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(54) **Multifunctional bathroom facility and a method for manufacturing it**

Multifunktionaler Sanitärgegenstand und Verfahren zum Herstellen des multifunktionalen Sanitärgegenstandes

Article sanitaire multifonctionnell et procédé de fabrication pour celui-ci

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(73) Proprietor: **Hatria S.r.l.
64020 Teramo (TE) (IT)**

(72) Inventor: **Gioacchini, Nilo
50060 Pelago FI (IT)**

(74) Representative: **Locatelli, Massimo et al
Barzanò & Zanardo Milano S.p.A.
Via Borgonuovo 10
20121 Milano (IT)**

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Description

[0001] The present invention refers to an innovative multifunctional bathroom facility and to a method for manufacturing such a bathroom facility.

[0002] In the field, multifunctional bathroom facilities are known to be made comprising both a WC bowl and a bidet bowl, adjacent to each other. Such solutions, however, normally foresee the assembly of the single prefabricated components, causing the end product to be costly to make and of poor quality. Moreover, the various components (WC and Bidet) are simply juxtaposed adjacent to each other in this way substantially being positioned close to each other, to such an extent that the use of one of the components prevents the use of the other. The water dispensing controls are also difficult to reach for the user seated on the bathroom facility.

[0003] Moreover, the personalization of the reciprocal position of the WC and the bidet normally requires an *ad hoc* costly operations, according to the requirements.

[0004] DE-A-4308269 discloses a multifunctional bathroom facility made of a monolithic body comprising an upper wall and both the WC and bidet. A combination of a toilet bowl and a bidet is shown in US 2004/0083543 A. The preamble of claim 1 is known in the DE-document which document can be seen as the closest prior art.

[0005] The general purpose of the present invention is to avoid the aforementioned drawbacks by providing a method for the manufacture of multifunctional bathroom facilities which is cost-effective and which allows a desired position of both the WC and the bidet in the end product to be selected, without requiring exceedingly expensive machinery.

[0006] A further purpose of the invention is that of providing a multifunctional high quality bathroom facility, which is convenient to use as well as comfortable for the user.

[0007] Another purpose of the invention is that of providing a bathroom facility which can be used as a furnishing element when it is not carrying out its primary function as a bathroom facility.

[0008] In view of such a purpose, it has been thought to make, according to the invention, a method for manufacturing a bathroom facility provided with a bidet bowl and with a WC bowl adjacent to each other, comprising the steps of:

- making a monolithic body provided with an upper wall in which there are two concave portions each suitable for making a first type of bowl selected between WC bowl and bidet bowl,
- cutting one of the two concave portions from the monolithic body in such a manner to form an opening in said upper wall,
- fixing a bowl of a second type selected between WC bowl and bidet bowl at said opening.

[0009] Again according to the invention, it has been

thought to make a bathroom facility provided with a bidet bowl and a WC bowl adjacent to each other, comprising a monolithic body which forms an upper wall of the bathroom facility and a first of said two bowls, said upper wall being provided with an opening which provides access to a second of said two bowls, characterized in that said second bowl is made of a separate piece that is fixed at the bottom of the monolithic body at said opening.

[0010] In order to clarify the explanation of the innovative principles of the present invention together with its advantages with respect to the prior art, hereafter, with the help of the attached drawings, a possible embodiment shall be described given as an example applying such principles.

[0011] In the drawings:

- figure 1 represents a perspective view of a bathroom facility according to the invention with its cover raised,
- figure 2 represents a transversal section view of the bathroom facility, sectioned at the height of the WC bowl,
- figure 3 represents a sequence of operations for manufacturing of a bathroom facility according to the invention with the WC arranged on the left,
- figure 4 represents a sequence of operations for the manufacture of a bathroom facility with the WC arranged on the right.

[0012] With reference to the figures, in figure 1 a multifunctional bathroom facility 11 is shown, comprising a monolithic body 12 which forms an upper wall 13 of the bathroom facility and a bidet bowl 15, integral with the wall 13. The monolithic body 12 is made of ceramic material.

[0013] On its perimeter edge, the wall 13 comprises a downward projection 29, clearly represented also in figure 2. The upper wall 13 almost has an elongated rectangular shape. Laterally with respect to the bidet bowl 15, the body 12 has an opening 60 through which the WC bowl 14 can be accessed (see fig. 2). A ring-shaped slab 21, like the type normally used to form the seat for the user, is arranged above the WC bowl 14.

