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(54) Shower installation

(57) A shower installation (2) is provided including a shower unit (30) and a tray element (4) into which the shower unit (30) is located when installed for supporting said shower unit (30) in use. The shower unit (30) has an upper surface (32) and a lower surface (34) and the upper and lower surfaces (32,34) of the shower unit (30) have substantially different shapes. At least part of the lower surface (34) is shaped so as to substantially fit within the tray element (4) and the upper surface (32) is shaped so as to provide an angled slope towards a drainage aperture (38) defined at a suitable location between the upper and lower surfaces (32,34).

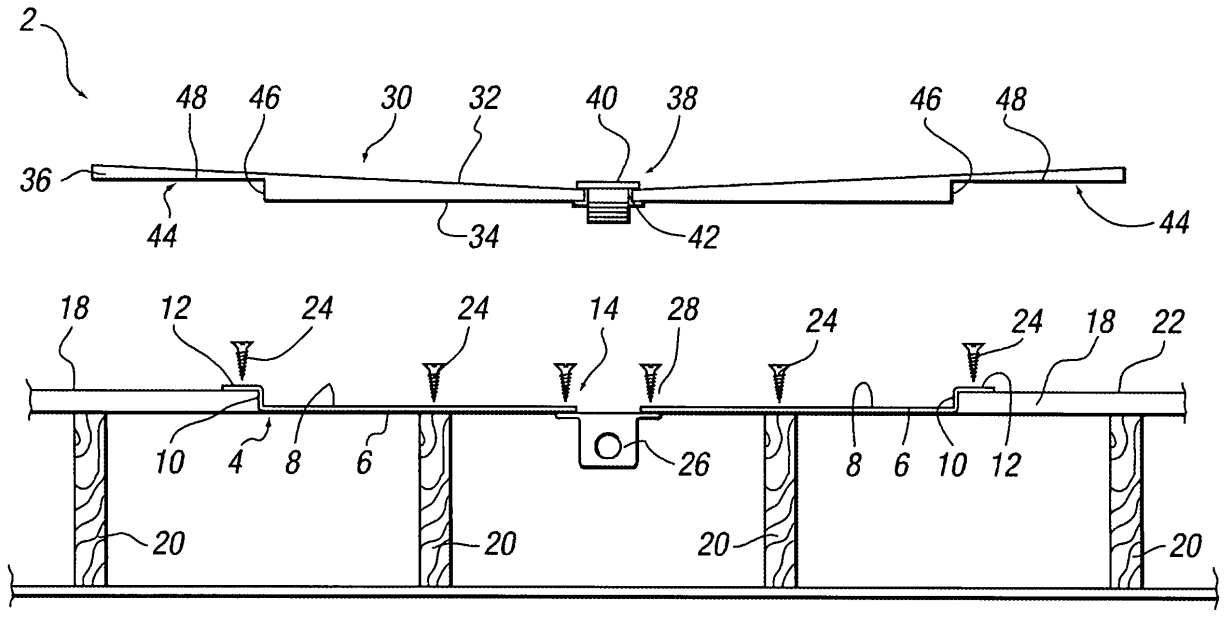

FIG. 4

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Description

[0001] This invention relates to a shower installation.

[0002] Conventionally, shower installations include a shower tray which is mounted on top of a floor surface at a suitable location. A cubicle is typically mounted on the shower tray so as to limit the flow of water from a shower fitting to the shower tray and cubicle. One or more doors are provided on the cubicle for allowing a user to enter and exit the same. Whilst such shower installations are adequate in preventing water from the shower splashing onto any surface external of said shower tray and cubicle, they require a user to step up into the tray. As such, users such as disabled, elderly and/or frail users are likely to have difficulties using conventional shower installations. In addition, conventional shower installations are of only limited aesthetic appeal.

[0003] An example of a conventional shower installation is disclosed in DE19746944. In this example, a shower member is located in a base member and the base member is located on top of a floor surface, such that the shower member and base member protrude substantially above the floor surface. The shower member and the base are substantially the same shape and are separated by an intermediate member.

[0004] In order to overcome the abovementioned problems, it is becoming increasingly popular to provide shower installations in a wet room type of arrangement 100, as illustrated in figure 5. Such arrangements include a shower unit 102 which is located onto the floor surface, such as the floorboards 104 of a room and water from the shower falls onto the shower unit and surrounding surface 105 and drains through a drain outlet 106 provided in the shower unit. A waterproof seal 108 can be provided between the surrounding surface 105 and the shower unit 102 to prevent the ingress of water therebetween. A further drain portion 110, such as a trap, is typically recessed in an aperture made in the floor boards. A rigid drain support 112, typically in the form of a box, is required to be securely fitted between the joists 114 of the floor board 104 adjacent the aperture. The further drain portion 110 is located in the drain support for connection with relevant pipework and the support is filled with cement so as to secure the further drain portion in place. The top of this cement filled drain support also provides a supporting surface for the shower unit which is located on top thereof when assembled.

