

(19)



(11)

**EP 3 296 472 B1**

(12)

**EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:

**06.09.2023 Bulletin 2023/36**

(21) Application number: **17196127.9**

(22) Date of filing: **05.01.2011**

(51) International Patent Classification (IPC):  
**E03D 1/012<sup>(2006.01)</sup>**

(52) Cooperative Patent Classification (CPC):  
**E03D 11/14; A47K 10/22; A47K 10/32;**  
**A47K 2010/3233; A47K 2010/3253**

(54) **SANITARY SPACE**

SANITÄRRaum

ESPACE SANITAIRE

(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: **05.01.2010 NL 2004058**

(43) Date of publication of application:  
**21.03.2018 Bulletin 2018/12**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:  
**11701873.9 / 2 521 819**

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## Description

**[0001]** The invention relates to a sanitary space, such as a toilet space, comprising the features of claim 1, i.e. amongst others:

- a floor;
- upright walls along the periphery of the floor;
- a pre-wall arranged in front of a wall, wherein a secondary space is formed between the wall and the pre-wall;
- an installation for flush water supply, such as for instance a flush basin such as a toilet bowl, arranged close to or against the pre-wall;
- a flushing reservoir placed in the secondary space and connected to the installation for flush water supply.

**[0002]** In the context of this invention a pre-wall is understood to mean an element separating the flushing reservoir from the sanitary space. This can for instance be plasterboard, but also a tile layer or block wall.

**[0003]** Such an arrangement in a sanitary space, in particular a toilet space, is usual nowadays. The flushing reservoir is also often referred to here as build-in reservoir. Such a build-in reservoir often comprises a frame arranged against the wall, a container for water arranged in the frame and a flushing mechanism mounted in the container which ensures that, following operation of a flush button, the water flows out on the underside of the container to a toilet bowl. Usually mounted against the frame is a pre-wall which is often covered with tiles. The toilet bowl is then mounted thereagainst and connected to the underside of the container and anchored to the frame. The build-in reservoir can also have, instead of a frame, a self-supporting housing or structure. Such a build-in reservoir is normally used in wet construction. A wall is often also erected here around at least a part of the build-in reservoir and the tiles can be arranged directly onto the reservoir.

**[0004]** In order to be able to carry out maintenance on the flushing reservoir and the flushing mechanism mounted therein, an opening is provided in the front side of the flushing reservoir. Subsequently arranged in the pre-wall is a corresponding opening which is covered with a push plate. In addition to having the function of covering the opening, this push plate has the further function of operating button. The flushing mechanism is activated by pressing on the push plate and the flushing water can flow via the underside of the reservoir to the toilet bowl.

**[0005]** Usually arranged directly above the frame of the build-in reservoir is a horizontal wall part which spans the distance between the pre-wall and the real wall. Different items, such as for instance a storage box, can be placed on such a horizontal wall part, also referred to as shelf. It is also possible in such a shelf embodiment to arrange the push plate in the horizontal wall part.

**[0006]** Two trends can be discerned in the field of toilet

spaces. First of all there is a trend toward having the pre-wall extend over the full height of the toilet space. This creates a wall which is not interrupted by a horizontal part. This produces an aesthetically desirable appearance and, in addition, conduits can be concealed behind the wall. A drawback hereof is that no storage space is available. In addition, a part of the usable space is removed because the pre-wall extends over the full height, and at the same time the secondary space is enlarged. This secondary space can however not be utilized.

**[0007]** The second trend which can be seen in the field of toilet spaces is the reduction in size of the push plate. It is deemed more aesthetically attractive for the push plate to be small. The drawback hereof is that the opening for access to the flushing reservoir is correspondingly smaller, whereby maintenance of the flush reservoir is made more difficult. Push plates are further also being made increasingly flatter or even integrated into the tiles.

**[0008]** Document EP1946688A2, which is seen as forming the closest prior art document, shows a pre-wall of the described type with several container-like elements integrated into the pre-wall to house sanitary accessories, such as a soap dispenser or a toilet paper holder.

**[0009]** The container-like parts are removable to be able to exchange them according to user's needs.

**[0010]** It is now an object of the invention to reduce or even obviate the above stated drawbacks.

**[0011]** This object is achieved according to the invention with a sanitary space according to the preamble which is characterized in that a service opening is arranged in the pre-wall, which service opening is positioned at least partially outside the projection of the flushing reservoir on the pre-wall such that access can be gained via the service opening to the secondary space around the flushing reservoir.

**[0012]** The service opening is thus positioned such that access can be gained via the service opening to the space around the flushing reservoir. Access can then be gained via this secondary space to the flushing reservoir, but also to other objects arranged in the secondary space.

**[0013]** In addition, it is possible to further reduce in size the operating member for operating the flushing mechanism since the operating member no longer has to cover the access to the flushing reservoir. It is further possible to already mount and adjust the operating member in the factory. It is after all not necessary to remove the push plate during assembly to enable access to the flushing reservoir. This is possible according to the invention via the service opening.

**[0014]** In a preferred embodiment of the sanitary space according to the invention the service opening is closable. Closing of the service opening is possible by means of an aesthetically designed plate, a mirror, a tile and so on. Since the closing part no longer need be integrated with a push plate, there is great freedom in design of the part for closing the service opening.