[0014] The bidet bowl comprises a lower discharge 20, and two water dispensers 18, 19, arranged at the front side and back side of the bowl, respectively.

[0015] The bathroom facility also advantageously comprises a cover 16, moveable between a vertical raised position (fig. 1), and a horizontal lowered position to cover the bidet bowl 15 and the WC bowl 14 (fig. 2). In the raised position, the cover 16 can act as a backrest, whereas in the lowered position, it has the function of a seat, forming a bench. Advantageously, the cover 16 has a rectangular shape, corresponding to that of the wall 13 of the monolithic body 12. The cover 16 is hinged to the body 12 at the hinges 17, on the rear side of the wall 13.

[0016] Control means for supplying water to the two bowls are arranged between the bidet bowl 15 and the

WC bowl 14. In particular, the control means comprise a handle 24 to control the dispensers of the bidet, and a button 23 to control the flushing of the WC. The control means 23, 24 are arranged in a concavity 22 formed on the upper surface of the wall 13, in such a manner so as to not interfere with the movement of the cover 16 towards the lowered horizontal position. The WC bowl 14 is formed with a separate piece that is fixed at the bottom of the monolithic body 12 at the opening 60. Advantageously, the monolithic body 12 is provided with an annular projection 25 which surrounds the opening 60 and faces downwards. The projection 25 is enclosed by an upper edge of the WC bowl 14 (fig. 2).

[0017] The WC bowl 14 comprises a water inlet 26 and a lower discharge 28, which communicates with the main cavity of the bowl through a siphon 27. The bowl 14 is advantageously realized in a single piece of ceramic. The gluing point of the bowl 14 against the wall 13 of the body 12 remains covered from sight due to the presence of the edge 29.

[0018] In figure 2 the vertical wall of the room in which the bathroom facility is applied is indicated with reference numeral 50.

[0019] Figures 3 and 4 show two sequences of manufacturing operations of bathroom facilities according to the invention with the WC and the bidet in different positions.

[0020] In particular, figure 3 shows the sequence for making a bathroom facility having the WC on the left.

[0021] Initially the monolithic body 12 is produced in ceramic, using techniques known in the field of manufacturing bathroom facilities. For example, the body 12 is made by casting the ceramic material in a suitable mould, drying the product, and then painting it after it has been extracted from the mould to then subject it to a baking process.

[0022] The monolithic body 12 is initially made with an upper wall 13 in which two concave portions 15, 15a are formed both suitable for making a bidet bowl. The two concave portions 15, 15a are almost identical to each other.

[0023] In a second step of the process, the concavity 15a is cut from the monolithic ceramic body 12, with a horizontal cut, in such a manner so as to form the opening 60 on the wall 13 of the body 12.

[0024] As can be clearly seen, the cutting is carried out in such a manner so as to keep the annular projection 25, already previously described.

[0025] Then, in a third step of the process, a WC bowl 14 is provided, which is brought close to the body 12 at the projection 25.

[0026] Finally, as shown in the last image of figure 3, the WC bowl 14 is fixed to the body 12, in such a manner so as to remain accessible through the opening 60. The fixing can be carried out according to any prior art, for example through gluing, on the lower bottom of the wall 13.

[0027] Figure 4 shows an analogous sequence of im-

ages representing the productive process of a bathroom facility, this time with the WC on the right.

[0028] The monolithic body 112 is initially made identical to the monolithic body 12, with two bidet bowls 115, 115a. In this case, however, it is the bowl 115a on the right that is cut out from the body 112. At the opening which is formed on the upper wall 113 a WC bowl 114 is fixed, so as to enclose the annular projection 125.

[0029] A multifunctional bathroom facility is thus obtained having the WC positioned on the right.

[0030] The manufacturing method of the aforementioned bathroom facilities allows the reciprocal positions of the WC and bidet to be personalized in a cost-effective manner, starting from a same piece obtained with a same mould.

[0031] At this point it is clear how the purposes of the present invention have been achieved.

[0032] In particular a multifunctional bathroom facility which is comfortable for the user has been provided. The WC and the bidet are not simply juxtaposed, but rather inserted in a ceramic plane, at a certain distance from one another. Between the two bowls there is space for the water supply controls, which can be easily accessed even in a seated position.

[0033] Moreover, the bathroom facility can be easily transformed into a bench, thanks to the cover element. The product is of high quality, from both a functional and aesthetic point of view.

