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(54) **DRAIN WITH LIFTING MEANS**

(57) The invention relates to a drain, comprising:
- a collecting tray for collecting water for draining, wherein
the collecting tray has an outlet opening for connection
to an outlet pipe; and
- a grating arranged in the collecting tray;
wherein at least one part of the grating is displaceable

between a first position, in which the at least one part of
the grating lies flush with or below the upper surface of
the grating, and a second position in which the at least
one part of the grating lies above the level of the upper
surface of the grating in the first position.

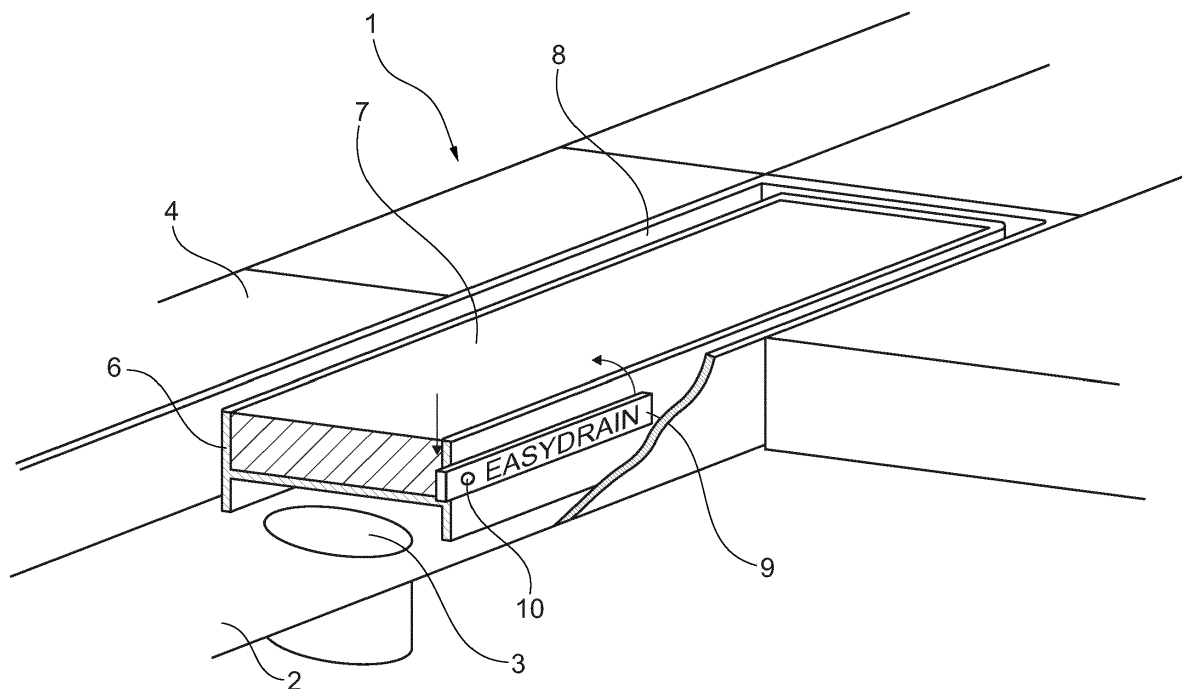


Fig. 1

Description

[0001] The invention relates to a drain comprising:

- a collecting tray for collecting water for draining, wherein the collecting tray has an outlet opening for connection to an outlet pipe; and
- a grating arranged in the collecting tray.

[0002] Drains are known with diverse types of grating, including metal gratings, which are provided in the upper surface with openings through which the water for draining can flow into the collecting tray, but also so-called tile-shaped gratings.

[0003] A tile-shaped grating is a holder into which a tile is placed and which usually matches the tiles of the surrounding floor. The dimensions of the tile-shaped grating are slightly smaller here than the underlying collecting tray. Thus formed between the surrounding floor and the tile-shaped grating is a gap along which the water for draining can flow into the collecting tray.

