

[54] TOILET ASSEMBLY
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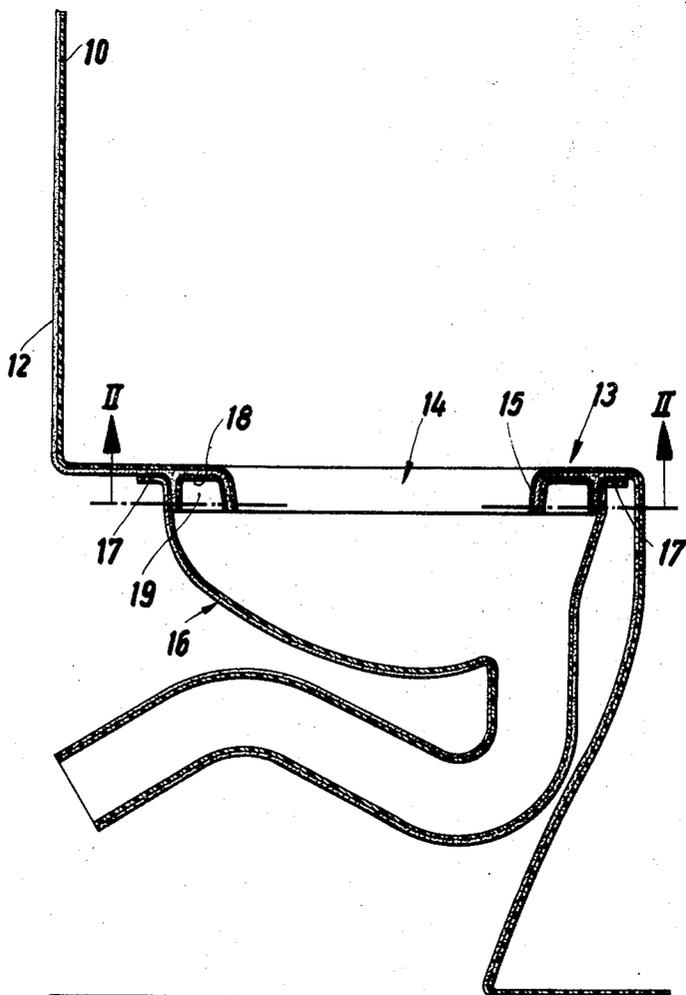
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4/89, 115, 237, 253, DIG. 6, DIG. 8;
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249/58

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[57] ABSTRACT
A toilet assembly having a seat member (13) provided with an opening (14) defined by a downwardly turned inner edge (15), and a bowl member (16) adhesively secured to the underside of the seat. A centering ring (18), having an inverted U-shaped cross-section, accurately positions the bowl with respect to the seat opening during assembly and provides a smooth surfaced flush channel (19). The centering ring may be a separate piece or may be integrally molded with the upper edge of the bowl.