[0005] A problem with this type of arrangement is that the shower unit 102 sits on and protrudes a significant height above the floorboards 104. As such, a new floor surface 105 has to be constructed around the high profiled shower unit and this is both expensive and time consuming.

[0006] In order to reduce the problem associated with constructing a new floor surrounding the shower unit, the profile of the shower unit can be reduced by recessing the shower unit in the floor. This requires a new sub floor to be constructed by cutting out a recess in the floor boards and joists to a height substantially equal to the height of the shower unit. The shower unit is then located in the new recessed sub floor. The drain support is constructed in a similar manner to that described above and is located below the newly defined sub floor, thereby requiring more cutting of the floor and joists. This arrangement requires a significant amount of levelling and cutting and takes a considerable amount of time to prepare the sub floor and drain support. As such, this arrangement can be expensive to fit due to labour costs. In addition, other services provided under the floor boards, such as electrical cabling, water and/or gas pipework and/or similar have to be rerouted or the floor cut further to allow the services to be located under the shower installation.

[0007] It is therefore an aim of the present invention to provide a shower installation which is simpler, quicker and easier to fit.

[0008] It is a further aim of the present invention to provide a method of fitting a shower installation.

[0009] According to a first aspect of the present invention there is provided a shower installation, said shower installation including a shower unit and a tray element into which the shower unit is located when installed for supporting said shower unit in use, the shower unit having an upper surface and a lower surface, characterised in that the upper and lower surfaces of the shower unit have substantially different shapes, at least part of the lower surface being shaped so as to substantially fit within the tray element and the upper surface being shaped so as to provide an angled surface towards a drainage aperture defined at a suitable location between the upper and lower surfaces.

[0010] The tray element is designed so as to be located in a suitable sized aperture in a floor surface in use. Thus, when fitted, the tray element and the shower unit do not protrude a significant height above the floor surface compared to prior art shower installations. To further reduce the height provided by the shower installation, the lower surface of the shower unit and top of the tray element are typically substantially adjacent to and in contact with each other. Thus, any gaps are removed between the tray element and shower unit which may add unnecessary height to the installation.

[0011] The tray element of the present invention has the advantage that it braces and strengthens the surrounding floor in which it is located in use, it supports the upper shower unit thereon and typically also supports the drains means, such as the trap and waste outlet conduit in the required position.

[0012] Water from a shower typically falls onto an upper surface of the shower unit in use and is drained via suitable drainage means provided with the shower unit. The drainage means are in the form of or are associated with the drainage aperture. The drainage aperture or apertures can be provided in any suitable location on the shower unit and the upper surface is shaped accordingly.

[0013] Preferably the tray element is capable of being mounted between two or more locations on a floor sur-

face in which the shower installation is to be fitted. For example, the tray element is typically suspended between two or more edges of a floor surface, joists and/or the like.

[0014] The tray element typically includes at least an upper or top surface, a lower or base surface and one or more side walls. The side walls of the tray element are typically of substantially equal height to the height of the floorboards, although the side walls can be of a different height if required.

[0015] Further preferably the tray element is provided with a lip or flange means around a peripheral edge thereof and typically adjacent an upper edge of the side walls. Said lip or flange means typically protrudes outwardly of the tray element and engages with the edge of the floor surface surrounding the hole in the floor in which the tray is to be located. The lip or flange means allows the tray element to be suspended between locations on a floor surface in use.

[0016] The tray element can be attached to the joists of a floor and/or the floor surface, such as floor boards, via attachment means. The attachment means can include any or any combination of one or more screws, nuts and bolts, clips, adhesive, cement, friction fit, welding and/or the like.

[0017] Preferably drain means are provided in or adjacent an aperture defined in the tray element and/or integrally formed therewith. The drain means can include a drain element, trap and/or the like. The drain means of the tray element are typically in communication with the drain means of the shower unit.

[0018] In one embodiment the drain means are attached to a surface, and preferably an underside surface, of the tray element surrounding the aperture. The drains means can be attached via any suitable attachment means. Thus, there is no requirement to construct a separate drain support as is required in prior art arrangements.

[0019] The shower unit typically has at least an upper surface and a lower surface. A recess portion is provided on the lower surface at a pre-determined distance from the peripheral edges thereof and a shoulder portion is defined between the recess portion and remaining lower surface. This shoulder portion is typically adjacent to or abutting with the side walls of the tray element when installed. The recess portion is located over the flange or lip means of the tray element. Thus, the shower unit utilises the recess provided by the tray element to provide the shower unit with a lower profile relative to the surrounding floor surface than conventional shower arrangements. Most of the height of the shower unit sits in the tray element compared to sitting on top of the floorboards as in conventional arrangements.

[0020] The recess portion of the shower unit extends substantially beyond the lip or flange means of the tray element (i.e. it can extend outwardly in a substantially horizontal direction).

