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Description

[0001] The invention relates to a drain for discharging a liquid, and particularly to a drainage channel to be placed in for instance a finishing floor of a wet area in a building, such as for instance a bathroom or a shower cubicle, see for example DE 41 15 638 A.

[0002] Bathrooms usually are provided with tiled floors. Such tiled floors are placed slightly inclined, so that water on such floors flows into the direction of a drain. For a correctly sloping incline to this drain from various positions around a drain, the floor has a fall in several directions.

[0003] A recent trend seems to have been set by providing floors with large-sized tiles. Practice has shown that laying such a floor with sufficient fall in several directions will then be difficult. As a result it may occur that at some locations on such a floor water does not flow naturally to the drains and therefore remains on the floor.

[0004] By using a drainage channel such as for instance known from community designs 36314 or 107834, a fall in several directions is at least partially no longer necessary. The drainage channel known from said community designs comprises a reservoir that is open at the upper side, comprising a bottom wall and upright side walls that fully enclose the open reservoir. In the middle, the bottom side is provided with a discharge opening for successively connecting a siphon and a discharge pipe thereto. At the upper side of the reservoir a cover grid provided with inflow openings for the liquid, is placed between the upper side of the upright side walls.

[0005] By placing such a known drainage channel for instance along a side wall of a wet area in a building, such as for instance a bathroom or a shower cubicle, only a fall sloping transverse to the drainage channel and in the direction of the drainage channel is necessary. A fall in one direction can also easily be realised with large tiles, as a result of which the entire floor is enabled to dewater naturally in the direction of the drainage channel.

[0006] A drawback of the known drainage channels is that they require a large build-in depth. As a result the possible placement of such drainage channels already has to be taken into account at an early stage, preferably already during the design of a construction project.

[0007] It is an object of the invention to improve on this.

[0008] To that end the invention provides a drainage channel for discharging a liquid as described in claim 1.

[0009] The stench-trap according to the invention placed in the duct part offers the advantage that no stench-trap, such as for instance a siphon, needs to be placed between the duct part and the discharge pipe. The discharge pipe can be connected directly to the discharge opening of the drainage channel according to the invention. As a result the build-in depth of the drainage channel can remain limited and the drainage channel according to the invention is highly suitable to be placed in a finished floor or to be used in a renovation of a wet area in a building, such as for instance a bathroom or a shower cubicle.

[0010] German patent application 23 35 870 describes one or more drainage channels placed in a floor for discharging waste water. The one or more drainage channels debouch in a drain provided with a double water seal serving as stench trap. Of the assembly of one or more drainage channels connected to a drain according to German patent application 23 35 870 the drain in particular needs a large build-in depth.

[0011] English patent application 2.297.110 as well describes a drainage channel placed in a floor for discharging water. For discharging water to the sewer the drainage channel at one of its end is connected to a drain placed there. Said drain is special in the sense that besides the usual drain cover at the upper side, it has a sideward opening for connecting the drainage channel thereto. The drain is furthermore provided with a water seal serving a stench-trap. Of the assembly of the drainage channel connected to a drain according to English patent application 2.297.110 particularly the drain has a large build-in depth.

[0012] The drawbacks of the assemblies according to the German patent application and the English patent application are at least solved by the drainage channel according to the invention, wherein the stench-trap is placed in the duct part of the drainage channel.

[0013] In an embodiment the discharge opening is situated in one of the upright longitudinal side walls. Thus no projecting parts and/or connections are necessary at the lower side of the drainage channel according to this embodiment, as a result of which the build-in depth of this drainage channel can be further limited. Preferably the build-in depth of the drainage channel is smaller than or equal to the thickness of a standard finished floor.

[0014] According to the invention the stench-trap comprises a first edge raising from the bottom wall, a lid placed above the first edge, which lid is provided with a second edge extending in the direction of the bottom wall, wherein the second edge extends over the first edge at a side of the first edge facing away from the discharge opening, and flow-through openings for the liquid between the first edge and the lid, the first edge and the second edge, and the second edge and the bottom wall. Preferably the first edge and the second edge are substantially transverse to the longitudinal side walls. Preferably the first edge extends substantially over the full width of the bottom wall.

[0015] Preferably the lid is detachably placed in the drainage channel. The stench-trap according to the invention can thus easily be cleaned by removing the lid.

[0016] A further drawback of the known drainage channels is that they require an accurate and/or laborious placement with respect to the floor surface. On the one hand the drainage channel needs to be accurately built in at the correct level, so that the upper side of the upright side walls is placed in the plane of the floor surface. If the drainage channel is placed too high, the liquid around the drainage channel will not naturally flow into the drain-

age channel and liquid will thus remain standing on the floor. Moreover a drainage channel projecting above the floor will be an obstacle over which the user may trip. If the drainage channel is placed too low, the drainage channel may form a local hollow in the floor over which the user may trip. On the other hand a sealing, such as a border of cement, has to be provided between the upper side of the upright walls and the surrounding floor, so that the liquid does not flow into the floor at the outside of the drainage channel. Such a sealing is visibly provided at the floor surface, and may get dirty during use. In practice such sealings, and particularly borders of a sealing cement such as silicon paste, prove to be difficult to clean and keep clean.

[0017] For at least partially solving this further drawback, an embodiment of the invention provides a drainage channel for discharging a liquid wherein the cover means at least partially projects above the duct part.

[0018] As the cover means at least partially projects above the duct part, the duct part can be placed below the floor level, wherein the upper side of the cover means can be placed substantially in the plane of the floor. On the one hand the sealings have been provided below the floor surface between the upper side of the upright walls and the surrounding floor, particularly the surrounding finished floor, and said sealings can be covered with the cover means and/or the floor covering surrounding the drainage channel. During normal use such a sealing is not visible on the floor surface. On the other hand the floor covering surrounding the drainage channel can be placed over the upright walls of the duct part, as a result of which a liquid will flow directly from the floor covering into the drainage channel. A sealing between the upper side of the upright walls and the surrounding floor can be left out, as a result of which the above-mentioned problems of the sealing no longer occur.

[0019] A further advantage of the device according to the invention is that the floor covering surrounding the drainage channel can be placed adjacent to the cover means, as a result of which a liquid can flow directly from the floor covering to the cover means and flow into the drainage channel via the inflow openings in the cover means.

[0020] In an embodiment the cover means projects above the duct part over a distance that is substantially equal to the thickness of the floor covering, such as for instance a tiled floor, surrounding the drainage channel. When placing the drainage channel according to this embodiment the upper sides of the upright walls of the duct part can be placed substantially in the plane of the concrete finished floor. As a result the upper side of the cover means will be substantially in the plane of the floor covering placed on the concrete finished floor.

