

(19)



(11)

EP 2 883 485 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
24.08.2016 Bulletin 2016/34

(51) Int Cl.:
A47K 7/08 (2006.01)

(21) Application number: **14197328.9**

(22) Date of filing: **11.12.2014**

(54) Toilet bowl with a wiping and drying device

Toilettenschüssel mit Wisch- und Trocknungsvorrichtung

Cuvette de toilette avec les dispositifs d'essuyage et de séchage

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **13.12.2013 GB 201322069**

(43) Date of publication of application:
17.06.2015 Bulletin 2015/25

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Description

Background to the Invention

[0001] This invention relates to a toilet.

[0002] A number of different toilets having bidet functions are known. For example, a nozzle may produce an upwardly-directed jet or spray of water.

[0003] US 4 092 744 A describes a hygiene device comprising a rotatable, porous bottom-cleaning brush on a shaft that is mounted between a bowl and a seat of a toilet and connected to a handle located alongside the toilet, but without any drying facility.

[0004] DE 10 2004 048 724 A discloses a toilet comprising a bottom-cleaning brush that is raised into position by a servomotor and rotated by a motor, soapy water being supplied to the brush simultaneously. The cleaning position of the brush is predetermined. Warm air for drying may be supplied through a flexible tube.

[0005] It is an aim of the invention to provide a toilet that allows a particularly high level of personal hygiene.

Summary of the Invention

[0006] The invention provides a toilet according to claim 1. The porous member may be in the form of a brush or a sponge. With this arrangement, the user is given greater control over personal hygiene than is provided by the known arrangements involving jets of water.

[0007] The wiping control member may comprise a rod extending in a direction generally transverse of the toilet bowl. A distal portion of the control member may comprise the water supply conduit and may carry the porous member at a distal end of the control member.

[0008] The toilet also includes a drying device comprising a drying element, such as a cloth or absorbent paper, arranged on a drying control member mounted to the wall of the toilet bowl, the drying control member including a handle protruding from the toilet. The drying element may alternatively comprise a nozzle for emitting warm air.

[0009] The wiping control member and/or the drying control member may be slidable through an opening in the wall of the toilet bowl, such that the porous member and/or the drying element, respectively, can be moved, using the respective handle, from a position adjacent the wall to a central position, and retracted again to the position adjacent the wall. The or each control member may be pivotable at the toilet wall. In particular, it may be rotatable about its own axis and pivotable about two further orthogonal axes. This may be achieved by a ball, including a transverse passage through which the control member is slidable, and rotatable within a part-spherical mounting in the wall of the toilet bowl.

[0010] In one embodiment, the water supply conduit is connected to a source of hot water and a source of cold water. A flexible hose may connect the water supply conduit to one or two taps which may be located on a rear

part of the toilet.

[0011] A soap dispenser may be arranged to introduce liquid soap into the water supplied to the water supply conduit.

5 [0012] The or each handle may extend in line with the control member, below a seat of the toilet. Alternatively, particularly for users whose movement is restricted, the handle may extend upwardly above the seat.

10 Brief Description of the Drawings

[0013] The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings, in which:

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Figure 1 is a section of a toilet bowl according to the invention, viewed from the front, with the wiping control member retracted; and

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Figure 2 is a fragmentary plan of the toilet bowl of Figure 1, with the wiping control member deployed.

Detailed Description of Particular Embodiments

[0014] The drawings show a toilet bowl 1 of generally 25 conventional shape, except that circular apertures are provided on either side to accommodate the hygiene device and the drying device respectively.

[0015] Upper and lower mountings 2 engage respective upper and lower parts of each aperture. Each of the 30 mountings 2 includes a part-spherical inwardly-facing surface. A ball 3, having an internal bore, is lodged between the two mountings 2, for example by snap-fitting.

[0016] A wiping control member 4 of the hygiene device comprises a rigid supply pipe 5 extending slidably 35 through the bore of one of the balls 3, and a handle 6 at the outer end of the control member. The distal end of the pipe 5 is open or perforated and carries a bottom-wiping sponge 7. In this example the sponge is generally spherical, but other shapes are possible, e.g. cylindrical, disc-shaped or irregular, and other porous members 40 such as a perforated pad or brush could be used instead of the sponge 7. Optionally, the sponge or other member can be retained on the pipe 5 by means of a recess in the sponge elastically stretchable over the end of the pipe. The sponge or other member could be removable 45 and replaceable.