**[0015]** In the sanitary space according to the invention

a box-like part is arranged in the service opening such that a recess is formed in the pre-wall. At least a part of this box-like part is removable to gain access to the secondary space. The partially removable part can for instance be a hatch, although it is recommended that the whole box-like part can be removed in order to thus obtain a maximum opening. In addition, the recess provides the possibility of setting down for instance a tray, a drawer or other items.

**[0016]** Is further possible here to arrange the operating member in the box-like part.

**[0017]** In another embodiment the box-like part comprises a frame, the frame being mounted in the service opening such that the box-like part is releasable. By arranging a frame in the service opening the box-like part or recess can be easily mounted on this frame. This frame moreover makes it easy to remove the box-like part so that access can be gained to the secondary space.

**[0018]** The pre-wall is preferably tiled. By tiling the pre-wall the pre-wall forms one whole with the other walls which are usually also tiled.

**[0019]** In another embodiment of the sanitary space according to the invention the pre-wall comprises on the top side a horizontal part running toward the wall of the sanitary space. Such an embodiment corresponds in appearance with existing sanitary spaces such as toilet spaces with build-in reservoir, wherein a horizontal part is provided on which objects can be placed.

**[0020]** In this embodiment the service opening can be arranged in the horizontal part of the pre-wall. The horizontal part is usually arranged at a height, whereby it is readily possible to look at the top of the horizontal part. By now arranging the service opening in this horizontal part it is easily possible to look into the secondary space.

**[0021]** In yet another embodiment of the sanitary space according to the invention the operating means of the flushing reservoir is arranged on an edge of the service opening.

**[0022]** Because the operating means no longer need be integrated into a push plate, the operating means can be arranged at any desired location. By arranging the operating means on an edge of the service opening it is not necessary to arrange additional openings in the pre-wall for the purpose of arranging the operating means.

**[0023]** In yet another embodiment of the sanitary space according to the invention a dispenser with a container for cleaning liquid is arranged in the secondary space, wherein the dispenser adds cleaning liquid to the flushing reservoir. The cleaning liquid can also be added in the flush pipe directly below the reservoir during flushing.

**[0024]** It is known in the prior art to arrange containers with cleaning liquid either visibly on the pre-wall or in the flushing reservoir itself. Because the secondary space is now easily accessible, diverse additional devices can be placed in this secondary space, such as a dispenser with cleaning liquid. Owing to the easy access maintenance can also be carried out more easily on such devices.

**[0025]** Another embodiment of the sanitary space ac-

cording to the invention comprises a toilet roll holder with a feed opening and a discharge opening, wherein the discharge opening is arranged in the pre-wall and wherein the feed opening is accessible via the service opening. A brush can possibly also be placed in addition to a toilet roll holder/storage.

**[0026]** Using the invention is possible to separate the function of inspection opening and operating member. A cover plate as in the prior art can thus be omitted.

**[0027]** These and other features of the invention are further elucidated with reference to the accompanying drawings.

Figure 1 shows a first embodiment of a sanitary space according to the invention.

Figure 2 shows a cross-sectional view of the embodiment of figure 1.

Figure 3 shows a second, not claimed, embodiment of a sanitary space according to the invention.

Figure 4 shows a third embodiment of a sanitary space according to the invention.

Figure 5 shows a fourth embodiment of a sanitary space according to the invention with partially cut-away parts.

Figure 6 shows a fifth embodiment of a sanitary space according to the invention.

Figure 7 shows a sixth embodiment of a sanitary space according to the invention.

**[0028]** Figure 1 shows a first embodiment 1 of a sanitary space, in particular a toilet space, according to the invention. Toilet space 1 has a floor 2. Walls 3 stand along the periphery of floor 2.

**[0029]** A pre-wall 4 is arranged in front of one of the walls 3 (see also figure 2). This pre-wall 4 extends over the full height of toilet space 1. A secondary space 5 is formed between wall 3 and pre-wall 4. A frame 6 with a flushing reservoir 7 is arranged in this secondary space 5.

**[0030]** A toilet bowl 8 is further arranged against pre-wall 4. Flushing reservoir 7 is connected via a pipe 9 to this toilet bowl 8.

**[0031]** Shown in broken lines 10 in figure 1 is the projection of flushing reservoir 7 on pre-wall 4. A service opening 11 is arranged in pre-wall 4 outside this projection 10. Via this service opening 11 it is possible to access the secondary space 5 from the toilet space itself, i.e. from the space in which toilet bowl 8 is present, in order to thus carry out maintenance on for instance flushing reservoir 7.

**[0032]** Placed in service opening 11 is a box-like part 12 which forms a recess in pre-wall 4. Items can be placed in this recess 12, such as for instance a stack of magazines.

**[0033]** Figure 3 shows a second, not claimed, embodiment of a toilet space 20 according to the invention. This toilet space 20 also has a floor 21 and walls 22 standing along the periphery of the floor.

**[0034]** A pre-wall 23 is arranged in front of one of the

walls 22. In this embodiment this pre-wall 23 does not extend as far as the ceiling. A horizontal part 24 is arranged on the top side. This horizontal part 24 is removable so that a service opening is formed through which access can be gained to the secondary space between wall 22 and pre-wall 23.

**[0035]** Further arranged on pre-wall 23 are a toilet bowl 25 and an aesthetically designed push-button 26 with which the flushing mechanism arranged in the secondary space can be operated.

**[0036]** Figure 4 shows a third embodiment 30 of the invention. Toilet space 30 here also has a floor 31 and walls 32 arranged along the periphery of floor 31. A pre-wall 33 extending over the full height is arranged in front of one of the walls 32.