[0021] Preferably the cover means is formed out of a mesh or grid which preferably can be detachably placed in the drainage channel. Apart from being crude dirt filter, such a cover means also ensures a to the user visible, preferably aesthetic, finishing of the drainage channel. A detachably placed cover means further offers the advantage that this cover means can be taken out for easily cleaning the duct part and/or the cover means.

[0022] In a simple embodiment the cover means comprises a cover wall and side walls connecting to the longitudinal sides of the cover wall, wherein the side walls extend substantially from the cover wall in the direction of the bottom wall, wherein the cover wall preferably is provided with the inflow openings. Preferably the cover wall and the side walls of the cover means are formed as a profile having a substantially U-shaped cross-section, wherein the side walls preferably are placed substantially perpendicular to the cover wall.

[0023] Preferably the side walls of the cover means at least partially rests on the bottom wall. Because the cover means rests on the bottom wall, no support means and/or attachment means for the cover means are necessary in the drainage channel, and particularly at the upright longitudinal side walls of the duct part.

[0024] In an embodiment the side walls of the cover means substantially abut the upright longitudinal side walls of the duct part. The cover means may thus be substantially secured by the longitudinal side walls, at least in a direction transverse to the longitudinal side walls.

[0025] In a further embodiment at least one of the longitudinal side walls, at least at an end thereof facing away from the bottom wall, comprises an edge extending substantially parallel to the bottom wall and facing away from the opposite longitudinal side wall. When placing the drainage channel according to this embodiment said edge sits near the upper side of the finished floor. Said edge may subsequently be covered by the floor covering such as tiles on the floor. Said edge placed between the tiles and the finished floor ensures a firm anchoring of the drainage channel in the floor.

[0026] Preferably the edge comprises one or more through openings. Via said opening the floor covering can be connected to the finished floor for an improved anchoring of the edge.

[0027] In an embodiment one of the longitudinal side walls comprises a retaining wall projecting substantially perpendicular to the bottom wall and above the drainage channel. Such an embodiment is particularly suitable for placement along a wall, wherein the retaining wall is placed against the skirting board of the wall.

[0028] Preferably said retaining wall is placed offset at the longitudinal side wall, at least at an end thereof that faces away from the bottom wall. Said retaining wall placed offset can after placement be covered by a wall covering, such as tiles of the wall along which the drainage channel has been placed.

[0029] Preferably the retaining wall is provided with one or more through openings. Via said openings the wall covering can be connected to the wall for an improved anchoring of the retaining wall.

[0030] In an embodiment the duct part is open at its ends so that further duct parts can be coupled thereto.

As a result an assembled drainage channel of any desired length can be achieved. Such an assembled drainage channel may for instance extend along nearly the full length of the floor along a wall.

[0031] For use in floors or floor parts having a standard size, such as for instance shower cubicles, the length of the duct part preferably corresponds to said standard sizes and the duct part preferably comprises upright transverse side walls at its ends.

[0032] In a further embodiment the bottom wall comprises a wall section sloping to the discharge opening. As a result a better discharge of the water into the drainage channel in the direction of the discharge opening is achieved. Furthermore the quantity of water that is in the drainage channel for optionally forming a water seal of the stench-trap, can be reduced.

[0033] In a further embodiment at least one longitudinal side wall, at least considered in cross-section of the drainage channel, comprises a leaning wall section. Preferably the leaning wall section of the at least one longitudinal side wall, at least considered in cross-section of the drainage channel, leans towards the opposite longitudinal side wall. In other words, the opening at the side of the drainage channel facing away from the bottom wall where water flows from the floor into the drainage channel is narrower than a section of the drainage channel situated below the floor. Because of this section, which in cross-section of the drainage channel is at least wider near the bottom wall of the drainage channel, the discharge capacity of this embodiment of the drainage channel according to the invention can be increased. Preferably this embodiment is further combined with a discharge opening and a discharge pipe connectable thereto having an inner diameter of more than 4 cm, preferably having a diameter of 5 cm.

[0034] Preferably the leaning wall section of the at least one longitudinal side wall, at least considered in cross-section of the drainage channel, comprises a dovetail profile. As a result the drainage channel, at least considered in cross-section of the drainage channel, has its largest width near the bottom wall. Such a dovetail profile may also contribute to an improved anchoring of the drainage channel in the finished floor.

[0035] In an advantageous embodiment the drainage channel is made entirely or partially of a rustproof material. Preferably the rustproof material comprises synthetic material or stainless steel.

[0036] In an embodiment the discharge opening comprises a non-return valve and/or dirt collection filter. Such a non-return valve may at least partially prevent sewage water from flowing back as well as/or prevent a sewage stench in the drainage channel in case of an overpressure in the sewage pipe. Such a dirt collection filter may catch dirt particles in the water to be discharged and thus reduce the risk of blockage of the sewage pipe.

[0037] In an embodiment the width of the duct part is smaller than 3 cm, preferably substantially equal to 2.5 cm.

[0038] In an embodiment the stench-trap, when operative, comprises a water seal.

[0039] Although a water seal may form a simple and effective stench-trap, the inventor acknowledged that using such a water seal in a drain, such as a drainage channel or drain, placed in a floor with floor heating, no longer is an adequate sealing within a relative short period of time. The floor heating warming up the floor may namely result in a quicker evaporation of the water of the water seal.

[0040] For at least partially solving this further drawback in an embodiment of the invention, the bottom wall and/or the upright longitudinal side walls of the duct part of said drainage channel comprise the insulation means, at least near the stench-trap.

[0041] Because of the insulation means the heating of the stench-trap, and particularly the evaporation of the water in the water seal, can at least be slowed down, for forming an adequate stench sealing during a longer period of time.

[0042] Preferably the duct part, at least near the stench-trap, comprises a double-walled bottom wall and/or double-walled upright longitudinal side walls, comprising spaced double walls for forming an insulation layer in between them. Said insulation layer may comprise an air layer, but may also comprise known insulation materials, such as for instance rock wool, glass wool, or synthetic materials and synthetic resins (for instance foamed).

