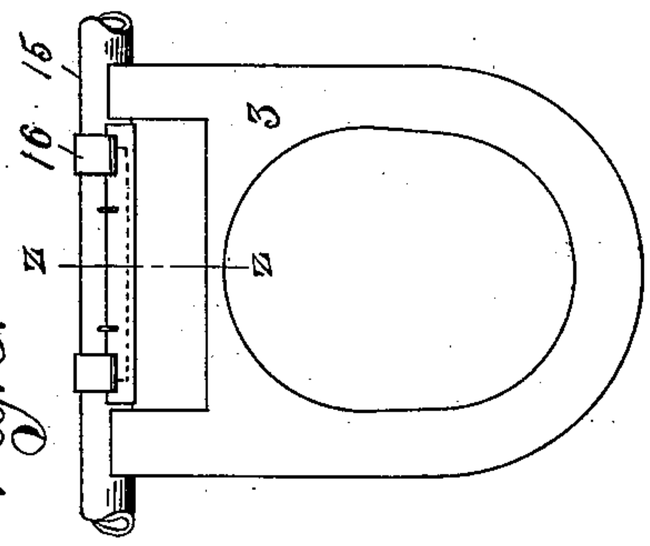


Fig. 6.

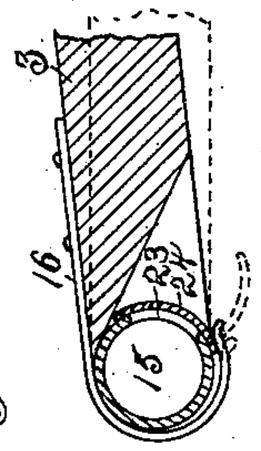
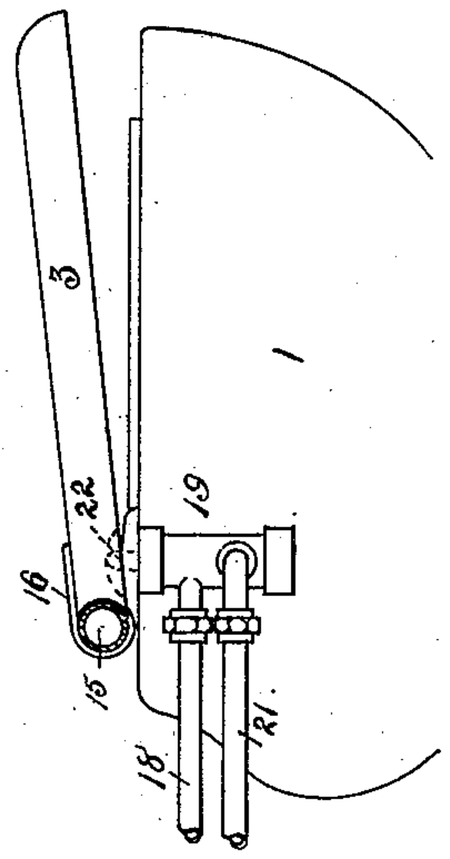


Fig. Y.



WITNESSES

J. Stewart Rice.

Geo. M. Copenhaver.

INVENTOR

Albert Drouillard,

By Thos. E. Robertson

Attorney.

No. 747,389. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

ALBERT DROUILLARD, OF WINDSOR, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO THE DETROIT VENTILATING COMPANY, LIMITED, OF DETROIT, MICHIGAN.

VENTILATING DEVICE FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 747,389, dated December 22, 1903.

Application filed January 8, 1901. Serial No. 42,532. (No model.)

To all whom it may concern:

Be it known that I, ALBERT DROUILLARD, a subject of the Queen of Great Britain, residing at Windsor, in the county of Essex and Province of Ontario, Canada, have invented certain new and useful Improvements in Ventilating Devices for Water-Closets, of which the following is a specification.

