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(54) **Linear floor drainage**

(57) A linear floor drainage kit (50) for use with a tubular floor drain (10) with an outlet pipe (13) in flow communication with a sewage pipe, the linear floor drainage kit (50) comprising:

- (a) a tubular floor drain adapter (51) for mounting on the floor drain (10);
- (b) an open topped linear floor drain holder (57) for mounting on said floor drain adapter (51) in a selectable orientation and having a drainage aperture (59) for draining drainage water into the floor drain (10);
- (c) a replaceable drain cover (61) for placing in said linear floor drain holder (57) and having a plurality of through-going drain apertures (62) for enabling drainage water to drain into said linear floor drain holder (57); and
- (d) a tubular smell barrier member (63) having a proximal smell barrier member end (64) and a distal smell barrier member end (66), said proximal smell barrier member (64) being in flow communication with said drainage aperture (59) and said distal smell barrier member end (66) downwardly extending into the floor drain (10) below the outlet pipe (13) such that the height of drainage water remaining in the floor drain (10) is above said distal smell barrier member end (66) thereby precluding undesirable sewage smells from the outlet pipe (13) escaping from the floor drain (10) into the atmosphere.

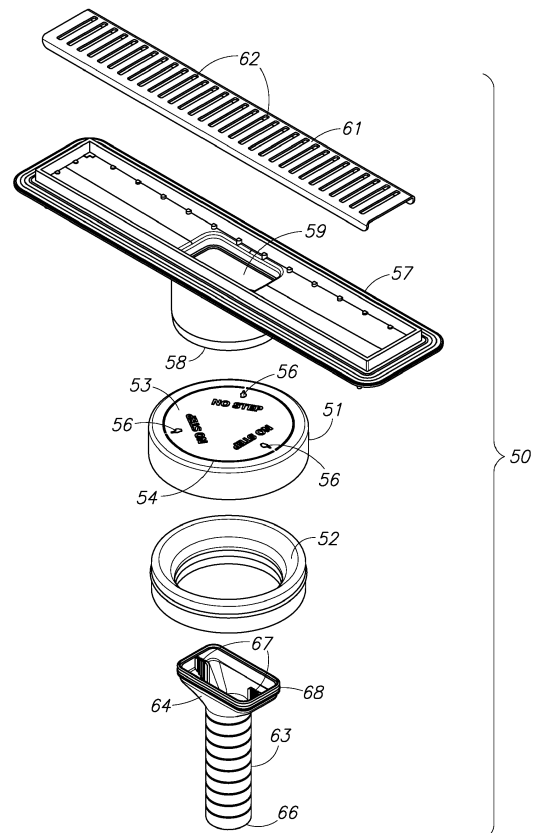


FIG.3

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## Description

### Field of the Invention

[0001] This present invention relates to linear floor drainage fixtures.

### Background of the Invention

[0002] Conventional plumbing infrastructure in bathrooms, showers, wet rooms, and the like, includes removable slotted circular drain covers placed on tubular floor drains installed in a floor and in flow communication with a sewage pipe. Conventional materials include PVC, PP and other plastics for the floor drains and brass for the drain covers. The drain covers can be interference fitted or screw fitted.

[0003] Commercially available linear floor drainage fixtures include a unitary T-shaped body with an open topped linear floor drain holder for receiving a removable drain cover and an outlet pipe for flow connection to an inlet pipe of a floor drain. Presently available linear floor drainage fixtures include a smell barrier for stopping undesirable sewage smells from a sewage pipe escaping into the atmosphere but the smell barrier does not meet Israel building standards.

### Summary of the Invention

[0004] The present invention is directed towards linear floor drainage kits for use with a floor drain in flow communication with a sewage pipe. The kit includes a tubular floor drain adapter for mounting on a pre-installed floor drain and an open topped linear floor drain holder for mounting on the floor drain adapter in a selectable orientation. The kit preferably also includes a replaceable drain cover for placing in the linear floor drain holder and a smell barrier member for precluding undesirable sewage smells from a sewage pipe escaping from the floor drain into the atmosphere.

