W. S. Carr,

Water Closet,

No. 9,480, Patented Dec. 21, 1852.

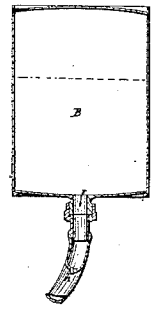


Fig. 2.

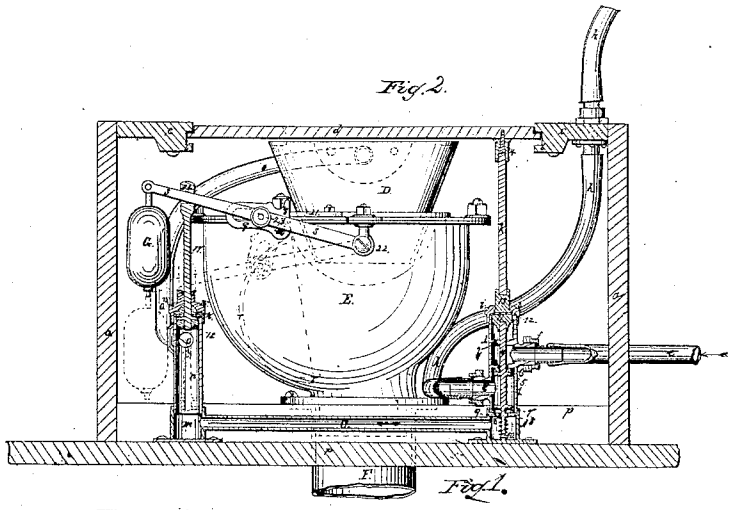
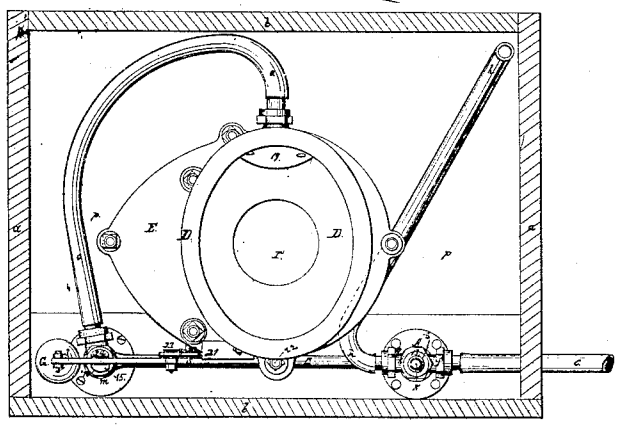


Fig. 1.



Attest:
Lemuel W. Smith
Charles Smith

Inventor:
William S. Carr

UNITED STATES PATENT OFFICE.

WM. S. CARR, OF NEW YORK, N. Y.

WATER-CLOSET.

Specification of Letters Patent No. 9,480, dated December 21, 1852.

To all whom it may concern:

Be it known that I, WILLIAM S. CARR, of the city, county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Water-Closets, by which the weight of the person is made to let on water from a competent head into an air vessel and when the closet is relieved of the weight of the person the supply of water is shut off and the water in the air vessel, by its pressure and hydrostatic column, operates on a plunger and through the lever now usually worked by hand turns aside and empties the pan at the bottom of the basin; at the same time a supply of water passes in by the usual deflector and cleanses the basin and closet, and when the pressure is relieved by the water flowing out of the air vessel the plunger descends and allows the pan to be replaced under the basin, and the water in the pipes, coming to its level, causes sufficient to run into the pan and prevent any smell escaping from the pipes; and I hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1, is a plan with the seat removed, Fig. 2, is an elevation of the closet complete, the front board being removed to show the parts, and the cocks and cylinder that regulate the water being shown in section.

The like marks of reference designate the same parts.

a, *a*, are the sides and *b* the front inclosing the parts of the apparatus, but may be any usual inclosure for the same.

c, *c*, are the side pieces on top between which is the seat *d*, with the opening as usual over the basin.

e, is a pipe from any competent supply under the requisite pressure. *f*, is a union joint connecting the same with a cylinder 1, on a base A, which cylinder forms the cock for the supply of water.

2, is a diaphragm above the pipe *e*, within the cylinder 1, through which is a rod 4, sliding easily but fitting closely to the hole in the diaphragm. 3, is a similar diaphragm below the pipe *e*, through which the rod 4, passes, the hole for which is of a size to allow the water to pass freely, and forms a seat on its lower side for a valve 5, over which is a washer or elastic packing 6, so as to form a close joint with the seat 3.

7, is a circular valve on the rod 4, below the valve 5.

8, is a seat on which is an elastic packing to receive the valve 7.

9, is a disk setting within the opening in the seat 8, and of a size to allow a proper flow of water through the seat 8.