This invention relates more particularly to a sanitary device of the class described and shown in my Patent No. 669,062, granted February 26, 1901, for removing the foul air and gases from a closet-bowl during use, and has for its object to have one closet or a series of closets automatically operate the fan or motor during the time that the closet is in use and in case of a series of closets simultaneously connect and disconnect the bowl from the exhaust-pipe, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 shows a number of closets connected in series to the same common exhaust pipe and fan, a separate valve being provided for each closet for setting the motor in operation. Fig. 2 is a similar view showing a modified construction of mechanism for setting the motor in operation, but one valve being used for the entire series of closets. Fig. 3 is a vertical central section through the suction-fan and hydraulic motor, adapted to be set into the wall or secured thereto adjacent to the bowl. Fig. 4 is a vertical central section through a closet-seat as hinged to the vent-pipe of the motor. Fig. 5 is a view looking at the under side of one of the seats shown in Figs. 1 and 2. Fig. 6 is a section on line *z z*, Fig. 5; and Fig. 7 is a side elevation showing manner of attaching the valve to the bowl.

As shown in the drawings, 1 is the bowl of the water-closet of known construction, provided with a seat-frame 2 or a common exhaust-pipe 15, to which the seat 3 is hinged. 4 is a fan-casing, preferably mounted on a shelf adjacent to the bowl or embedded in the wall and inclosing a suction-fan 5, and an actuating water-wheel 6, mounted upon a common shaft 7, and inclosed in a separate compartment 8, formed in said casing. The lower portion of the casing is preferably formed into an inclined discharge-spout 9, connecting with the common exhaust-pipe 15, where one is used, or directly to the bowl through which the waste water from the water-wheel is conducted through a vertical trunk 10 and discharged into the interior of the bowl, while at the same time the interior of the bowl is connected with the fan through a trunk 11, leading from the discharge-spout into the eye of the fan, whereby the foul air from the closet is drawn into the fan and discharged into a ventilating-pipe 12.

The water-wheel is preferably placed in front of the fan-wheel, as shown in Fig. 3, in which the motor is adapted to be set into the wall and the opening covered over by a board 14, the exhaust-pipe 15 being connected to the spout 9 to connect the closets with the motor, and, as shown in the drawings, the seats are hinged directly to the exhaust-pipe 15 by means of the strap-hinges 16.

The water-wheel is driven by the impact of water received through a jet-opening 17 in the casing from a pipe 18 under control of a valve 19, which is preferably arranged to operate automatically to admit the water from the usual service-pipe 20 through the branch pipe 21. As shown in the drawings, the valve 19 is directly connected to the bowl, with the stem 22 of the valve projecting vertically upward against the under side of the seat, which is normally elevated by a suitable spring or weight, (not shown,) all so arranged that by sitting upon the seat the latter is depressed, and the water under pressure is admitted to the water-wheel, causing the fan to revolve and draw the foul air from the bowl into the fan and carry it off into the ventilating-pipe.

As shown in the drawings, a number of closets are connected together in series to the same common exhaust-pipe to which the seats are secured free to turn thereon, one end of said pipe being connected to a suction-fan operated by means of a hydraulic motor, preferably embedded within the wall of the building, as shown, although I may simply attach

the motor to the wall at or near the bowl, as desired.

The exhaust-pipe 15 is provided with openings 23, communicating with the bowl and provided with hinged covers 24, operated by the movement of the seat, as shown in Fig. 6, by reason of the hinge members 16 striking the rear edge of said covers as the seat is raised and closing said openings, which are automatically opened by the depression of the seat through the action of gravity, as indicated in dotted lines, so that the foul air may be drawn from the bowl and the spent water from the motor overflow into the bowl through the same common pipe. Each of the closets is provided with a valve 19, secured in proximity to the under side of the seat, whereby upon the depression of the seat said valve will be opened and allow the water from the supply-pipe to flow through the pipe 18 to the motor and set the same in operation irrespective of which closet may be used. In Fig. 2 I have shown a modified construction by which but one valve is required, which is connected directly to the exhaust-pipe 15, with its valve-stem projecting through the upper side thereof, and in which 25 is a shaft mounted in bearings secured to the wall and provided with arms 26, projecting into proximity to the under side of the seat, so that when any one of said seats is depressed it will rock the shaft and through the medium of the arm 27 depress the valve-stem and admit water to the motor and as the valve is connected directly to the exhaust-pipe 15, and leakage therefrom will flow into the bowl together with the overflow from the motor.

Automatically-operating closet-valves of any known construction may be employed.

