



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 398 421 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
17.03.2004 Bulletin 2004/12

(51) Int Cl.7: **E03D 9/08**

(21) Application number: **03255588.0**

(22) Date of filing: **09.09.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(72) Inventor: **Davies, Ralph Simon**
Wavertree, Liverpool L15 6XA (GB)

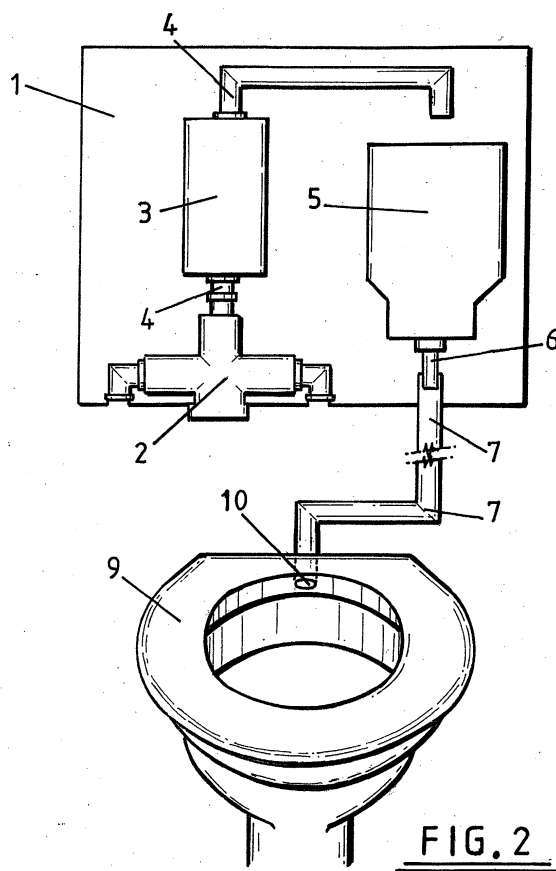
(74) Representative: **Lyons, Andrew John et al**
ROYSTONS,
Tower Building,
Water Street
Liverpool L3 1BA, Merseyside (GB)

(30) Priority: **10.09.2002 GB 0220890**

(71) Applicant: **Davies, Ralph Simon**
Wavertree, Liverpool L15 6XA (GB)

(54) **Apparatus for enabling a toilet to act as a bidet**

(57) Apparatus for enabling a toilet to act as a bidet includes an operating unit comprising a back plate 1, an outer cover (not shown) a flexible delivery hose 7 and a toilet/bidet seat 9. The operating unit contains a thermostatic mixing valve 2, a control valve 3, copper or other suitable tubing 4, and a tun-dish 5 with a push-fit or screw fitting 6, for connecting one end of the hose. The other end of the hose is moulded into a pre-drilled hole in the seat, or alternatively, connected to a push-fit or screw adaptor 8, (Figure 3 not shown) at the centre of the rear of the seat. Hot and cold water supplies (not shown) are connected to the mixing valve's inlet. The mixed water flow from the mixing valve is controlled by means of the control valve, and is delivered to the seat via the tun-dish and the hose.



Description

[0001] This invention relates to apparatus for enabling a toilet to act as a bidet, which includes a wall-mounted operating unit, a flexible delivery hose and a combination toilet/bidet seat.

[0002] Bidets are well known sanitary fittings which comprise a porcelain pan and either separate hot and cold taps, or a single outlet mixing tap.

[0003] Bidets are, however, relatively expensive. Moreover they are a separate sanitary fitting to the toilet, which means that they require extra space in the bathroom. It is also necessary to move across from the toilet to the bidet.

[0004] An object of this invention is to enable an existing toilet to also function as a bidet.

[0005] According to the present invention, apparatus for enabling a toilet to act as a bidet, said apparatus comprising a wall-mounted operating unit consisting of a back plate and an outer cover and containing a fail-safe thermostatic mixing valve, a control valve, copper or other suitable tubing, and a tun-dish arrangement, wherein mixed hot and cold water is delivered via the operating unit and then via a flexible delivery hose and push-fit or screw fitting to a toilet/bidet seat having a pre-drilled hole passing substantially horizontally through the centre of the rear of the seat.

[0006] Preferably the operating unit's back plate and outer cover, and the toilet/bidet seat are made of plastics material, but they may also be made from resin or other suitable waterproof material.