[0005] Linear floor drainage kits of the present invention can be readily assembled on pre-installed floor drains to replace existing drain covers, for example, during renovations to replace floor tiles. Alternatively, linear floor drainage kits of the present invention can additionally include a floor drain for complete plumbing installations.

### Brief description of the drawings

[0006] In order to understand the invention and to see how it can be carried out in practice, a preferred embodiment will now be described, by way of a non-limiting example only, with reference to the accompanying drawings in which similar parts are likewise numbered, and in which:

Fig. 1 is a partially cut away perspective view of a

floor drain installed in a floor;

Fig. 2 is a perspective view of a commercially available linear floor drainage fixture;

Fig. 3 is a perspective view of a linear floor drainage kit of the present invention; and

Fig. 4 is a cut away perspective view of an installed linear floor drainage kit of the present invention.

### Detailed description of the drawings

[0007] Figure 1 shows a floor drain 10 installed in a floor. The floor drain 10 includes two inlet pipes 11 and 12 and an outlet pipe 13 in flow communication with a sewage pipe. The floor drain 10 is covered by a drain cover 14 recessed relative to surrounding floor tiles 16.

[0008] Figure 2 shows a linear floor drainage fixture 20 in the form of a unitary T-shaped body with an open topped linear floor drain holder 21 for receiving a removable drain cover 22 and an outlet pipe 23 for flow connection to an inlet pipe of a floor drain.

[0009] Figures 3 and 4 show a linear floor drainage kit 50 includes four discrete components as follows:

[0010] A tubular floor drain adapter 51 for mounting on the floor drain 10. The floor drain adapter 51 surrounds an annular seal 52. The floor drain adapter 51 is integrally formed with a removable floor drain adapter cover 53 for covering a floor drain 10 to prevent building waste inadvertently falling thereinto during construction work, innovations, and the like, possibly leading to blockages. The floor drain adapter 51 includes a circular weakened joint 54 and, say, three equispaced apertures 56 for insertion of a screwdriver and the like for enabling a plumber to readily break the joint 54 for removing the floor drain adapter cover 53 from the floor drain adapter 51 for enabling final assembly of the linear floor drainage kit 50. The floor drain adapter cover 53 preferably bears a NO STEP warning to warn it is not intended to be stepped upon.

[0011] An open topped linear floor drain holder 57 for mounting on the floor drain adapter 51. The floor drain holder 57 has a downward depending mount 58 for sealing contact with the annular seal 52 on mounting the floor drain holder 57 onto the floor drain adapter 51. The floor drain holder 57 has a rectangular throughgoing drainage aperture 59 for draining drainage water into the floor drain 10. The floor drain holder 57 can be mounted on the floor drain adapter 51 in a selectable orientation thereby facilitating installation.

[0012] A replaceable drain cover 61 for placing in the linear floor drain holder 57. The drain cover 61 has a plurality of throughgoing drain apertures 62 for enabling drainage water to drain into the linear floor drain holder 57.

[0013] An upright tubular smell barrier member 63 having a proximal smell barrier member end 64 and a distal smell barrier member end 66. The proximal smell barrier member end 64 matches the drainage aperture 59 and has snap fits 67 for snap fitting onto the linear floor drain

holder 57. The proximal smell barrier member end 64 includes a rectangular shaped O-ring 68 for sealing around the drainage aperture 59. The distal smell barrier member end 66 downwardly extends into the floor drain 10 below the outlet pipe 13 such that the height of drainage water remaining in the floor drain 10 lies thereabove thereby precluding undesirable sewage smells from the outlet pipe 13 escaping from the floor drain 10 into the atmosphere. The smell barrier member 63 can be alternatively integrally formed with either the floor drain adapter 51 or the linear floor drain holder 57.

**[0014]** While particular embodiments of the present invention are illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention.

**Claims**

1. A linear floor drainage kit for use with a tubular floor drain with an outlet pipe in flow communication with a sewage pipe, the linear floor drainage kit comprising:

(a) a tubular floor drain adapter for mounting on the floor drain;

(b) an open topped linear floor drain holder for mounting on said floor drain adapter in a selectable orientation and having a drainage aperture for draining drainage water into the floor drain;

(c) a replaceable drain cover for placing in said linear floor drain holder and having a plurality of throughgoing drain apertures for enabling drainage water to drain into said linear floor drain holder; and

(d) a tubular smell barrier member having a proximal smell barrier member end and a distal smell barrier member end, said proximal smell barrier member being in flow communication with said drainage aperture and said distal smell barrier member end downwardly extending into the floor drain below the outlet pipe such that the height of drainage water remaining in the floor drain is above said distal smell barrier member end thereby precluding undesirable sewage smells from the outlet pipe escaping from the floor drain into the atmosphere.