[0017] A flexible hose 8 communicates with the supply pipe 5 adjacent the handle 6. Hot and cold water are supplied to the hygiene device through the hose 8 by 50 means of taps 9. In this example the taps are shown mounted on the rear of the toilet bowl 1. Alternatively, the taps could be provided separately from the toilet.

[0018] A drying control member 10 of the drying device extends through the bore of the other ball 3, and has a 55 handle 11 at its outer end. The distal end of the drying control member 10 carries a drying element 12, such as a cloth or absorbent paper, which may be removable and replaceable. The mounting of the drying control member

10 is above the outlet from which flushing water flows into the toilet bowl, to prevent wetting of the drying element 12.

[0019] Figure 1 shows the control members 4, 10 in their retracted position, which allows normal use of the toilet. The user then opens the taps 9 to supply water of a preferred temperature to the sponge 7. Using the handle 6, the user slides the wiping control member 4 through the ball 3 to the position shown in Figure 2. The handle 6 can be used to move the sponge forwards, backwards, up and/or down as required, and to rotate it about the axis of the control member for bottom-cleaning.

[0020] The water running through the sponge 7 will keep it clean. After use, the taps are closed and the hygiene device is returned to the position shown in Figure 1.

[0021] The user then uses the other handle 11 to slide the drying control member 10 inwardly. As with the handle 6, the handle 11 can be used to move the drying element 12 forwards, backwards, up and/or down as required, and to rotate it about the axis of the control member for bottom-drying.

[0022] In an alternative embodiment (not shown), the drying control member comprises an air conduit connected to a heating and blowing device, and terminates in a nozzle for emitting warm air for drying.

[0023] In the embodiment shown, the handles 6, 11 extend in line with their respective control elements 4, 10. In an alternative embodiment (not shown), suitable for users of restricted mobility, the handles extend vertically to a level above the toilet seat.

[0024] In the embodiment shown, mains water is supplied to the hygiene device. Optionally, a reservoir for liquid soap can be provided, communicating with the flexible hose, so as to supply soapy water to the sponge or other porous member. A valve can be provided to terminate the supply of soap so as to allow selection between soapy water and clean water, e.g. for rinsing.

Claims

1. A toilet including a hygiene device comprising a porous bottom-wiping member (7) arranged on a wiping control member (4), the wiping control member including a handle (6) protruding from the toilet, and a water supply conduit (5, 8) connected to the porous member (7) for supplying water thereto, **characterised by** a drying device comprising a drying element (12) arranged on a drying control member (10), the drying control member also including a handle (11) protruding from the toilet, and the wiping and drying control members (4, 10) being mounted to a wall of the toilet bowl.
2. A toilet according to claim 1, wherein the porous member (7) is in the form of a brush or a sponge.
3. A toilet according to claim 1 or 2, wherein the wiping

control member (4) comprises a rod (5) extending in a direction generally transverse to the toilet bowl.

4. A toilet according to claim 1, 2 or 3, wherein a distal portion of the wiping control member (4) comprises the water supply conduit (5).
5. A toilet according to claim 4, wherein the wiping control member (4) carries the porous member (7) at a distal end of the wiping control member.
6. A toilet according to any preceding claim, wherein the drying element (12) comprises a fabric or paper.
7. A toilet according to any one of claims 1 to 5, wherein the drying element comprises a nozzle for emitting warm air.
8. A toilet according to any preceding claim, wherein the wiping control member (4) and/or the drying control member (10) is/are slidable through an opening in the wall of the toilet bowl, such that the porous member (7) and/or the drying element (12) can be moved, using the handle (6, 11), from a position adjacent the wall to a central position, and retracted again to the position adjacent the wall.
9. A toilet according to any preceding claim, wherein the respective control member (4, 10) is pivotable at the wall of the toilet bowl.
10. A toilet according to claim 9, wherein the respective control member (4, 10) is rotatable about its own axis and pivotable about two further orthogonal axes.
11. A toilet according to claim 10, including a ball (3) having a transverse passage through which the respective control member (4, 10) is slidable, the ball being rotatable within a part-spherical mounting (2) in the toilet wall.
12. A toilet according to any preceding claim, wherein the water supply conduit (5, 8) is connected to a source of hot water (9) and a source of cold water (9).
13. A toilet according to any preceding claim, including a soap dispenser, arranged to introduce liquid soap into the water supplied to the water supply conduit.
14. A toilet according to any preceding claim, wherein the or each handle extends upwardly above a seat of the toilet.

