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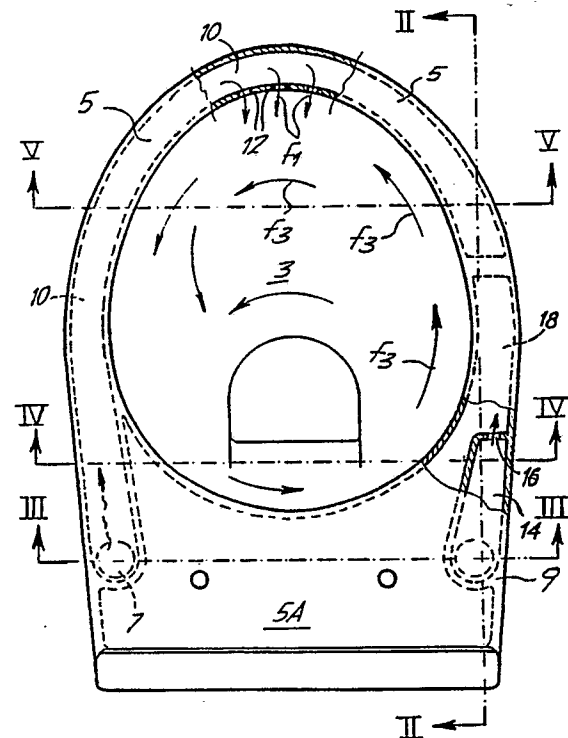
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54 Sanitary apparatus having the function of a W.C. bowl and of a bidet as well, and providing a continuous flush when using the bowl.

57 The apparatus has the function of a w.c. bowl provided with hydraulic closure and of a bidet as well, and comprises, along the upper, almost oval edge (5) of the bowl (3), a nozzle (16) able to form a limited, almost tangentially oriented jet (f_3) to produce a spiral blade of water for cleaning the inner surface of the bowl (3) so as to prevent adherences thereon.

FIG.1



SANITARY APPARATUS HAVING THE FUNCTION OF A W.C. BOWL AND OF A BIDET AS WELL, AND PROVIDING A CONTINUOUS FLUSH WHEN USING THE BOWL

The invention relates to a water closet bowl provided with a hydraulic closure, which ensures a very hygienic operation under automatic cleaning conditions. The bowl may be built also to allow its use as a bidet.

A first object of the invention is a sanitary apparatus operating like a bowl provided with a hydraulic closure, which substantially comprises, along the upper edge of the almost oval space of the bowl, a fitting for a nozzle able to form a limited, almost tangentially oriented jet to produce a spiral blade of water for cleaning the inner surface of the bowl, so as to avoid adherences thereon.

In a practical embodiment, the sanitary apparatus according to the invention is built to function as a bowl provided with a hydraulic closure and as a bidet as well, and comprises in combination, along the upper edge of the almost oval space of the bowl: a conduit which from a first rear supply fitting reaches one or more front outlets directed towards the bowl to produce jets of flushing water for the functioning as a bidet; and a nozzle which receives water from a second fitting provided for a limited, almost tangentially oriented jet, for producing a spiral blade of water for the cleaning of the inner surface of the bowl so as to avoid adherences thereon.

Said nozzle may extend laterally below the bowl edge, and a lower, slightly inclined wall of said edge extending in front of the nozzle diverts the jet slightly downwards to start the spiral flush. Said lower, slightly inclined wall can provide a conduit closure for the front outlet(s) facing the bowl provided for the functioning as a bidet.

The two above mentioned fittings may be formed on the two sides of the bowl and on the rear thereof, below the rear flat surface forming the extension of the bowl edge.

The bowl may be in the form of an overhanging bowl, i.e. a bowl suspended from a vertical wall, or may be provided with a base resting on the floor.

The invention will be better understood by following the description and the attached drawing, which shows a practical, not limiting example of the same invention. In the drawing:

Fig. 1 shows an overall plan view;

Fig. 2 shows a partially sectioned view taken on line II-II of Fig. 1; and

Figs. 3, 4 and 5 show cross-section on lines III-III, IV-IV and V-V of Figs. 1 and 2.

According to what is illustrated in the attached drawing, the apparatus is substantially shaped as a

usual toilet bowl having a base 1 with a drain manifold, a bowl 3 and an upper perimetral edge 5 which delimits upwardly the opening of bowl 3 and which extends into 5A to form a rear flat surface as an extension of said edge.

