

United States Patent

[19]

McNally

[11] 3,801,999

[45] Apr. 9, 1974

[54] **TOILET SEATS**[76] Inventor: **Ronald McNally**, 29 Lewis St.,
Bedlinag, Treharris, England[22] Filed: **Mar. 27, 1972**[21] Appl. No.: **238,348**[30] **Foreign Application Priority Data**

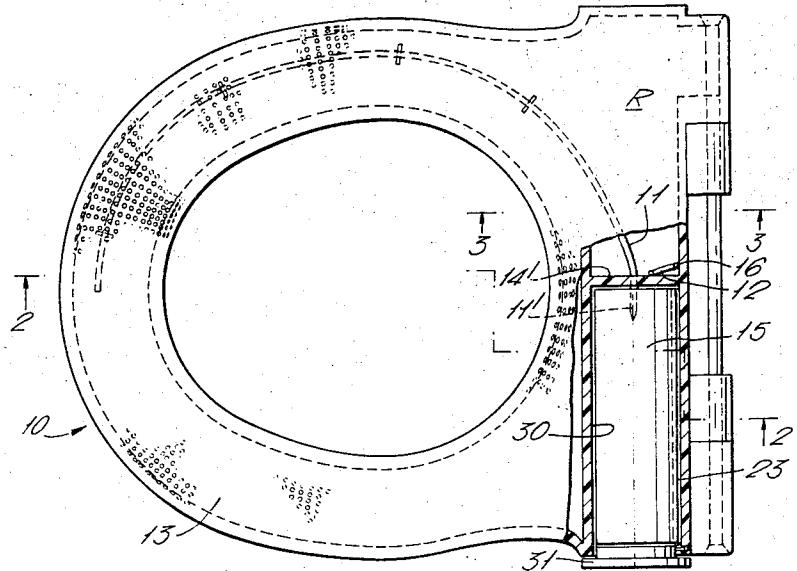
Mar. 26, 1971 Great Britain 7979/71

[52] **U.S. Cl.** 4/229[51] **Int. Cl.** E03d 9/02, A47k 13/00[58] **Field of Search** 4/229, 222, 233[56] **References Cited**

UNITED STATES PATENTS

1,492,825 5/1924 Abbott 4/229 X
2,320,156 5/1943 Perlmutter 4/2331,712,816 5/1929 Elliott 4/229 X
1,818,562 8/1931 Levy et al. 4/233
2,104,947 1/1938 Joosten 4/233 X*Primary Examiner*—Harvey C. Hornsby*Assistant Examiner*—Donald B. Massenberg*Attorney, Agent, or Firm*—Woodhams, Blanchard & Flynn[57] **ABSTRACT**

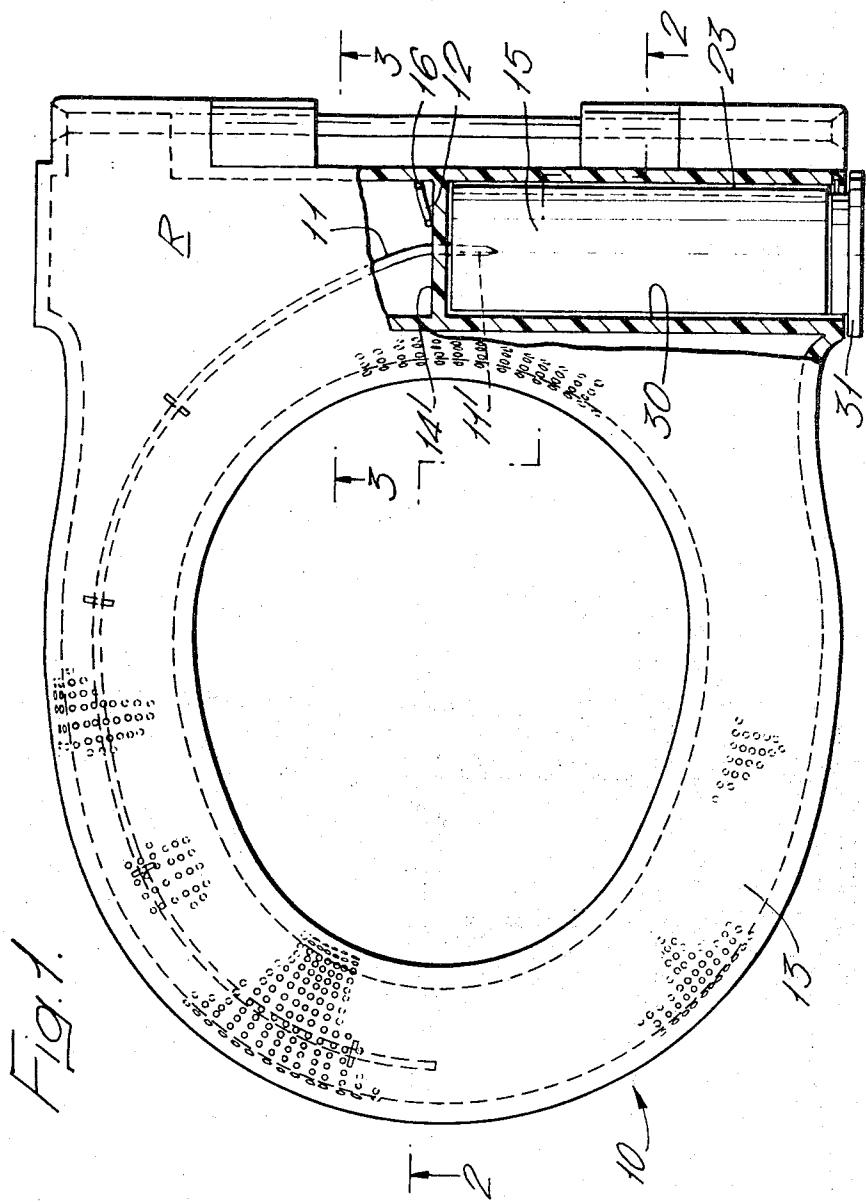
This is a toilet seat which is hollow, a surface of the seat having a plurality of discrete holes which communicate with the hollow interior which in turn is in communication with a reservoir of disinfectant, which can flow to the surface through the hollow interior and discrete holes, there being an automatic cut-off device to prevent flooding of the disinfectant from the reservoir over the surface.