[0004] Periodic cleaning of drains is desirable. The grating has to be removed here so that the underlying collecting tray can be cleaned. Removal of the grating is often difficult because there are few gripping points. It is known for this purpose to also supply a separate hook which can be inserted into an opening in the grating or into the gap along a tile-shaped grating in order to thus lift the grating. These separate hooks are often lost, whereby an attempt must be made to remove the gratings by hand. This is difficult and, certainly in the case of a tile-shaped grating which is relatively heavy due to the integrated tile, often impossible.

[0005] There is a further trend in gratings, and particularly the tile-shaped grating, to embody the design such that the drain is as inconspicuous as possible in the floor. Arranging a mark of origin, such as a brand name and/or logo, is then dispensed with for aesthetic reasons. From the viewpoint of the manufacturer of the drain it is however desirable to arrange a mark of origin.

[0006] It is now an object of the invention to reduce or even obviate the above stated drawbacks.

[0007] This object is achieved according to the invention with a drain according to the preamble, which is characterized in that at least one part of the grating is displaceable between a first position, in which the at least one part of the grating lies flush with or below the upper surface of the grating, and a second position in which the at least one part of the grating lies above the level of the upper surface of the grating in the first position.

[0008] The part of the grating which is displaceable from the first position to the second position provides a gripping point in that it protrudes relative to the upper surface of the grating in the first position. This protruding part makes it possible to grip the grating and lift it out of the drain.

[0009] The collecting tray can be formed as a tray with a bottom and upright walls along the edge of the bottom,

but can also be formed as a recess in the surrounding floor.

[0010] A brand name or logo which is only visible when the displaceable part of the grating is in the second position can in addition be provided on for instance the displaceable part of the grating. The drain is thus as inconspicuous as possible in the first position, while the brand name or logo can have a prominent position during removal of the grating, when the displaceable part is in the second position.

[0011] In an embodiment of the drain according to the invention the at least one part of the grating comprises an arm arranged pivotally on the grating, wherein in the second position the free end of the arm protrudes above the upper surface of the grating.

[0012] The grating can be lifted with the arm. The arm preferably extends on either side of the pivot point so that pressing in the arm on the one side causes the other part of the arm to move upward.

[0013] A brand name or logo can further be provided at a suitable position on the arm.

[0014] The arm can be arranged here on a side of the grating or can be arranged in the upper surface of the grating.

[0015] The arm can further also be embodied as a U-shaped bracket, with both legs of the bracket protruding into either side of the grating. The grating can then be provided with a recess, whereby the U-shaped bracket can be gripped and pivoted upward so as to thus remove the grating.

[0016] In a further embodiment of the drain according to the invention the arm is arranged on the outer side of the grating adjacent to the collecting tray. Particularly in the case of a tile-shaped grating a gap is formed around the grating and bounded by the collecting tray. The arm can be lowered into this gap, whereby the arm is hardly visible in the first position. An identifying mark can be arranged on the part of the arm that is visible when it has been lowered into the gap. A brand name can thus still be arranged in a subtle manner on the drain.

[0017] Another embodiment of the drain according to the invention comprises lifting means arranged between the collecting tray and the grating for the purpose of lifting the grating from the first position to the second position.

[0018] In this embodiment a part of or the whole grating can be moved upward, whereby the grating forms a threshold. The grating can hereby be removed easily from the drain.

[0019] In a variant in which the drain is elongate and is arranged in the floor at the position of a door, such as a shower door, the drain with the grating in the second position can also function as threshold, whereby foam and water are held in and can flow directly into the drain, and there is no risk of foam and water flowing across the grating.

[0020] Another advantage of the lifting means is that the overall depth of the drain can be reduced. The grating then has to be moved into the second position before

use. The outlet opening in the collecting tray is then hereby left clear. After use the grating can be moved back into the first position in which it closes the outlet opening.

[0021] In a further embodiment the lifting means comprise spring means and a locking for locking the spring means in the first position. The spring means compensate the weight of the grating, whereby the grating is automatically urged into the second position. The grating can then be held in the first position by the locking.