[0043] The invention will be further elucidated on the basis of the exemplary embodiment shown in the attached drawings, in which:

Figure 1 shows a view in perspective of a part of a first exemplary embodiment of a drainage channel according to the invention;

Figure 2 shows a view in cross-section in longitudinal direction of a drainage channel of figure 1 near the discharge opening;

Figures 3, 4 and 5 show a view in cross-section transverse to the longitudinal direction of exemplary embodiments of various drainage channels according to the invention having different profile shapes, respectively;

Figure 6 shows a view in cross-section in longitudinal direction of a second exemplary embodiment of a drainage channel according to the invention;

Figure 7 shows a view in cross-section in longitudinal direction of a third exemplary embodiment of the drainage channel according to the invention near the discharge opening;

Figure 8 shows a view in perspective of a part of a fourth exemplary embodiment of a drainage channel

according to the invention;

Figure 9 shows a view in cross-section in longitudinal direction of a drainage channel of figure 8 near the discharge opening; and

Figure 10 shows a view in cross-section transverse to the longitudinal direction of a fifth exemplary embodiment of a drainage channel according to the invention.

[0044] An exemplary embodiment of a drainage channel 1 according to the invention is provided with a duct 2 that is built up from a bottom wall 3 and longitudinal side walls 4, 5. In one of the upright longitudinal side walls 5 a discharge opening 10 is furthermore provided with a connecting sleeve 6 for connecting the drainage channel 1 to a discharge pipe (not show). In the exemplary embodiment as shown in figure 1 one of the longitudinal side walls 4 is provided with a projecting retaining wall 7 placed offset, which projects above the opening of the drainage channel 1. The other longitudinal side wall 5 is provided with an edge 8 projecting substantially parallel to the bottom wall 3 and facing away from the longitudinal side wall 4, which edge 8 is for connecting the drainage channel 1 to the floor surface (not shown). Said projecting edge 8 can be formed as an ornamental strip, and as such remain visible after tiling the floor surface. In that case an upper side of a cover grid 9 placeable in the drainage channel 1 is situated substantially in the same plane as the projecting edge 8. On the other hand the projecting edge can be incorporated into the floor; the projecting edge is then for instance placed between the finished floor and the tiled floor 20 as shown for instance in figures 3, 4 and 5. In that case the cover grid 9 is constructed such that its upper side sits in the same plane as the tiled floor 20 (see figures 3, 4 and 5).

[0045] In the duct part 2 of the drainage channel 1 a stench-trap is placed. A view in cross-section of said stench-trap is shown in figure 2. The discharge opening 10 of the drainage channel is placed within the stench trap. Said stench-trap according to the exemplary embodiment as shown in figure 2 is formed by two first edges 11, 12 raising from the bottom and extending over the full width of the duct part 2. In addition the stench-trap comprises a lid 13 provided with two second edges 14, 15 extending in the direction of the bottom wall 3, which second edges extend over the first edges 11, 12 so that, when the drainage channel is filled with water, a water seal is achieved as shown in figure 2. When further water is supplied to the duct part 2, the water level in this duct part 2 will rise as a result of which water will flow (indicated with arrows in figure 2) to the discharge opening 10 via the water seal. The lid 13 can be taken out of the drainage channel 1 so that the discharge opening 10 and the space surrounding it can be reached for cleaning it.

[0046] The drainage channel 1 with integrated stench-trap can thus be made of small height h so that said drainage channel can easily be placed in a finished floor of a concrete floor. Therefore such a drainage channel is highly suitable for use during renovation of a wet area in a building, such as for instance a bathroom or shower cubicle. Preferably said height h is 0.5 cm larger than the diameter of a discharge pipe connectable to the connecting sleeve 6. If the connecting sleeve 6 is adapted for a discharge pipe of 4 cm connectable thereto, then the height h is substantially equal to 4.5 cm. When use is made of a discharge pipe of 5 cm, then the height h is substantially equal to 5.5 cm.

[0047] The drainage channel 1 with integrated stench-trap can furthermore be made of a small width b. Preferably the width b of the duct part 2 is smaller than 3 cm, preferably substantially equal to 2.5 cm.

[0048] Figures 3, 4 and 5 show views in cross-section of various exemplary embodiments of profiles of the drainage channel 1 according to the invention taken along the line A-A in figure 2. Said figures also show the position of the floor tiles 20 and/or wall tiles 21 with respect to the various exemplary embodiments.

[0049] In figure 3 one of the longitudinal sides 51 is placed inclined so that said longitudinal side wall 51 leans above the bottom wall 3. As a result the duct part 2 is strongly widened near the bottom wall 3 as a result of which an improved discharge capacity can be achieved. The stench-trap as such can also be made wider. In the exemplary embodiment as shown in figure 3 use is made of a continuous first edge 11 which connects to the longitudinal side walls 4, 51. In addition the lid is divided into a detachable member 13 having second edge 14 and a permanently placed member having second edge 141 connecting to the inclined longitudinal side wall 51.

[0050] The exemplary embodiment as shown in figure 4 is suitable for placement in continuous floors, for instance near an access opening of a wet area. Such an embodiment can for instance also be placed near the tilting door of a garage for discharging precipitation and the like flowing down from a car parked in the garage. In this exemplary embodiment the retaining wall is transformed into a projecting edge 71 which like the projecting edge 8 can be placed between the finished floor and the tiled floor 20 for anchoring the drainage channel according to this exemplary embodiment.

[0051] This exemplary embodiment is furthermore provided with a lid 13 provided with a second edge 14 which extends to near the bottom wall 3 and which is provided with an opening 16 for allowing water through to the discharge opening via the first edge 11. An advantage of such a lid 13 is that no supports have to be provided for it in the duct part 2; the lid 13 rests on the bottom wall 3 with the two edges 14, 15.

[0052] Figure 5 shows a view in cross-section of an exemplary embodiment of the drainage channel according to the invention for a continuous floor, analogous to the exemplary embodiment of figure 4, having two leaning longitudinal side walls 41, 51, analogous to the exemplary embodiment of figure 3. The longitudinal side

walls 41, 51 placed inclined, together with the bottom wall 3 form a dovetail profile that can be placed in the finished floor. Such a dovetail profile here ensures a firm anchoring of this exemplary embodiment of the drainage channel in the finished floor.

[0053] The view in longitudinal section of the exemplary embodiment as shown in figure 6 is provided with wall sections 31, 32 of the bottom wall 3 that slope towards the discharge opening 10. In addition said exemplary embodiment is provided with upright transverse side walls 17, 18 situated at the ends of the duct part.