Below the flat surface 5A, on the two sides of the bowl, two fittings 7 and 9 respectively are provided for supplying water for two different functions, the supply of the two fittings being controlled by relevant opening and closing valves. The fitting 7 leads into a conduit 10 which extends below the flat surface 5A and a portion of edge 5, at least up to the front part of said edge 5, where the conduit 10 is provided with outlets 12 (three in the example) to produce jets in the direction of arrows f1, with an initially horizontal trajectory, which jets are discharged into the bowl after a trajectory which is sufficient to allow the utilization of said jets in the direction f1 to provide washings similar to those performed in common bidet. The fitting 7 may be supplied with mixed hot and cold water in use.

The fitting 9, opposite and substantially symmetrical to that indicated by 7, supplies a short conduit 14 which ends with a nozzle 16 intended to generate a jet according to f2 which has a relatively limited rate of flow and is substantially tangent to and underlying the edge 5. This jet of nozzle 16 according to arrow f2 skims along a wall 18 which faces the nozzle 16 and is slightly inclined downwards therefrom in the direction of arrow f2. A laminar stream of water is thereby produced which washes the inner surface of bowl 3, according to the direction generically indicated in the drawing by arrows f3, with such a spiral development and rotation inside the bowl capable of wetting and cleaning the inner surfaces thereof and discharging into the same drain provided by the hydraulic closure of the bowl. The above mentioned jet and spiral flushing which are obtained through the nozzle 16 have the purpose of maintaining wet the surface likely to be hit over by the excrements and other waste, thereby avoiding as far as possible the adherence thereof on the bowl surface and also removing everything possibly coming in contact with said surface of bowl 3. Suitable systems may be provided to timely supply said flush in the direction of arrow f3, for a suitable duration, by the nozzle 16 when using the bowl. Such disposition makes it possible to use a lesser amount of water during the final discharge for the elimination of the excrements collected in the drain and the bottom of bowl 3. In fact, this final discharge needs not to provide also for the cleaning of the bowl surface, which is particularly difficult to carry out when no

provision is made for said nozzle 16 generating the laminar, spiral, continuous flushing of the bowl during use thereof. The orientation of nozzle 16 and the inclination and orientation of wall 18 opposite thereto ensure the right and regular orientation of the water jet according to f2, so as to provide a spiral flush in the direction of arrows f3 which is able to clean all the zones of the inner surface of bowl 3 that may become dirty during its use.

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Claims

1. A sanitary apparatus having the function of a bowl provided with a hydraulic closure and of a bidet as well, characterized by comprising, along the upper edge of the almost oval opening of the bowl, a fitting for a nozzle able to form a limited, almost tangentially oriented jet to produce a blade of water for the spiral flushing of the inner surface of the bowl, so as to avoid adherences thereon.

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2. Sanitary apparatus having the function of a hydraulic closure bowl and of a bidet, characterized by comprising in combination, along the upper edge of the almost oval opening of the bowl: a conduit which from a first rear supply fitting reaches one or more front outlets oriented towards the bowl in order to generate jets of flushing water for the functioning as a bidet; and from a second fitting a nozzle for a limited, almost tangentially oriented jet, to generate a blade of water for flushing the inner surface of the bowl thereby avoiding adherences thereon.

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3. Sanitary apparatus according to claim 1 or 2, characterized in that the nozzle extends laterally below the bowl edge, and that a lower, slightly inclined wall of said edge, extending in front of the nozzle, diverts the jet slightly downwards.

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4. Conduit according to claims 2 and 3, characterized in that said lower, slightly inclined wall makes up a closing of the conduit for the front outlet(s) oriented towards the bowl.