[0034] The bathroom facility can be manufactured cost-effectively, and the reciprocal position of the WC and bidet can be easily personalized during the production stage, without requiring special machinery, such as different shaped moulds.

[0035] Of course, the description above of an embodiment applying the innovative principles of the present invention is given as an example of such innovative principles and therefore should not be taken to limit the scope of protection claimed hereby.

[0036] For example, in the manufacturing method of the bathroom facility, the monolithic ceramic body could initially be made with two WC bowls, rather than two bidet bowls, foreseeing a subsequent cutting step of one of the two WCs and the fixing of a bidet bowl.

[0037] Other materials could also be used to make the bathroom facility, instead of ceramic, for example Corian, metal, impregnated wood or marble.

Claims

1. Method for making a bathroom facility provided with a bidet bowl (15) and a WC bowl (14) adjacent to each other, comprising the steps of:

- making a monolithic body (12) provided with an upper wall (13) in which are present two concave portions (15, 15a) each adapted to realize a first type of bowl selected between WC bowl

- and bidet bowl,
 - cutting one (15a) of the two concave portions from the monolithic body in such a manner to form an opening (60) in the said upper wall (13),
 - fixing the bowl (14) of a second type selected between WC bowl and bidet bowl at said opening (60).
2. Method according to claim 1, **characterised in that** the monolithic body (12) is made of ceramic material.
 3. Method according to claim 1, **characterised in that** the monolithic body (12) is made by casting ceramic material in a mould, drying the cast material, painting and subsequent baking.
 4. Method according to claim 1, **characterised in that** the said monolithic body (12) is initially made with two concave portions (15, 15a) adapted to make a bidet bowl.
 5. Method according to claim 4, **characterised in that** the concave portion (15a) is out leaving an annular portion (25) projecting downwards from the upper wall (13), the WC bowl (14) being fixed to the monolithic body (12) in such a manner to enclose said annular portion (25).
 6. Bathroom facility provided with a bidet bowl (15) and a WC bowl (14) adjacent to each other, comprising a monolithic body (12) which forms an upper wall (13) of the bathroom facility and a first, of said two bowls (15), said upper wall being provided with an opening (60) which provides access to the second of said two bowls (14), **characterised in that** said second bowl (14) is made of a separate piece that is fixed at the bottom of the monolithic body (12) at said opening (60).
 7. Bathroom facility according to claim 6, **characterised in that** the monolithic body (12) forms the bidet bowl (15) of the bathroom facility in a single piece.
 8. Bathroom facility according to claim 6, **characterised in that** the monolithic body (12) is made of ceramic material.
 9. Bathroom facility according to claim 6, **characterised in that** it comprises a cover (16) moveable between a vertical position to render the bowls (14, 15) accessible and a horizontal position to cover both said bowls in such a manner to provide a seat.
 10. Bathroom facility according to claim 6, **characterised in that** it comprises control means (23, 24) for supplying water to the bidet and wc bowls, the control means being arranged at the upper wall (13) of the bathroom facility between the two bowls (14, 15).

11. Bathroom facility according to claim 10, **characterised in that** the control means (23, 24) are arranged in a concavity (22) of the upper wall (13) of the bathroom facility, in such a manner not to interfere with the movement of the cover (16) towards the horizontal lowered position.

Patentansprüche

1. Verfahren zum Herstellen einer Sanitäranlage, versehen mit einem Bidetbecken (15) und einem WC-Becken (14), die aneinander angrenzen, umfassend folgende Schritte:
 - Herstellen eines monolithischen Körpers (12), der mit einer oberen Wand (13) versehen ist, in der zwei konkave Anteile (15, 15a) vorhanden sind, die jeweils dazu geeignet sind, einen ersten Beckentyp, ausgewählt aus WC-Becken und Bidetbecken, zu bilden,
 - Ausschneiden eines (15a) der beiden konkaven Anteile aus dem monolithischen Körper derart, dass eine Öffnung (60) in der oberen Wand (13) entsteht,
 - Befestigen des Beckens (14) eines zweiten Typs, ausgewählt aus WC-Becken und Bidetbecken, an der Öffnung (60) .
2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** der monolithische Körper (12) aus Keramik hergestellt ist.
3. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** der monolithische Körper (12) durch Gießen von Keramik in eine Form, Trocknen des gegossenen Materials, Bemalen und anschließendes Brennen hergestellt wird.
4. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** der monolithische Körper (12) anfänglich mit zwei konkaven Anteilen (15, 15a) hergestellt wird, die dazu geeignet sind, ein Bidetbecken zu bilden.
5. Verfahren nach Anspruch 4, **dadurch gekennzeichnet, dass** der konkave Anteil (15a) so ausgeschnitten wird, dass ein ringförmiger Anteil (25) belassen wird, der aus der oberen Wand (13) nach unten auskragt, wobei das WC-Becken (14) an dem monolithischen Körper (12) derart befestigt wird, dass der ringförmige Anteil (25) umschlossen wird.
6. Sanitäranlage, versehen mit einem Bidetbecken (15) und einem WC-Becken (14), die aneinander angrenzen, umfassend einen monolithischen Körper (12), der eine obere Wand (13) der Sanitäranlage bildet, und ein erstes der beiden Becken (15), wobei