**[0037]** Formed between wall 31 and pre-wall 32 is a secondary space in which is placed a flushing reservoir (not shown) on which toilet bowl 33 is mounted. This corresponds with the embodiment according to figure 1.

**[0038]** Arranged in pre-wall 32 above the flushing reservoir is a service opening 34 in which is arranged a box-like part 35 which provides a recess in pre-wall 32 and which is at least partly removable.

**[0039]** A feed opening 36 is arranged in a side wall of box-like part 35. A discharge opening 37 is arranged adjacently of toilet bowl 33 in pre-wall 32. The feed opening 36 and the discharge opening are connected to each other via a channel 38. This channel 38 is arranged in the secondary space. Toilet rolls 39 can for instance be supplied to channel 38 via feed opening 36. A user can then remove toilet rolls 39 as required via discharge opening 37.

**[0040]** Figure 5 shows a fourth embodiment 40 of a sanitary space according to the invention. The embodiment 40 has a build-in reservoir 41 provided with an inspection opening 42 which extends over both the front side and the top side of build-in reservoir 41. A pre-wall 43 is arranged in front of build-in reservoir 41.

**[0041]** Placed in the opening in pre-wall 43 is a box-like part 44 which protrudes partially into inspection opening 42. Arranged in the bottom of box-like part 44 is an operating member 45 for operating the flushing mechanism in build-in reservoir 41.

**[0042]** When box-like part 44 is removed, access can be gained to the secondary space behind the pre-wall and to inspection opening 42 of build-in reservoir 41.

**[0043]** Figure 6 shows a fifth embodiment of a toilet space 50 according to the invention. A flushing reservoir 53 is arranged in secondary space 52 behind a pre-wall 51. Flushing reservoir 53 is provided with two operating pins 54, 55 with which the flushing mechanism in flushing reservoir 53 can be operated.

**[0044]** Arranged adjacently of flushing reservoir 53 in secondary space 52 is a duct 56 which debouches at the opening 57 in pre-wall 51. This duct 56 can be used as storage for toilet rolls which can be removed via opening 57.

**[0045]** Both duct 56 and flushing reservoir 53 are open

on the top side. These openings, as well as secondary space 52, are closed by box-like part 58 which serves as bridge between pre-wall 51 and the wall lying therebehind.

**[0046]** Box-like part 58 has on either side a flange 59 which covers the upright parts 60 of pre-wall 51 and provides for a suitable finishing. Flanges 59 can be shortened in order to make the box-like part 58 suitable for varying dimensions.

**[0047]** Arranged on the underside of box-like part 58 are two operating buttons 61, 62 with which the operating pins 54, 55 can be operated.

**[0048]** Figure 7 shows a cross-sectional view of a part of a sanitary space according to the invention. A service opening 71 is provided in a pre-wall 70. A frame 72 is arranged fixedly on the edge of this service opening 71. This frame 72 serves the purpose, among others, of finishing the edge of service opening 71.

**[0049]** A box-like part 73 is arranged in frame 72. This box-like part 73 provides for a recess in pre-wall 70. Box-like part 73 is provided with a flange 74 with which box-like part 73 can be fixed to frame 72, for instance with a bolt 75.

**[0050]** According to the invention the box-like part 73 can be easily taken out of pre-wall 70 by loosening the bolts 75. Easy access can hereby be gained to service opening 71 and the space behind pre-wall 70.

## 30 Claims

1. Sanitary space (30), such as a toilet space, comprising:

- 35 - a floor (31);
- upright walls (32) along the periphery of the floor (31);
- a pre-wall (33) arranged in front of a wall (32), wherein a secondary space is formed between the wall (32) and the pre-wall (33);
- 40 - an installation for flush water supply, such as for instance a flush basin such as a toilet bowl, arranged close to or against the pre-wall (33);
- 45 - a flushing reservoir placed in the secondary space and connected to the installation for flush water supply;

wherein a service opening (34) is arranged in the pre-wall (33), which service opening (34) is positioned at least partially outside the projection of the flushing reservoir on the pre-wall (33) such that access can be gained via the service opening (34) to the secondary space around the flushing reservoir

**characterized in that**

a box-like part (35) is arranged in the service opening (34) such that a recess is formed

