

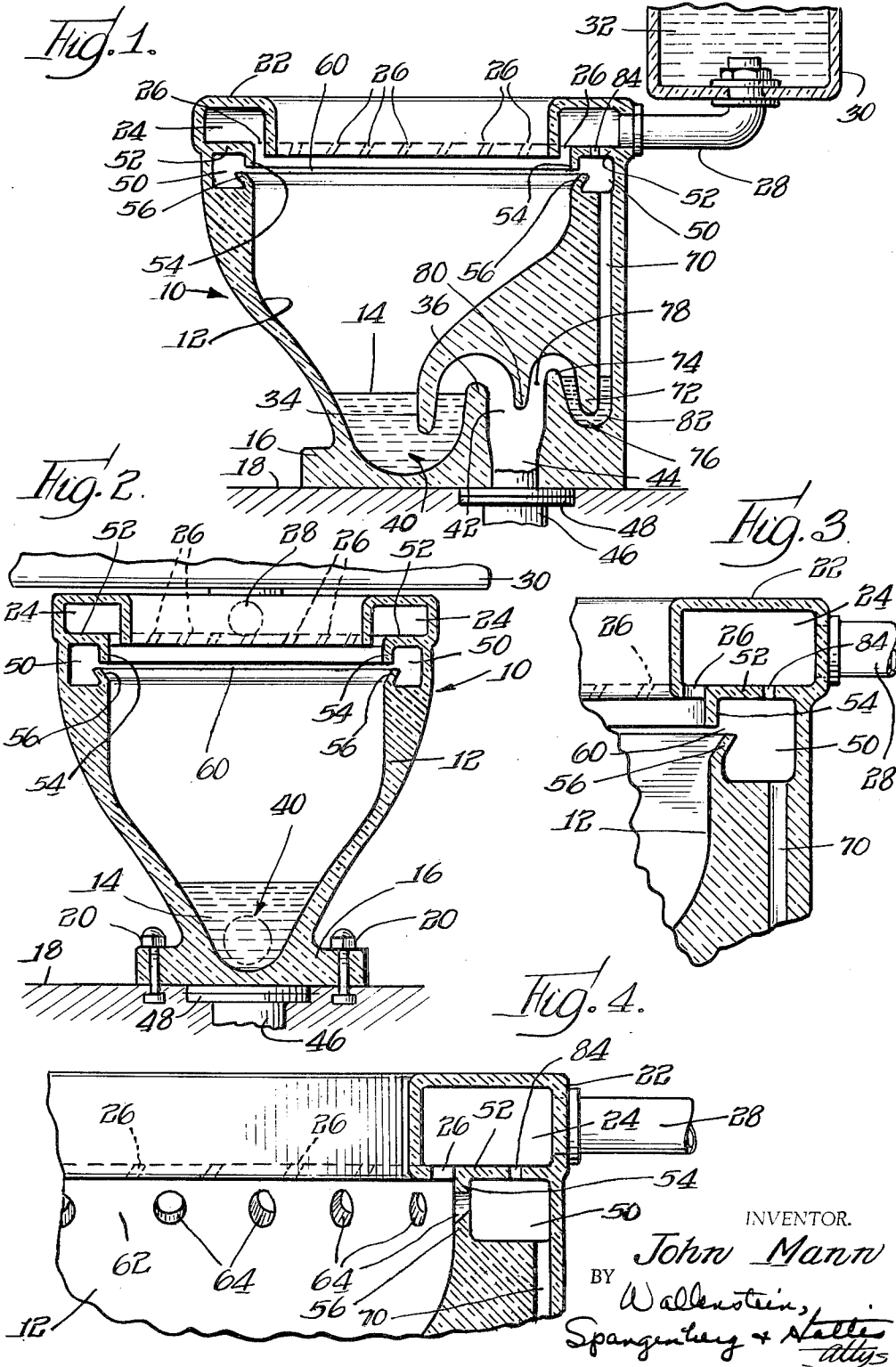
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COMPOSITE COMMODE AND OVERFLOW TROUGH

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COMPOSITE COMMODE AND OVERFLOW
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The present invention relates to a commode of unique construction wherein provision is made for preventing fluids in the basin of the commode from overflowing in the event drainage from the basin through its associated trap is for some reason obstructed or blocked-off.