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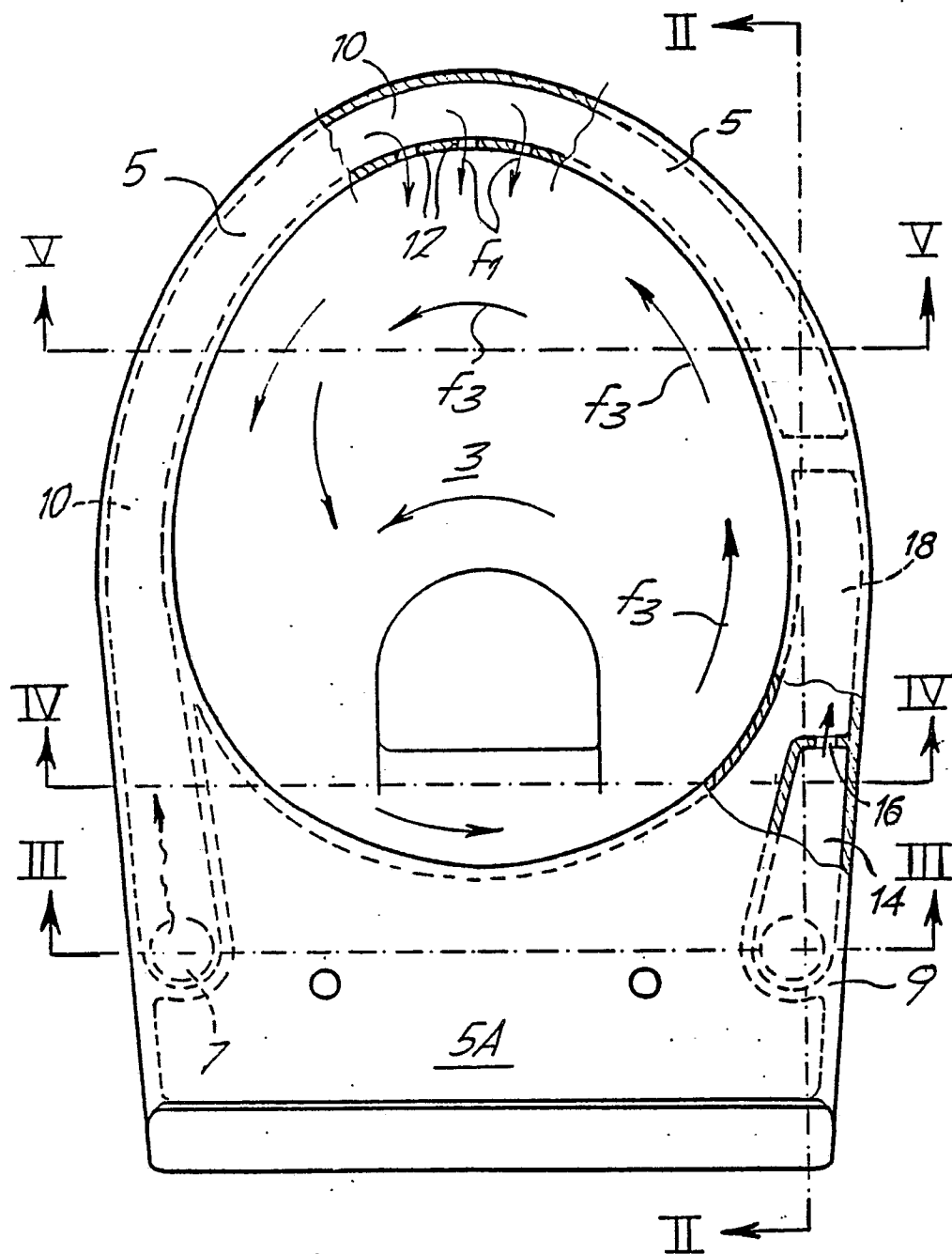
5. Apparatus according to the preceding claims, characterized in that the two fittings are formed on the two sides of the bowl and on the rear thereof, below the rear flat surface which is an extension of the bowl edge.