die obere Wand mit einer Öffnung (60) versehen ist, die Zugang zum zweiten der beiden Becken (14) gibt, **dadurch gekennzeichnet, dass** das zweite Becken (14) aus einem separaten Stück hergestellt ist, das auf dem Boden des monolithischen Körpers (12) an der Öffnung (60) befestigt ist.

7. Sanitäranlage nach Anspruch 6, **dadurch gekennzeichnet, dass** der monolithische Körper (12) das Bidetbecken (15) der einstückigen Sanitäranlage bildet.
8. Sanitäranlage nach Anspruch 6, **dadurch gekennzeichnet, dass** der monolithische Körper (12) aus Keramik hergestellt ist.
9. Sanitäranlage nach Anspruch 6, **dadurch gekennzeichnet, dass** sie einen Deckel (16) umfasst, der zwischen einer vertikalen Stellung, in der die Becken (14, 15) zugänglich sind, und einer horizontalen Stellung zur Abdeckung der Becken derart bewegt werden kann, dass ein Sitz bereitgestellt wird.
10. Sanitäranlage nach Anspruch 6, **dadurch gekennzeichnet, dass** sie Steuermittel (23, 24) umfasst, um das Bidet- und das WC-Becken mit Wasser zu versorgen, wobei die Steuermittel an der oberen Wand (13) der Sanitäranlage zwischen den beiden Becken (14, 15) angeordnet sind.
11. Sanitäranlage nach Anspruch 10, **dadurch gekennzeichnet, dass** die Steuermittel (23, 24) in einer Höhlung (22) der oberen Wand (13) der Sanitäranlage derart angeordnet sind, dass sie die Bewegung des Deckels (16) zur abgesenkten, horizontalen Stellung hin nicht beeinträchtigen.

Revendications

1. Procédé de fabrication d'un article sanitaire pourvu d'une cuvette de bidet (15) et d'une cuvette de WC (14) adjacents l'un à l'autre, comprenant les étapes suivantes :
 - la fabrication d'un corps monolithique (12) pourvu d'une paroi supérieure (13) dans laquelle sont présentes deux portions concaves (15, 15a), chacune adaptée pour recevoir un premier type de cuvette sélectionné entre une cuvette de WC et une cuvette de bidet,
 - la découpe d'une (15a) des deux portions concaves à partir du corps monolithique de manière à former une ouverture (60) dans ladite paroi supérieure (13),
 - la fixation de la cuvette (14) d'un deuxième type sélectionné entre une cuvette de WC et une cuvette de bidet au niveau de ladite ouverture

(60).

