Aug. 3, 1954

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PLUMBING FIXTURE

2,685,094

Filed May 2, 1950

2 Sheets-Sheet 1

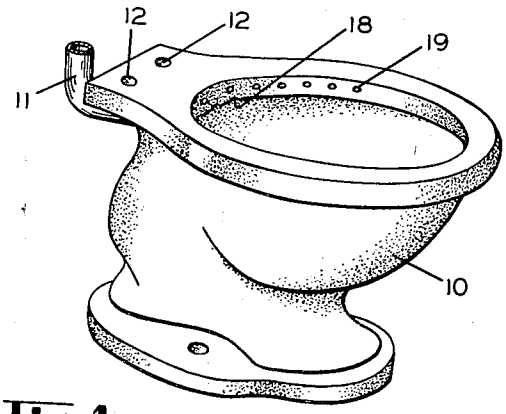


Fig. 1

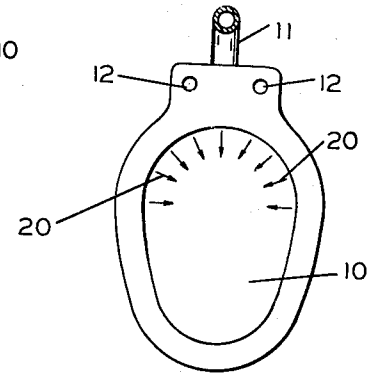


Fig. 3

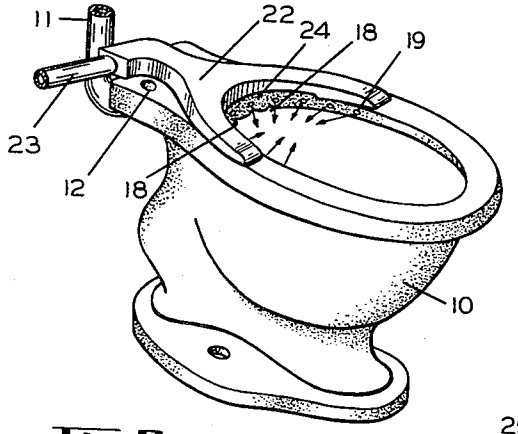


Fig. 2

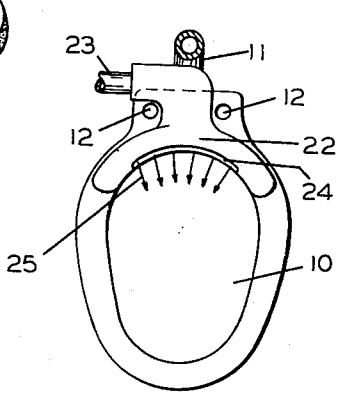


Fig. 4

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2 Sheets-Sheet 2

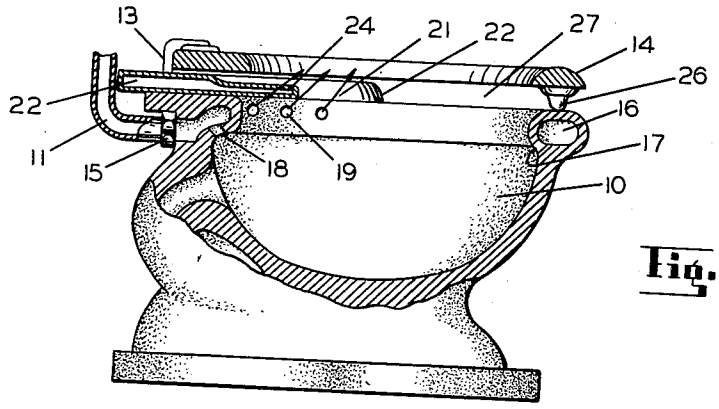


Fig. 5

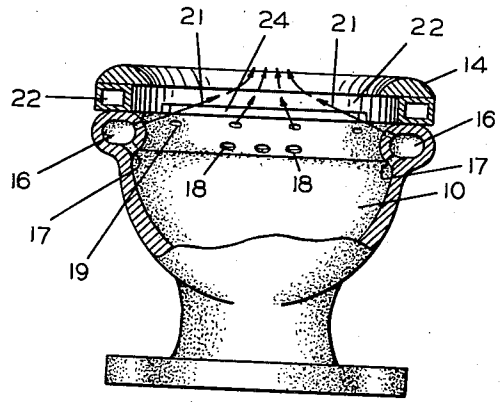


Fig. 6

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2,685,094

UNITED STATES PATENT OFFICE

2,685,094

PLUMBING FIXTURE

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Application May 2, 1950, Serial No. 159,574