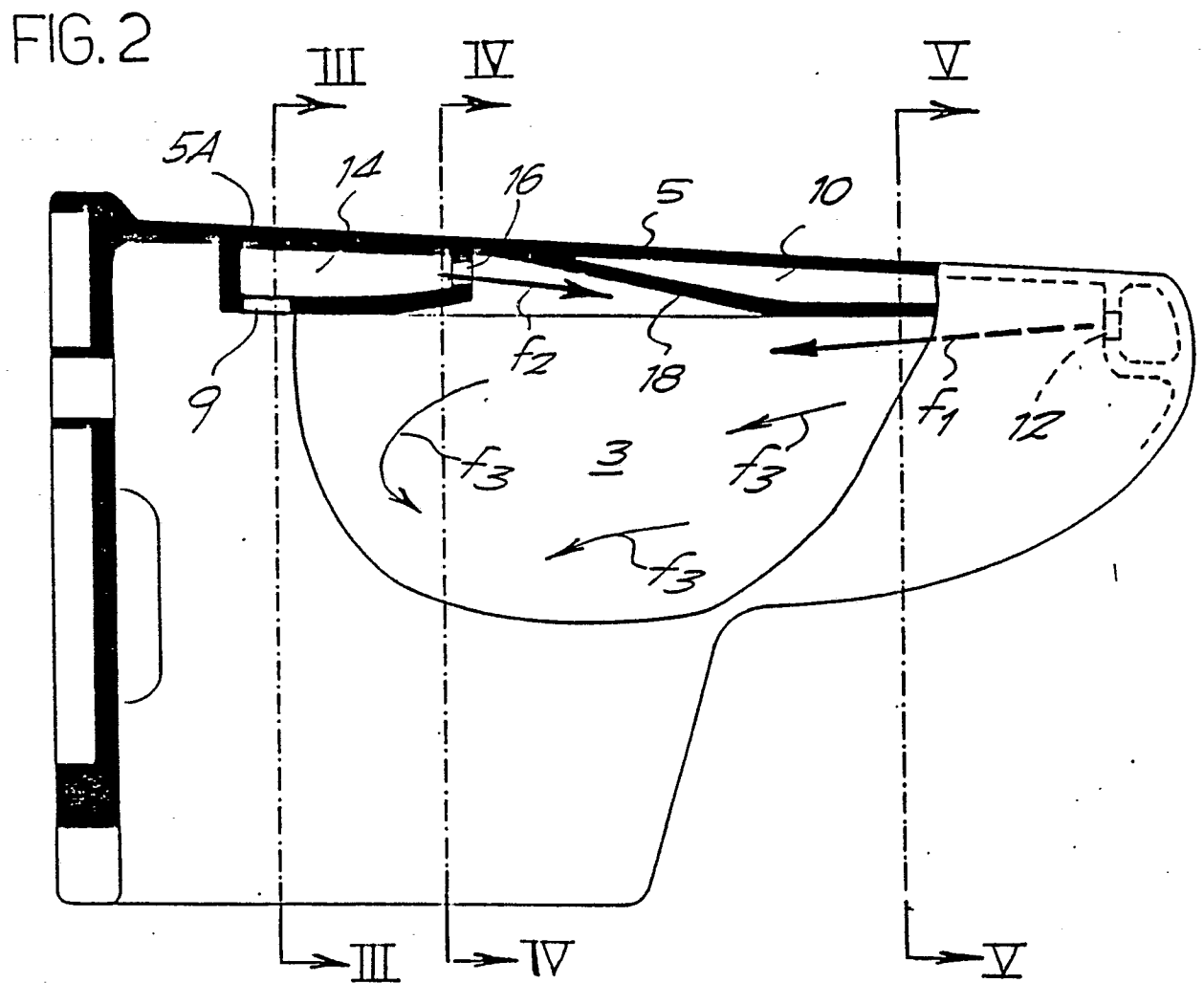
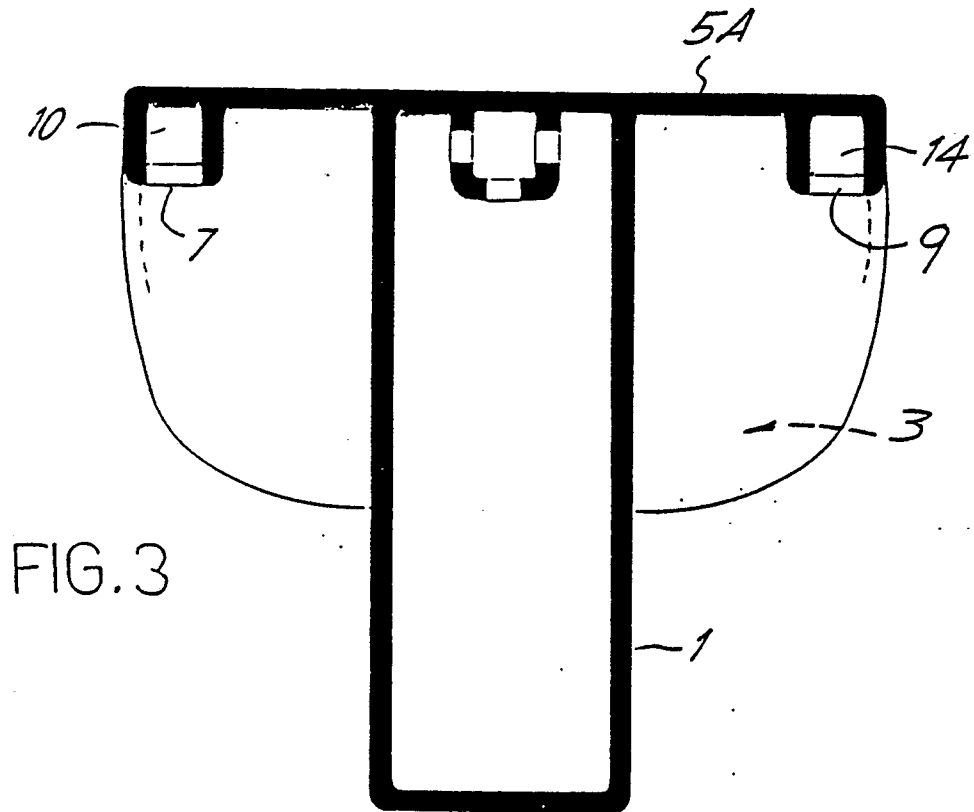
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FIG.1