[0054] Figure 7 shows a view in cross-section of a variant of the stench-trap as shown in figure 2. In this variant the connecting sleeve 6 is partially passed into the drainage channel 2. The connecting sleeve 6 extends within the drainage channel 2 over the full width b (see figure 1) of the drainage channel 2. At the upper side of the part of the connecting sleeve 6 placed in the drainage channel, a segment has been removed for creating a passage opening 63. In this way the part of the connecting sleeve 6 placed within the drainage channel forms two of the first edges 61, 62 raising from the bottom which edges extend over the full width of the duct part 2. The part of the connecting sleeve 6 situated within the drainage channel 2 may, for instance by means of a glue connection or welding joint, be connected to the bottom wall 3. The stench-trap according to this variant comprises a lid 13 provided with two second edges 14, 15 extending in the direction of the bottom wall 3, and extending over the first edges 61, 62 so that when the drainage channel is filled with water, a water seal is achieved as shown in figure 7. The stench-trap according to the variant as shown in figure 7 is active in the same way as the stench-trap shown in figure 2.

[0055] A fourth exemplary embodiment of a drainage channel 1 according to the invention, as shown in the figures 8 and 9, is provided with a duct 2 built up from a bottom wall 3 and longitudinal side walls 4, 5. In the bottom wall 3 a discharge opening 10 is furthermore provided with a connecting sleeve 6 for connecting the drainage channel 1 to a discharge pipe (not shown). In a variant of this exemplary embodiment the discharge opening 10 can also be placed in a longitudinal side wall 5 as shown in figure 1.

[0056] In this exemplary embodiment as shown in figure 8 one of the longitudinal walls 4 is provided with a projecting retaining wall 7 placed offset which projects above the opening of the drainage channel 1. The other longitudinal side wall 5 is provided with an edge 8 projecting substantially parallel to the bottom wall 3 and facing away from the longitudinal side wall 4, which edge 8 is for connecting the drainage channel 1 to the surface of a finished floor (not shown). Said projecting edge 8 can be incorporated into the floor; the projecting edge 8 is then for instance placed between the finished floor and the tiled floor 20 as shown for instance in the figures 3, 4 and 5.

[0057] As shown in figures 8 and 9, the projecting retaining wall 7 and the projecting edge 8 are provided with through openings 72, 82 for attaching the drainage channel in the finished floor or against the wall. In addition the covering, such as floor tiles 20 or wall tiles 21, provided on the finished floor or the walls, can be connected to the finished floor or wall via said through openings 72, 82. For instance when gluing the floor tiles 20, a glue connection between the floor tiles 20 and the finished floor can be formed in the through openings 82. As a result a firm anchoring of the drainage channel 1 into the floor is achieved. Such through openings 72, 82 can also be provided in the retaining walls 7 and/or projecting edges 8, 71 of the embodiments as shown in the figures 1, 2, 3, 5 or 10.

[0058] In the duct part 2 a cover means 9 is placed, which projects above the duct part 2 over a distance d that is substantially equal to the thickness of a floor covering, such as a tiled floor 20 (see figures 3, 4 and 5), surrounding the drainage channel. The cover means 9 is constructed such that its upper side 91 sits substantially in the same plane as the tiled floor 20.

[0059] The cover means 9 is formed like a profile having a substantially U-shaped cross-section and comprises a cover wall 91 and side walls 92 connecting to the longitudinal sides of the cover wall 91, wherein the side walls 92 are placed substantially perpendicular to the cover wall 91. The side walls 92 of the cover means 9 support at least partially on the bottom wall 3.

[0060] At least the cover wall 91 of the cover means 9 is formed out of a mesh or grid provided with openings for allowing a liquid to flow therethrough into the drainage channel 2. In a simple exemplary embodiment the entire cover means 9 is formed out of a mesh or grid bent into a U-shaped profile. Thus also the connecting side walls 92 may also be provided with openings for allowing a liquid to flow therethrough into the drainage channel.

[0061] Figure 10 shows a view in cross-section of an exemplary embodiment of a variant of the drainage channel 1 according to figure 4.

[0062] In the exemplary embodiment as shown in figure 10, the side walls 4, 5 and the bottom wall 3 are constructed double-walled at least near the stench-trap. Between the outer walls 32, 42, 52 and the inner walls 3, 4, 5 an insulation layer 30 is formed for thermally insulating at least the stench-trap with respect to the surrounding floor. The insulation layer 30 may comprise an air layer, but may also be provided with insulation material 31.

[0063] It is observed here that the embodiments of the invention described above are intended as an illustration of the invention and not as a limitation of the invention. An expert will certainly be capable of designing alternative embodiments that fall within the scope of protection of the attached claims.

[0064] For instance in a variant of the embodiment as shown in figure 10, wherein the inner walls 3, 4, 5 are surrounded with an insulation material 31, the outer walls 32, 42, 52 can be left out, if the insulation material 31 is

of such a structure or construction that the insulation material 31 forms a firm and/or substantially form-retaining layer. A protective outer wall 32, 42, 52 then is not necessary.

[0065] Furthermore the invention of a water seal wherein the walls, at least near the water seal, are provided with insulation means for thermally insulating the water seal with respect to the floor surrounding the drain, cannot only be used for drainage channels as shown in figure 10, but also for other drains, such as a floor drain.

Claims

1. Drainage channel for use in a finishing floor of a wet area in a building for discharging a liquid, comprising:

   a duct part comprising a bottom wall and upright longitudinal side walls, wherein the duct part is provided with a discharge opening,
   a cover means provided with inflow openings for the liquid for at least partially covering the duct part,
   characterized in that said drainage channel comprises a stench-trap situated in the duct part, wherein the stench-trap is placed between the upright longitudinal side walls and above the bottom wall, and connects to the discharge opening, and wherein the stench-trap comprises:

      a first edge raising from the bottom wall,
      a lid, wherein the lid is placed above the first edge and is provided with a second edge extending in the direction of the bottom wall, wherein the second edge extends over the first edge at a side of the first edge facing away from the discharge opening,
      flow-through openings for the liquid between the first edge and the lid, the first edge and the second edge, and the second edge and the bottom wall,

   wherein the lid is arranged below the cover means, and
   wherein a water seal is achieved when the duct part of the drainage channel is filled with water.

2. Drainage channel according to claim 1, wherein the discharge opening is situated in one of the upright longitudinal side walls or in the bottom wall.

3. Drainage channel according to claims 1 or 2,
   wherein the first edge and the second edge are substantially transverse to the longitudinal side walls, wherein the first edge preferably extends substantially over the full width of the bottom wall, and wherein the lid preferably is detachably placed in the drainage channel.

