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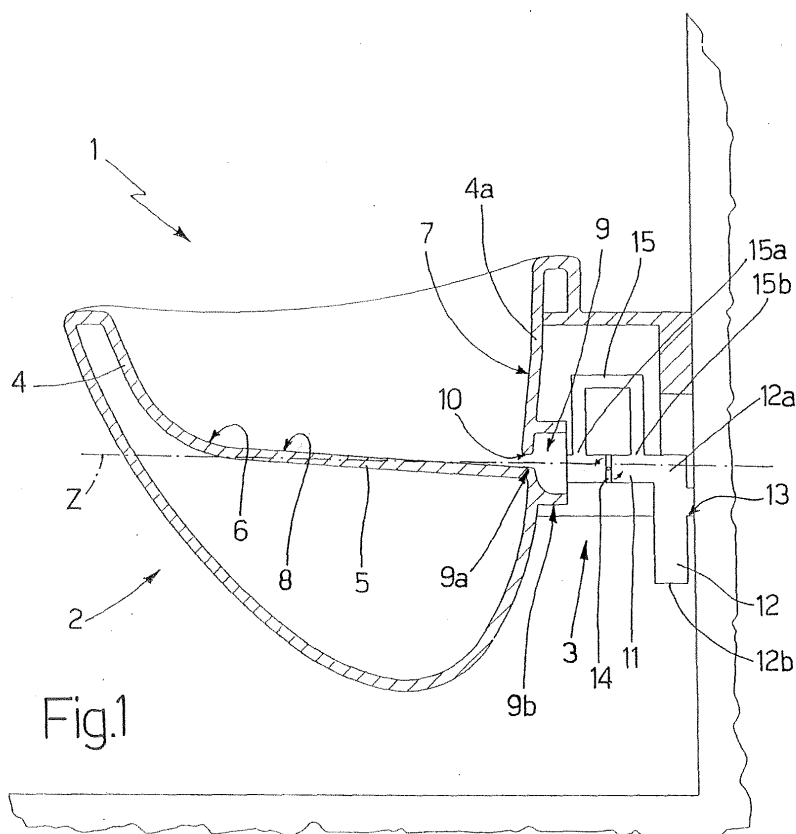
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(54) **Water drain unit for sanitary fixtures**

(57) A water drain unit (1) for sanitary fixtures, for draining water from a bowl (6) of the sanitary fixture to a water mains. The unit has a bowl (6) having a sloping bottom surface (8); a substantially horizontal-axis (Z) drain fitting (9) formed in one piece with the bowl (6);

and a siphon (3) connected to the drain fitting (9). And the drain fitting (9) has a first end (9a) communicating with the bowl (6) via an opening (10) formed at one end of the bottom surface (8); and a second end (9b) communicating with the siphon (3).



Description

[0001] The present invention relates to a water drain unit for sanitary fixtures.

[0002] The drain unit according to the present invention may be used to particular advantage for bidets, to which the following description refers purely by way of example.

[0003] Sanitary fixtures normally comprise a water drain system comprising a vertical-axis hole formed in a bottom portion of the fixture bowl and connected to a siphon in turn connected to the water mains.

[0004] The edge of the hole in the ceramic bowl is normally covered with a metal ring.

[0005] A drawback of the above drain system lies in the ceramic portion beneath the metal ring being hard to reach using normal cleaning means, and so being a repository for dirt, with all the obvious hygiene problems this involves. That is, a gap inevitably remains between the metal ring and the ceramic portion, through which dirt is allowed to pass and deposit underneath the metal ring.

[0006] Moreover, the vertical-axis hole means the siphon must also be positioned vertically, thus being clearly visible and unsightly, particularly in the case of off-floor fixtures.

[0007] It is an object of the present invention to provide a water drain unit for sanitary fixtures, designed to provide a straightforward, low-cost solution to the problems of the known art.

[0008] According to the present invention, there is provided a water drain unit for sanitary fixtures, for draining water from a bowl of said fixture to a water mains; said unit being characterized by comprising a bowl having a sloping bottom surface; a substantially horizontal-axis drain fitting formed in one piece with said bowl; and a siphon connected to said drain fitting; said drain fitting having a first end communicating with said bowl via an opening formed at one end of said bottom surface, and a second end communicating with said siphon.

[0009] A non-limiting embodiment of the invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a longitudinal section of a preferred embodiment of the unit according to the present invention;

Figure 2 shows a cross section of the Figure 1 unit.

[0010] Number 1 in Figure 1 indicates as a whole the unit according to the present invention, and which comprises a bidet 2 and a siphon 3.