My invention in so far as it has any relation to automatic controlling means consists in so connecting the exhaust-pipe with the bowl that it will be automatically connected with the bowl upon the depression of the seat and simultaneously therewith the motor set in operation while the closet is in use.

If desired, the rear under portion of the seat-frame may be chamfered opposite the openings into the exhaust-pipe.

Some of the features illustrated and described in this application are also shown in my aforesaid patent, No. 669,062, of February 26, 1901; but the claims in this application differ from those in the patent, for example, in setting forth the fact that the seat is hinged to the exhaust-pipe and that the said pipe is a medium for the discharge of waste water from the motor and also acts as a ventilating-pipe, while the claims of my aforesaid patent relate to a device comprising a casing inclosing a water-wheel and a suction-fan and to the general arrangement of such parts and to their connection with the closet irrespective, however, as to whether the seat is hinged to the exhaust-pipe as in the appended claims.

Having thus fully described my invention, what I desire to secure by Letters Patent is—

1. In a ventilating device for water-closets, the combination with the bowl and a suction-fan and actuating-motor for driving the same, adjacent thereto, of an exhaust-pipe connecting the eye of the fan directly with the bowl at or near the top thereof, and the closet-seat hinged to said exhaust-pipe and adapted to set the motor in operation upon the depression of the seat the said pipe being a medium for the discharge of waste water from the motor and also acting as a ventilating-pipe.

2. In a ventilating device for water-closets, the combination with the bowl, a suction-fan and actuating water-wheel for driving the same, adjacent to the bowl, of an exhaust-pipe connecting the eye of the fan with the bowl, and the closet-seat hinged to said pipe, a water-supply pipe for said motor, a valve in said supply-pipe and means for automatically operating it by the movement of the seat, the said pipe being a medium for the discharge of waste water from the motor and also acting as a ventilating-pipe.

3. In a ventilating device for water-closets, the combination with the bowl, a suction-fan and actuating water-wheel for driving the same, adjacent to the bowl, of an exhaust-pipe connecting the suction-fan with the bowl, the closet-seat hinged to said pipe, a water-supply pipe for said motor, a valve in said supply-pipe provided with means for automatically operating it by the movement of the seat, said valve being secured to the exhaust-pipe, so that any leakage therefrom will flow back into the bowl with the spent water from the motor and the foul air be drawn through the same pipe.

4. In a series of closets, the combination with the bowls, of a common ventilating-pipe for all of said bowls, and normally elevated seats hinged to said pipe, openings formed in the side of said pipe and hinged covers provided for said openings, adapted to be operated by the movement of the seat to open and close the same, and a suction-fan and motor adapted to be automatically set in operation, connected to said pipe to draw the foul air from the bowl during use.

5. In a series of closets, the combination with the bowls of a common ventilating-pipe for all of said bowls and normally elevated seats hinged to said pipe, covered openings provided in the side of said pipe, adapted to be automatically opened by the depression of the seat, and a suction-fan connected to said pipe and provided with an actuating-motor adapted to be automatically set in operation by said seat, the said pipe being a medium for the discharge of waste water from the motor and also acting as a ventilating-pipe.

6. A series of closets, provided with normally elevated hinged seats, a ventilating-pipe common to all of said closets extending across the top thereof, having openings formed in its side communicating directly with the bowl, covers provided for each of said openings adapted to be opened and closed

by the movement of the seat, and a suction-fan or motor connected with said ventilating-pipe, adapted to be set in operation simultaneously with the depression of said seat, to draw the foul air from the bowl, the said pipe being a medium for the discharge of waste water from the motor and also acting as a ventilating-pipe.

7. A series of closets, provided with normally elevated hinged seats, a suction-fan and motor for driving the same, a water-supply pipe for said motor, a valve for said supply-pipe, means for automatically operating said valve, and a ventilating-pipe common to all of said bowls, normally out of communication therewith, and adapted to be automatically connected with any closet simultaneously with the operation of the fan by the depression of its particular seat, the said pipe being a medium for the discharge of waste water from the motor and also acting as a ventilating-pipe.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT DROUILLARD.

Witnesses:

OTTO F. BARTHEL,

E. I. SCULLY.