4. Drainage channel according to any one of the preceding claims,
   wherein the cover means at least partially projects above the duct part over a distance which, preferably, substantially equals the thickness of a floor covering, such as for instance a tiled floor, surrounding the drainage channel, and
   wherein the cover means preferably is detachably placed in the drainage channel.

5. Drainage channel according to claim 4, wherein the cover means comprises a cover wall having longitudinal sides and side walls connecting to the longitudinal sides, wherein the side walls extend substantially from the cover wall in the direction of the bottom wall,
   wherein the cover wall preferably is provided with the inflow openings,
   wherein the cover wall and the side walls of the cover means preferably define a profile having a substantially U-shaped cross-section, wherein the side walls preferably are placed substantially perpendicular to the cover wall,
   wherein the side walls of the cover means preferably at least partially rest on the bottom wall, and
   wherein the side walls of the cover means preferably at least partially abut the upright longitudinal side walls of the duct part.

6. Drainage channel according to any one of the preceding claims, wherein the bottom wall and/or the upright longitudinal side walls of the duct part, at least near the stench-trap, comprises insulation means,
   wherein the duct part, at least near the stench-trap, preferably comprises a double-walled bottom wall and/or double-walled upright longitudinal side walls, comprising spaced double walls for forming an insulation layer in between them.

7. Drainage channel according to one or more of the preceding claims, wherein a first of the longitudinal side walls, at least at an end thereof facing away from the bottom wall, comprises an edge extending substantially parallel to the bottom wall and away from a second longitudinal side wall situated opposite the first longitudinal side wall, and wherein the edge preferably comprises one or more through openings.

8. Drainage channel according to one or more of the preceding claims, wherein a first of the longitudinal side walls comprises a retaining wall projecting substantially perpendicular to the bottom wall and above the drainage channel, wherein the retaining wall preferably is placed shifted at the first longitudinal side wall, at least at an end thereof that faces away from the bottom wall, and wherein the retaining wall preferably comprises one or more through openings.

9. Drainage channel according to one or more of the preceding claims, wherein at least one longitudinal side wall, at least considered in cross-section of the drainage channel, comprises a leaning wall section, wherein the leaning wall section of the at least one longitudinal side wall, at least considered in cross-section of the drainage channel, preferably leans towards the opposite longitudinal side wall,
wherein the leaning wall section of the at least one longitudinal side wall, at least considered in cross-section of the drainage channel, preferably comprises a dovetail profile.

10. Drainage channel according to any one of the preceding claims, wherein the duct part comprises upright transverse side walls situated at its ends, and/or wherein the bottom wall comprises a wall section sloping to the discharge opening.

Patentansprüche

1. Abflussrinne zur Verwendung in einer Bodendeckschicht eines Nassbereich in einem Gebäude zum Abführen einer Flüssigkeit, umfassend:

einen Kanalteil, umfassend eine Bodenwand und aufrechte Längs-Seitenwände, wobei der Kanalteil mit einer Abflussöffnung versehen ist,
ein Abdeckungsmittel, das mit Einströmöffnungen für die Flüssigkeit versehen ist, um wenigstens einen Teil des Kanalteils abzudecken,
dadurch gekennzeichnet, dass die Abflussrinne einen in dem Kanalteil angeordneten Geruchsverschluss umfasst, wobei der Geruchsverschluss zwischen den aufrechten Längs-Seitenwänden und oberhalb der Bodenwand angeordnet ist, und mit der Abflussöffnung verbunden ist, und wobei der Geruchsverschluss umfasst :

einen ersten Rand, der von der Bodenwand vorsteht,
einen Deckel, wobei der Deckel oberhalb des ersten Rands angeordnet ist und mit einem zweiten Rand versehen ist, der sich in der Richtung der Bodenwand erstreckt, wobei sich der zweite Rand an einer Seite des ersten Rands, die van der Abflussöffnung abgewandt ist, über den ersten Rand erstreckt,
Durchflussöffnungen für die Flüssigkeit zwischen dem ersten Rand und dem Deckel, dem ersten Rand und dem zweiten Rand und dem zweiten Rand und der Bodenwand,
wobei der Deckel unterhalb des Abdeckmittels angeordnet ist, und
wobei eine Wasserabdichtung erreicht wird, wenn der Kanalteil der Abflussrinne mit Wasser gefüllt ist.

2. Abflussrinne nach Anspruch 1, wobei die Abflussöffnung in einer der aufrechte Längs-Seitenwände oder in der Bodenwand angeordnet ist.

3. Abflussrinne nach Anspruch 1 oder 2, wobei der ersten Rand und der zweite Rand im wesentlichen quer zu den Längs-Seitenwänden sind, wobei sich der erste Rand vorzugsweise im Wesentlichen über die volle Breite der Bodenwand erstreckt, und
wobei der Deckel bevorzugt abnehmbar in der Abflussrinne positioniert ist.

4. Abflussrinne nach einem der vorhergehenden Ansprüche, wobei das Abdeckungsmittel wenigstens teilweise über den Kanalteil über einen Abstand vorsteht, der vorzugsweise im Wesentlichen der Dicke eines Bodenbelags entspricht, wie beispielsweise eines gefliesten Bodens, der die Abflussrinne umgibt, und
wobei das Abdeckungsmittel vorzugsweise abnehmbar in der Abflussrinne positioniert ist.

5. Abflussrinne nach Anspruch 4, wobei das Abdekkungsmittel eine Abdeckungswand umfasst, die Längsseiten und Seitenwände aufweist, die mit den Längsseiten verbunden sind, wobei sich die Seitenwände im wesentlichen von der Abdeckungswand in der Richtung der Bodenwand erstrecken,
wobei die Abdeckungswand vorzugsweise mit den Einströmöffnungen versehen ist,
wobei die Abdeckungswand und die Seitenwände des Abdeckungsmittels bevorzugt ein Profil bilden, das einem im Wesentlichen einen U-förmigen Querschnitt bildet, wobei die Seitenwände vorzugsweise im Wesentlichen senkrecht zu der Abdeckungswand positioniert sind,
wobei die Seitenwände des Abdeckungsmittels vorzugsweise wenigstens teilweise auf der Bodenwand ruhen, und
wobei die Seitenwände des Abdeckungsmittels vorzugsweise wenigstens teilweise an den aufrechten Längs-Seitenwände des Kanalteils anliegen.