- in the pre-wall (33); and  
wherein at least a part of the box-like part (35) is removable to gain access to the secondary space.
2. Sanitary space as claimed in claim 1, wherein the partially removable part is a hatch. 5
  3. Sanitary space (30) as claimed in claim 1 or 2, wherein an operating member for operating the flushing reservoir is arranged in the box-like part (35). 10
  4. Sanitary space (30) as claimed in any of the foregoing claims, wherein the box-like part (35) comprises a frame, the frame being mounted in the service opening (34) such that the box-like part (35) is releasable. 15
  5. Sanitary space (30) as claimed in any of the foregoing claims, wherein the pre-wall (33) is tiled. 20
  6. Sanitary space (30) as claimed in any of the foregoing claims, wherein the pre-wall (33) comprises on the top side a horizontal part running toward the wall (32) of the sanitary space (30). 25
  7. Sanitary space (30) as claimed in claim 6, wherein the service opening (34) is arranged in the horizontal part of the pre-wall (33). 30
  8. Sanitary space (30) as claimed in any of the foregoing claims, wherein the operating means of the flushing reservoir is arranged on an edge of the service opening (34). 35
  9. Sanitary space (30) as claimed in any of the foregoing claims, wherein a dispenser with a container for cleaning liquid is arranged in the secondary space, wherein the dispenser adds cleaning liquid to the flushing reservoir. 40
  10. Sanitary space (30) as claimed in any of the foregoing claims, comprising a toilet roll holder (38) with a feed opening (36) and a discharge opening (37), wherein the discharge opening is arranged in the pre-wall (33) and wherein the feed opening (36) is accessible via the service opening. 45
- Patentansprüche** 50
1. Sanitärraum (30), wie ein Toilettenraum, umfassend:
    - einen Boden (31); 55
    - aufrechte Wände (32) entlang des Umfangs des Bodens (31);
    - eine Vorwand (33), die vor einer Wand (32)
- angeordnet ist, wobei ein Sekundärraum zwischen der Wand (32) und der Vorwand (33) gebildet ist;
- eine Installation zur Spülwasserversorgung, wie beispielsweise ein Spülbecken wie eine Toilettenschüssel, wobei die Installation nahe oder an der Vorwand (33) angeordnet ist;
  - einen Spülbehälter, der in dem Sekundärraum angeordnet ist und mit der Installation zur Spülwasserversorgung verbunden ist;
  - wobei eine Wartungsöffnung (34) in der Vorwand (33) angeordnet und zumindest teilweise außerhalb der Projektion des Spülbehälters an der Vorwand (33) positioniert ist, so dass ein Zugang zu dem Sekundärraum um den Spülbehälter herum über die Wartungsöffnung (34) ermöglicht ist,
- dadurch gekennzeichnet, dass**
- ein boxartiges Teil (35) in der Wartungsöffnung (34) angeordnet ist, so dass eine Aussparung in der Vorwand (33) gebildet ist;
  - wobei wenigstens ein Teil des boxartigen Teils (35) abnehmbar ist, um Zugang zum Sekundärraum zu erhalten.
2. Sanitärraum (30) nach Anspruch 1, wobei das teilweise abnehmbare Teil eine Lukenabdeckung ist.
  3. Sanitärraum (30) nach Anspruch 1 oder 2, wobei ein Betätigungselement zum Betätigen des Spülbehälters in dem boxartigen Teil (35) angeordnet ist.
  4. Sanitärraum (30) nach einem der vorhergehenden Ansprüche, wobei das boxartige Teil (35) einen Rahmen umfasst, der in der Wartungsöffnung (34) derart angebracht ist, dass das boxartige Teil (35) lösbar ist.
  5. Sanitärraum (30) nach einem der vorhergehenden Ansprüche, wobei die Vorwand (33) gefliest ist.
  6. Sanitärraum (30) nach einem der vorhergehenden Ansprüche, wobei die Vorwand (33) auf der Oberseite einen horizontalen Teil umfasst, der zu der Wand (32) des Sanitärraums (30) hin verläuft.
  7. Sanitärraum (30) nach Anspruch 6, wobei die Wartungsöffnung (34) in dem horizontalen Teil der Vorwand (33) angeordnet ist.
  8. Sanitärraum (30) nach einem der vorhergehenden Ansprüche, wobei das Betätigungsmittel des Spülbehälters an einer Kante der Wartungsöffnung (34) angeordnet ist.
  9. Sanitärraum (30) nach einem der vorhergehenden

Ansprüche, wobei ein Spender mit einem Behälter für Reinigungsflüssigkeit in dem Sekundärraum angeordnet ist, wobei der Spender Reinigungsflüssigkeit zu dem Spülbehälter hinzufügt.

10. Sanitärraum (30) nach einem der vorhergehenden Ansprüche, umfassend einen Toilettenpapierrollenhalter (38) mit einer Zuführöffnung (36) und einer Abführöffnung (37), wobei die Abführöffnung (37) in der Vorwand (33) angeordnet ist und wobei die Zuführöffnung (36) über die Wartungsöffnung zugänglich ist.

### Revendications

1. Espace sanitaire (30), tel qu'un espace de toilettes, comprenant :

- un plancher (31) ;
- des parois verticales (32) sur la périphérie du plancher (31) ;
- une paroi d'habillage (33) disposée devant une paroi (32), dans lequel un espace secondaire est formé entre la paroi (32) et la paroi d'habillage (33) ;
- une installation d'alimentation en eau de rinçage, tel que par exemple un bassin de rinçage comme une cuvette de WC, disposée à proximité ou contre la paroi d'habillage (33) ;
- un réservoir de chasse d'eau placé dans l'espace secondaire et raccordé à l'installation d'alimentation en eau de rinçage ;

dans lequel une ouverture de service (34) est disposée dans la paroi d'habillage (33), laquelle ouverture de service (34) est positionnée au moins partiellement à l'extérieur de la projection du réservoir de chasse d'eau sur la paroi d'habillage (33) de façon à permettre un accès, par le biais de l'ouverture de service (34), à l'espace secondaire autour du réservoir de chasse d'eau

#### caractérisé en ce que

une partie de type boîte (35) est disposée dans l'ouverture de service (34) de façon à former un évidement dans la paroi d'habillage (33) ; et dans lequel au moins une partie de la partie de type boîte (35) peut être retirée pour permettre un accès à l'espace secondaire.

2. Espace sanitaire selon la revendication 1, dans lequel la partie pouvant partiellement être retirée est une trappe.

3. Espace sanitaire (30) selon la revendication 1 ou la revendication 2, dans lequel un élément de mise en œuvre destiné à mettre en œuvre le réservoir de chasse d'eau est disposé dans la partie de type boîte (35).

4. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, dans lequel la partie de type boîte (35) comprend un bâti, le bâti étant monté dans l'ouverture de service (34) de sorte que la partie de type boîte (35) puisse être délogée.

5. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, dans lequel la paroi d'habillage (33) est carrelée.

6. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, dans lequel la paroi d'habillage (33) comprend, du côté haut, une partie horizontale allant vers la paroi (32) de l'espace sanitaire (30) .

7. Espace sanitaire (30) selon la revendication 6, dans lequel l'ouverture de service (34) est disposée dans la partie horizontale de la paroi d'habillage (33).

8. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, dans lequel le moyen de mise en œuvre du réservoir de chasse d'eau est disposé sur un bord de l'ouverture de service (34).

9. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, dans lequel un distributeur doté d'un contenant de liquide de nettoyage est disposé dans l'espace secondaire, dans lequel le distributeur ajoute du liquide de nettoyage au réservoir de chasse d'eau.

10. Espace sanitaire (30) selon l'une quelconque des revendications précédentes, comprenant porte-rouleau de papier hygiénique (38) doté d'une ouverture d'alimentation (36) et d'une ouverture de distribution (37), dans lequel l'ouverture de distribution est disposée dans la paroi d'habillage (33) et dans lequel l'ouverture d'alimentation (36) est accessible par le biais de l'ouverture de service.