[0022] In yet another embodiment the lifting means comprise two wedge-shaped elements which rise against each other and wherein one element is arranged slidably on the grating, and wherein the other element is arranged in the collecting tray.

[0023] In yet another embodiment the locking is released by pressing the spring means further in beyond the first position. The same principle is used for instance in a ballpoint pen in order to move the pen outward.

[0024] According to the invention the at least one part of the grating can be a pin arranged between a pressed-in position and a protruding position. This pin has a mechanism similar to a ballpoint mechanism, whereby the pin can be displaced between the two positions each time this pin is pressed in.

[0025] The pin preferably protrudes through an opening in the upper surface of the grating.

[0026] It is highly preferable to arrange the at least one part of the grating, which is displaceable between two positions, on for instance an adjusting foot. Adjusting feet are often used to place the grating at the desired height in the collecting tray. The adjusting foot is for instance a plastic part here which can be attached to the grating.

[0027] In yet another embodiment of the drain according to the invention the grating comprises a holder for holding a floor part such as a tile.

[0028] The invention further comprises a combination of a floor and a drain according to the invention, wherein the drain is arranged in the floor and in the first position the upper surface of the grating lies substantially flush with the upper surface of the floor.

[0029] These and other features of the invention are further elucidated with reference to the accompanying drawings.

Figure 1 shows a perspective view with partially cut-away parts of a first embodiment of a drain according to the invention.

Figures 2A and 2B show cross-sections of a second embodiment of a drain according to the invention in two different positions.

Figure 3 shows a third embodiment of a grating for a drain according to the invention.

Figure 4 shows a fourth embodiment of a grating for a drain according to the invention.

Figure 5 shows a fifth embodiment of a grating for a drain according to the invention.

[0030] Figure 1 shows a first embodiment of a drain 1

according to the invention. This drain 1 has a collecting tray 2 with an outlet opening 3. Collecting tray 2 is surrounded by a tile floor 4. Placed in collecting tray 2 is a so-called tile-shaped grating which comprises a holder 6 with a tile 7 therein. The upper surface of tile 7 lies substantially flush with the upper surface of tile floor 4.

[0031] Formed between tile floor 4, or the upright edge of collecting tray 2, and tile-shaped grating 6, 7 is a gap 8 along which water can flow and enter collecting tray 2.

[0032] An arm 9 which can rotate about a pivot point 10 is arranged on the outer side of the tile-shaped grating. When the one side of arm 9 is pressed, the arm will pivot upward, whereby a part by which the grating can be gripped protrudes above the upper surface of the grating.

[0033] On the side of the arm can be arranged a brand name which becomes visible when arm 9 is pivoted upward.

[0034] Figures 2A and 2B show a second embodiment of a drain 20 according to the invention. Drain 20 has a collecting tray 21 with an outlet opening 22. Tiles 23 of a surrounding floor are arranged on either side of collecting tray 21.

[0035] A metal grating 24 is further placed in collecting tray 21, wherein openings 25 are arranged in the upper surface of grating 24.

[0036] Arranged between grating 24 and collecting tray 21 are lifting means, each comprising a spring 26, which urge grating 24 upward. The lifting means further comprise two telescopic housing parts 27 which are provided with co-acting protrusions 28. With housing parts 27, protrusions 28 and grooves optionally arranged in housing parts 27 the same operation as a ballpoint pen can be obtained. This then makes it possible to hold grating 24 in the first position as shown in figure 2A. The locking will be released by pressing the grating 24 slightly further in, whereby springs 26 can press grating 24 to the second position (shown in figure 2B).

[0037] In figure 2B grating 24 is in the second position, whereby it forms a barrier to for instance foam 29, and whereby foam 29 is prevented from flowing over grating 24 and to the opposite part of tiles 23.

[0038] If desired, a logo or brand name can be provided on the side wall of grating 24 so that the mark of origin is visible in the second position. Grating 24 can in addition be easily picked up in this position.

[0039] Figure 3 shows a third embodiment of a grating 30 for a drain according to the invention.