6. Abflussrinne nach einem der vorhergehenden Ansprüche, bei der die Bodenwand und / oder die aufrechten Längs-Seitenwänden des Kanalteils wenigstens in der Nähe des Geruchverschlusses Isolierungsmittel umfasst,
wobei der Kanalteil wenigstens in der Nähe der Geruchsverschlusses vorzugsweise eine doppelwandige Bodenwand und / oder doppelwandige aufrechte Längs-Seitenwände umfasst, die beabstandete Doppelwände umfassen, um eine Isolierschicht dazwischen zu bilden.

7. Abflussrinne nach einem oder mehreren der vorhergehenden Ansprüche, bei der eine erste der Längs-Seitenwände, wenigstens an einem Ende, das van der Bodenwand abgewandte ist, einen Rand umfasst, der sich im Wesentlichen parallel zu der Bodenwand und von einer zweiten Längs-Seitenwand weg erstreckt, die gegenüber der ersten Längs-Seitenwand angeordnet ist, und wobei der Rand vorzugsweise eine oder mehrere durchgehende Öffnungen umfasst.

8. Abflussrinne nach einem oder mehreren der vorhergehenden Ansprüche, bei der eine erste der Längs-Seitenwände eine Rückhaltewand umfasst, die im Wesentlichen senkrecht zu der Bodenwand und oberhalb der Abflussrinne vorsteht, wobei die Rückhaltewand bevorzugt an der ersten Längs-Seitenwand versetzt angeordnet ist, wenigstens an einem Ende davon, das von der Bodenwand abgewandt ist, und wobei die Rückhaltewand vorzugsweise eine oder mehrere durchgehende Öffnungen umfasst.

9. Abflussrinne nach einem oder mehreren der vorhergehenden Ansprüche, bei der wenigstens eine Längs-Seitenwand, wenigstens im Querschnitt der Abflussrinne betrachtet, einen geneigten Wandabschnitt aufweist,
wobei der geneigte Wandabschnitt der wenigstens eine Längs-Seitenwand, wenigstens im Querschnitt der Abflussrinne betrachtet, vorzugsweise zu der gegenüberliegenden Längs-Seitenwand geneigt ist,
wobei der geneigte Wandabschnitt der wenigstens eine Längs-Seitenwand, wenigstens im Querschnitt der Abflussrinne betrachtet, vorzugsweise ein Schwalbenschwanzprofil aufweist.

10. Abflussrinne nach einem der vorhergehenden Ansprüche, bei der der Kanalteil aufrechte Quer-Seitenwände umfasst, die an seinen Enden angeordnet sind, und / oder wobei die Bodenwand einen Wandabschnitt aufweist, der eine Schräge zu der Austrittsöffnung bildet.

Revendications

1. Canal de drainage destiné à être utilisé dans un finition de sol d'une zone humide à un bâtiment pour évacuer un liquide, comprenant:

   une partie de conduit comprenant une paroi de fond et des parois latérales longitudinales verticale, dans lequel la partie de conduit est muni d'une ouverture d'écoulement,
   un moyen de couverture pourvu d'ouvertures d'influx pour le liquide pour recouvrir au moins partiellement la partie de conduit,
   caractérisé en ce que ledit canal de drainage comprend un siphon située dans la partie de conduit, dans lequel le siphon est placé entre les parois latérales longitudinales verticales et au-dessus de la paroi de fond, et se connecte à l'ouverture de d'écoulement, et dans lequel le siphon comprend :

      un premier bord s'élevant à partir de la paroi de fond,
      un couvercle, dans lequel le couvercle est placé au-dessus du première bord et est pourvu d'un deuxième bord s'étendant dans la direction de la paroi de fond, dans lequel le deuxième bord s'étend sur le premier bord faisant face à l'opposé de l'ouverture d'écoulement,
      des ouvertures de passage pour le liquide entre le premier bord et le couvercle, le premier bord et le deuxième bord, et le deuxième bord et la paroi de fond,
      dans lequel le couvercle est disposé au-dessous des moyens de couverture, et
      dans lequel un fermeture d'eau est obtenue lorsque la partie de conduit du canal de drainage est rempli d'eau.

2. Canal de drainage selon la revendication 1, dans lequel l'ouverture d'écoulement est située dans une des parois latérales longitudinales verticales ou dans la paroi de fond.

3. Canal de drainage selon les revendications 1 ou 2, dans lequel le premier bord et le deuxième bord sont sensiblement transversaux aux parois latérales longitudinales, dans lequel le premier bord s'étend de préférence sensiblement sur toute la largeur de la paroi de fond, et dans lequel le couvercle est placé de préférence de manière amovible dans le canal de drainage.

4. Canal de drainage selon l'une quelconque des revendications précédentes, dans lequel les moyens de couverture fait saillie au moins en partie au-dessus de la partie de conduit sur une distance qui, de préférence, est sensiblement égale à l'épaisseur d'une couverture de sol, comme par exemple un sol carrelé, entourant le canal de drainage, et dans lequel le moyen de couverture est place de préférence de manière amovible dans le canal de drainage.

5. Canal de drainage selon la revendication 4, dans lequel le moyen de couverture comprend une paroi de couverture ayant des côtés longitudinaux et des parois latérales se connectant aux côtés longitudinaux, dans lequel les parois latérales s'étendent sensiblement de la paroi de couverture dans la direction de la paroi de fond,
dans lequel la paroi de couverture est muni de pré-

férence d'ouvertures d'influx,
dans lequel la paroi de couverture et les parois latérales du moyen de couverture définissent de préférence un profil ayant une section transversale sensiblement en forme de U, dans lequel les parois latérales sont placées de préférence sensiblement perpendiculaires à la paroi de couverture,
dans lequel les parois latérales du moyen de couverture reposent de préférence au moins en partie sur la paroi de fond, et
dans lequel les parois latérales du moyen de couverture sont en butée de préférence au moins en partie contre les parois latérales longitudinales verticales de la partie de conduit.

6. Canal de drainage selon l'une quelconque des revendications précédentes, dans lequel la paroi de fond et / ou les parois latérales longitudinales verticales de la partie de conduit, au moins près du siphon, comporte des moyens d'isolation,
dans lequel la partie de conduit, au moins près du siphon, comprend de préférence une paroi de fond à double paroi et / ou des parois latérales longitudinales verticales à double paroi, comprenant des paroi double espacées pour former une couche d'isolation entre elles.

7. Canal de drainage selon une ou plusieurs des revendications précédentes, dans lequel une première des parois latérales longitudinales, au moins à une extrémité de celle-ci faisant face à l'opposé de la paroi de fond, comprend un bord s'étendant sensiblement parallèle à la paroi de fond et s'éloignant d'une deuxième paroi latérale longitudinale située opposée à la première paroi latérale longitudinale, et dans lequel le bord comprend de préférence une ou plusieurs trous de passage.