4 Claims, 4 Drawing Figures

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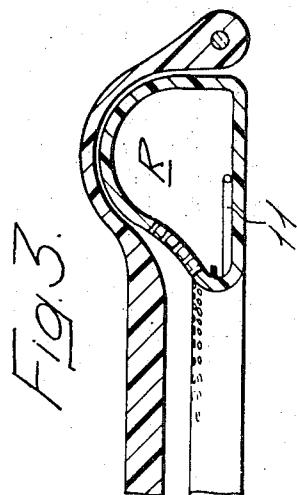
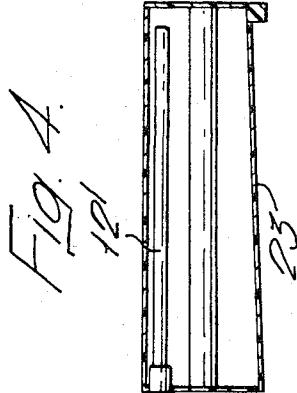
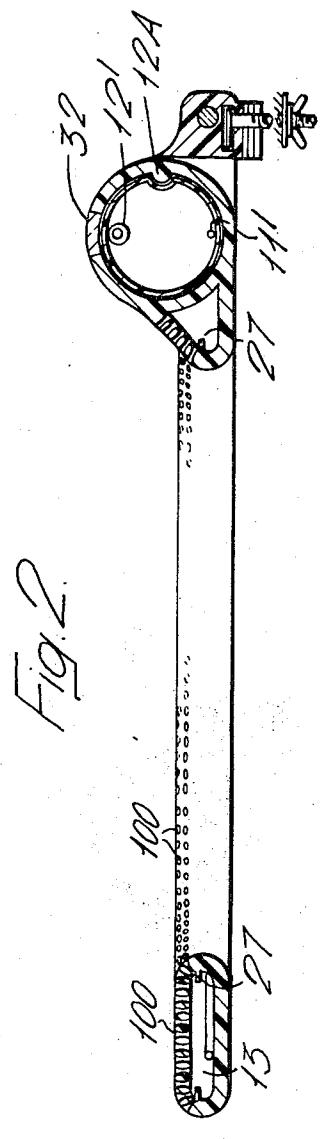
SHEET 1 OF 2



PATENTED APR 9 1974

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SHEET 2 OF 2



TOILET SEATS

The invention relates to toilet seats. Toilet seats are often unhygienic and can harbor disease and therefore have frequently to be cleaned and preferably sterilised or disinfected, particularly where the seats are used in public places such as termini, places of entertainment, or other venues where large numbers of people use a limited number of toilet seats. The risk of one person infecting a great many others is correspondingly increased.

It is an object of the invention to provide a hollow toilet seat injection moulded in a plastics material having a plurality of perforations in the upper surface thereof.

It is another object of the invention to provide a drip feed apparatus for supplying and maintaining a predetermined depth of liquid in the toilet seat.

According to another object of the invention, the toilet seat may have an end of an air bleed pipe of drip feed apparatus located in the back of the seat such that when the seat is lifted the end of the pipe will always be submerged in fluid, so as to prevent flooding of the seat.

According to yet another object of the invention, the spacing between the edges of adjacent holes is not more than one-fourth inch.

According to yet another object of the invention, there is provided a toilet seat having a duct therein, holes in the upper surface of the seat in communication with the duct, means on the back of the seat for retaining a fluid reservoir, and means for controlling a flow of fluid from a reservoir into the duct.

It is a further object of the invention to provide means for indicating when the fluid supply ceases in the toilet seat.

