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(54) **Shower drain**

(57) The invention relates to a shower drain, comprising:

- a tray with a bottom surface and an upright edge along the bottom surface, wherein a draining opening is arranged in the bottom surface;

- at least one flexible sheet arranged on the outside along a part of the upright edge;

wherein
the part of the upright edge is a folded edge, wherein the flexible sheet is clamped between the folded edge.

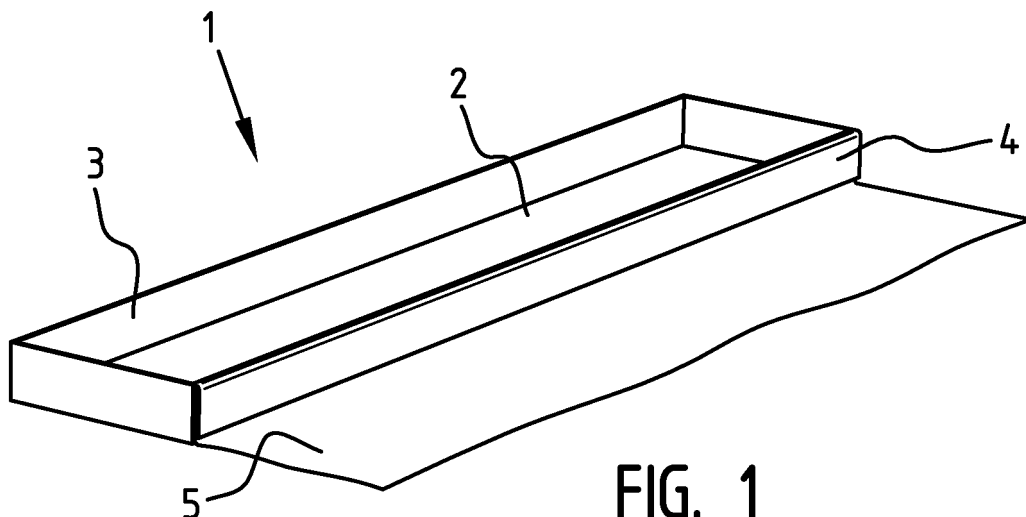


FIG. 1

Description

[0001] The invention relates to a shower drain, comprising:

- a tray with a bottom surface and an upright edge along the bottom surface, wherein a draining opening is arranged in the bottom surface;
- at least one flexible sheet arranged on the outside along a part of the upright edge.

[0002] The term "shower drain" is a generally used term in the prior art, and is used for drains used in for instance bathrooms. Such a shower drain is often elongate but can also be square, round or triangular.

[0003] When a shower drain is arranged in a floor of for instance a shower space or bathroom, it is then necessary that the connection of the floor to the drain be watertight and that this watertightness also remains guaranteed over a long period. For this purpose it is usual to arrange in the floor a flexible sheet which is adhered fixedly to the shower drain. A tile layer for instance is then arranged on this flexible sheet. In order to attach the sheet to the tray of a shower drain it is usual for such a tray to be provided all around with wide flanges which provide an adhesive surface and onto which the flexible sheet can be fixedly adhered.

[0004] During installing of the shower drain the fitter must glue the flexible sheet on-site. The drawback is that the conditions during fitting of a shower drain are not normally ideal for glueing. The glue layer can be adversely affected by the large amount of dust, whereby the adhesion of the glue to the flexible sheet leaves something to be desired. This can result in leakage in the longer term.

[0005] When a shower drain is fitted close to a wall, the usual flange to which the flexible sheet is adhered then forms an obstacle. This flange has a determined width, whereby the shower drain always comes to lie at a distance from the wall. It is possible to shorten the flange at this position, although the glueing area is hereby reduced in size, which can likewise have an adverse effect on the quality of the adhesion of the flexible sheet to the flange.

[0006] It is now an object of the invention to provide a shower drain wherein the above stated drawbacks are alleviated or even obviated.