[0011] Bidet 2 in turn comprises a lateral wall 4 and a bottom wall 5 formed in one piece with each other and defining a bowl 6. More specifically, lateral wall 4 comprises a rear wall 4a with a substantially vertical outer surface 7.

[0012] Bottom wall 5 has a sloping bottom surface 8

to direct water towards rear wall 4a.

[0013] Bidet 2 comprises a substantially cylindrical connecting portion 9 formed in one piece with lateral wall 4 and bottom wall 5, and having a substantially horizontal or at most slightly inclined axis Z to ensure correct outflow of water from bowl 6 to siphon 3.

[0014] Connecting portion 9 is connected at a first end 9a to bowl 6 via an oblong opening 10, and at a second end 9b to siphon 3. As shown in Figure 2, opening 10 is formed between bottom surface 8 of bottom wall 5 and outer surface 7 of rear wall 4a.

[0015] The vertical-axis hole typical of the known art is thus eliminated. At the same time, hygiene is improved, by the entire ceramic surface being easily accessible using normal cleaning means; siphon 3 may be located as far as possible out of sight behind rear wall 4a; and opening 10 is also concealed by virtue of its location and the concealing effect of rear wall 4a and, in particular, vertical outer surface 7.

[0016] Siphon 3 comprises a substantially horizontal-axis first tubular portion 11 connected to connecting portion 9; and a second tubular portion 12 perpendicular to first tubular portion 11, to which it is connected at a top end 12a. Second tubular portion 12 has a bottom end 12b closed to form the siphon, and is connected to the water mains (not shown) via an opening 13 formed close to top end 12a.

[0017] Siphon 3 comprises a butterfly valve 14 located inside first tubular portion 11, and which assumes a closed position and an open position to respectively close and open first tubular portion 11 and so act as a plug to fill bowl 6.

[0018] Siphon 3 comprises a third tubular portion 15 connected to first tubular portion 11, and which, in the embodiment shown, is in the form of an upside down U. Third tubular portion 15 has two ends 15a, 15b, both facing inside first tubular portion 11, respectively up- and downstream from butterfly valve 14 in the water flow direction, and provides for draining the overflow when butterfly valve 14 is in the closed position.

[0019] Third tubular portion 15 of siphon 3 enables the unsightly overflow opening in bowl 6 to be eliminated, thus also solving any problems caused by water absorption by the non-enamelled portions along the overflow water drain path.

[0020] That is, in known sanitary fixtures, overflow water is drained inside the ceramic part, but in a non-enamelled area which is therefore highly susceptible to water absorption, with all the problems this entails. As a result, sanitary fixtures must be made of material with a very low absorption index.

[0021] In the unit according to the present invention, on the other hand, siphon 3 is completely separate from the ceramic bidet, so that the water drainage portion is completely separate from the ceramic material from which the bidet is made, and may therefore be made of other material, such as plumbing plastic. In other words, in the unit according to the present invention, all the san-

itary fixture parts coming into contact with water can be enamelled easily, so that even materials with a higher absorption index may be used.

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Claims

1. A water drain unit (1) for sanitary fixtures, for draining water from a bowl (6) of said fixture to a water mains; said unit being **characterized by** comprising a bowl (6) having a sloping bottom surface (8); a substantially horizontal-axis (Z) drain fitting (9) formed in one piece with said bowl (6); and a siphon (3) connected to said drain fitting (9); said drain fitting (9) having a first end (9a) communicating with said bowl (6) via an opening (10) formed at one end of said bottom surface (8), and a second end (9b) communicating with said siphon (3). 10 15
2. A unit as claimed in Claim 1, **characterized in that** said opening (10) is substantially oblong and formed between said bottom surface (8) and a rear surface (7). 20
3. A unit as claimed in Claim 2, **characterized in that** said siphon (3) comprises a substantially horizontal-axis first tubular portion (11) connected to the drain fitting (9); and a second tubular portion (12) connected to the first tubular portion (11) and having a siphon function. 25 30
4. A unit as claimed in Claim 3, **characterized in that** said siphon (3) comprises a valve (14) located inside the first tubular portion (11), and which acts as a plug to fill the bowl (6). 35
5. A unit as claimed in Claim 4, **characterized in that** said valve (14) is a butterfly valve.
6. A unit as claimed in Claim 4 or 5, **characterized in that** said siphon (3) comprises a third tubular portion (15) connected to said first tubular portion (11) and having two ends (15a, 15b) facing inside said first tubular portion (11), on opposite sides of said valve (14); said third tubular portion (15) being located on top of said first tubular portion (11), so as to form a safety water drain system when the valve (14) is closed. 40 45

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