S. S. HELLYER.

Water-Closet.

No. 221,064. Patented Oct. 28, 1879.

Fig. 1.

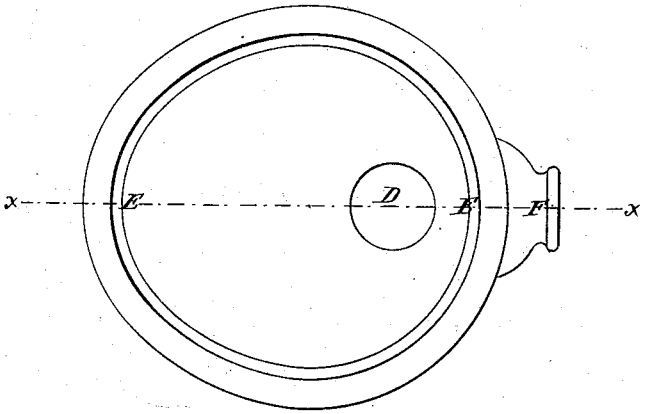


Fig. 2.

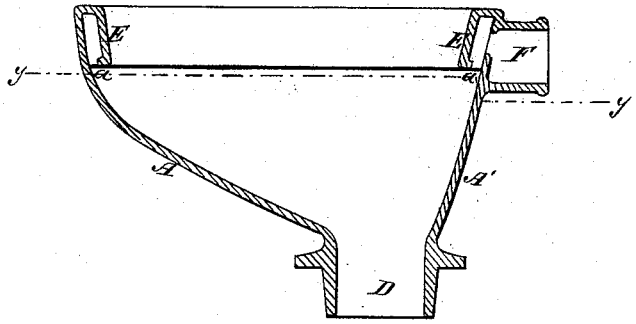
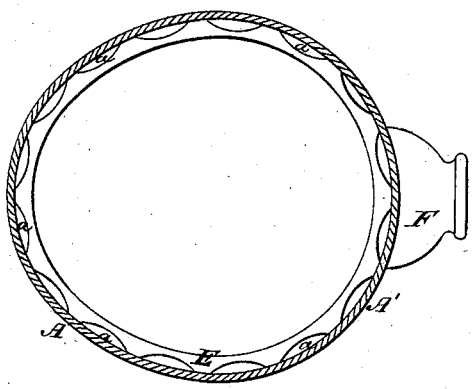


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL S. HELLYER, OF LONDON, ENGLAND, ASSIGNOR TO HENRY C. MEYER & CO., OF NEW YORK, N. Y.

IMPROVEMENT IN WATER-CLOSETS.

Specification forming part of Letters Patent No. **221,064**, dated October 28, 1879; application filed September 4, 1879; patented in England, November 15, 1876.

To all whom it may concern:

Be it known that I, SAMUEL S. HELLYER, of London, of the county of Middlesex, England, have invented certain new and useful Improvements in Water-Closets, for which Letters Patent of Great Britain were granted to me November 15, 1876, and sealed May 5, 1877; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that kind of water-closet apparatus where no valve is employed in combination with the outlet of the basin, and has for its main objects to provide for use a simple, cheap, and efficient basin for water-closets of such construction as will insure a perfection of wash, or a thorough flushing of the basin; and to these ends and objects my invention consists in a water-closet basin having the position or location of the outlet and the inclination of the back such as to insure the direct passage of the soil deposited into the water of the trap, without coming into contact with the sides or walls of the basin, and also having such a general contour and such a disposition of numerous perforations in the flushing-rim as to insure a direct convergence of the whole of the water discharged onto the walls of the basin toward the outlet, all as will be hereinafter more fully explained.

To enable those skilled in the art to make and use my invention, I will now proceed to more fully describe the construction and operation of my improved water-closet basin, referring by letters to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a top view of a basin made according to my invention. Fig. 2 is a vertical central section of the same, taken at the line *x x* of Fig. 1; and Fig. 3 is a horizontal sectional view taken at the line *y y* of Fig. 2, and with the basin in an inverted position, so as to get a view of the under side of the flushing-rim.

