H. P. BUCHAN.

Water-Closet.

No. 161,004. Patented March 23, 1875.

Fig: 2.

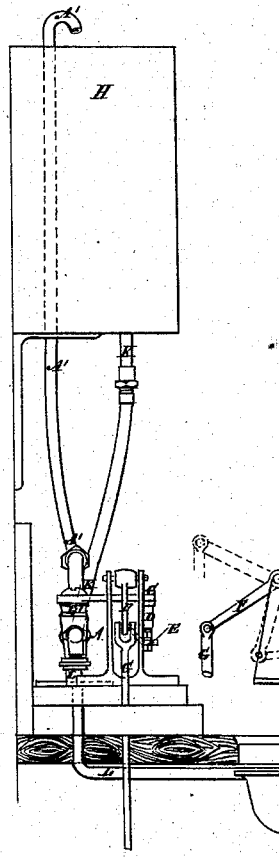

Fig: 1.

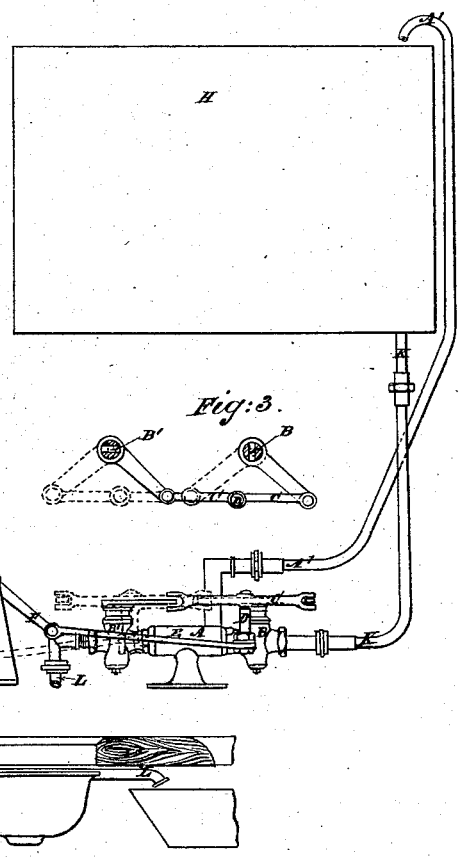

Fig: 3.

Witnesses:
Ed Davidson
Jas. Boyton.

Inventor:
Henry Philip Buchan
by his Attorney
Wm D. Baldwin

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

HENRY P. BUCHAN, OF SOUTHAMPTON, ENGLAND.

IMPROVEMENT IN WATER-CLOSETS.

Specification forming part of Letters Patent No. **161,004**, dated March 23, 1875; application filed June 3, 1874.

To all whom it may concern:

Be it known that I, HENRY PHILIP BUCHAN, of the town and county of Southampton, England, merchant, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in Water-Closets; and I, the said HENRY PHILIP BUCHAN, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object to apply disinfecting-fluid to water-closets. The apparatus used for this purpose can be fixed either above or below the seat of the closet, and is connected with a reservoir containing the disinfecting-fluid. It consists of a small cylinder of sufficient capacity to hold enough disinfecting-fluid to destroy all noxious gases and organic matter at each use of the closet.

At the two ends of the cylinder are two taps, so arranged that when one tap is shut the other is open, and vice versa. On the plug of each tap is a lever, and the two are connected with an iron rod, which is coupled to the handle or lever of the closet, so that when the handle is lifted to empty the contents of the pan one tap is opened to allow the disinfecting-fluid from the reservoir to fill the cylinder, but the other tap is shut, so that it cannot escape. When the handle is let down the reverse action takes place, and the fluid in the cylinder is discharged, and conducted, by a small pipe, to the pan-valve, trap, or drain. An air-pipe is provided at the top of the cylinder to allow the air to escape while it is being filled with the fluid.

In order that my invention may be fully understood and readily carried into effect, I have shown in the drawings hereunto annexed an apparatus constructed according to my invention, for supplying disinfecting-fluid to water-closets.

Figure 1 of the drawings shows a front view of the apparatus; and Fig. 2, an end view of the same, together with so much of the ordinary seat-pan and pull-up apparatus of a water-closet as is necessary to explain its action.

In these figures, A is the small cylinder or vessel; B B′, two taps, one at each end of the cylinder. On the plug of each tap is a lever-arm, jointed to a connecting-rod, C. At the center of this rod is carried a pin, D, which is connected, by the connecting-rod E, with a crank, F, and this crank is connected, by the rod G, to the lever by which the pan-valve is opened and closed, and to which the ordinary pull-up handle is connected. By this means, when the handle of the closet is raised, the tap B is opened and the tap B′ closed, and when the handle is lowered the position of the taps is reversed. From the tap B a pipe, K, passes to the bottom of a small supply-cistern, H, containing a supply of disinfecting-fluid, so that when the tap B is opened the cylinder A fills with disinfecting-fluid, there being an air-pipe, A′, rising up from the cylinder, to allow air to escape from it, and this pipe is turned over at its upper end to overhang the cistern H, so that any liquid rising up it quickly may, if jerked out from its upper end, be received back again into the tank. From the tap B′ a pipe, L, passes to the pan of the closet or into the end of the water-supply pipe. The cistern, together with the cylinder A, and the taps, levers, and rods, are inclosed in a wooden casing, (not shown in the drawing,) and this casing is constructed so that any part of the apparatus can be readily got at.

The action of the apparatus is as follows: When the apparatus is at rest—that is, before the closet is used—the tap B is closed, so that no fluid comes into the cylinder from the cistern H. When the handle of the closet is raised, the tap B′ is closed and the tap B opened. The cylinder A and air-pipe, rising from it, then become filled with liquid, when the handle is again lowered, the tap B′ is opened, and the tap B closed. The disinfecting-fluid in the cylinder A and air-pipe then flows, by gravitation, through the pipe L, into the pan of the closet.

A sectional view, taken through the plugs of the two taps B B′ in their two positions, is shown at Fig. 3.

Having thus described the nature of my invention, and the manner of performing the same, I would state that I do not confine myself to the precise construction of the apparatus as shown in the drawings hereunto annexed, as various modifications may be made

in its construction, as, for example, the cylinder A, in place of being mounted horizontally, may be mounted vertically, and the taps at its two ends may then be worked directly by a rod rising up from the lever, by which the pan-valve is opened and closed, and to which the ordinary pull-up handle is connected; but

What I claim is—

1. The combination, substantially as hereinbefore set forth, of a reservoir containing disinfecting-fluid, a cylinder adapted to receive a charge of said fluid, taps at each end of said cylinder, a supply-pipe connecting the cylinder and water-closet, and lever-connections between the taps and pull-up handle of the water-closet, whereby the disinfecting-fluid is shut off as the handle of the closet is raised to let on the water, and discharged when the water-supply is shut off.

2. The combination, substantially as hereinbefore set forth, of the reservoir, cylinder, the taps, their lever-connections, and the air-pipe of the cylinder, whereby the capacity of the cylinder is increased, and the quick discharge of the fluid secured.

HENRY PHILIP BUCHAN.

Witnesses:

A. EDWD. ROLINS,
Solicitor, Southampton, England.
SAMUEL THRESHER, *Clerk to Consul.*