[0040] Grating 30 is a bent plate, wherein an elongate opening 32 is arranged in upper surface 31. An elongate plate 33 is arranged pivotally in this elongate opening 32. A logo can for instance be provided on this plate 33.

[0041] Plate 33 has a pivot shaft which is preferably arranged out of centre so that plate 33 lies flush with upper surface 31 in rest position. Pressing on the one side of plate 33 will cause the other end to move upward, whereby grating 30 can then be removed from a collecting tray.

[0042] Figure 4 shows a fourth embodiment of a grating

40 for a drain according to the invention. Grating 40 is also a bent plate, wherein different openings 42 are arranged in upper surface 41 for passage of water falling thereon.

[0043] A removing element 43 is arranged in one of the openings 42. This removing element 43 has a pin 44 which can be moved outward in similar manner as a ball-point pen by being pressed in. Grating 40 can then be taken out using protruding pin 44.

[0044] Figure 5 shows a fifth embodiment of a grating 50 for a drain according to the invention. Provided on a side 51 in grating 50 is a slot 52 in which a wedge-shaped element 53 is slidably arranged. This wedge-shaped element 53 rises against a second wedge-shaped element 54 which is for instance arranged in the collecting tray.

[0045] Grating 50 will be pressed upward by now sliding the first wedge-shaped element 53 against the second wedge-shaped element 54, after which grating 50 can be gripped and taken out.

Claims

1. Drain comprising:

- a collecting tray for collecting water for draining, wherein the collecting tray has an outlet opening for connection to an outlet pipe; and
- a grating arranged in the collecting tray;

characterized in that

at least one part of the grating is displaceable between a first position, in which the at least one part of the grating lies flush with or below the upper surface of the grating, and a second position in which the at least one part of the grating lies above the level of the upper surface of the grating in the first position.

2. Drain as claimed in claim 1, wherein the at least one part of the grating comprises an arm arranged pivotally on the grating, wherein in the second position the free end of the arm protrudes above the upper surface of the grating.

3. Drain as claimed in claim 2, wherein the arm is arranged on the outer side of the grating adjacent to the collecting tray.

4. Drain as claimed in any of the foregoing claims, comprising lifting means arranged between the collecting tray and the grating for the purpose of lifting the grating from the first position to the second position.

5. Drain as claimed in claim 4, wherein the lifting means comprise spring means and a locking for locking the spring means in the first position.

6. Drain as claimed in claim 5, wherein the locking is released by pressing the spring means further in beyond the first position.

7. Drain as claimed in claim 4, wherein the lifting means comprise two wedge-shaped elements which rise against each other and wherein one element is arranged slidably on the grating, and wherein the other element is arranged in the collecting tray.

8. Drain as claimed in any of the foregoing claims, wherein the at least one part of the grating is a pin arranged between a pressed-in position and a protruding position.

9. Drain as claimed in claim 8, wherein the pin protrudes through an opening in the upper surface of the grating.

10. Drain as claimed in any of the foregoing claims, wherein the grating comprises a holder for holding a floor part such as a tile.

11. Combination of a floor and a drain as claimed in any of the foregoing claims, wherein the drain is arranged in the floor and in the first position the upper surface of the grating lies substantially flush with the upper surface of the floor.