Not infrequently, the basins of conventionally constructed commodes become clogged at or near the point of drainage thereof into the sewer or soil pipe system. This blockage or clogging generally occurs in the trap through which the basin drains when flush water is admitted thereto, and may be the result of articles such as balls, toys, combs and the like, intentionally or inadvertently finding their way into the basin. Such articles need not completely block the flow of fluids through the trap, but may become so lodged therein as to cause a damming effect resulting in a gradual build-up of solid materials in the trap until fluid flow therethrough is stopped or reduced to seepage proportions. When such a condition occurs, flush water admitted to the basin floods the basin and overflows at the rim of the commode onto the floor.

In accordance with the present invention, a commode construction is provided which prevents the overflow of fluids from the basin of the commode in the event of blockage or stoppage of drainage through the commode trap. In achieving this objective, the commode construction of the present invention is provided with fluid overflow receiving means and trap by-pass conduit or passageway means which cooperate to drain fluids from the basin of the commode when drainage through the main commode trap is prevented. The fluid overflow receiving means advantageously takes the form of a trough or gutter desirably positioned adjacent to and under the flush water inlet channel formed in the lip or rim of the commode. The gutter is connected to a downwardly extending overflow drain conduit or passageway which is formed at its lower end into a by-pass trap, the outlet of which empties at a point downstream from the main trap into the plumbing outlet or bell connected at the base of the commode to the main trap. The mouth or opening of the overflow receiving gutter of the commode construction of the present invention desirably has means for preventing solid materials from entering and clogging the gutter and its associated trap by-pass means. The gutter and by-pass trap effectively cooperate to prevent fluids from overflowing from the basin onto the floor. This action persists until the condition responsible for blockage or stoppage of normal basin drainage has been discovered and remedied. The construction of the commode takes advantage of present commode fabricating techniques and does not appreciably add to the cost or to the size of commodes as conventionally constructed.

These and other objects, advantages and features of the invention will become apparent upon making reference to the specification to follow, the claims and the accompanying drawings, in which:

FIG. 1 is a side view in vertical section of an embodiment of the commode construction of the present invention;

FIG. 2 is a front view corresponding to the view of the commode construction illustrated in FIG. 1;

FIG. 3 is an enlarged fragmentary vertical sectional view showing details of the overflow receiving gutter of the commode construction of the present invention; and

FIG. 4 is an enlarged fragmentary view in vertical sec-

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tion of the commode construction of the present invention showing another form of the overflow intercepting gutter.

Referring now in detail to FIGS. 1 and 2 of the drawings, the embodiment of the commode construction of the present invention there illustrated comprises a molded or cast bowl 10 having a basin 12 which normally contains a pool of water 14. The bowl 10 may be fabricated of vitreous china, enamelware, plastic, porcelainized cast iron, or the like. The bowl 10 is provided with a pedestal 16 which rests on a supporting surface such as a floor 18 to which the pedestal 16 is affixed by screws or bolts 20. The top of the bowl 10 is formed into a rim 22, the walls of which define a flush-water channel 24 desirably extending completely around the bowl. The channel 24 has a plurality of water distributing openings or holes 26 which admit water to the basin 12. In the embodiment illustrated, the channel 24 desirably is communicatively joined through a conduit 28 to a source of water such as, for example, a water compartment or reservoir 30 containing a supply of water 32 for flushing the basin 12. A seat (not shown) normally is hingebly secured to the bowl 10 at the rim 22.

A partition or trap wall 34 is provided at the base of the basin 12. The wall 34 extends downwardly into the pool of water 14 and serves to prevent sewer gases from entering the basin. The basin 12 at its base is further provided with an upwardly extending rear overflow wall 36 which, together with the wall 34, forms an S-shaped trap 40. The trap 40 has a siphon passage 42 which is communicatively joined at its outlet end 44 to a plumbing outlet or bell 46 secured to the outlet end 44 of the trap 40 by a sealing ring 48 for example. When flush water from a source thereof such as the compartment 30 is admitted into the basin 12 by way of the openings 26 in the channel 24, the pool of water 14 rises in the basin and flows over the top edge of the rear wall 36 into the passage 42 into plumbing outlet or bell 46. The quantity of water flowing into the basin 12 from the compartment 30 is sufficient to fill the trap 40 with a pool of water upon completion of the flushing operation.