[0007] This object is achieved with a shower drain according to the preamble which is characterized in that the part of the upright edge is a folded edge, wherein the flexible sheet is clamped between the folded edge. Because the sheet is now clamped fixedly by a folded edge, there can now be proper quality control of the attachment of the flexible sheet during manufacture of the shower drain, and a good seal can be guaranteed. In addition, the use of a flange to which the flexible sheet is glued in the prior art becomes unnecessary, whereby a shower drain according to the invention can be arranged against

a wall and is therefore no longer limited by the width of flange. An additional advantage is that the depth of the shower drain in the floor can also no longer be limited by the protruding horizontal flange. In the prior art this horizontal flange must lie under the tile layer. When thick tiles were used, it was possible in the prior art that the shower drain came to lie below the upper surface of the finished tile floor. In a shower drain according to the invention the flexible sheet can be arranged such that the thickness of the tiles no longer affects the height of the shower drain in the floor.

[0008] In a preferred embodiment of the shower drain according to the invention the tray is manufactured from steel plate, in particular stainless steel plate.

[0009] In another embodiment of the shower drain according to the invention the flexible sheet is a watertight fabric. Such watertight fabric is used universally in the manufacture of bathroom floors and shower floors, and is particularly suitable for a watertight finishing of the floor. Lead or bitumen can for instance also be clamped.

[0010] In a preferred embodiment the folded edge is an outward bent edge. The bent edge moreover has the advantage of improving the finishing of the tray. Bending of the edge creates a rounded upper edge.

[0011] The bent part preferably lies against the upright edge. The flexible sheet is hereby clamped along the whole width of the bent edge, and because the bent edge abuts along a large area a firm connection of the flexible part to the tray is obtained.

[0012] In yet another embodiment of the shower drain according to the invention the bent edge comprises an outward directed horizontal flange. This horizontal flange is preferably only a few millimetres wide and provides protection for the flexible fabric running thereunder. When a shower drain is arranged in a tiled floor, the transition between the tiles and the shower drain must be provided with a silicone seal. This silicone seal must be replaced every few years, and this normally takes place by cutting away the silicone edge. By now providing a small horizontal flange, the knife with which the silicone edge is cut away is prevented from damaging the flexible sheet.

[0013] In yet another embodiment of the shower drain according to the invention the bottom surface is rectangular. At least two flexible sheets are here preferably arranged on two adjacent sides of the tray, wherein each flexible sheet is clamped by the associated folded edge and at least one flexible sheet is partially clamped by an adjacent folded edge. A good seal is hereby obtained at the position of the corners of a rectangular shower drain.

[0014] This drain can optionally also be applied as industrial drain.

[0015] These and other features of the invention are further elucidated with reference to the accompanying drawings.

[0016] Figure 1 shows a perspective view of a first embodiment of a shower drain according to the invention.

[0017] Figure 2 shows a cross-sectional view of a sec-

ond embodiment of the shower drain according to the invention.

[0018] Figure 3 shows a cross-sectional view of a third variant of the shower drain according to the invention.

[0019] Figure 4 is a perspective view of a fourth embodiment of a shower drain according to the invention.

[0020] Figure 5 is a cross-sectional view of a fifth variant of the shower drain according to the invention.

[0021] Figure 1 shows a shower drain 1 according to the invention. This shower drain 1 has a bottom surface 2 and an upright wall 3 along the periphery of bottom surface 2. On one side of surface 2 the upright edge 3 has a folded part 4 between which a flexible sheet 5 is clamped. This clamping of the flexible sheet is already carried out during manufacture of shower drain 1, whereby the flexible sheet no longer need be glued during fitting of the shower drain. During manufacture of shower drain 1 the flexible sheet can optionally be glued against upright wall 3, after which it is clamped fixedly by bent edge 4.

[0022] Figure 2 shows a second embodiment 10 of the shower drain according to the invention. This shower drain 10 has a bottom surface 11 with an upright edge 12. Upright edge 12 has a bent edge 13 between which is clamped a flexible fabric 14. A horizontal flange 15 is arranged on the end of bent edge 13. When shower drain 11 is arranged on a sub-floor 16 and tiles 17 are arranged against shower drain 10, it is essential that the space between tile 17 and bent edge 13 is filled with a silicone mastic. This mastic must be replaced every few years and is then cut out of this space. Flange 15 now ensures that the flexible fabric 14, which here runs under the flange, cannot be damaged by means of a knife.