2 Claims. (Cl. 4—216)

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My invention relates to plumbing fixtures and more particularly to improvements in toilets.

The object of my invention is to provide a toilet bowl that is designed to provide sanitary facilities for the convenience and benefit of the user.

Another object of my invention is to provide a toilet bowl designed to permit sanitary accessory equipment to be incorporated therein, thereby adding to its performance and efficiency.

It is manifest that the conventional toilet consisting of a bowl, an adjustable seat and a flushing arrangement requires separate sanitary facilities for manual manipulation by the user. Often times, these facilities are not available or proper provisions are lacking for their replacement, and it is the object of my invention to provide a toilet into which washing and drying features are incorporated for the convenience and positive mechanical operation by the user.

Other and further objects of my invention will become more apparent as the description proceeds when taken in conjunction with the drawing in which:

Figure 1 is a perspective view of the toilet bowl integrally incorporating the flushing and spraying provision.

Figure 2 is a similar view of the toilet bowl as shown in Figure 1 illustrating the forced air unit disposed in position as an accessory.

Figure 3 is a top view of the toilet bowl as shown in Figure 1.

Figure 4 is a top view of the toilet bowl with the air unit in place, as shown in Figure 2.

Figure 5 is a longitudinal vertical cross-sectional view of the assembled toilet bowl equipped with an air unit and seat, and

Figure 6 is a lateral vertical cross sectional view of the toilet bowl, with the air unit and seat arrangement as shown in Figure 5.

Similar characters of reference indicate corresponding parts throughout the several views, and referring now to the same, the character 10 shows a toilet bowl constructed as an integral unit, provided with a trap arrangement in its outlet and a tubular elbow member 11 leading from and communicating with, a flush tank or flush valve, (not shown) acting as a source of water supply for the unit. The top face of the bowl 10 is shown provided with a rectangular ledge or mounting equipped with a pair of apertures 12 for the engagement of the hinge posts 13 which act as a support for the seat member 14. The seat, obviously, may be of any conventional shape, or design or pattern. The tubular elbow member 11 may be attached to the inlet of the bowl 10 by means of a threaded member 15, or in any other convenient or efficient manner.

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The upper peripheral edge or flushing rim of the bowl 10 is provided with an integrally molded tubular section 16 which is shown open at its lower edge 17 around the sides and front thereof and provided with a plurality of apertures 18 at the rearward end thereof. The elongated opening 17 and the apertures 18, lead through the wall of the section 16 inwardly and downwardly toward the inside of the bowl 10. The integrally molded tubular section 16 is shown in Figure 5, in direct communication with the water inlet or elbow 11.

There are a plurality of upwardly oblique spray apertures 19 extending through the inner wall of the tubular section 16 on the rear thereof and the rearward portion of the sides thereof, and spraying the water inwardly as indicated by the arrows 20 in Figure 3. These apertures 19 are arranged in arcuate series and also spray the water passed therethrough, upwardly toward the center of the opening in the bowl 10 as indicated by the arrows 21 in Figures 5 and 6. This arrangement will cause the water entering from the tubular elbow 11 to pass through the apertures 18 in a downward direction and through the apertures 19 in an angular manner upward, while the surplus supply of water will be forced through the elongated opening 17 of the section 16. This completes the flushing operation of the toilet when the flush valve or flush tank is manually opened and put into operation. It is evident that in the disclosed arrangement, where the spray apertures 19 and flushing rim 16 are served from the single water inlet 11, that flushing and spraying occur simultaneously. Moreover, as the spray water and flushing water emanate from the same source, no valve mechanism other than that originally provided with the toilet installation is required. The simple act of flushing also initiates spraying. Where a flush tank is used the head of water in the tank provides pressure for spraying as well as flushing.