2. Procédé selon la revendication 1, **caractérisé en ce que** le corps monolithique (12) est réalisé en matériau céramique.
3. Procédé selon la revendication 1, **caractérisé en ce que** le corps monolithique (12) est réalisé par moulage de matériau céramique dans un moule, séchage du matériau moulé, peinture et cuisson successive.
4. Procédé selon la revendication 1, **caractérisé en ce que** ledit corps monolithique (12) est réalisé initialement avec deux portions concaves (15, 15a) adaptées pour réaliser une cuvette de bidet.
5. Procédé selon la revendication 4, **caractérisé en ce que** la portion concave (15a) est découpée en laissant une portion annulaire (25) faisant saillie vers le bas à partir de la paroi supérieure (13), la cuvette de WC (14) étant fixée au corps monolithique (12) de manière à enfermer ladite portion annulaire (25).
6. Article sanitaire pourvu d'une cuvette de bidet (15) et d'une cuvette de WC (14) adjacents l'un à l'autre, comprenant un corps monolithique (12) qui forme une paroi supérieure (13) de l'article sanitaire et une première desdites deux cuvettes (15), ladite paroi supérieure étant pourvue d'une ouverture (60) qui fournit l'accès à la deuxième desdites deux cuvettes (14), **caractérisé en ce que** ladite deuxième cuvette (14) est constituée d'une pièce séparée qui est fixée au dessous du corps monolithique (12) au niveau de ladite ouverture (60).
7. Article sanitaire selon la revendication 6, **caractérisé en ce que** le corps monolithique (12) forme la cuvette de bidet (15) de l'article sanitaire d'une seule pièce.
8. Article sanitaire selon la revendication 6, **caractérisé en ce que** le corps monolithique (12) est réalisé en matériau céramique.
9. Article sanitaire selon la revendication 6, **caractérisé en ce qu'il** comprend un couvercle (16) mobile entre une position verticale pour rendre les cuvettes (14, 15) accessibles et une position horizontale pour couvrir les deux dites cuvettes de manière à fournir un siège.
10. Article sanitaire selon la revendication 6, **caractérisé en ce qu'il** comprend des moyens de commande (23, 24) pour alimenter en eau les cuvettes de bidet et de WC, les moyens de commande étant agencés au niveau de la paroi supérieure (13) de l'article sanitaire entre les deux cuvettes (14, 15) .

11. Article sanitaire selon la revendication 10, **caracté-**
risé en ce que les moyens de commande (23, 24)
sont agencés dans une concavité (22) de la paroi
supérieure (13) de l'article sanitaire, de manière à
ne pas interférer avec le mouvement du couvercle 5
(16) vers la position abaissée horizontale.