[0021] In one embodiment the depth of the shower unit adjacent the recess portion decreases from the outermost edge to the shoulder portion or towards a central area of the shower unit, such that with the recess portion of the shower unit located over the flange of the tray element, the outermost edge of the shower unit is still in contact with the surrounding floor surface when assembled.

[0022] The depth of the remaining portion of the shower unit typically has a narrowing taper from the recess portion towards a drain means or centre of the shower unit.

[0023] Preferably an aperture is defined in the shower unit and said aperture is typically substantially aligned with the aperture or drain means of the tray element when the shower unit is fitted with the tray element.

[0024] Further preferably drain means are provided in the aperture of the shower unit or integrally formed therewith. For example, the drain means can include a waste outlet, sealing means and/or the like.

[0025] Preferably the upper surface of the shower unit is angled at an acute angle to the horizontal and is angled downwardly towards the drain means/aperture. Thus the peripheral edge of the shower unit is provided at a greater height than the aperture to which drain means are connected. The upper surface of the shower unit is typically planar in form.

[0026] The angle of the upper surface of the shower unit typically depends on the size of the shower unit.

[0027] Preferably the shower installation is for use in a wet room application and further preferably the installation is for use with suspended timber floors, although it can be used with other types of floor, such as concrete screed flooring.

[0028] Preferably once the shower installation is fitted, sealing means can be used to seal all abutments and edges of the installation with a suitable water resistant material, such as ceramic floor tiles, porcelain tiles, sheet flooring and/or the like. For example, between the floor surface and the shower unit and/or tray element.

[0029] In one embodiment the base of the tray element is a substantially continuous planar/linear surface which provides a substantially horizontal support surface for the shower unit when installed.

[0030] According to a second aspect of the present invention there is provided a method of fitting a shower installation, said method including the steps of suspending a tray element between edges of a floor surface defining a hole in the floor surface and engaging a shower unit to an upper surface of said tray element, the shower unit having an upper surface and a lower surface, characterised in that the upper and lower surfaces of the shower unit have substantially different shapes, at least part of the lower surface being shaped so as to substantially fit within the tray element and the upper surface being shaped so as to provide an angled slope towards a drainage aperture defined at a suitable location between the upper and lower surfaces.

[0031] A user typically cuts a suitable shaped hole in

the floor surface to allow fitting of the tray element therein.

[0032] According to further independent aspects of the present invention there is provided a shower unit and a tray element.

[0033] According to a yet further aspect of the present invention there is provided a kit of parts for a shower installation.

[0034] Thus, the present invention provides a shower installation of substantially lower profile than prior art arrangements without requiring significant amounts of cutting of the existing floor and without the requirement for constructing a sub-floor surface. As such, the advantages of the present invention are that the shower installation can be fitted in substantially less time, typically one hour compared to a full days fitting required with prior art shower installations. Since the tray element of the present invention can be suspended between the floorboards or floor defining the cut out portion, it is not essential for the tray element to be attached to the joists. As such, the present invention does not require substantial joinery construction as a result of the joists of the floor having to be cut which is often a time consuming step in the method for fitting conventional shower installations. Furthermore, there is no requirement for the trap and drain means of the present invention to be located in concrete in a support provided in the cut out since the trap and/or drain means can be fitted at one end to appropriate pipework in the premises of the building in which the shower installation is to be fitted and suspended at a further end to the base of the tray element. In addition, the shower installation of the present invention provides a relatively low profile shower installation which is high in strength.

[0035] For example, with a conventional shower unit of 1200mm x 1200mm, this area of floorboards would be required to be removed and the joists thereunder cut to an appropriate height. In the present invention, only an 800m x 800m section of the floor needs to be cut to allow the tray element to be located therebetween and no joists need to be cut or services re-routed. The shower unit is located in the tray element and only a portion of the height of the shower unit protrudes above the floor surface (i.e. 15.4mm compared to 40mm with conventional arrangements when the shower unit is located directly on the floorboards).

[0036] An embodiment of the present invention will now be described with reference to the accompanying figures, wherein:

Figure 1 is a plan view of a tray element according to one embodiment of the present invention;

Figure 2 is a side view of part of a shower unit according to one embodiment of the present invention;

Figure 3 is a plan view of the tray element in figure 1 set into floorboards of a floor surface prior to installation of the shower unit in figure 2 therein;

Figure 4 is an exploded side view showing the tray element and shower unit; and

Figure 5 is a cross section taken through one example of a prior art shower installation.

[0037] Referring to the figures, there is illustrated a shower installation 2 for use in a wet room.

[0038] The shower installation includes a tray element 4 which has a base 6, top surface 8, side walls 10 and a peripheral flange 12 provided on an upper edge of the side walls 10 and extending outwardly of the tray element. An aperture 14 is provided substantially centrally of the tray element for the location of drain means therein. It will be appreciated that the aperture can be provided at any suitable position in the tray element as required.