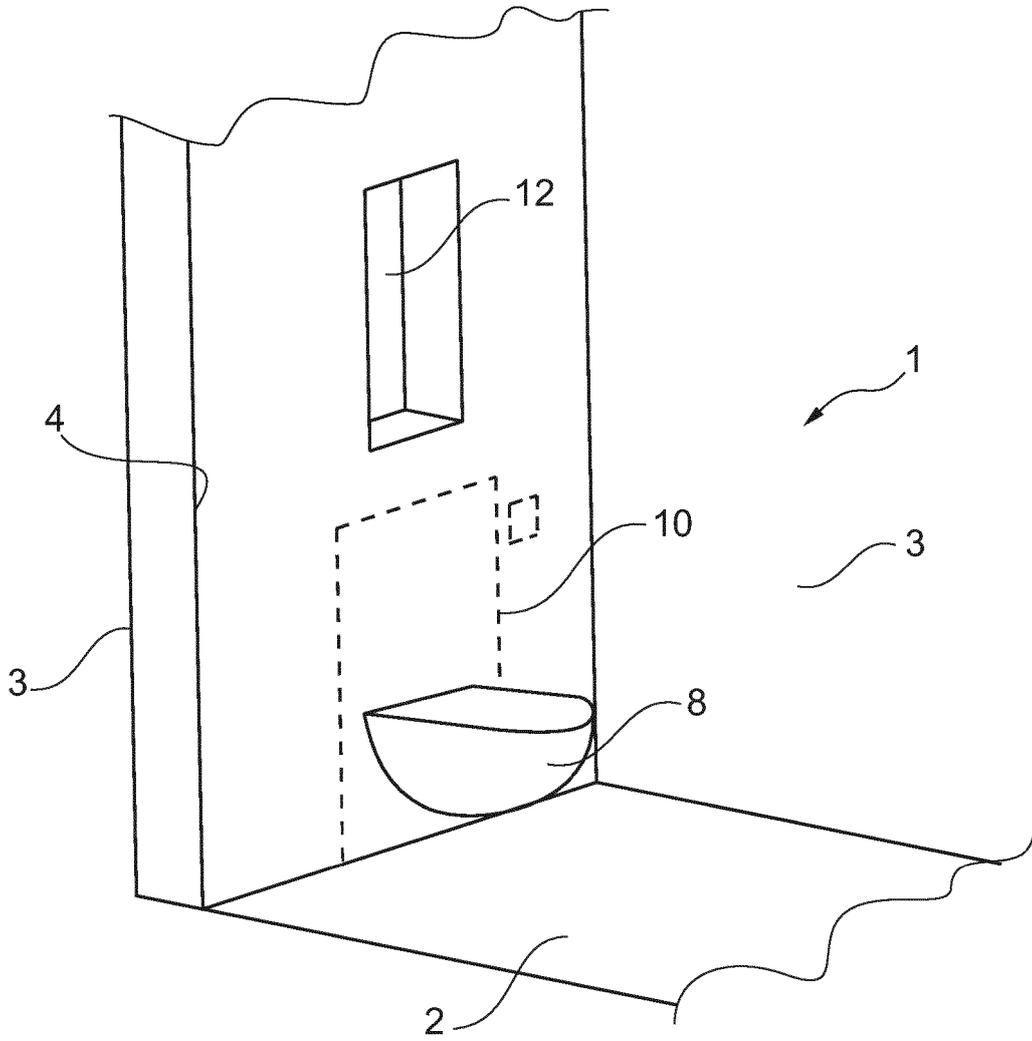


Fig. 1

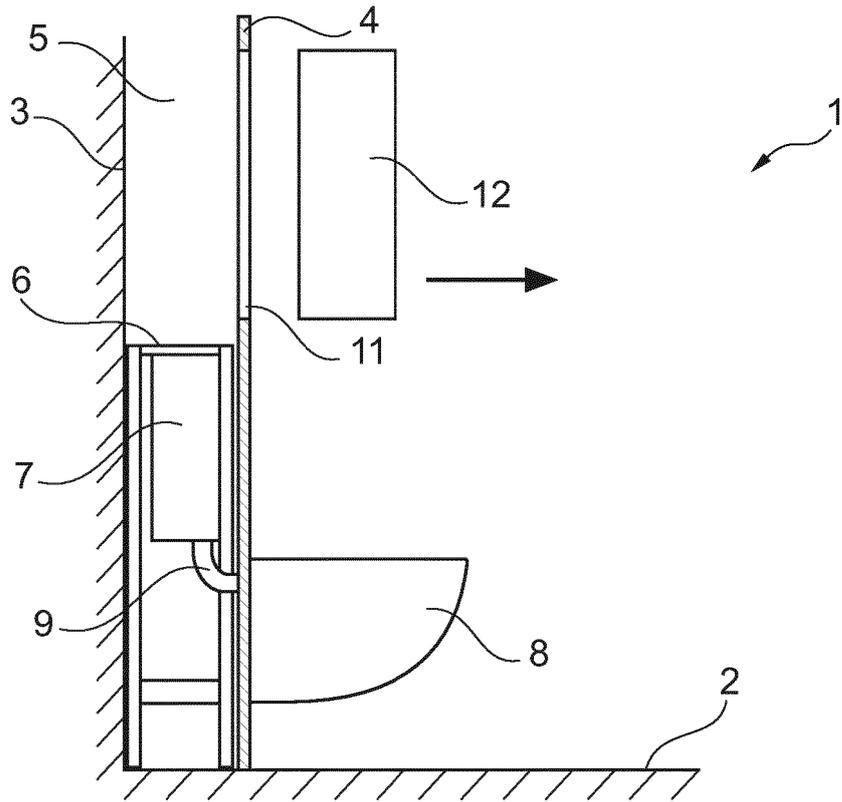


Fig. 2

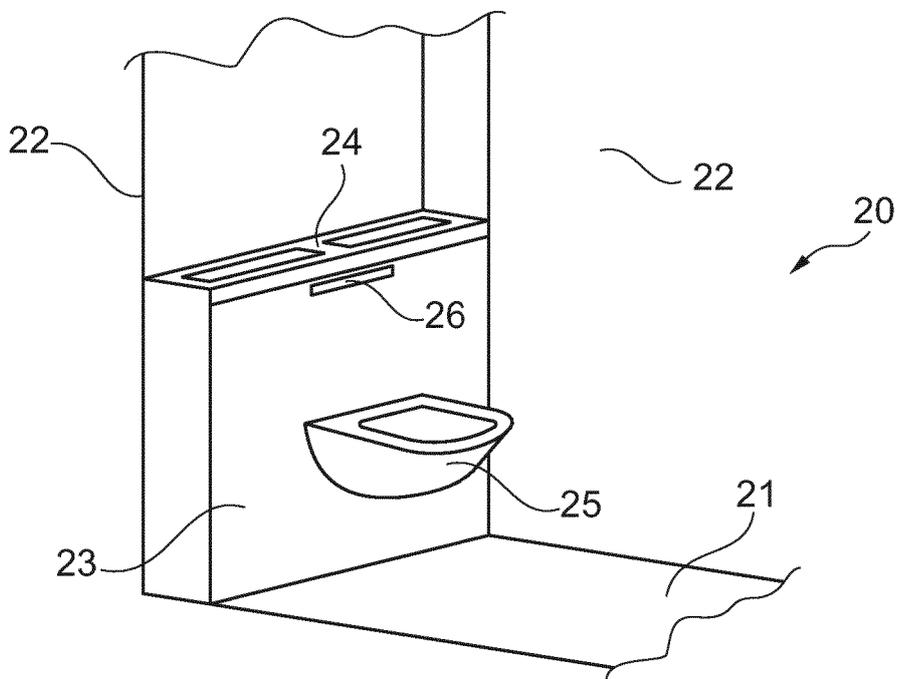


Fig. 3