[0007] The invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows the wall-mounted operating unit, with the internal components and controls, and the delivery hose;

Figure 2 shows the wall-mounted operating unit, and the toilet/bidet seat, complete with the delivery hose moulded into the said seat, the seat shown fitted to an existing toilet;

Figure 3 shows the toilet/bidet seat, complete with the delivery hose connected to a push-fit or a screw adaptor at the centre of the rear of the said seat, the seat shown fitted to an existing toilet; and

Figure 4 shows a flow diagram of the warmed water flush through the operating unit.

[0008] Referring to Figures 1, 2 and 4, the wall-mounted operating unit's back plate 1 comprises a fail-safe thermostatic mixing valve 2, a control valve 3, copper or other suitable tubing 4, a tun-dish arrangement 5 with a push-fit or a screw fitting 6 at its outlet for connecting one end of the flexible delivery hose 7. The above mentioned components and controls (2, 3, 4, 5, 6 and 7) may be secured to the back plate 1 by for example, clips or similar means (not shown).

[0009] The toilet/bidet seat 9 comprises a length of

the delivery hose 7 either moulded into and through a hole 10 in the centre of the rear face of the said seat, as in Figure 2, or connected to a push-fit or a screw adaptor 8 at the centre of the rear of the seat, as in Figure 3.

[0010] Preferably, a nozzle or some form of insert (not shown) which may be made of plastics material, but may also be made from resin, metal or other suitable waterproof material, may be placed inside the hole at the outlet of the toilet/bidet seat 9.

[0011] Advantageously, the said nozzle or insert may extend the full length of the hole, to emerge also from the inlet of the toilet/bidet seat 9, so as to permit connection of the push-fit or screw adaptor 8, or alternatively, direct connection of the delivery hose 7.

[0012] Referring to Figure 4, the hot and cold water supply connections to the inlet side of the fail-safe thermostatic mixing valve 2 are made using suitable plumbing fittings and copper, chromed or other suitable tubing (not shown).

[0013] Advantageously, the back plate 1 may also be provided with several entry and exit positions (not shown) to permit the ease of plumbing in the system as above, and to allow for the preferred positioning of the above tubing and the delivery hose 7. The said entry and exit positions may be such so that they can be simply knocked-out, or alternatively, cut out with a sharp blade.

[0014] Preferably, the back plate 1 is also provided with fixing positions to allow for it to be mounted onto a wall, using for example, screws and wall plugs or similar means (not shown).

[0015] Advantageously, the outer cover (not shown) may also be provided with entry and exit positions around some of its edges, to coincide with some of the previously mentioned entry and exit positions in the back plate 1.

[0016] Preferably, the outer cover (not shown) is secured to the back plate 1 for example, at the top and bottom, by screws or similar means.

[0017] Advantageously, the outer cover may also be provided with a suitably formed opening in its face to allow the control valve 3 to protrude through, so as to permit the operation of the apparatus.

[0018] In order to operate the apparatus the control valve 3 is opened and a warm water mix from the thermostatic mixing valve 2 is delivered to the toilet/bidet seat 9 via the copper or other suitable tubing 4, the tun-dish arrangement 5 and a length of the delivery hose 7.

[0019] In order to automatically stop the flow of water to the toilet/bidet seat 9 after a pre-determined time, the control valve 3 may be of the push button type.

Claims

1. Apparatus for enabling a toilet to act as a bidet comprising a thermostatic mixing valve (2) for receiving and mixing hot and cold water supplies for delivery