[0023] Figure 3 shows a third embodiment 20 of a shower drain according to the invention. Here also the shower drain 20 has a bottom surface 21 with an upright edge 22. This upright edge 22 is specially designed so that shower drain 20 can be arranged against wall 23. Tiles 24 are placed on the horizontal part 25 of upright edge 22.

[0024] Also provided here on upright edge 22 is a bent part 26 between which a flexible sheet 27 is clamped. This flexible sheet provides for a good sealing of shower drain 20 relative to wall 23 and floor 28.

[0025] Figure 4 shows a fourth embodiment of a shower drain 30 according to the invention. This shower drain 30 has a bottom surface 31 which is rectangular. Upright edges 32, 33 and 34 are arranged along bottom surface 31. Each upright edge has an associated folded edge part 35, 36 and 37 respectively.

[0026] A flexible sheet 38, 39, 40 is arranged under each bent edge part 35, 36, 37. Flexible sheet 39 is not only clamped under bent edge 36 but also under bent edges 35 and 37 of the adjacent upright edges 32, 34. A good seal is hereby obtained at the position of the corners of rectangular tray 30.

[0027] Figure 5 shows a fifth embodiment of a shower drain 45 according to the invention. This shower drain 45 also has a bottom surface 46, an upright edge 47 and a

folded edge 48. A flexible sheet 49 is clamped between upright edge 47 and folded edge 48.

[0028] In this embodiment shower drain 45 is placed on a sub-floor 50 on which relatively thick tiles 51 are placed. The thickness of tiles 51 is here greater than the height of shower drain 45. Because a flexible sheet 49 has now been arranged, it is possible to have the top side of shower drain 45 lie flush with the top surface of tile 51. For this purpose the flexible sheet 49 first runs downward along the side of tile 51 and then horizontally under tile 51.

Claims

1. Shower drain, comprising:

- a tray with a bottom surface and an upright edge along the bottom surface, wherein a draining opening is arranged in the bottom surface;
- at least one flexible sheet arranged on the outside along a part of the upright edge;

characterized in that

the part of the upright edge is a folded edge, wherein the flexible sheet is clamped between the folded edge.

2. Shower drain as claimed in claim 1, wherein the tray is manufactured from steel plate, in particular stainless steel plate.
3. Shower drain as claimed in claim 1 or 2, wherein the flexible sheet is a watertight fabric.
4. Shower drain as claimed in any of the foregoing claims, wherein the folded edge is an outward bent edge.
5. Shower drain as claimed in claim 4, wherein the bent part lies against the upright edge.
6. Shower drain as claimed in claim 4 or 5, wherein the bent edge comprises an outward directed horizontal flange.
7. Shower drain as claimed in any of the foregoing claims, wherein the flexible sheet is glued to the upright edge.
8. Shower drain as claimed in any of the foregoing claims, wherein the bottom surface is rectangular.
9. Shower drain as claimed in claim 8, wherein at least two flexible sheets are arranged on two adjacent sides of the tray, wherein each flexible

sheet is clamped by the associated folded edge, and wherein at least one flexible sheet is partially clamped by an adjacent folded edge.