3 Claims, 3 Drawing Figures



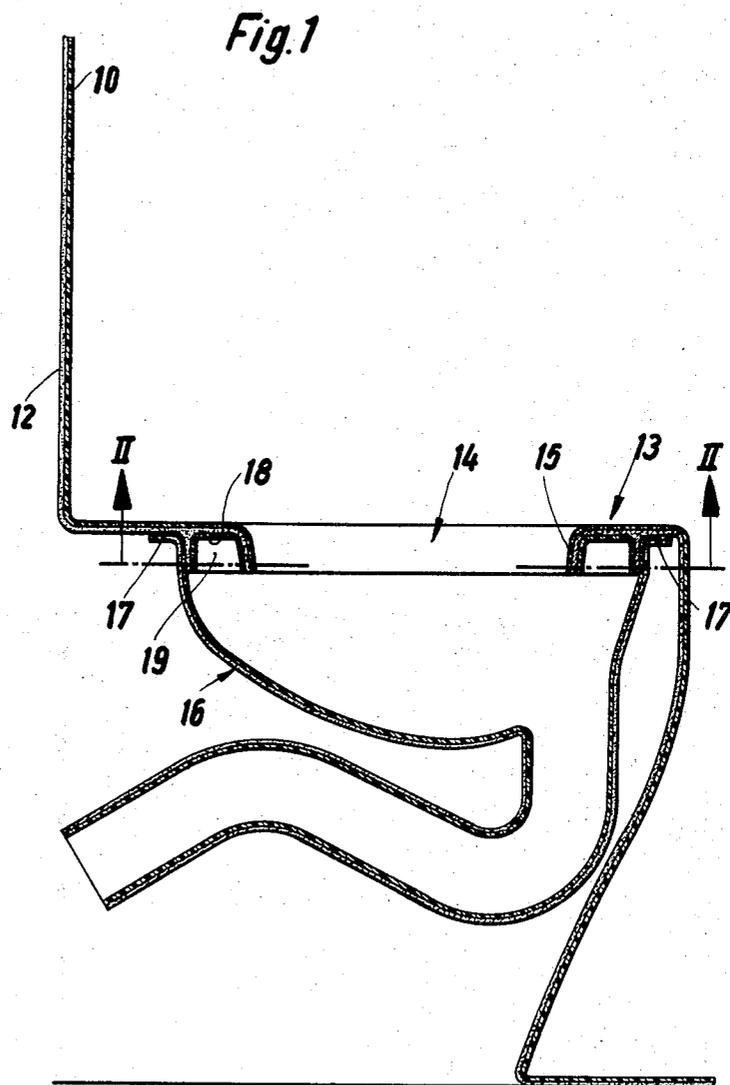


Fig.2

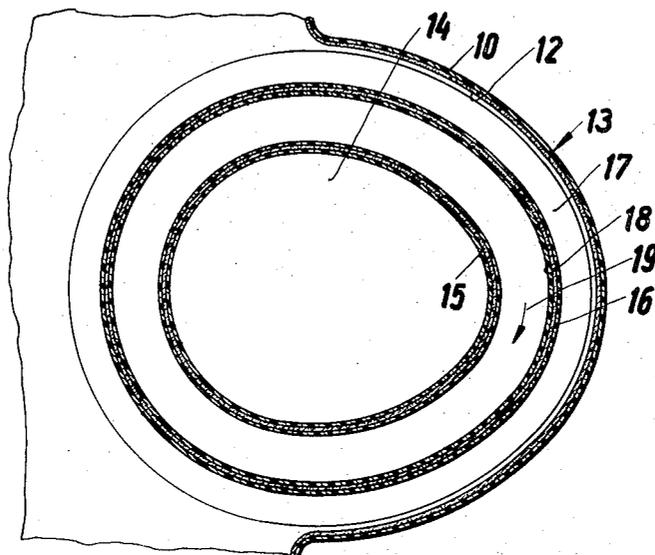
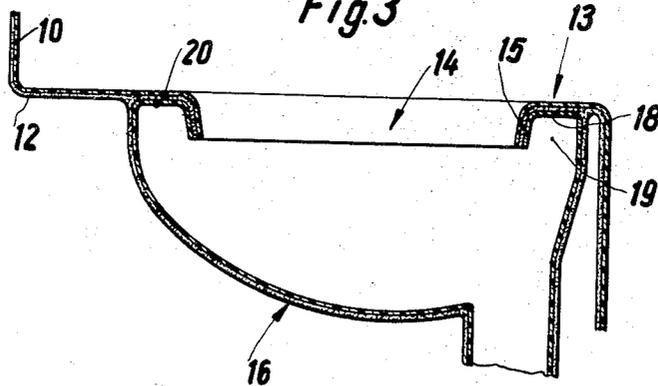


Fig.3



TOILET ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a sanitary unit made from deep-drawn plastics parts, such unit including a molded toilet seat and a separately produced toilet bowl which is fitted to the seat from below and the top edge of which is connected to the underside of the toilet seat, for example by sticking.

2. Description of the Prior Art

The tendency for the building industry to make increasing use of prefabricated parts which may be simply assembled on the site has recently also become noticeable in sanitary fittings. For example, prefabricated sanitary units are now made in large-scale production as standard factory items. These are large sized units, two of which are used at a time to form a complete bath-room, wash-room or the like. The individual units are molded from plastics material, more particularly thermoplastic panels, by deep-drawing, and are then reinforced at the back with a glass-fiber polyester coating.

Premolded and prefabricated sanitary units of this kind are provided with integrally molded wash basins, baths, shower-trays and the like. Recently there has also been a tendency for a prefabricated toilet to be at least partially integrally molded on the deep-drawn molding. This is achieved by making the toilet seat part of the large molding, while the toilet bowl is manufactured separately and is then connected to the integrally molded seat. To this end, the toilet bowl has a top bent edge which bears against the underside of the toilet seat and is adhesively connected thereto, preferably by means of the applied polyester coating. The seat opening has a downwardly bent edge which extends all around it and which is surrounded by the top edge of the toilet bowl, although spaced therefrom.

A number of difficulties have been found in practice with this construction. First of all, when the bowl is fitted it is not easy to secure it in an exactly central position with respect to the seat opening. In addition, the underside of the seat, like the other surface regions of the molding, is provided with the rough glass fiber polyester coating, where dirt can readily accumulate. Finally, the rough surface at the underside of the seat and the frequently inevitable inaccurate centering of the bowl make the flow conditions for the flushing water uneven.