It will be clear to those skilled in the art that the description of the present invention thus far given relates in large measure to structure common to commodes of conventional construction. It should be understood, therefore, that a description of the commode construction of this invention incorporating the hereinabove described structures is by way of illustration and should not be construed as limitative of the invention.

In achieving the objectives of the present invention, the bowl 10 advantageously is molded or cast or otherwise manufactured with a fluid overflow receiving trough or gutter 50. In the embodiment illustrated, the gutter 50 extends completely around the basin 12 and is positioned under and adjacent to the channel 24, the lower, inwardly extending wall of the channel 24 desirably forming the upper wall 52 of the gutter 50. The wall 52 at its outermost end is joined to a downwardly extending upper lip portion 54 which, together with an upwardly and then inwardly extending lower lip portion 56, form a narrow fluid access passage or mouth 60 for the gutter 50. The mouth 60 may be open throughout the length of the gutter 50, as shown in FIGS. 1, 2 and 3, or, as shown in FIG. 4, may be molded or cast with a thin, outer integral wall portion 62 having a plurality of spaced fluid access holes or openings 64 therein. The mouth 60, and the holes or openings 64 of the embodiment illustrated in FIG. 4, desirably are of a size to permit passage only therethrough of fluids and to inhibit or prevent solids from entering the gutter 50.

As clearly seen in FIG. 3, the upper wall 52, and its associated downwardly extending upper lip portion 54,

terminate adjacent the inner wall of each of the openings 26 of the channel 24 so as not to impede the flow therethrough of flush water from the reservoir 30 into the basin 12. Also, as clearly seen in FIG. 3, the lower lip portion 56 of the gutter 50, at its upper end, extends inwardly with respect to the lip 54 and terminates at a level slightly lower, and desirably the same or slightly above, the lowermost edge of the upper lip 54 of the gutter 50. This arrangement effectively prevents flush water, entering the basin through openings 26, from being diverted into the gutter 50 thereby enabling utilization of all of the water during flushing for basin cleaning and drainage. The outer walls of the lip portions 54 and 56 advantageously are so arranged with respect to the openings 26 that flush water passing therethrough makes contact with and thus cleans them during each flushing operation.

The gutter 50 advantageously is pitched rearwardly slightly to enable overflow fluids to flow toward and enter the inlet of a downwardly extending overflow fluid drain conduit or passageway 70 formed in the rear wall of the bowl 10. The passageway 70, at its lower end, curves around a trap forming wall 72, and then extends upwardly and around a rear overflow wall 74 to form a fluid overflow trap, designated generally at 76, having a siphon passage 78. In the embodiment of the invention illustrated, the siphon passages 42 and 78 are separated by a downwardly extending wall 80 and open into the plumbing outlet or bell 46. As in the main trap 40 of the commode, the trap 76 carries a pool of clean water 82 to serve as a barrier to any sewer gases which may pass from the sewer or soil pipe into the trap 76. In order to maintain an adequate quantity of water in the trap 76 to assure a water seal between the sewer or soil pipe and the gutter 50 at all times, the commode construction of the present invention advantageously is provided with means for diverting a portion of the clean flush water from the water source into the trap 76. In the embodiment of the invention illustrated, this conveniently is achieved by providing the common wall 52 of the channel 24 and the gutter 50 with a small, interconnecting opening or passageway 84. The passageway 84 desirably should be of a size sufficient to allow approximately a pint, more or less, of water entering the channel 24 during each flushing operation to pass into the gutter 50. This diverted water flows into the passageway 70 and is intercepted by the trap 76. It should be understood, of course, that a plurality of openings or passageways may be used instead of the single passageway 84. However, for simplicity of manufacture, a single passageway as illustrated is preferred.

The commode construction of the present invention effectively prevents any overflow of fluids from the basin onto the floor on which the commode is supported. Thus, when waste material and fluids in the basin are, for some reason, prevented from passing out of the basin 12 through the main drain trap 40, and water from the reservoir or compartment 30 thereafter is admitted into the basin through the channel 24 and its associated openings 26, the fluid content of the basin will increase rapidly to an overflow condition. When the fluids in the basin reach the mouth 60 of the gutter 50, they flow over the lower lip of the gutter and are carried rearwardly where they enter the passageway 70. Fluids thus passing into the passageway 70 cause the pool of water 82 to rise in the trap 76 and overflow the wall 74 into the siphon passage 78 which opens into the plumbing outlet or bell 46. This main trap 40 by-pass action continues as long as fluids in the basin continue to rise therein to the level of the mouth of the gutter. As described above, solids are prevented from entering the gutter by the restricted size of the mouth 60 or openings 64.