Patentansprüche

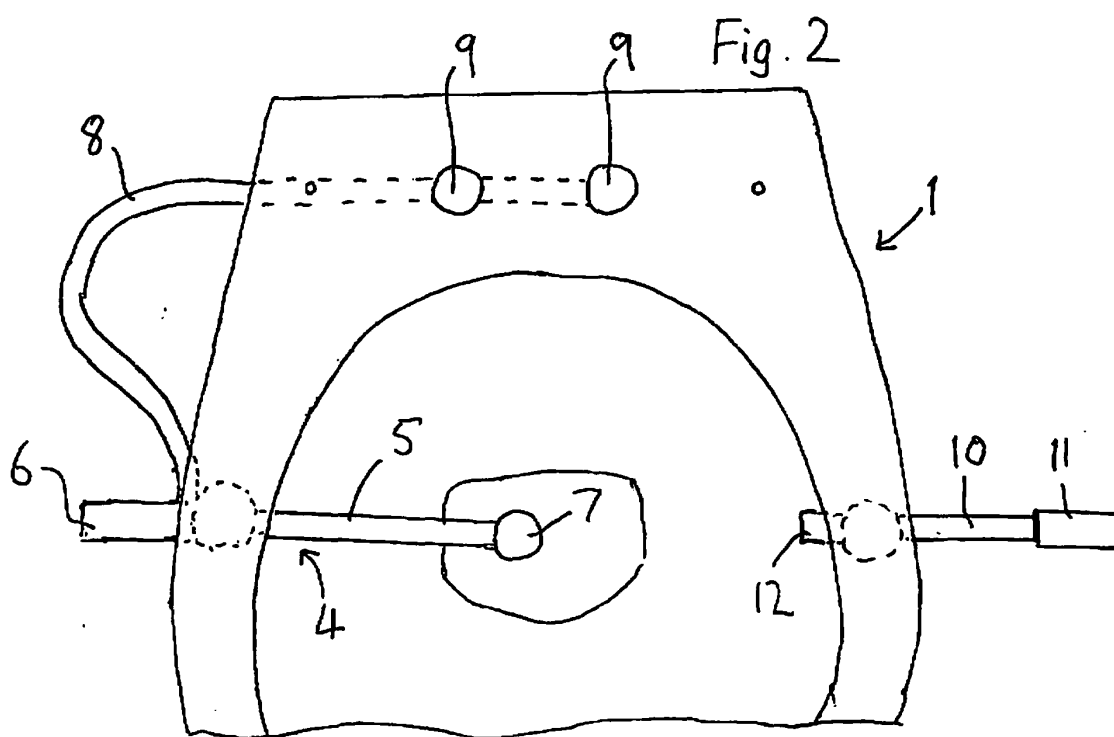
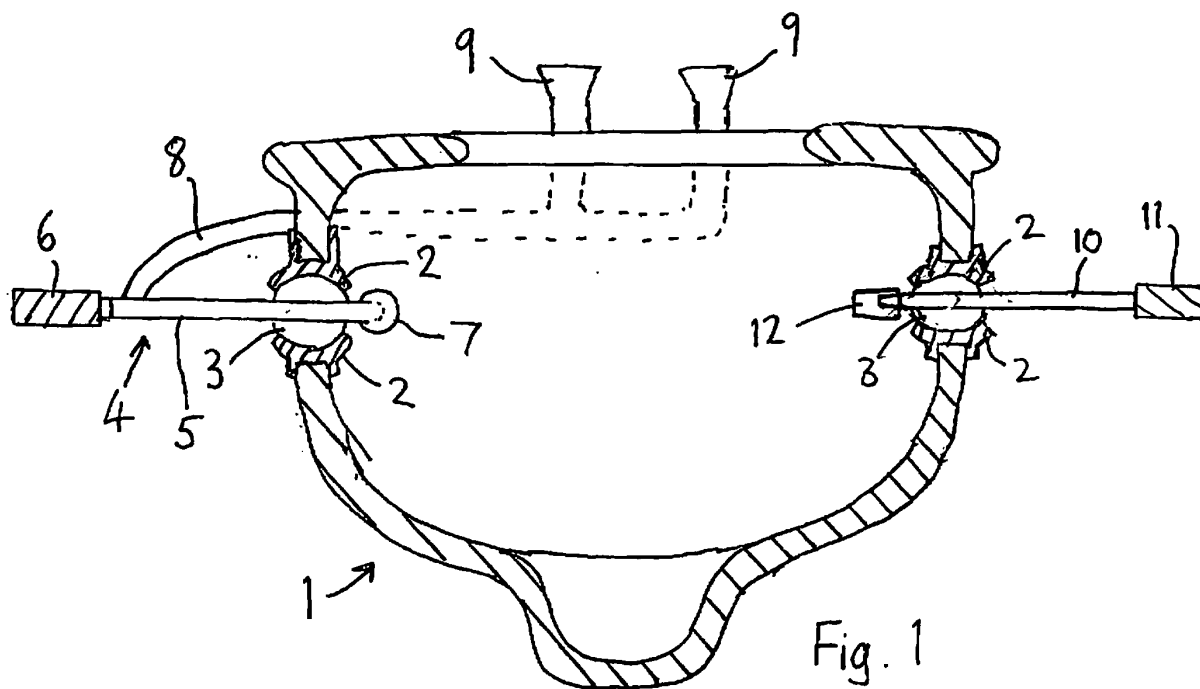
1. Toilette mit einer Hygiene-Vorrichtung, die ein durchlässiges Hinterteil-Wischteil (7), das an einem