Obviously, water may be pre-heated to a tepid temperature, or to room temperature, and will provide a sanitary spray for contact with the exposed portion of the body of the user during the flushing operation and will thereby eliminate any manually manipulated sanitary accessories.

The device is further provided with an air jet or manifold 22, for directing a blast of pre-heated air to the body of the user, after the

flushing and spraying cycle has been completed. This jet 22 is of semi-circular contour complementary in annular extent with the apertures 19 and is shown provided with an air inlet 23 and a semi-circular slot outlet 24, for directing the blast or current of air provided by a blower arrangement (not shown) in the direction indicated by the arrows 25 in Figure 4, that is, in an angularly disposed upward direction so as to reach the surface of the exposed body portion of the user after the spraying and flushing cycle has been completed.

The seat 14 is supported by the hinge 13 at its rearward end, and by a bumper member 26, which is constructed of pliable material, at its forward end to provide a space shown as 27 that will permit the insertion of the air jet unit 22. This jet unit 22 may be constructed of sheet metal or the like and thus be prevented from being crushed by the seat.

As best shown in Fig. 2, the drying manifold 22 comprises arcuately curved outlet branches and a common inlet at the junction of said branches, the ledge of the bowl 10 having spaced seat support bolt apertures 12 between which a rearward extension of the manifold inlet lies. The drying manifold desirably tapers downwardly from its inlet toward its outlet branches and the air outlet slot is desirably disposed along the lower margins of said branches.

From the above description, it will become manifest that in operation, the device functions as follows: When the user occupies the top surface of the seat 14, the exposed portion of his body will be caused to extend below the surface of the seat, and when the valve (not shown) is opened, the water from the flush valve will be caused to be discharged through the tubular elbow member 11 into the enclosure 16, around the outer periphery of the bowl 10. The water will then be forced through the apertures 19 in the form of a plurality of fine sprays to contact the exposed portion of the body, and the surplus water will be forced through the downwardly disposed apertures 18 at the rear of the bowl and the elongated opening 17 around the balance of the bowl to complete the flushing operation.

After the flushing cycle is completed, the preheated air may be caused, either by manual or mechanical control, to be forced through the slot 24 in the jet unit 22, in an upwardly direction toward the exposed portion of the user's body, thereby causing the moisture adhered to the surface of the body, to be evaporated and the surface dried without manual contact or manipulation of sanitary accessories. Obviously, the heating or warming of the water or air, or both, may be accomplished in any convenient manner and is not considered a feature covered by my invention.

In the chosen embodiment of my invention, there are many changes that can be made in the form and configuration of the component parts constituting the device, and although I have shown a particular construction and arrangement of the parts, I do not wish to limit myself to the specific construction shown and I reserve the right to make such changes without departing from the spirit of my invention or the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

1. In a device of the character described, the combination with a source of water having an outlet and a single valve in said outlet for releasing said water, of a toilet bowl having a hollow rim with a single channel from which open downwardly directed flushing apertures and upwardly directed spraying apertures, said spraying apertures being disposed in an arcuate pattern about the rim and at a level above the flushing apertures whereby water sprayed through the spraying apertures will not interfere with water flushed through the flushing apertures, said hollow rim having a connection to the outlet of the source of water whereby both spraying and flushing apertures are served by the same source and under control of the said single valve, and air drying means comprising a manifold disposed above the level of the spraying apertures and having an upwardly directed outlet to flow air upwardly in the same general direction as the spraying apertures.

2. The device of claim 1 in which said air drying manifold has arcuately curved outlet branches overlying said hollow rim and substantially complementary in arcuate extent with said spray apertures, said manifold having an air pressure connection at the junction of said branches, said air outlet comprising an upwardly oblique slot extending arcuately along said branches and at the lower margins thereof, said manifold being downwardly tapered from said air pressure connection along said outlet branches.

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