[0039] A plurality of screw holes 16 are defined in the tray element 4 at spaced apart intervals on the peripheral flange and between the top and base surfaces 6, 8. More specifically, the screw holes made in the tray element are typically in alignment with the joists of the floor boards on which the tray element is to be located and surrounding aperture 14.

[0040] In use, a cut out portion is made in the floor surface in which the shower installation is to be located. This cut out portion can be made using a circular saw or other suitable cutting tool and it is typically made at a suitable location in a room so as to be within an area in which water from a shower head will fall. The cut out portion is typically surrounded by floorboards 18 and joists 20 supporting the floorboards of the floor surface are visible through the cut out portion. The cut out portion is typically of substantially the same dimensions as the base 6 of tray element 4, thereby allowing tray element 4 to be located in the cut out portion, as shown in figure 4, with the side walls 10 of the tray element abutting the free ends of the floor boards 18, the flange 12 resting on a top surface 22 of the floor boards 18 and parts of the base 6 resting on the joists 20. The tray element is secured in position via screws 24 which are located through screw holes 16. Drain means in the form of a trap 26 are attached to the base 6 of the tray element via screws 28 prior to location of the tray element in the cut out portion. The trap 26 is also fitted to suitable pipework in the premises in which the shower installation is to be fitted below the tray element.

[0041] With the tray element located in position on the floor surface, a shower unit 30 is fitted to the tray element. Dotted line 31 in figure 3 illustrates the position of shower unit 30 when assembled. The shower unit 30 includes a top surface 32, a base surface 34, side walls 36 and an aperture 38 defined between the base and top surfaces 32, 34. The base surface 34 of the shower unit abuts against the upper surface of the tray element and both surfaces are typically flat planar surfaces. Drains means in the form of a waste outlet 40 is fitted in aperture 38 and a rubber seal 42 is located around outlet 40 to prevent leakage of any water between the shower unit and tray

element. The waste outlet 40 communicates with trap 26 on the tray element.

[0042] A recess portion 44 is defined in base surface 34 adjacent a peripheral edge thereof. A shoulder portion 46 is defined between the recess portion and base surface 34 and this shoulder portion abuts the side wall 10 of the tray element when the shower installation is assembled. Surface 48 of recess portion 44 is located over flange 12 and contacts upper surface 22 of floor boards 18.

[0043] The top surface 32 of the shower unit is provided at an acute angle to the horizontal, the slope of the angle falling inwardly towards aperture 38, such that the peripheral edge of top surface 32 is at a greater height with respect to the floor boards compared to aperture 38. The depth of the shower unit also has a narrowing taper from the peripheral edge towards aperture 38. Surface 48 can be provided at a reverse angle to top surface 32, such that the peripheral edge of the underside of the tray is in contact with the top surface of the floor boards.

[0044] Once fitted the floor surrounding the shower installation can be built up with tiles and/or other suitable flooring so that the upper peripheral edge of the shower unit is substantially flush with the surrounding floor surface. The degree to which the floor surrounding the shower installation needs to be built up by depends on the size of the shower unit. For example, the top peripheral edge of a 900mm shower unit is at a height of 8.8mm above the floor surface, a 1000mm shower unit is at a height of 11.0mm above the floor surface, a 1100mm shower unit is at a height of 13.2mm and so on. The surrounding floor will need to be built up to a height corresponding to the height of the shower unit.

[0045] The angle or gradient of the top surface of the shower unit can be at any suitable angle to allow adequate drainage of water falling onto the shower unit through waste outlet 40. For example, the gradient can be 4.4% in one embodiment.

[0046] The shoulder portion 46 on the shower unit can be provided at such a distance from the peripheral edge so as to allow a number of different sized shower units to be locatable with a single universal tray element or a small number of tray elements. For example, an 800mm tray element can be used with a 900mm shower unit and/or a shower unit larger than 900mm. Alternatively, a specific size of tray element can be provided for each size of shower unit.

[0047] The lower tray element of the present invention is designed to utilise the depth of the removed floorboards to allow connection to a drain outlet. It allows, for example, a 1500mm x 1500mm "wet area" to be installed into a suspended timber floor with only a 22mm covering being required to be added on top of the floorboards to complete the wet area and a 33m fall from the peripheral edge of the shower unit to the drain outlet. Smaller shower installations will achieve even less height above the floorboards. As such, the present invention does not require building up of the surrounding floor to the same degree as conventional shower installations, thereby reducing the time taken to fit the shower installation of the present invention.

[0048] Whilst the drainage apertures in the tray element and shower unit are illustrated as being substantially central thereof, it will be appreciated by persons skilled in the art that the drainage aperture or apertures could be provided at any suitable location on the tray element and shower unit and the shower unit would be shaped accordingly.

[0049] The shower units and tray elements can be provided in any suitable size, shape and/or design.