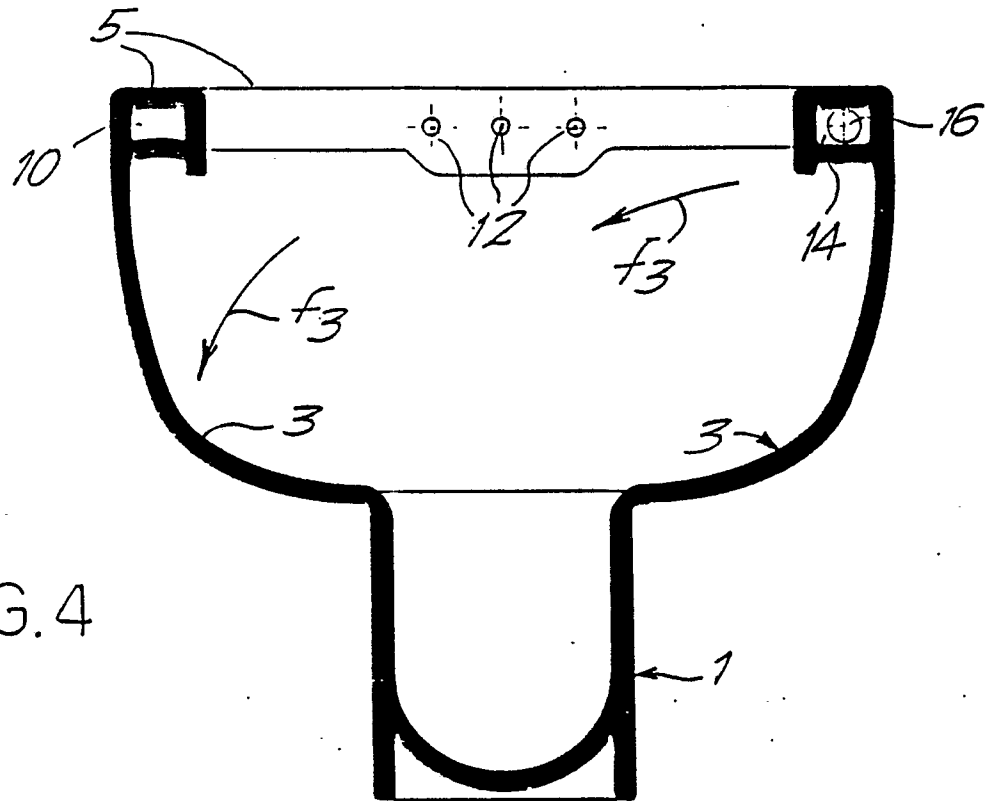


FIG. 4

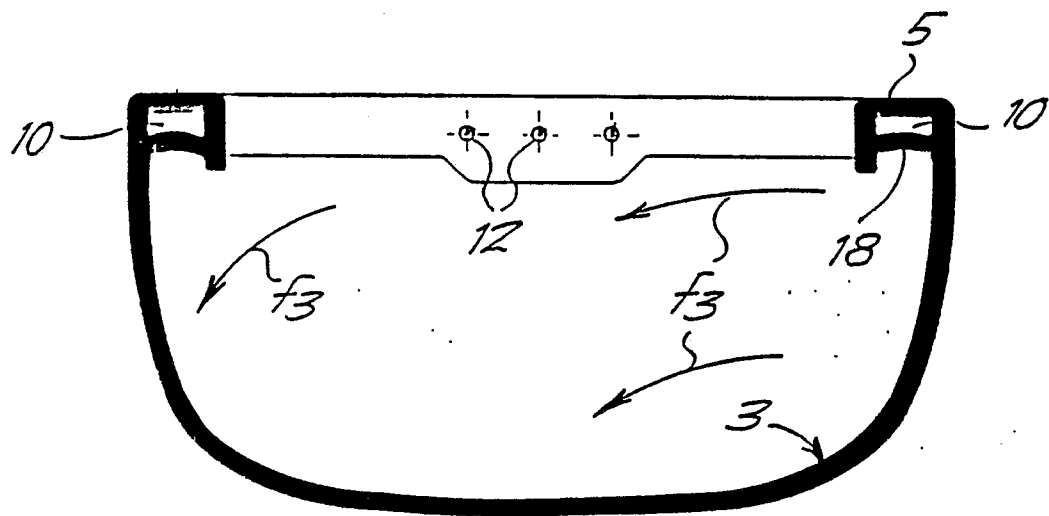


FIG. 5