8. Canal de drainage selon une ou plusieurs des revendications précédentes, dans lequel une première paroi latérales longitudinales comprend une paroi de retenue faisant saillie sensiblement perpendiculairement à la paroi de fond et au-dessus du canal de drainage, dans lequel la paroi de retenue est placée de préférence décalée au niveau de la première paroi latérale longitudinale, au moins au niveau d'une extrémité de celle-ci qui fait face à l'opposé de la paroi de fond, et dans lequel la paroi de retenue comprend de préférence une ou plusieurs trous de passage.

9. Canal de drainage selon une ou plusieurs des revendications précédentes, dans lequel au moins une paroi latérale longitudinale, au moins considérée en coupe transversale du canal de drainage, comprend une section de paroi inclinée,
dans lequel la section de paroi inclinée de l'au moins une paroi latérale longitudinale, au moins considérée en coupe transversale du canal de drainage, penche de préférence vers la paroi latérale longitudinale opposée,
dans lequel la section de paroi inclinée de l'au moins une paroi latérale longitudinale, au moins considérée en coupe transversale du canal de drainage, comprend de préférence un profil en queue d'aronde.

10. Canal de drainage selon une ou plusieurs des revendications précédentes, dans lequel la partie de conduit comprend des parois latérales transversales verticales situées à ses extrémités, et / ou dans lequel la paroi de fond comprend une section de paroi en pente vers l'ouverture d'écoulement.