10, is a strong spring within the base A, sufficient to hold the valve 5, tightly to the seat 3, against the pressure of water.

g, is a pipe opening through the cylinder 1, between the valves 5 and 7, and connected by a union joint to a pipe *h*, leading to a reservoir B, which reservoir is of any proper size and shape, and is to be placed at the proper elevation in any convenient place. Above the diaphragm 2, is a head 11, and an india rubber or elastic disk 12 sets over the upper end of the cylinder 1 and forms a tight joint by being compressed onto the ends of the cylinder by the screw head *i*, through which head is a plug 13, that receives the lower end of a rod *k* jointed at 14, to the under side of the seat *d*. This seat *d*, is attached by hinges or otherwise at the back and allowed a certain amount of motion up and down in guides *l* along under the sides of the seat.

C, is a pipe from the base A, to the base *m*, of the cylinder *n*.

15, is the screw cap on the upper end with a packing 16, supported by a disk resting on the upper end of the cylinder so that the packing is compressed and tightened by screwing on the cap 15. This forms the packing to a rod 17, passing through the cap, and having on its lower end a plunger 18, fitting slackly into the cylinder so that water can pass slowly around it.

o, is a pipe from near the top of the cylinder *n*, passing around and into the pan or basin D, where the water is directed around the inside of the basin by the deflector 19, as usual.

E, is the hopper supporting the basin D, and standing on the floor or other support *p*.

F is the soil pipe passing away in any convenient manner.

20 is the rod forming the center of the hinge on which the pan *r*, moves.

q, is the cam piece on the outer end of

the rod 20, and 21, is the stop piece taking the same when the pan *r*, is turned down, see Fig. 2.

s, is the lever on a fulcrum 22, with a roller 23, in the cam piece *q*. This lever *s*, is in the ordinary closet attached to a handle to be raised when the pan is to be washed out but instead of being worked by hand the lever merely rests in a jaw 24, on the end of the rod 17.

G is a weight to the end of the lever *s*.

The operation of the parts is as follows: The weight of a person setting on the seat *d*, causes it to descend slightly, within the guides *l*, and forcing down the rod *k*, and plug 13, which pressing on the elastic packing 12, bends it downward and carries with it the head 11, which forces the rod 4, and valves 5 and 7 downward closing the lower opening by the seat 8, and opening the valve 5, which allows the water to pass into the cylinder 1, and through the pipe *h*, to the reservoir B, and if the valves be kept in this position a sufficient length of time the pressure in the reservoir B, due to the compression of the air becomes equal to the pressure in the pipe *e*. When the weight of the person is removed from the seat *d*, the spring 10, lifts all the parts directly above it, raising the seat and closing the valve 5, against the head of water, bringing the parts into the position shown in Fig. 2, opening the valve 7. The water now rushes back from the compression of the air in the reservoir through the pipe *h*, passing the seat 8, in a regulated amount and by the pipe C, enters the cylinder *n*, throwing up the plunger 18, from its position as denoted by dotted lines carrying with it the lever *s*, and turning the pan *r*, down into the position shown by dotted lines emptying the same. The water passes from the cylinder *n*, by the pipe *o*, washing out the pan, and the water continues to run until it finds its level in the pipes *h*, and *o*, but the flow of water is not sufficient to keep the plunger 18, above the pipe *o*, for more than probably half the time the water flows, the weight G carrying the parts down into the position shown by dotted lines bringing the pan *r*, up to and around the lower end of the basin D, catching sufficient water as it passes into the pan to prevent smell from coming out of the pipe in the usual manner. The closet is then ready to be again used, and that without any manual operation, the whole being effected by the weight of the person.

I am aware that a hopper closet has been made in which the weight of the person caused a cock something similar to that herein shown to let the water into the hopper shaped pan, and I am also aware that closets have been made in which the pan was moved away by the motion of the seat, and the water made to run; but I am not aware of any previous arrangement in which an air tight reservoir has been used, the filling or partial filling being effected by motion of the seat letting on the water, and when the weight is removed from the seat the supply of water is shut off and a connection opened between the air vessel or reservoir and the pan or basin of the closet. Neither am I aware of any arrangement of the parts by which the pressure of water opens the pan, thereby avoiding a separate and distinct operation by hand, always subject to neglect or hasty and improper performance by which the water has not time to act.

I do not claim any of the parts of the pan, basin or hopper as these may be of any desired character, and if used with the hopper closet without a pan the parts which move the pan *r*, may be dispensed with.

What I desire to secure by Letters Patent is—

The cylinder *n*, and plunger 18, by which the force of the water is made to raise the lever *s*, depressing and emptying the pan *r* as described and shown.

In witness whereof I have hereunto set my signature this fourteenth day of August one thousand eight hundred and fifty two.

WILLIAM S. CARR.

Witnesses:

LEMUEL W. SERRELL,

CHARLES TENCELLENT.