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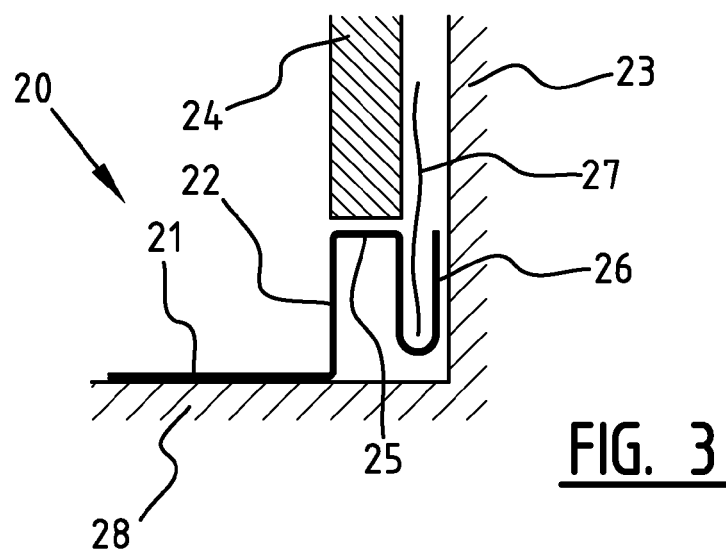
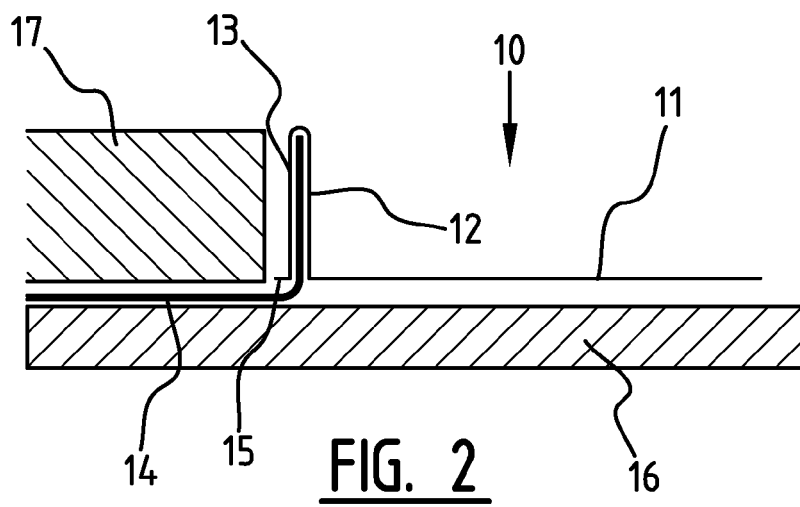
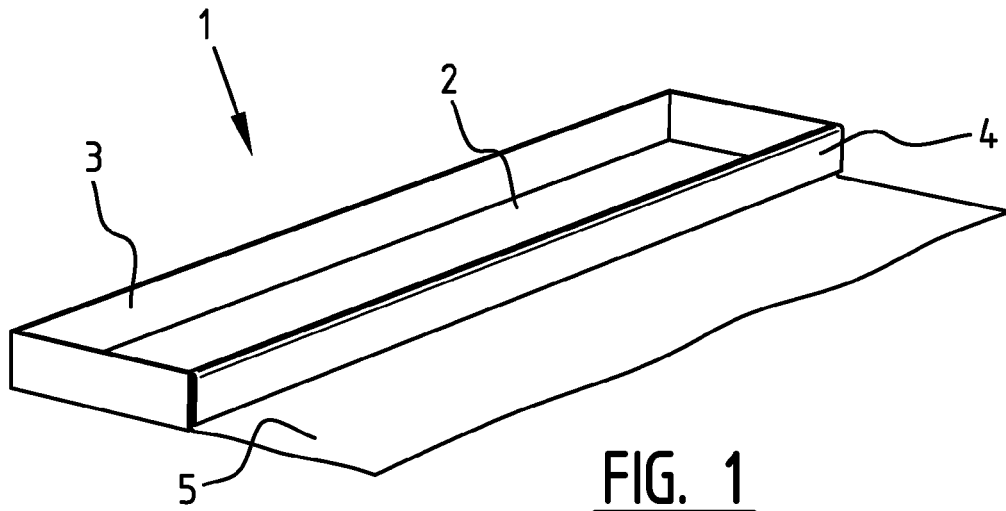
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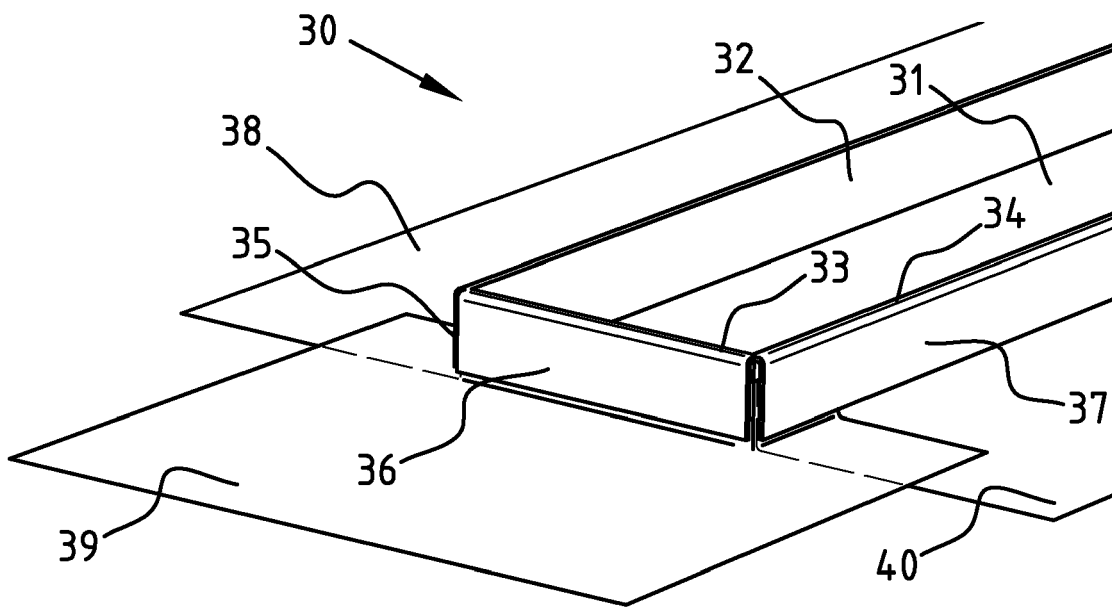