Claims

1. A shower installation, said shower installation including a shower unit and a tray element into which the shower unit is located when installed for supporting said shower unit in use, the shower unit having an upper surface and a lower surface, **characterised in that** the upper and lower surfaces of the shower unit have substantially different shapes, at least part of the lower surface being shaped so as to substantially fit within the tray element and the upper surface being shaped so as to provide an angled surface towards a drainage aperture defined at a suitable location between the upper and lower surfaces.

2. A shower installation according to claim 1 **characterised in that** the tray element supports drain means associated with the shower installation.

3. A shower installation according to claim 2 **characterised in that** the drain means include a trap and/or waste outlet conduit.

4. A shower installation according to claim 2 **characterised in that** the drain means are attached to or integrally formed with a base of the tray element and/or associated with an aperture defined in the base of the tray element.

5. A shower installation according to claim 1 **characterised in that** the tray element includes an upper surface, a lower surface and side walls with a lip or flange means around a peripheral edge of said side walls.

6. A shower installation according to claim 5 **characterised in that** a recess portion is defined on the lower surface of the shower unit and said recess portion is located over the lip of flange means of the tray element when assembled.

7. A shower installation according to claim 6 **characterised in that** a shoulder portion is defined between the recess portion and the remaining lower surface

of the shower unit, the shoulder portion being located adjacent to or in abutting relationship to the side walls of the tray element when assembled.

8. A shower installation according to claim 6 **characterised in that** the recess portion of the shower unit extends outwardly substantially beyond the lip or flange means of the tray element.

9. A shower installation according to claim 6 **characterised in that** the depth of the shower unit at the recess portion decreases from the free or outermost edge of the recess portion towards the centre of the shower unit.

10. A shower installation according to claim 7 **characterised in that** the remaining surface of the shower unit tapers from the shoulder unit towards the drain means or centre of the shower unit.

11. A shower installation according to claim 1 **characterised in that** a substantial height or depth of the shower unit is located within the tray element.

12. A shower installation according to claim 1 wherein drain means are associated with the aperture defined between the upper and lower surfaces of the shower unit.

13. A shower installation according to any preceding claim wherein the aperture defined in the shower unit is substantially aligned with the aperture defined in the tray element.

14. A shower installation according to claim 1 wherein the upper surface of the shower unit is angled at an acute angle to the horizontal and slopes downwardly towards the drain aperture.

15. A shower installation for use in a wet room application.

16. A shower installation according to claim 1 **characterised in that** sealing means are associated with at least the peripheral edges of the tray element and/or shower unit.

17. A shower installation according to claim 1 **characterised in that** the base of the tray element is substantially horizontal and planar/linear in form.

18. A shower installation according to claim 1 **characterised in that** attachment means are used to attach the tray element to a floor surface and/or the shower unit to the tray element.

19. A shower installation according to claim 18 **characterised in that** the attachment means include any or any combination of one or more screws, nuts and bolts, clips, adhesive, cement, welding or friction fit.

20. A shower installation according to claim 1 **characterised in that** the base of the shower unit is substantially adjacent to and in contact with the top of the tray element when assembled.

21. A shower installation according to claim 1 **characterised in that** the upper surface of the shower unit is typically planar in form.

22. A method of fitting a shower installation, said method including the steps of suspending a tray element between edges of a floor surface defining a hole in the floor surface and engaging a shower unit to an upper surface of said tray element, the shower unit having an upper surface and a lower surface, **characterised in that** the upper and lower surfaces of the shower unit have substantially different shapes, at least part of the lower surface being shaped so as to substantially fit within the tray element and the upper surface being shaped so as to provide an angled slope towards a drainage aperture defined at a suitable location between the upper and lower surfaces.

23. A method according to claim 22 **characterised in that** the side walls of the tray element are formed to be of substantially equal height to the height of the floor surface in which the tray element in suspended and are provided adjacent to or in abutting relationship with the floor surface when fitted.

24. A method according to claim 22 **characterised in that** the tray element is provided with lip or flange means around a peripheral edge thereof and the lip or flange means are attached to the floor surface during fitting via attachment means.

25. A method according to claim 22 **characterised in that** sealing means are provide between the floor surface and the peripheral edges of the tray element and/or shower unit.

26. A method according to claim 22 **characterised in that** the surrounding floor surface is built up to be substantially flush with the upper surface of the shower unit.

27. A kit of parts for a shower installation, said kit including a shower unit and a tray element into which the shower unit is located when installed for supporting said shower unit in use, the shower unit having an upper surface and a lower surface, **characterised in that** the upper and lower surfaces of the shower unit have substantially different shapes, at least part of the lower surface being shaped so as to substan-

tially fit within the tray element and the upper surface being shaped so as to provide an angled surface towards a drainage aperture defined at a suitable location between the upper and lower surfaces.