2. The kit according to claim 1 wherein said floor drain adapter includes a removable floor drain adapter cover for covering the floor drain for preventing building waster falling thereinto during installation of the kit, said removable floor drain adapter cover being removed for mounting said floor drain holder on said floor drain adapter.

3. The kit according to claim 2 wherein said floor drain

adapter cover includes a visual warning to warn it is not intended to be stepped upon.

4. The kit according to any one of claims 1 to 3 wherein said smell barrier member is integrally formed with said floor drain adapter.

5. The kit according to any one of claims 1 to 3 wherein said smell barrier member is integrally formed with said floor drain holder.

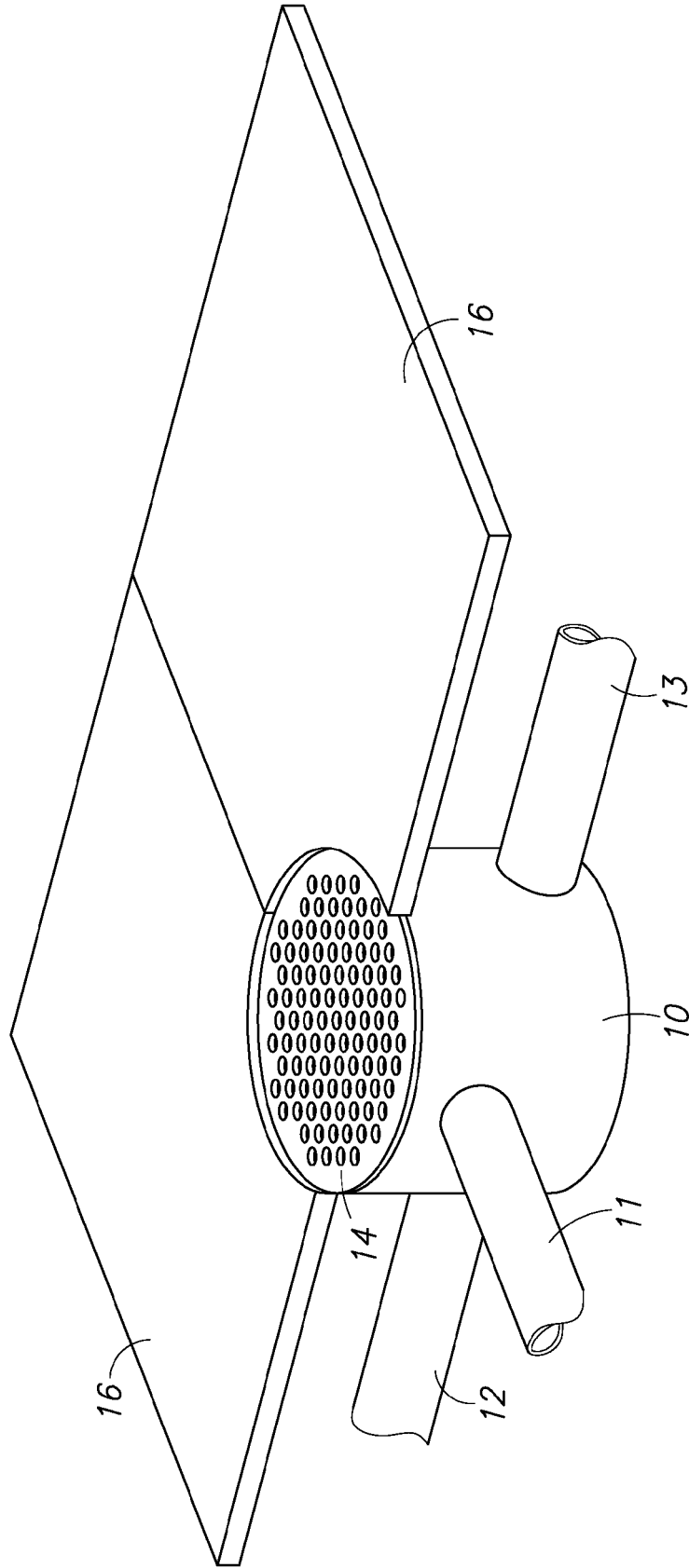


FIG.1  
(PRIOR ART)