FIG. 4

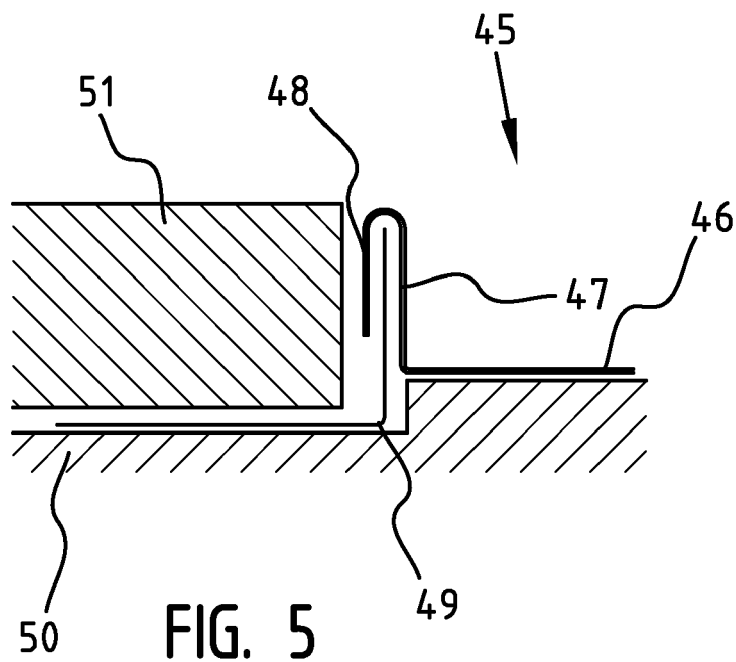


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 09 15 1373

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	DE 20 2006 012825 U1 (ILLBRUCK SANITAERTECHNIK GMBH [DE]) 28 December 2006 (2006-12-28) * paragraph [0024] - paragraph [0053]; figures *	1-9	INV. E03F5/04 A47K3/00 A47K3/40
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X	DE 20 2007 003376 U1 (A & S BAEDER GMBH & CO [DE]; MUNCH JEAN PAUL [FR]) 28 June 2007 (2007-06-28) * paragraphs [0010], [0013], [0015], [0028] - paragraph [0034]; figures 1-5 *	1-6,8	
			TECHNICAL FIELDS SEARCHED (IPC)
			E03F A47K
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 8 May 2009	Examiner Van Bost, Sonia
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 09 15 1373

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-05-2009

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