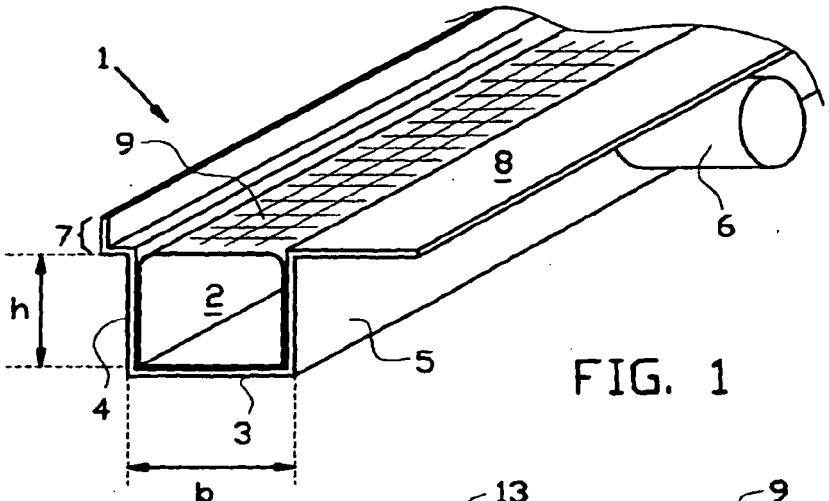

FIG. 1

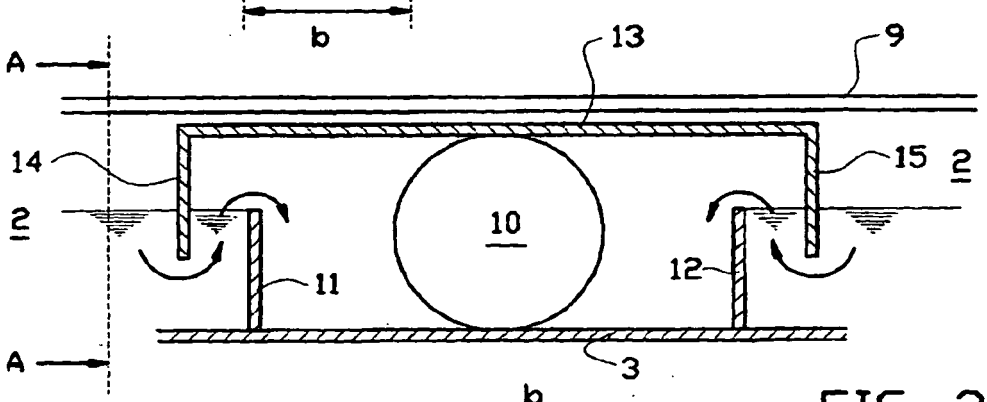

FIG. 2

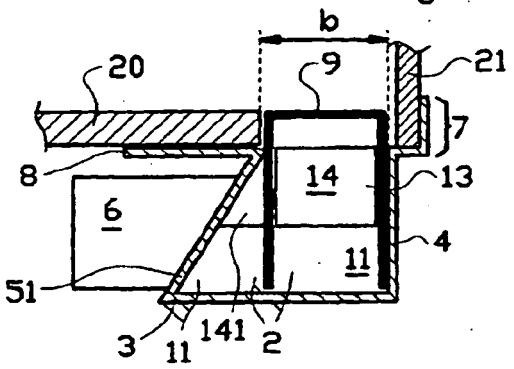

FIG. 3

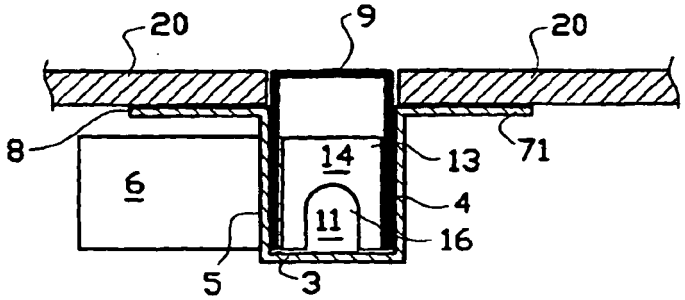

FIG. 4

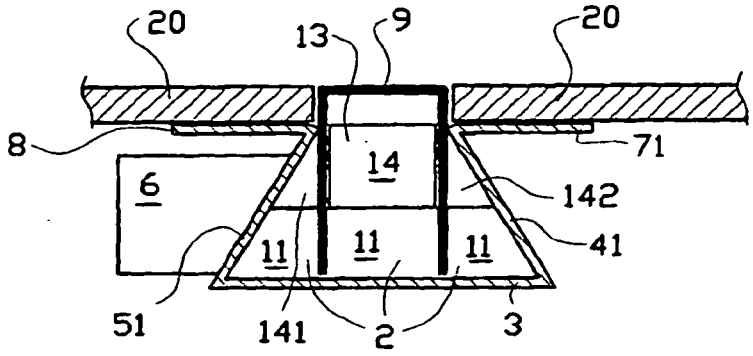

FIG. 5

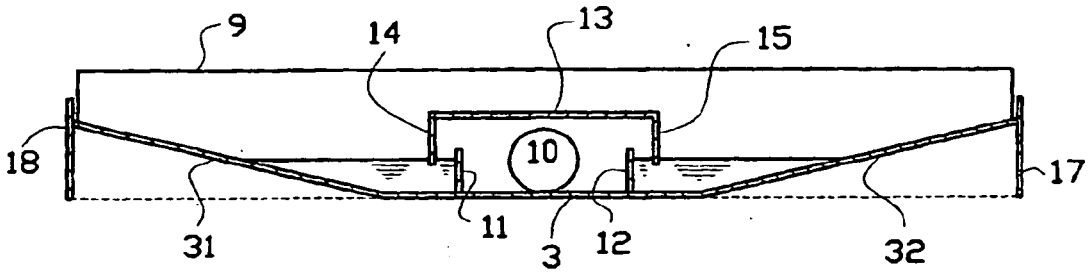

FIG. 6

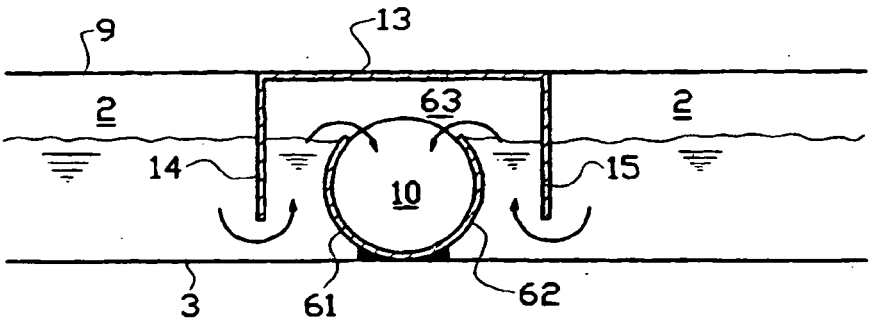

FIG. 7

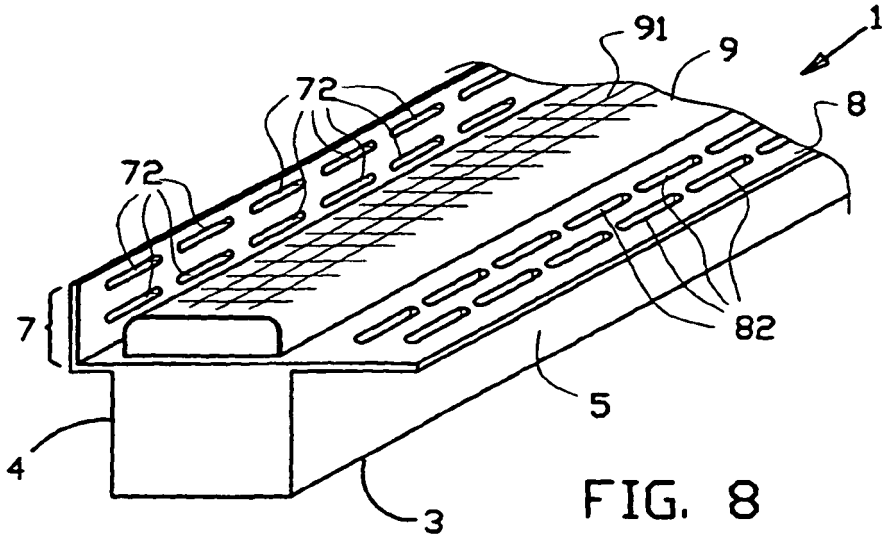

FIG. 8

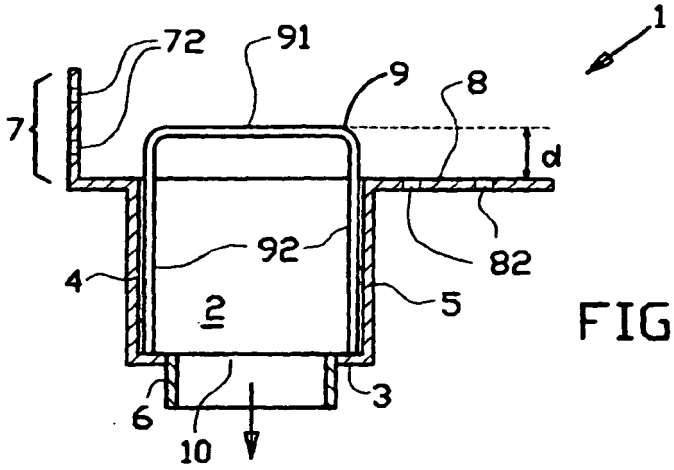

FIG. 9

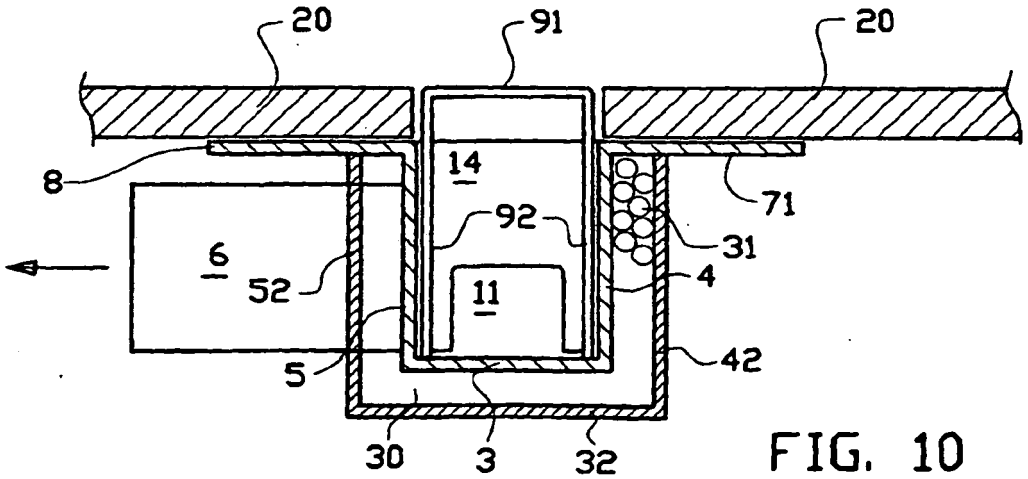

FIG. 10

REFERENCES CITED IN THE DESCRIPTION

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