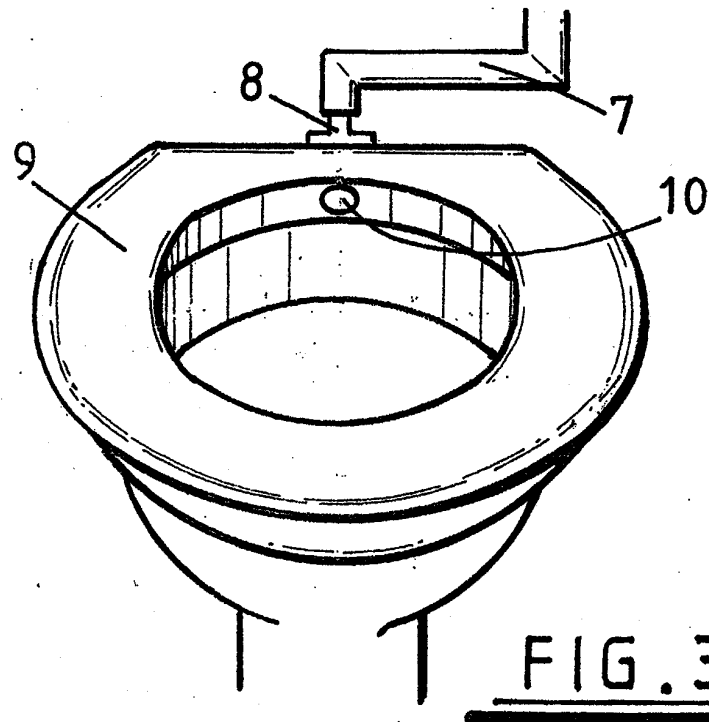
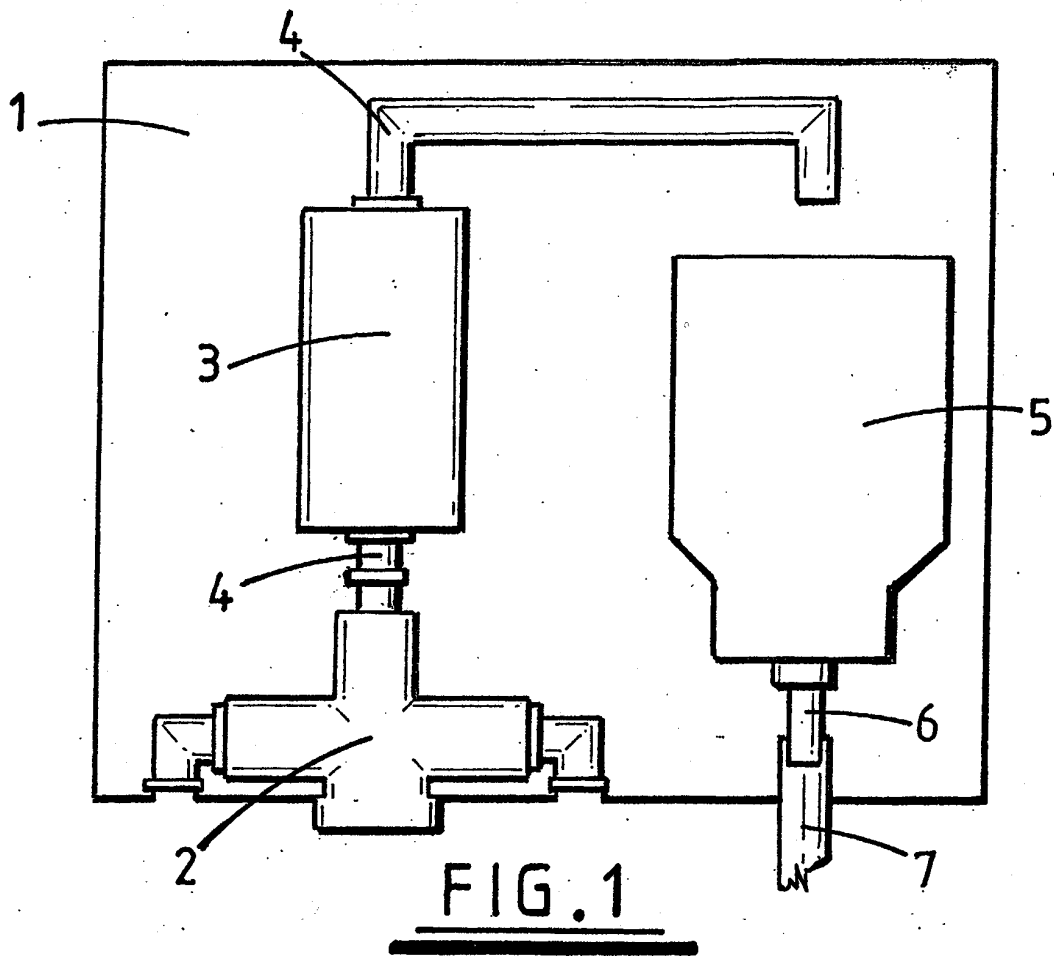
to a flexible delivery hose (7) via a control valve (3) and a tun-dish arrangement (5), the flexible delivery hose being connected to a hole (10) through the rear of the seat (9) of the toilet.