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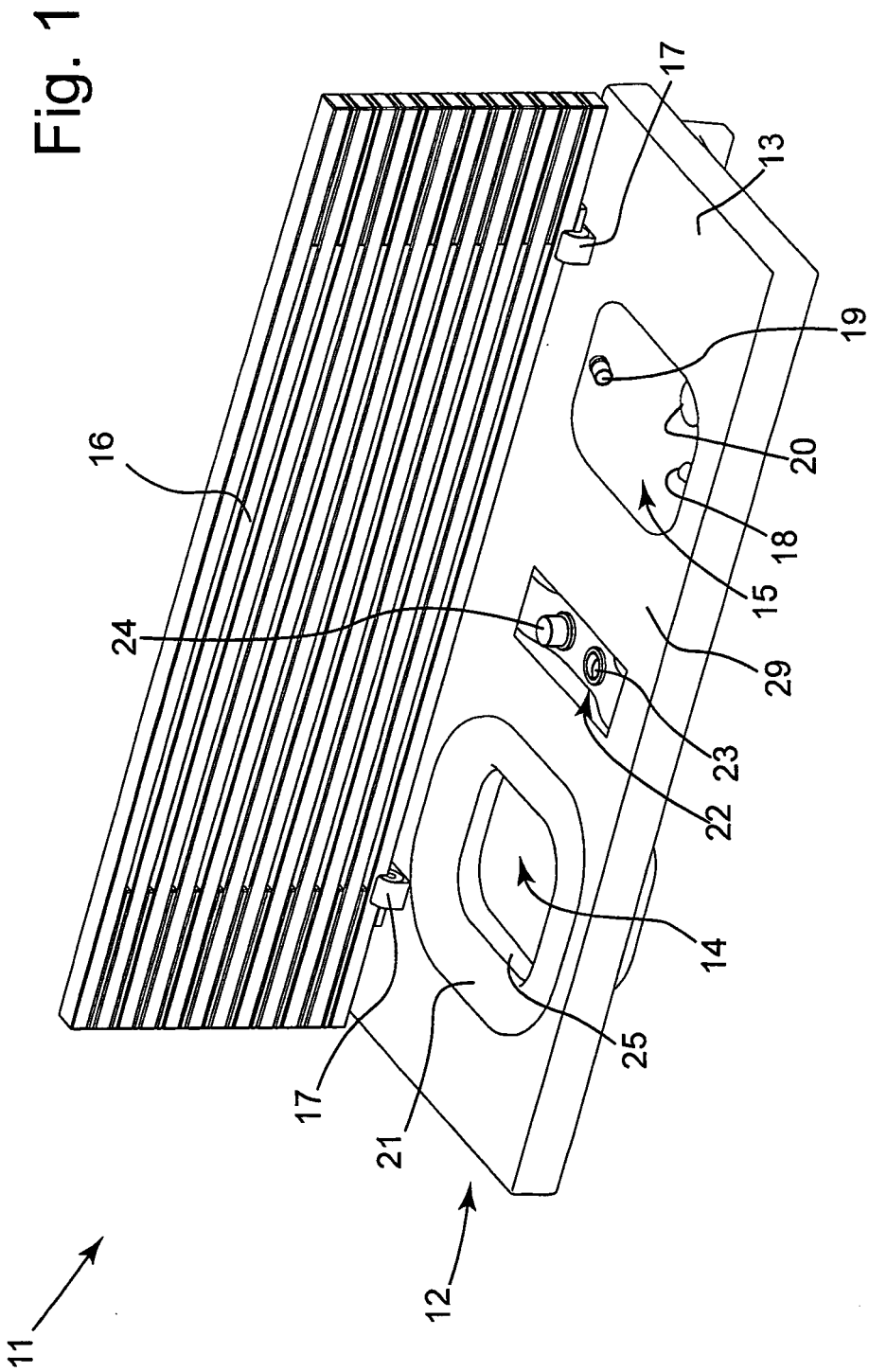
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