SUMMARY OF THE INVENTION

An object of the invention is to obviate or reduce the above disadvantages of the known sanitary units and to provide simple and easy installation of the toilet bowl at the underside of the toilet seat without impairing the accuracy of the relative position between the bowl and the seat.

Accordingly, the present invention provides a sanitary unit made from deep-drawn plastics parts and including a molded toilet seat and a separately produced toilet bowl which is fitted to the seat from below and the top edge of which is adhesively connected to the underside of the seat, for example by sticking, in which unit the bowl is centered with respect to the opening of the seat by centering means.

The centering means are preferably disposed in the zone between the inside of the top edge of the bowl and

the outside of the downwardly bent edge of the seat opening. When the bowl is fitted, the centering means are secured together with said bowl on the underside of the seat, more particularly being stuck thereon, so that the bowl has an exact relative position with respect to the seat opening. The centering means bear against the downwardly bent edge of the seat opening.

According to a preferred embodiment, a centering ring is provided to center the bowl, said centering ring being disposed on the inside of the bowl and extending all around the same and having a U-shaped cross-section with downwardly pointing flanges so that a downwardly open U-shaped flushing channel is formed which extends all around the bowl and which has a smooth surface. The centering ring provides accurate and reliable positioning of the bowl with respect to the seat and also provides a smooth-walled, continuously extending channel in which no dirt can accumulate and in which the flow conditions are perfect.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a partial section of part of a sanitary unit including a toilet and embodying the invention;

FIG. 2 is a section on the line II—II in FIG. 1; and

FIG. 3 is a section of another embodiment of the invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

The invention is particularly applicable to large sized, complete sanitary units formed or molded from a plastics panel 10 by deep-drawing. Sanitary fittings, for example a wash basin 11, are integrally molded at the same time. After deep-drawing, the necessary reinforcement for the moldings is applied in the form of glass-fiber polyester coatings 12 to the back of the moldings.

In the embodiment illustrated, a toilet seat 13 is integrally molded to form a toilet. An opening 14 in the seat is surrounded by a turned down edge 15 which extends all around the opening.

A toilet bowl of plastics material is made as a separate molding by deep-drawing and is then fitted from below to the toilet seat 13. In the embodiment shown in FIG. 1, the top edge of the toilet bowl 16 is provided with an outwardly bent flange 17, which is adhesively secured to the underside of the seat 13, preferably by means of the previously applied glass-fiber polyester coating 12.

In order to obtain an exact relative position of the bowl 16 with respect to the opening 14, an endless centering ring 18 is provided which extends all around the opening and which is of U-shape in cross-section, and which preferably consists of deep-drawn plastics. The centering ring 18 is so disposed that the zone between the inside of the top edge of the bowl 16 and the facing side of the edge 15 of the opening is filled by the cross-section of the centering ring 18. A downwardly open flow channel 19 is thus formed, which extends all around the opening and which has a smooth surface. The centering ring 18 is preferably adhesively secured by sticking, i.e., by the glass-fiber polyester coating 12.

The centering ring 18 gives the toilet bowl 16 an accurate relative position with respect to the toilet seat 13, without this being left to the fitter's eye, while the smooth surface of the downwardly open centering ring

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prevents any dirt from accumulating in this zone and the appropriately selected cross-section ensures favorable flow conditions for the flushing water in the resulting flow channel 19.

In the second embodiment shown in FIG. 3, the toilet bowl 16 differs from the previously described embodiment in that the outwardly extending flange 17 is dispensed with, and instead the centering ring 20 is integrally molded directly on the top edge of the bowl so that no additional separate centering ring is required.

The centering ring 18 or 20 of the respective embodiments is in either case advantageously flush with the edge 15 of the opening of the seat 13.

What is claimed is:

1. In a bathroom unit fabricated from plastic panels by a deep-draw molding process and including a main member having an integrally molded toilet seat rim with an opening therein and a toilet bowl positioned beneath the opening and having an upper edge portion adhesively secured to the underside of the toilet seat rim, the improvements characterized by:

a. an edge flange integral with the toilet seat rim and depending downwardly therefrom around the seat opening, and

b. means for strengthening and reinforcing the attachment between the toilet seat rim and the toilet bowl comprising a continuous, closed spacing and centering ring having a downwardly open U-shaped section interposed between the upper edge portion of the bowl and the downwardly depending edge flange, and secured to the underside of the toilet seat rim and the inner side of the edge flange; the opening for centering the bowl with respect to the opening and for spacing the upper edge portion of the bowl with respect to the opening.

2. A bathroom unit according to claim 1 wherein the ring is also secured to the inside of the upper edge portion of the bowl.

3. A bathroom unit according to claim 1 wherein the ring is moulded to the upper edge portion of the bowl and is integral therewith.

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