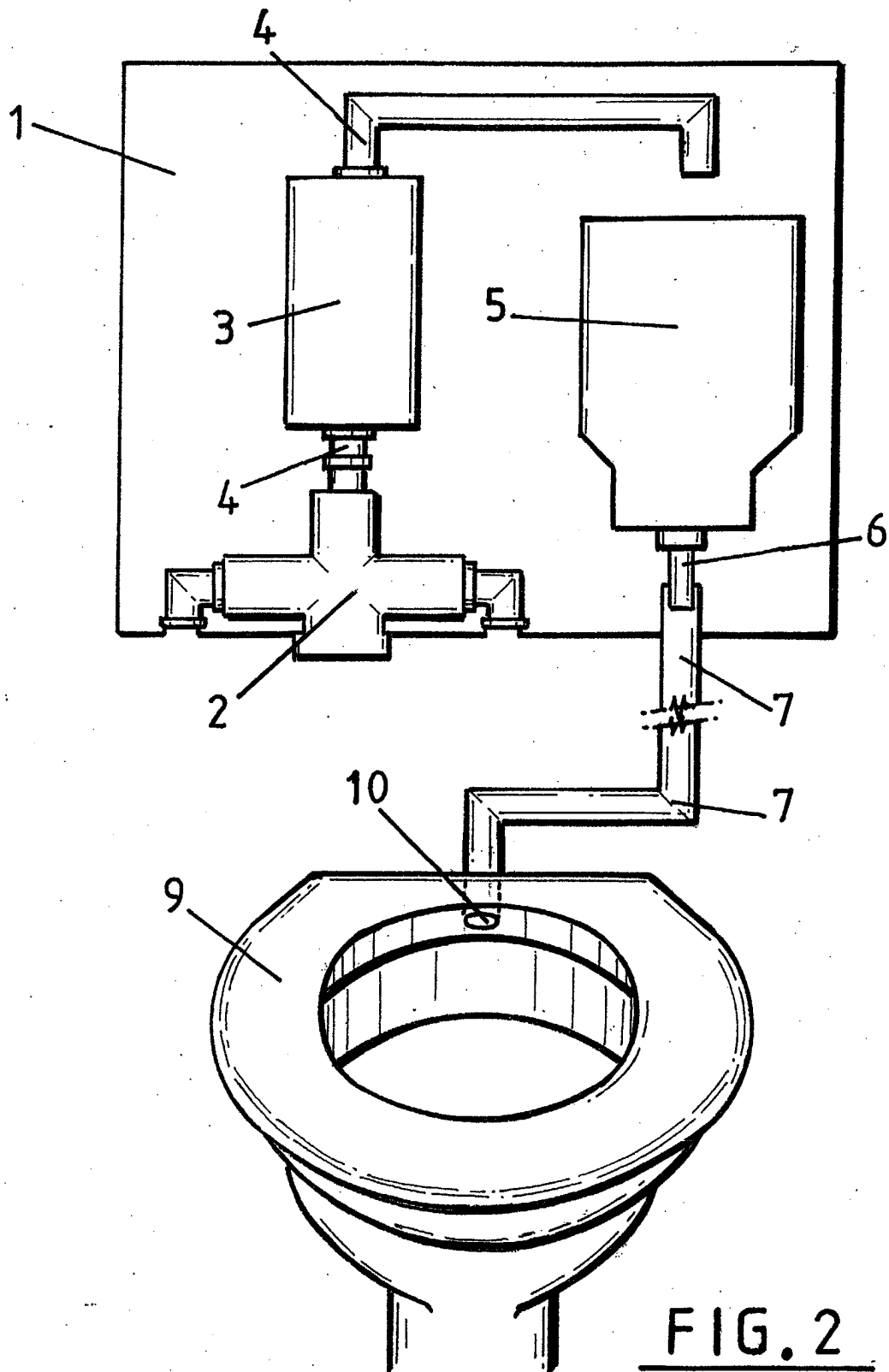
5

2. Apparatus as claimed in claim 1 further comprising a wall-mountable operating unit comprising a back plate (1) and an outer cover, the operating unit containing the mixing valve (2), control valve (3) and tun-dish arrangement (5). 10
3. Apparatus as claimed in claim 1 or 2, wherein tubing (4) from the control valve (3) to the tun-dish arrangement (5) is arranged so that water in the tun-dish is prevented from reaching the outlet end of the tubing. 15
4. Apparatus as claimed in claim 1, 2 or 3, wherein the hole (10) in the rear of the toilet seat is pre-drilled. 20
5. Apparatus as claimed in any one of claims 1 to 4, wherein the delivery hose (7) is moulded into and through the hole (10) in the toilet seat (9).
6. Apparatus as claimed in any one of claims 1 to 4, wherein the delivery hose (10) is connected to an adaptor (8) at the rear of the toilet seat (9). 25
7. Apparatus as claimed in claim 6, wherein a nozzle is inserted into the hole (10) in the rear of the seat (9). 30
8. Apparatus as claimed in claim 7, wherein the nozzle extends fully through the hole in the rear of the seat for connection of the delivery hose. 35
9. Apparatus as claimed in any one of claims 2 to 8, wherein the operating unit is made of plastics material. 40
10. A kit of parts usable to adapt a toilet for use as a bidet comprising a thermostatic mixing valve (2) for receiving and mixing hot and cold water supplies for delivery to a flexible delivery hose (7) via a control valve (3) and a tun-dish arrangement (5), the flexible delivery hose being connectable to a hole (10) through the rear of the seat (9) of the toilet. 45