In the several figures the same part will be found designated by the same letter of reference.

I have, in the manufacture of my improved water-closet basin, designated it in the market as the "Artisan," from the fact of its being specially adapted for artisans' dwellings, where that kind of closets having valves at the outlet of the basin (operated by the pull-up handle) would be too expensive.

In the several figures just alluded to, A A′ is the body of the basin, composed of earthenware or other suitable material, and D is the main outlet therefrom.

The back of the basin is made to incline inward and downward at an angle of from ten degrees to about fifteen degrees from the vertical, and merges at its lower part in the back of the outlet D, as shown clearly at A′ in Fig. 2, the center of the outlet itself being at such a distance from the front of the seat as will insure the passage of the deposit directly into the water of the trap, when using the closet, without touching and soiling the walls or sides of the basin; and I prefer to make the basin as small as practicable, in order to reduce to a minimum the surface that may require to be cleansed. The hollow rim E is supplied from the flushing-inlet F, and is perforated with long narrow openings, *a*, arranged at intervals all around on its under side, (see Fig. 3,) and these perforations or openings are all directed, so far as the general configuration of the basin will admit, toward the outlet D, so as to produce a direct convergence of the water-jets to the said outlet, where the action of the several jets is directly concentrated upon the trap, to cleanse it effectually of any foreign matter. This basin also allows of an earthenware trap being fixed on the floor immediately under the basin, the said trap being independent of the basin, in order to obviate a breakage of the connection with the said pipe or drain when the basin requires to be moved.

When situate upstairs, a lead trap should, by preference, be fixed under the basin, as the connection can be readily made to the soil-pipe by a wiped soldered joint, thereby avoiding the risk of breakage on the drain side of the trap for any noxious gases to escape through the same into the house.

When situate on the basement the ordinary or other earthenware trap may be fitted under the water-closet basin, employing, by prefer-

ence, a trap having a dip of not less than one and a half inch.

It will be understood that in the use of a basin made as herein described and illustrated, the supply of water for the flushing entering at F will fill the flushing-rim E, and thence pass out in jets through the numerous perforations *a*, and, washing the whole interior surface of the basin, will converge from all said perforations directly toward the outlet D, thus insuring a thorough flushing of the basin, and an efficient cleaning of the outlet and trap; and it will be seen that this mode of operation, and also the avoidance of any soiling of the back portion of the walls of the basin, are due both the shape or contour of the basin, and the positions and arrangements of the flushing apparatus and the outlet-aperture, as described.

I am aware that the hoppers of closets have been made of such shape as to avoid the deposit of any excrement upon the walls thereof, the wall in the vicinity of the back part of the hopper having been made so nearly vertical as to have avoided this difficulty; and I am also aware of the fact that a great variety of forms and arrangements of flushing-apertures have been used in prior apparatus, and do not therefore wish to be understood as laying claim to either the special form of hopper shown, or the particular shape and arrangement of the flushing-apertures separately; but as the form and arrangement of the apertures in the flushing-rim should vary in accordance with the variations in shape of the hopper or basin, and as, in a combination of hopper and flushing-apertures, the general effect of the combination is different in the case of any change in either or both of elements of such combination, I have devised, I believe, such a form and arrangement of apertures, in combination with such special form of hopper or basin, as induces to a better effect than has been accomplished in any of the prior analogous combinations.

Having now so fully described the construction and operation of my improved water-closet basin that those skilled in the art can make and use the same, what I claim as new, and desire to secure by Letters Patent, is—

In combination with a water-closet basin, a hopper having the inclination of the back portion of its wall and the location of the outlet such as to insure the direct passage of the soil into the trap, without coming in contact with the sides of the basin, and having the described general contour, a flushing-rim provided with a series of long segmentally-shaped apertures arranged about equidistant, whereby a better distribution of the water in the walls of the basin is effected and the supply of water discharged into the outlet, as set forth.

In testimony whereof I have hereunto set my hand and seal this 8th day of July, 1879.

SAMUEL STEVENS HELLYER. [L. S.]

In presence of—
C. R. FLOOD,
R. T. CHEESEWORTH.