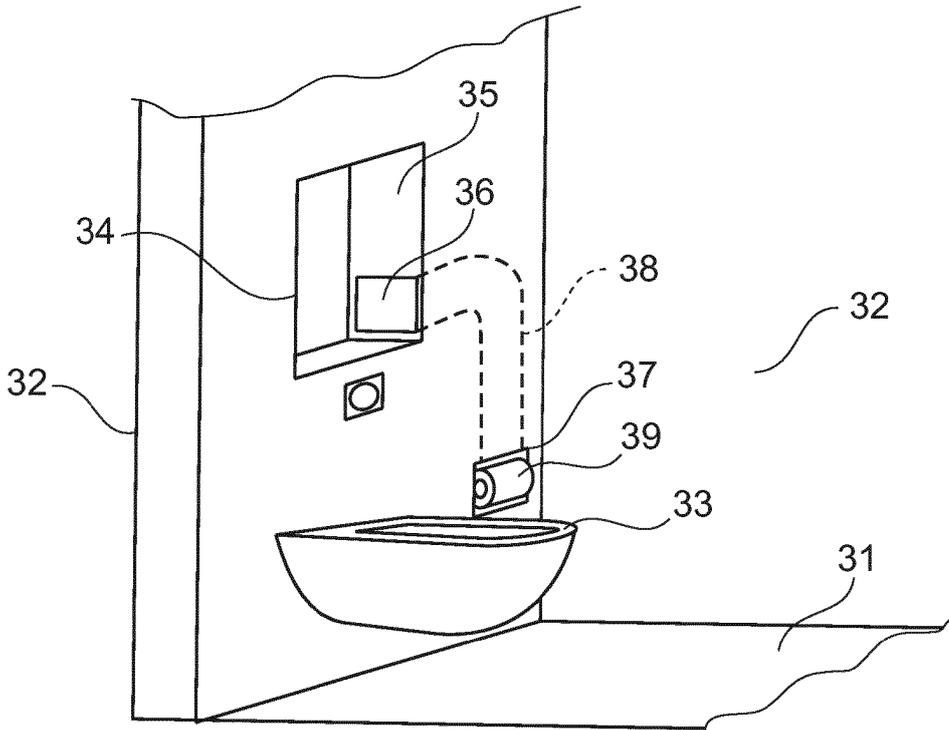


Fig. 4

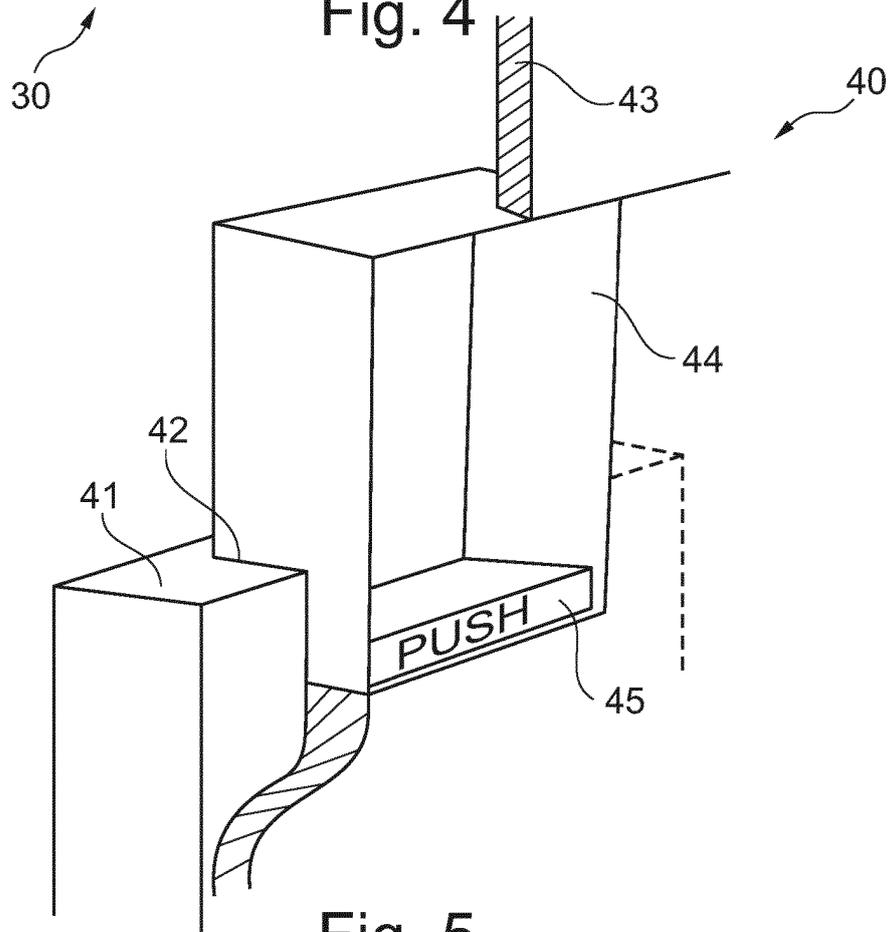


Fig. 5

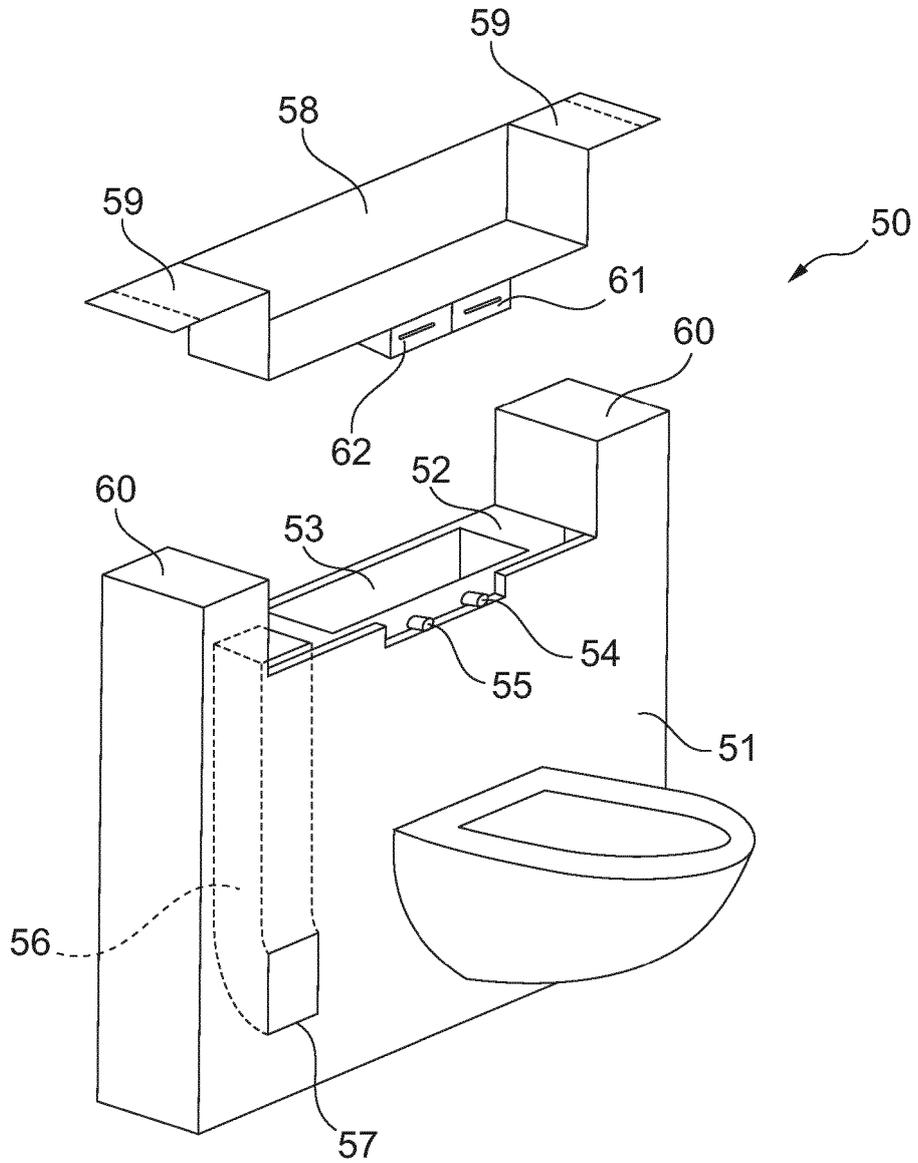