It should be understood that various modifications can be made in the preferred form of the invention here-

inabove described without deviating from the broader aspects thereof.

What is claimed is:

1. In a commode construction including a bowl having a basin for receiving and holding waste materials, a trap having an inlet in communication with said basin and an outlet in communication with a waste material drainage system, and a source of water connected to said basin for flushing waste materials from said basin through said trap, the improvement comprising fluid overflow receiving means for said commode, said fluid overflow receiving means comprising a gutter in the upper portion of said basin, and trap by-pass passageway means communicatively connected between said drainage system and said gutter and having an outlet which is downstream from and by-passes said trap, said gutter and said trap by-pass passageway means cooperating to drain fluids rising in the basin from said basin into said drainage system when waste materials in the basin are prevented from being flushed through the trap.

2. A commode construction as claimed in claim 1 wherein said gutter is provided with fluid passageway means between said source of water and said trap by-pass passageway means for directing during each flushing of the basin a portion of the fresh flush water from said source into said trap by-pass passageway means thereby to maintain a supply of fresh water therein to prevent the flow of gases from said drainage system into said gutter through said trap by-pass passageway means.

3. In a commode construction including a bowl having a basin for receiving and holding waste materials, a trap having an inlet in communication with said basin and an outlet in communication with a waste material drainage system, a source of water connected to said basin for flushing waste materials from the basin through the trap, and a channel formed in the basin for admitting water from said source into the basin, the improvement comprising a fluid overflow receiving gutter in said basin adjacent to and beneath said channel, a trap by-pass passageway in said commode having an inlet in communication with the gutter and outlet in communication with the drainage system downstream from said trap, said passageway at its outlet end being formed into a fluid overflow drainage trap, and a fluid passageway between said channel and said gutter for admitting during each flushing of the basin a portion of the fresh water entering the channel from said source into the trap by-pass passageway communicating with the gutter thereby to maintain a supply of fresh water in the trap formed at the outlet end of said trap by-pass passageway to prevent the flow of gases from said drainage system into said gutter.

4. In a commode construction including a bowl having a basin for receiving and holding waste materials, a trap having an inlet in communication with said basin and an outlet in communication with a waste material drainage system, and a source of water connected to said basin for flushing waste materials from said basin through said trap, the improvement comprising fluid overflow receiving means for said commode, said fluid overflow receiving means comprising a gutter in the upper portion of said basin, said gutter being formed with spaced upper and lower wall portions, the free end of said lower wall portion extending inwardly with respect to the free end of said upper wall portion and defining therewith a continuous opening for said gutter for receiving fluids rising in said basin, the dimensions of said opening being such as to substantially prevent solid materials in the basin from entering the gutter, and trap by-pass passageway means cooperating to drain fluids rising in the basin from said basin into said drainage system when waste materials in the basin are prevented from being flushed through the trap.

5. In a commode construction including a bowl having a basin for receiving and holding waste materials, a trap having an inlet in communication with said basin and

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an outlet in communication with a waste material drain-
age system, and a source of water connected to said basin
for flushing waste materials from said basin through said
trap, the improvement comprising fluid overflow receiving
means for said commode, said fluid overflow receiving
means comprising a gutter formed integral with said
basin in the upper portion thereof, said gutter having an
inner wall portion provided with a plurality of spaced
openings for admitting fluids rising in said basin into the
gutter, said openings being of a size to prevent solid
materials in said basin from entering the gutter, and trap
by-pass passageway means communicatively connected
between said drainage system and said gutter and having
an outlet which is downstream from and by-passes said
trap, said gutter and said trap by-pass passageway means
cooperating to drain fluids rising in the basin from said
basin into said drainage system when waste materials in

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the basin are prevented from being flushed through the
trap.

6. A commode construction as claimed in claim 5
wherein said wall portion of the gutter is integral with
the basin.

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