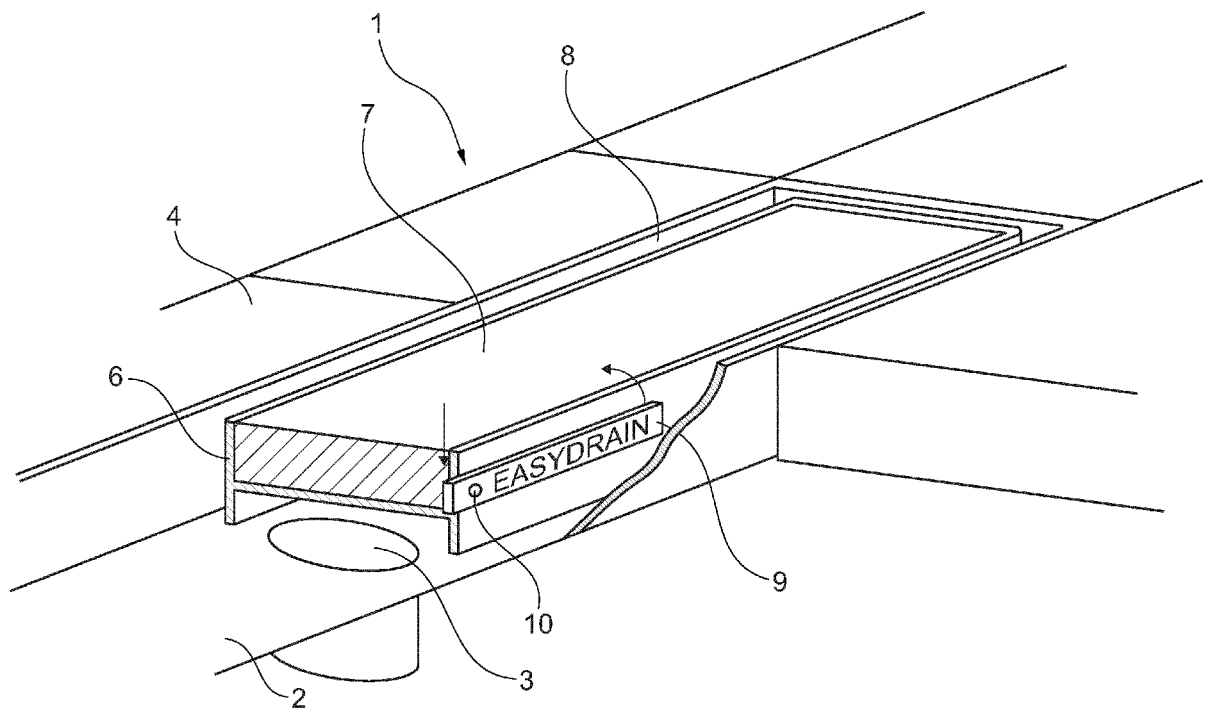


Fig. 1

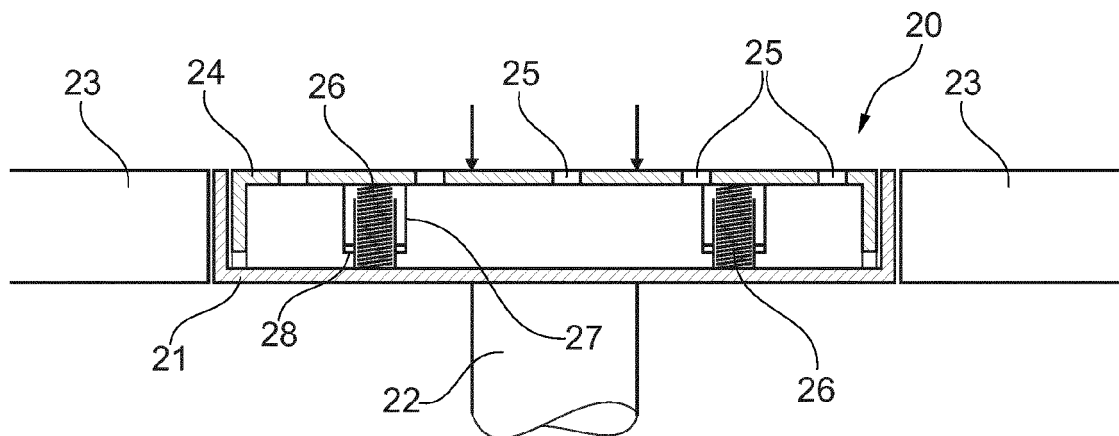


Fig. 2A

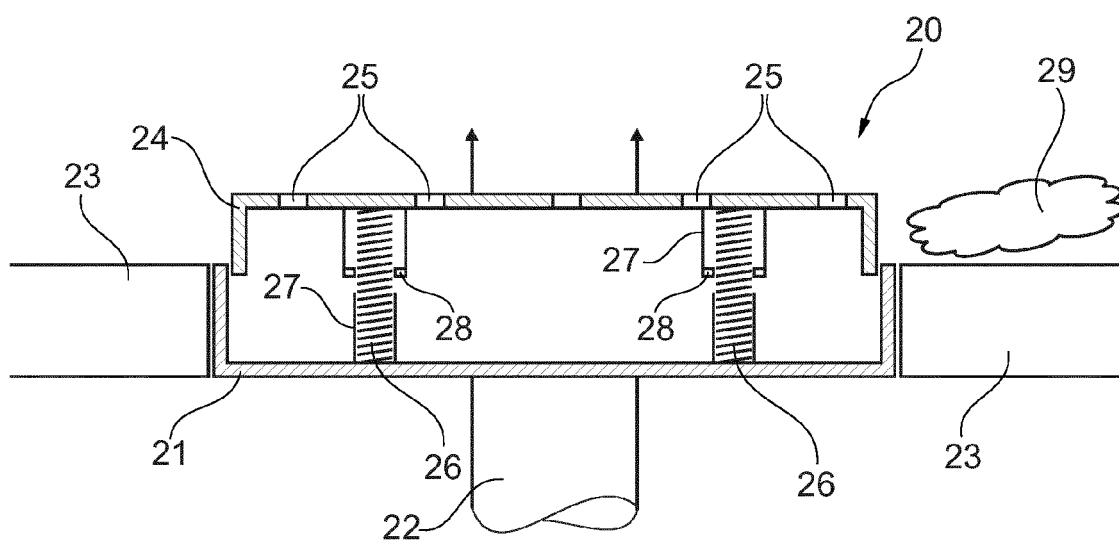


Fig. 2B

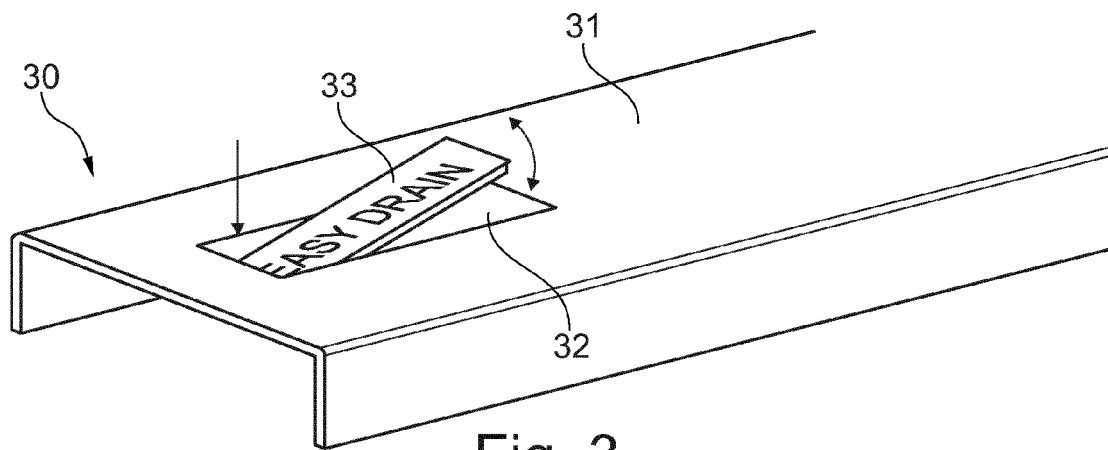


Fig. 3

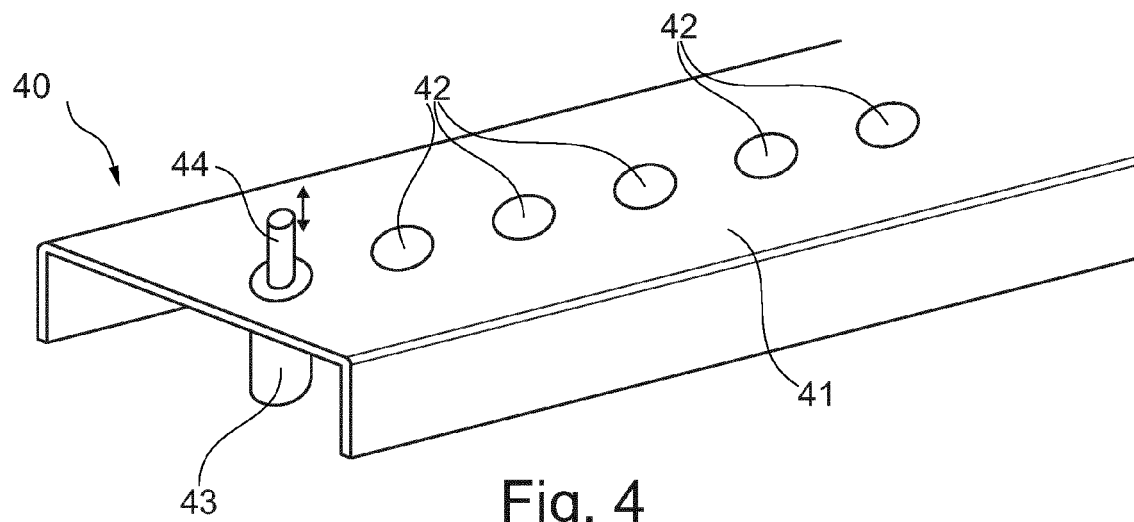


Fig. 4

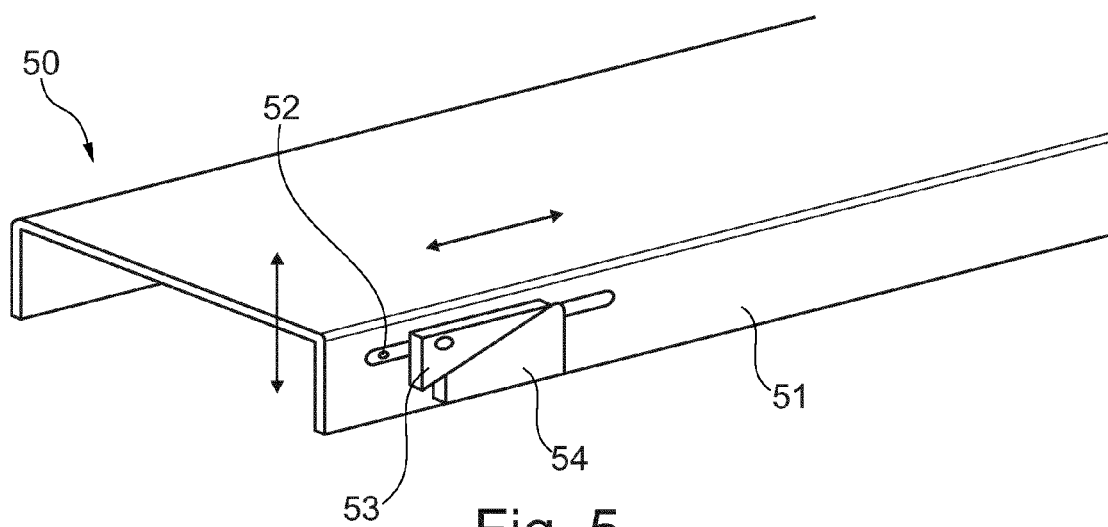


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 15 15 3591

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 2 243 886 A1 (EASY SANITAIRY SOLUTIONS BV [NL]) 27 October 2010 (2010-10-27) * paragraph [0019] - paragraph [0039]; figures *	1,4,7, 10,11 2,3	INV. E03F5/04 E03F5/06
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			TECHNICAL FIELDS SEARCHED (IPC)
			E03F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 5 June 2015	Examiner De Coene, Petrus
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 15 3591

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05-06-2015

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