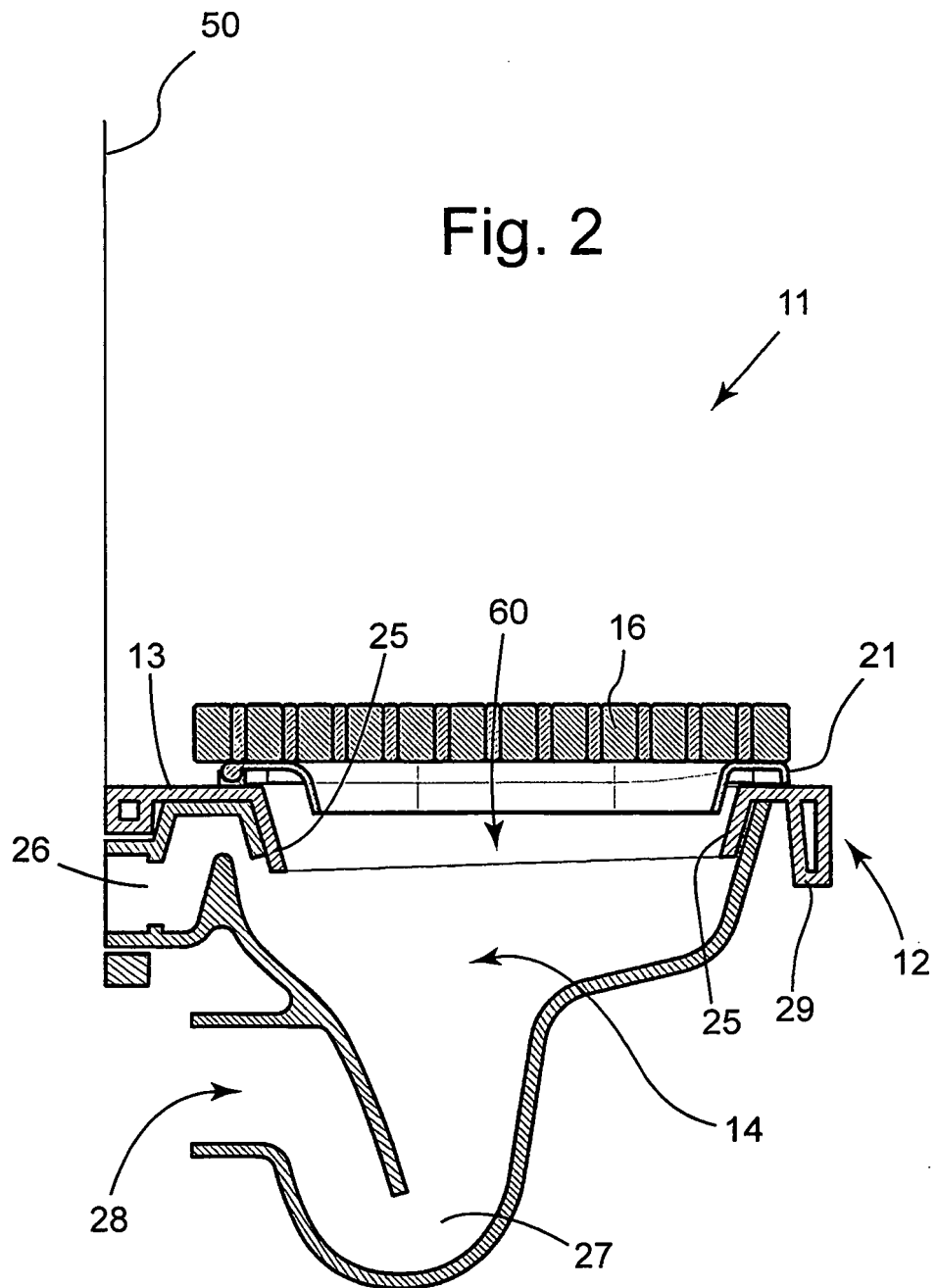
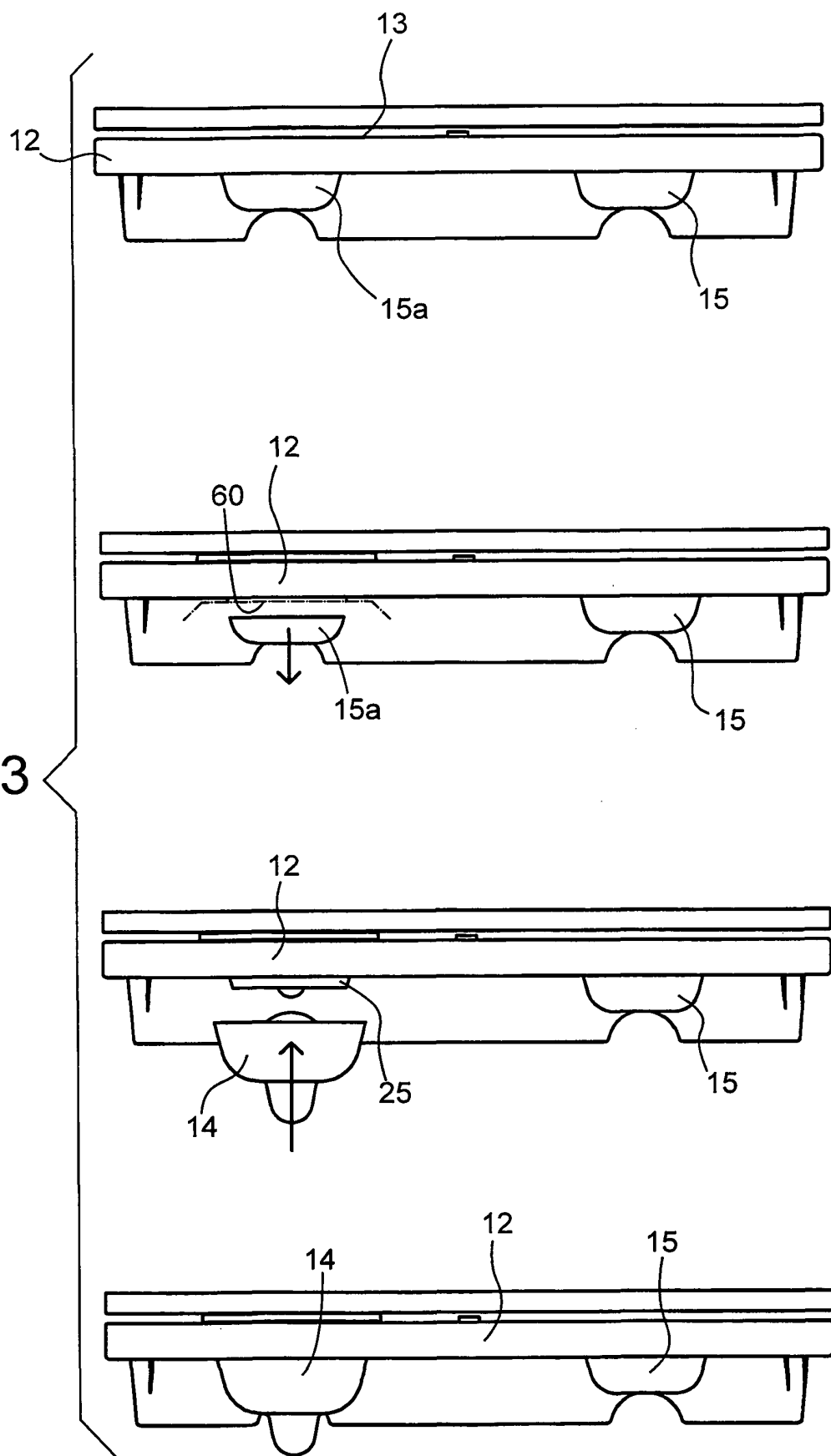