28. A shower unit for use with a shower installation according to claim 1.

29. A tray element for use with a shower installation according to claim 1.

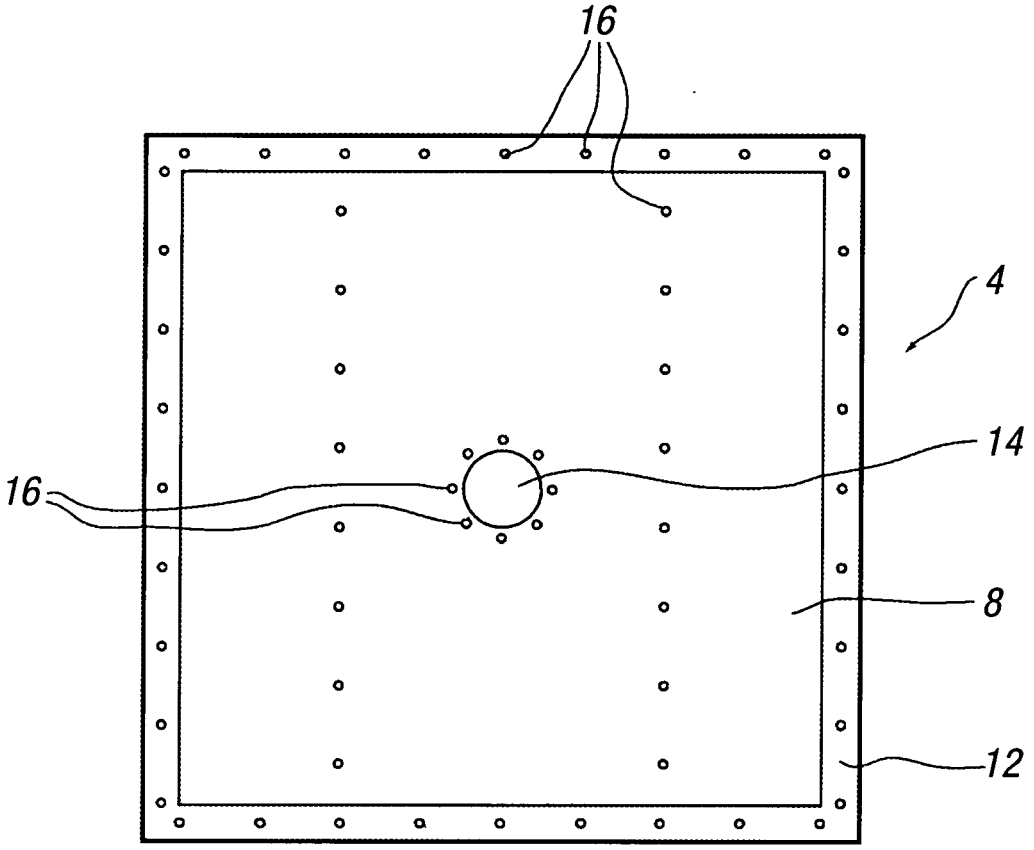

FIG. 1