- Wisch-Steuerteil (4) angeordnet ist, wobei das Wisch-Steuerteil (4) einen Griff (6) aufweist, der aus der Toilette herausragt, und eine Wasserversorgungsleitung (5, 8), die mit dem durchlässigen Teil (7) verbunden ist um Wasser darüber bereitzustellen, aufweist, **gekennzeichnet durch** eine Trocknungsvorrichtung, die ein Trocknungselement (12) aufweist, das an einen Trocknungs-Steuerteil (10) angeordnet ist, wobei das Trocknungs-Steuerteil (10) auch einen Griff aufweist, der aus der Toilette herausragt und wobei das Wisch-Steuerteil (4) und das Trocknungs-Steuerteil (10) an einer Wand der Toilettenschüssel befestigt werden.
2. Toilette nach Anspruch 1, wobei das durchlässige Teil (7) die Form einer Bürste oder eines Schwammes aufweist.
 3. Toilette nach Anspruch 1 oder 2, wobei das Wisch-Steuerteil (4) eine Stange (5) aufweist, die sich in eine im Wesentlichen transversale Richtung zu der Toilettenschüssel erstreckt.
 4. Toilette nach Anspruch 1, 2 oder 3, wobei ein distaler Abschnitt des Wisch-Steuerteils (4) die Wasserversorgungsleitung (5) aufweist.
 5. Toilette nach Anspruch 4, wobei das Wisch-Steuerteil (4) das durchlässige Teil (7) an einem distalen Ende des Wisch-Steuerteils (4) trägt.
 6. Toilette nach einem der voranstehenden Ansprüche, wobei das Trocknungselement (12) einen Stoff oder ein Papier aufweist.
 7. Toilette nach einem der Ansprüche 1 bis 5, wobei das Trocknungselement (12) eine Düse zum Abgeben von warmer Luft aufweist.
 8. Toilette nach einem der voranstehenden Ansprüche, wobei das Wisch-Steuerteil (4) und/oder das Trocknungs-Steuerteil (10) durch eine Öffnung in der Wand der Toilettenschüssel verschiebbar ist/sind, sodass das durchlässige Teil (7) und/oder das Trocknungselement (12) durch Benutzung des Griffs (6, 11) von einer Position benachbart zu der Wand in eine zentrale Position bewegt werden können, und wieder in die Position benachbart zu der Wand zurückgezogen werden können.
 9. Toilette nach einem der voranstehenden Ansprüche, wobei das entsprechende Steuerteil (4, 10) schwenkbar an der Wand der Toilettenschüssel gelagert ist.
 10. Toilette nach Anspruch 9, wobei das entsprechende Steuerteil (4, 10) drehbar um seine eigene Achse ist und schwenkbar um zwei weitere, dazu orthogonale Achsen ist.
 11. Toilette nach Anspruch 10, die eine Kugel (3) aufweist, die einen transversal verlaufenden Durchgang aufweist, durch den das entsprechende Steuerteil (4, 10) verschiebbar ist, wobei die Kugel innerhalb einer teilweise sphärischen Halterung (2) in der Toilettenwand drehbar ist.
 12. Toilette nach einem der voranstehenden Ansprüche, wobei die Wasserversorgungsleitung (5, 8) mit einer Warmwasserquelle (9) und einer Kaltwasserquelle (9) verbunden ist.
 13. Toilette nach einem der voranstehenden Ansprüche, die einen Seifenspender aufweist, der angeordnet ist zum Einleiten von Flüssigseife in das zu der Wasserversorgungsleitung bereitgestellte Wasser.
 14. Toilette nach einem der voranstehenden Ansprüche, wobei der oder jeder Griff sich aufwärts über einen Sitz der Toilette erstreckt.
- ## Revendications
1. Toilette incluant un dispositif d'hygiène comprenant un élément d'essuyage des fesses poreux (7) disposé sur un élément de commande d'essuyage (4), l'élément de commande d'essuyage incluant une poignée (7) dépassant par rapport à la toilette, et un conduit d'alimentation en eau (5, 8) connecté à l'élément poreux (7) destiné à fournir de l'eau à celui-ci, **caractérisé par** un dispositif de séchage comprenant un élément de séchage (12) disposé sur un élément de commande de séchage (10), l'élément de commande séchage incluant également une poignée (11) dépassant par rapport aux toilette, et les éléments de commande d'essuyage et de séchage (4, 10) étant montés sur une paroi de la cuvette de toilette.
 2. Toilette selon la revendication 1, dans laquelle l'élément poreux (7) est sous la forme d'une brosse ou d'une éponge.
 3. Toilette selon la revendication 1 ou 2, dans laquelle l'élément de commande d'essuyage (4) comprend une tige (5) s'étendant dans une direction généralement transversale par rapport à la cuvette de toilette.
 4. Toilette selon la revendication 1, 2 ou 3, dans laquelle une partie distale de l'élément de commande d'essuyage (4) comprend le conduit d'alimentation en eau (5).
 5. Toilette selon la revendication 4, dans laquelle l'élément de commande d'essuyage (4) supporte l'élé-