These and the other objects and advantages of the invention will become apparent from reading the following description in conjunction with the accompanying drawings, illustrative of one embodiment by way of example only of a toilet seat, and wherein:

FIG. 1 is a diagrammatic plan view of a toilet seat;

FIG. 2 is a view of a section through the seat taken on the line 2-2 in FIG. 1;

FIG. 3 is a view of a section through the seat taken on the line 3-3 in FIG. 1; and

FIG. 4 is a longitudinal section of a bottle unit.

A toilet seat 10 as shown in FIG. 1 of the accompanying drawings shows the distribution of the fluid feed pipe 11 and the air bleed pipe 12 in a toilet seat.

The air bleed pipe 12 is located on the base of the seat cavity and an aperture 16 is so dimensioned as to be obturated by a predetermined fluid level in the seat cavity 13.

The two pipes 11 and 12 pass through a seat cavity 14' and into a reservoir 15 which is located in the back of the seat so as to provide a gravity or pressure feed thereto.

The air bleed pipe 12 extends to the top of the reservoir and the fluid feed pipe 11 extends into the bottom of the reservoir when the seat is in a horizontal position.

In operation, when the seat cavity 13 is empty and the fluid reservoir 15 is full, air is drawn up the pipe 12 from the interior of the seat, as fluid flows from the reservoir 15 under gravity through the pipe 11 into the seat cavity 13. The fluid continues to flow into the seat

until the end of the air bleed pipe 12 is obturated by the said fluid. When this happens the air bleed to the top of the reservoir ceases and the fluid is prevented from flowing down the tube 11 by the reduced air pressure in the top of the reservoir.

The air bleed tube 12 terminates at the back of the seat so that when the seat is raised it is always obturated by the fluid which runs into the back of the seat.

The volume and disposition of a space R, at the back 10 of the seat is such that when the correct level of fluid is continued in the seat cavity 13, and the seat is lifted to a substantially vertical position, the fluid will flow into the space R forming a fluid level above that in the reservoir 15 so as to prevent fluid flow therefrom and 15 resultant flooding of the seat caused by successive raising and lowering thereof.

The reservoir 15 as shown in FIG. 4 comprises a disposable container 23 which is adapted to be ruptured by the pipe ends 12' and 11'.

The disposable container 23 is adapted to be slid axially into the bore 30 in the seat, the container having a groove 12A in which a tongue on the seat engages to locate the container. A plug 31 is provided to hold the container 23 in the seat. The plug 31 and the container 23 may be of transparent material so as to provide a visual means for determining the fluid level in the container 23.

A transparent window 32 may alternatively be provided in the upper surface of the seat.

Perforations or holes 100 in the upper surface of the seat are such that the vapour of the disinfecting fluid effectively sterilises the entire upper surface of the seat with which a user comes into contact.

To prevent the outer surface of the seat from becoming wetted by the disinfectant which may creep up the sides of the seat cavity and out of the perforations, a dam means 27 may be provided.

The spacing of the holes in the surface of the seat should advantageously not exceed one-fourth inch between the edges of adjacent holes, so as to ensure satisfactory sterilisation of the seat surface.

The seat is advantageously made of a plastics material by an injection moulding process.

The holes in the surface of the seat may be of any 45 convenient shape for example narrow rectangular slots are very effective.

Alternatively the container 13 may contain a pressurised gaseous disinfectant which would be released into the seat cavity 13 through a valve. This would eliminate the need for having the seat accurately levelled and there would be an additional advantage that there would be no liquid swilling about in the seat thus eliminating the slight risk of temporarily wetting the seat surface.

55 I claim:

1. In a toilet seat, a surface whereon the weight of a person is received, said surface including a number of discrete aperture means to disinfect said surface, and means to disinfect said surface, said last-mentioned means comprising reservoir means for disinfectant, said reservoir means forming an integral part of said seat, and cavity means extending throughout said seat below said surface, said discrete aperture means communicating said surface with said cavity means, feed pipe means and air bleed pipe means entering said reservoir means through a wall thereof, said feed pipe means connecting an interior region of said reservoir, means

containing disinfectant with said cavity means such that said reservoir means is communicated with said surface, and said bleed pipe means connecting said interior of said reservoir means with atmosphere, said bleed pipe means including an aperture means which is capable of being obturated by disinfectant in said cavity means whereby flow through said feed pipe means is cut off.

2. The toilet seat structure as defined in claim 1, wherein said cavity means has a portion at the rear of said seat, said portion being of such a size and volume that when the seat is vertical, disinfectant in said portion is disposed at a level higher than disinfectant in said reservoir means, whereby disinfectant is prevented from flowing from said reservoir means along said feed pipe means in said vertical position.

3. The toilet seat structure as defined in claim 1, wherein said reservoir means is demountable from said seat and said feed pipe means and said bleed pipe means terminate respectively in pressure end means, whereby when said reservoir means is mounted in said seat, said respective pressure end means rupture an adjacent end of said reservoir means for communicating said interior of said reservoir means with said feed pipe means and said bleed pipe means.

4. The toilet seat structure as defined in claim 1, wherein in said cavity means below said discrete aperture means there is provided a dam means, whereby said liquid in said cavity means is prevented from encroaching on said surface of said seat.

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