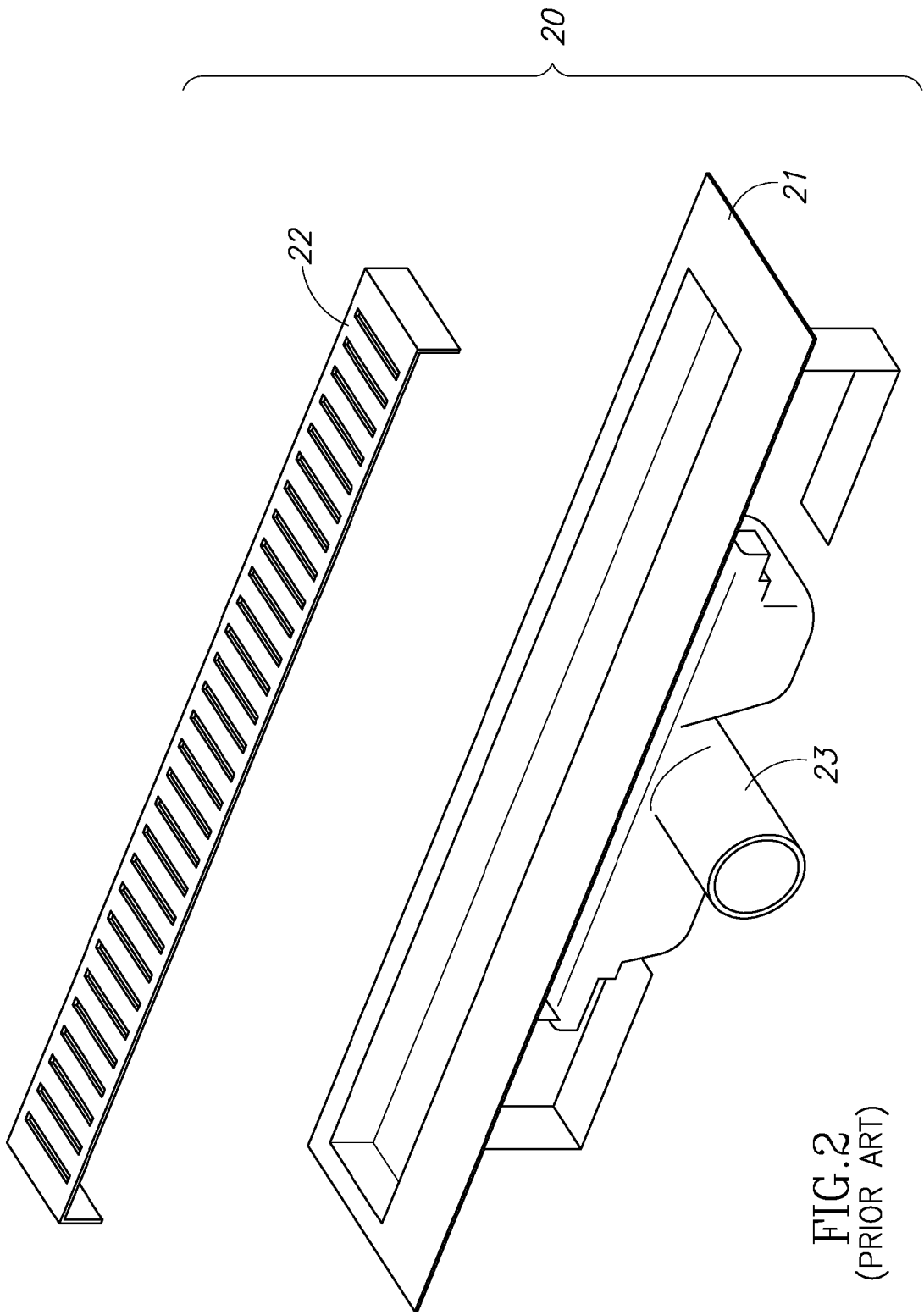


FIG. 2  
(PRIOR ART)