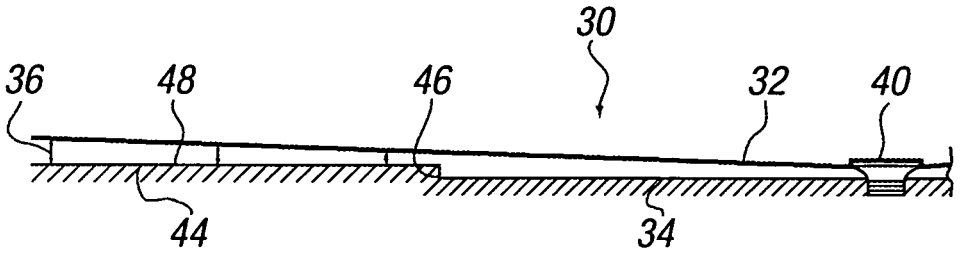

FIG. 2

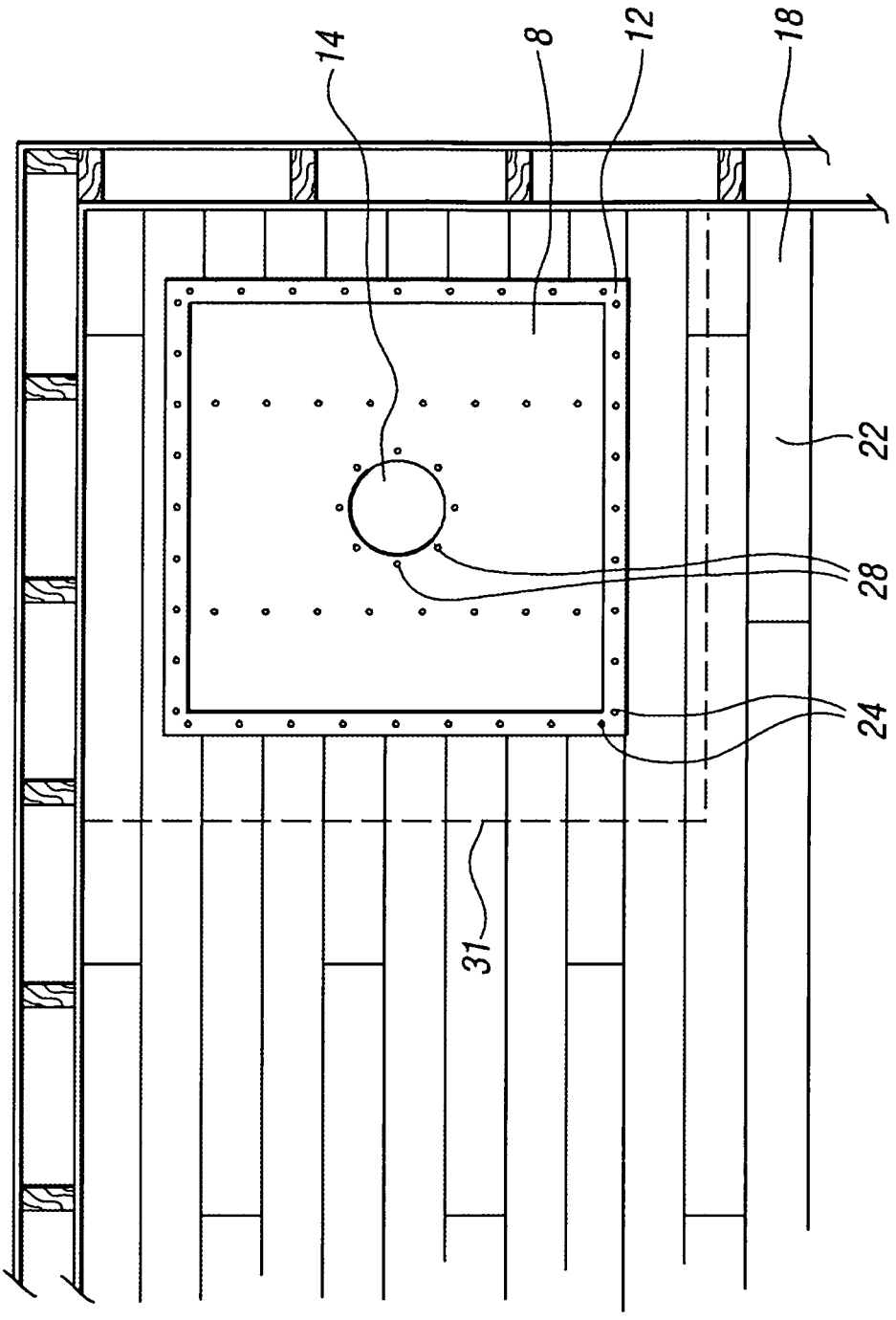

FIG. 3

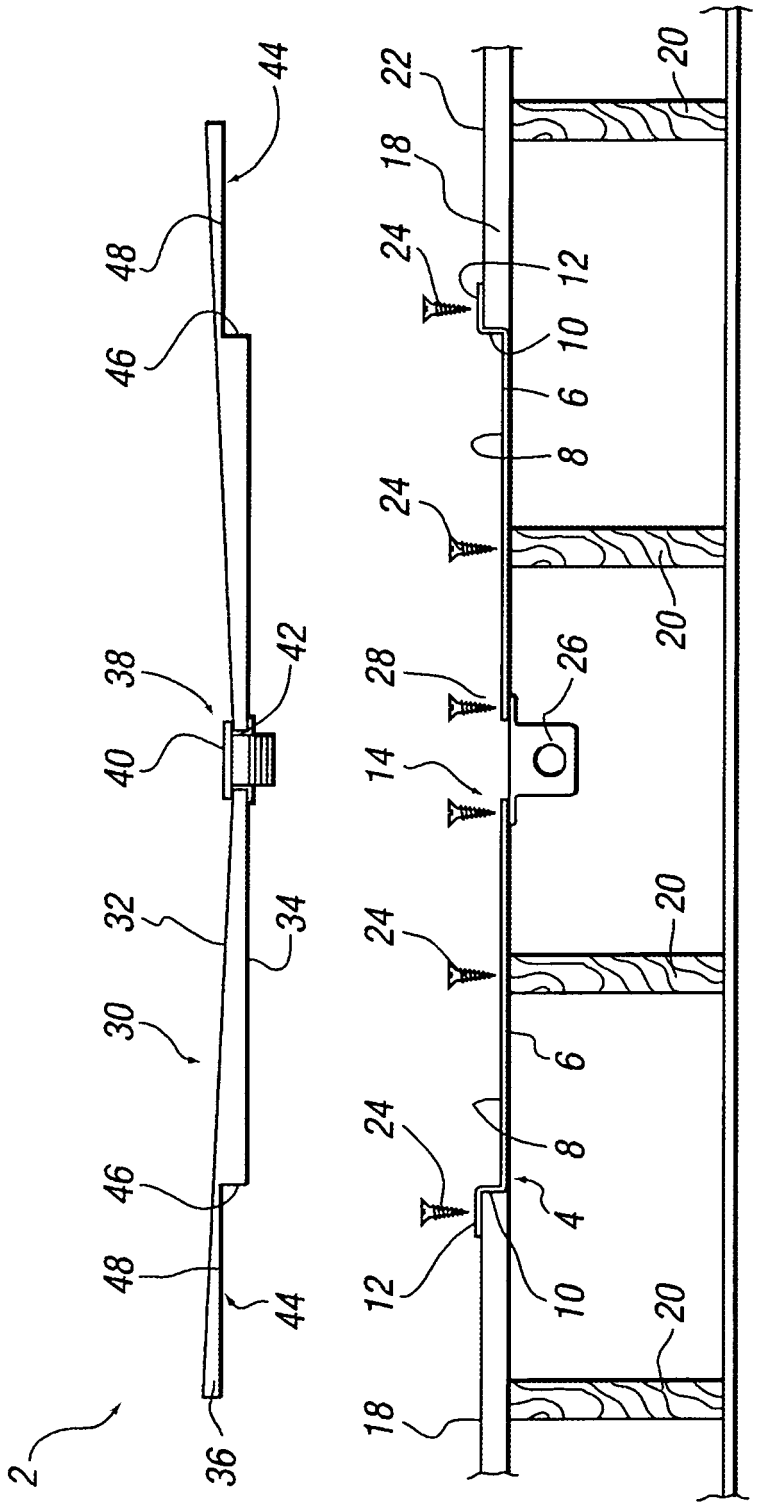
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FIG. 4