ment poreux (7) à une extrémité distale de l'élément de commande d'essuyage.

6. Toilette selon l'une quelconque des revendications précédentes, dans laquelle l'élément de séchage (12) comprend un tissu ou un papier. 5
7. Toilette selon l'une quelconque des revendications 1 à 5, dans laquelle l'élément de séchage comprend une buse pour émettre de l'air chaud. 10
8. Toilette selon l'une quelconque des revendications précédentes, dans laquelle l'élément de commande d'essuyage (4) et/ou l'élément de commande de séchage (10) peut/peuvent glisser à travers une ouverture dans la paroi de la cuvette de toilette, de sorte que l'élément poreux (7) et/ou l'élément de séchage (12) puissent être déplacés, en utilisant la poignée (6, 11), d'une position adjacente à la paroi jusqu'à une position centrale, et à nouveau rétractés jusqu'à la position adjacente à la paroi. 15 20
9. Toilette selon l'une quelconque des revendications précédentes, dans laquelle l'élément de commande respectif (4, 10) peut pivoter au niveau de la paroi de la cuvette de toilette. 25
10. Toilette selon la revendication 9, dans laquelle l'élément de commande respectif (4, 10) peut tourner autour de son propre axe et peut pivoter autour de deux autres axes orthogonaux. 30
11. Toilette selon la revendication 10, incluant une bille (3) ayant un passage transversal à travers lequel l'élément de commande respectif (4, 10) peut coulisser, la bille pouvant tourner avec un montage partiellement sphérique (2) dans la paroi de toilette. 35
12. Toilette selon l'une quelconque des revendications précédentes, dans laquelle le conduit d'alimentation en eau (5, 8) est connecté à une source d'eau chaude (9) et à une source d'eau froide (9). 40
13. Toilette selon l'une quelconque des revendications précédentes, incluant un dispositif de distribution de savon, prévu pour introduire un savon liquide dans l'eau fournie au conduit d'alimentation en eau. 45
14. Toilette selon l'une quelconque des revendications précédentes, dans laquelle la poignée ou chaque poignée s'étend vers le haut au-dessus d'un siège de la toilette. 50

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REFERENCES CITED IN THE DESCRIPTION

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