50

55





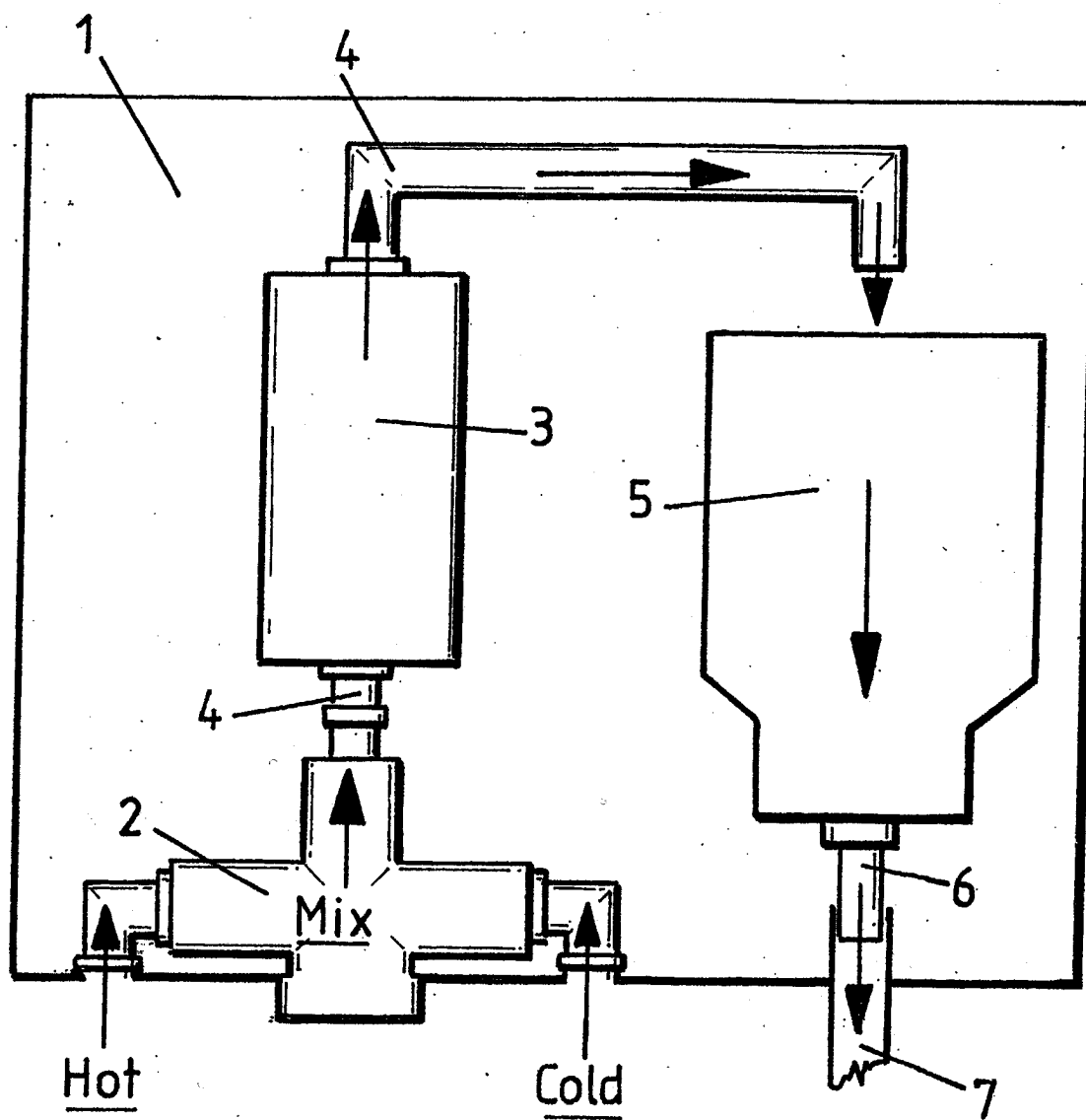


FIG. 4