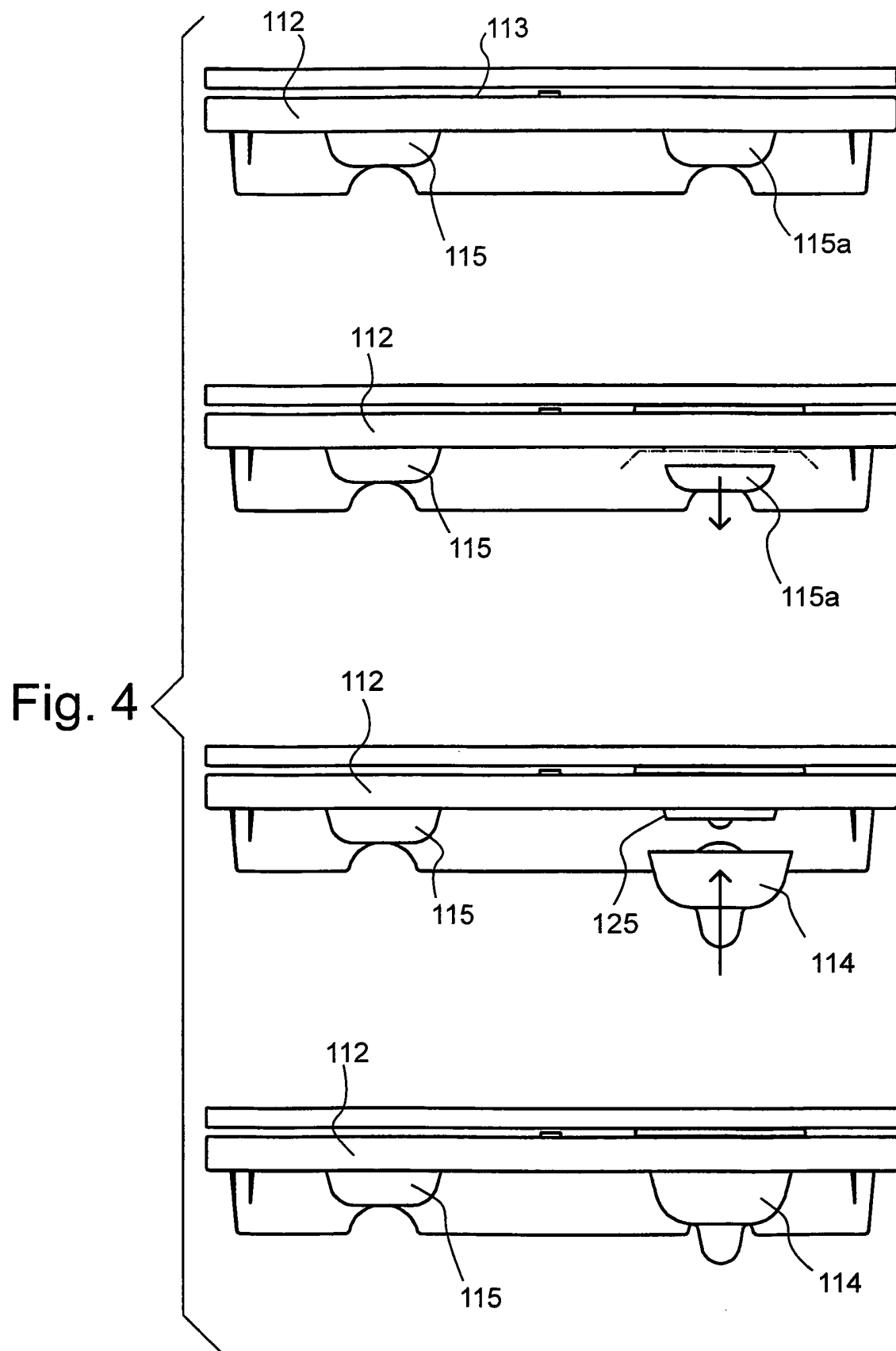


Fig. 3





REFERENCES CITED IN THE DESCRIPTION

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