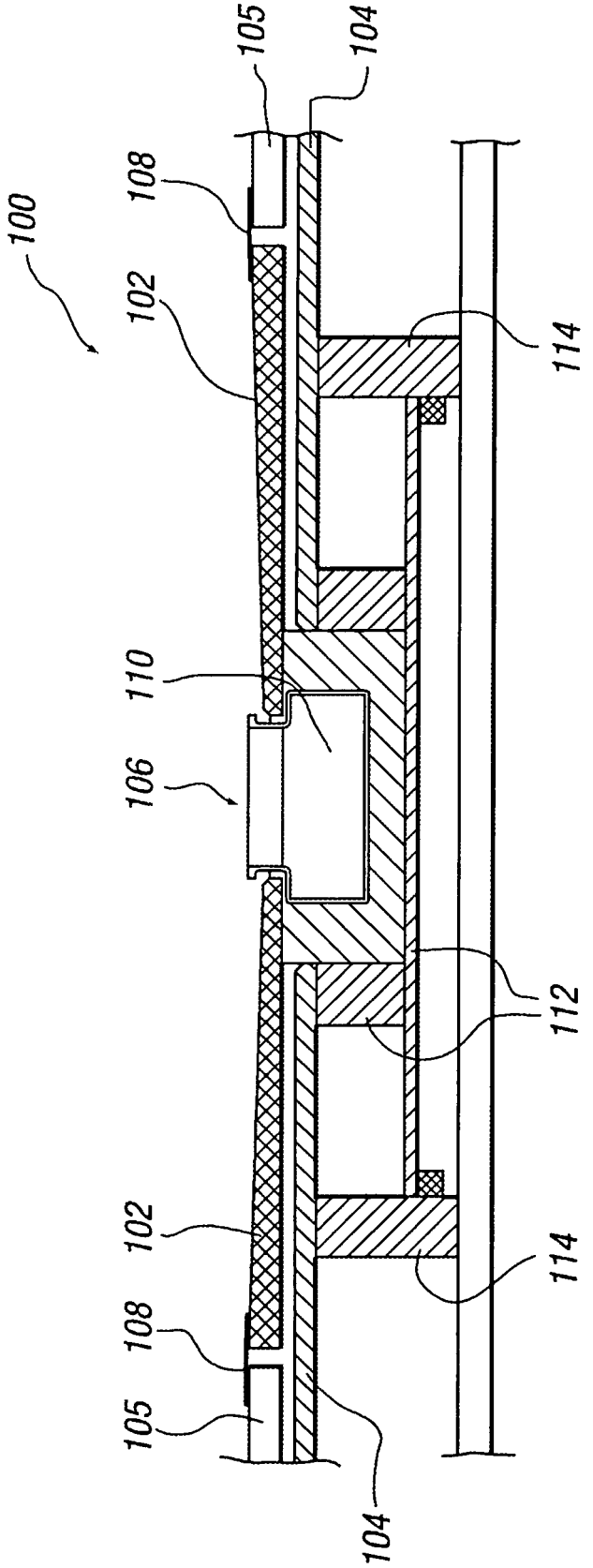

FIG. 5