Fig. 6

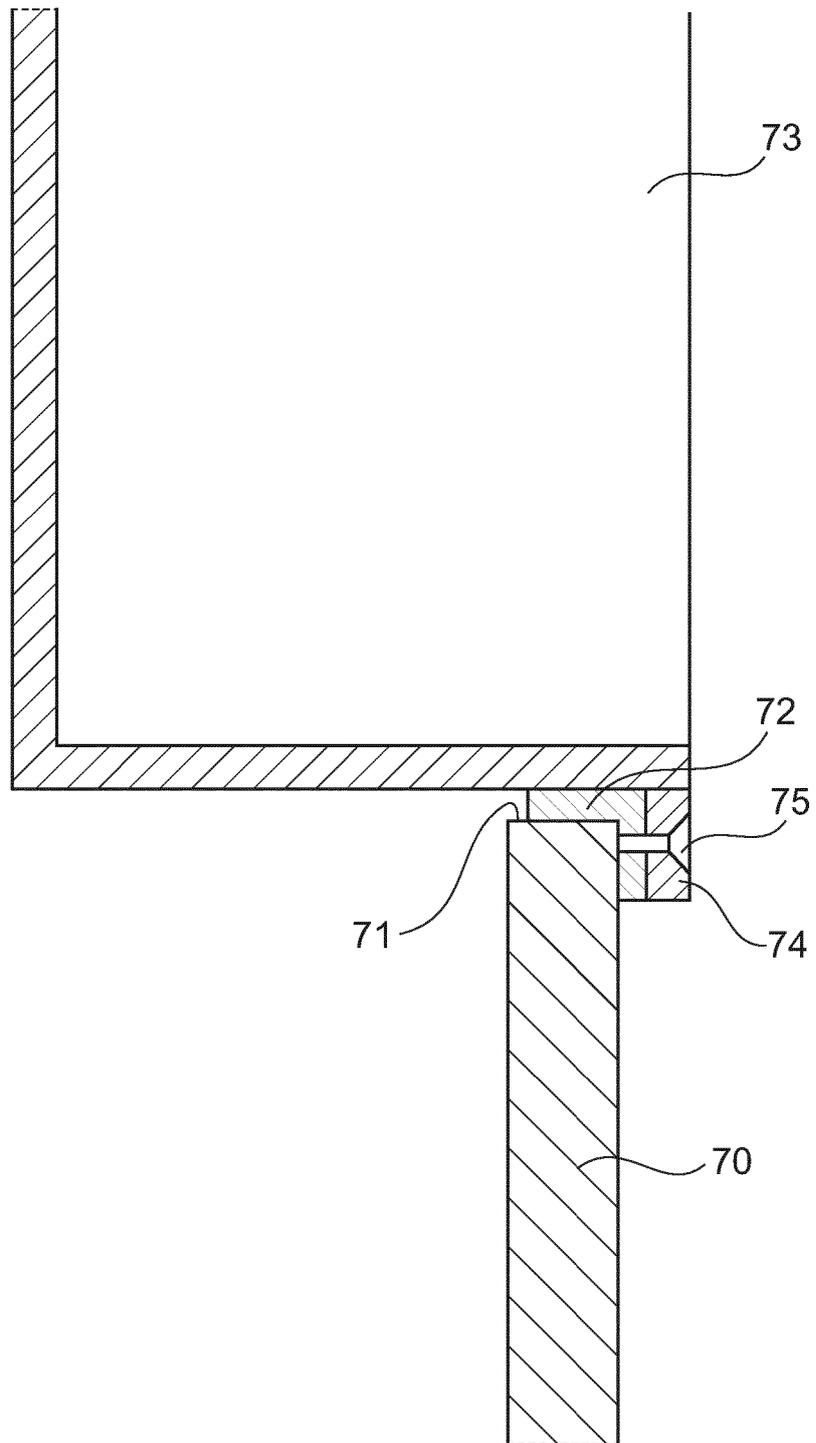


Fig. 7

**REFERENCES CITED IN THE DESCRIPTION**

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