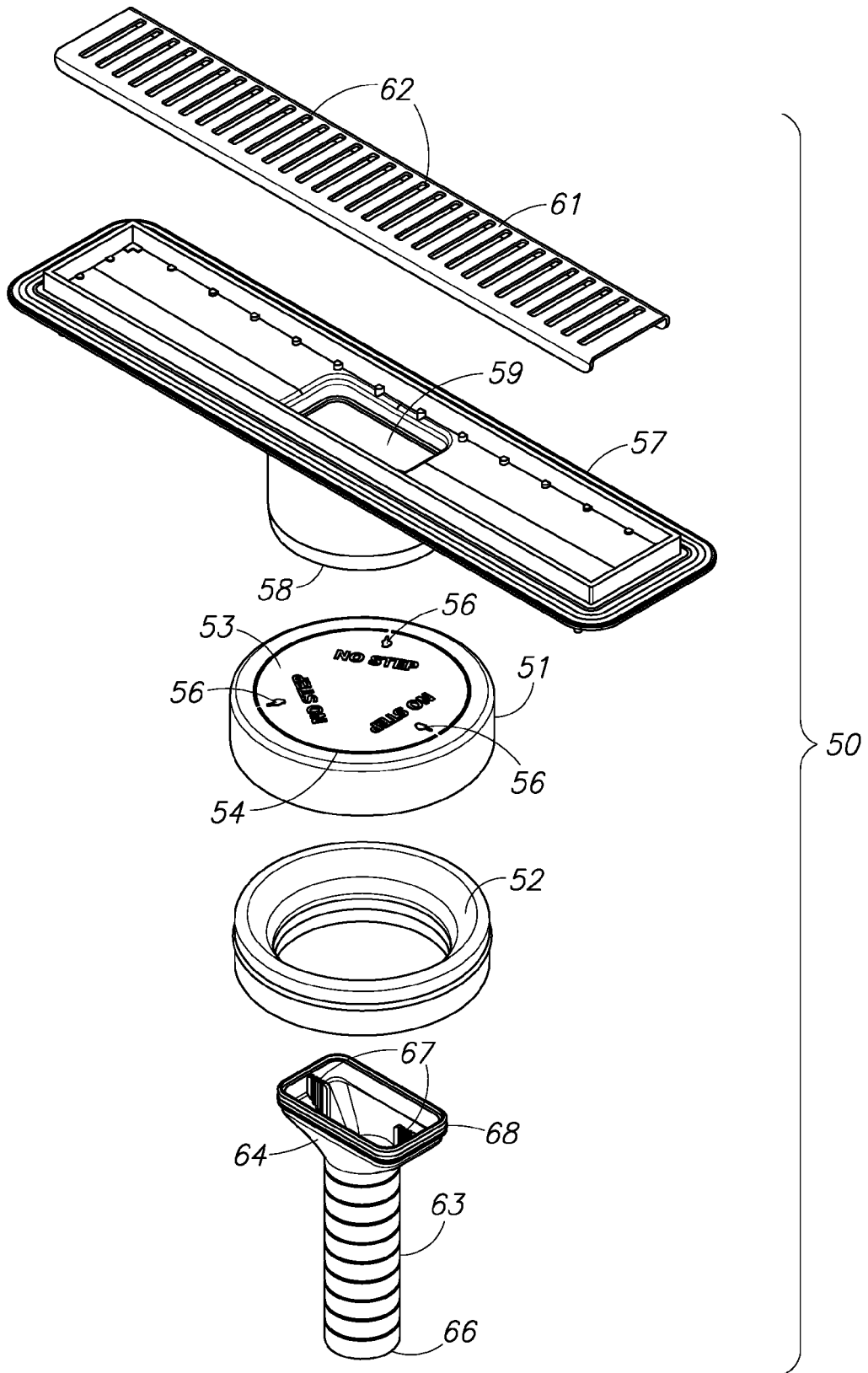


FIG.3

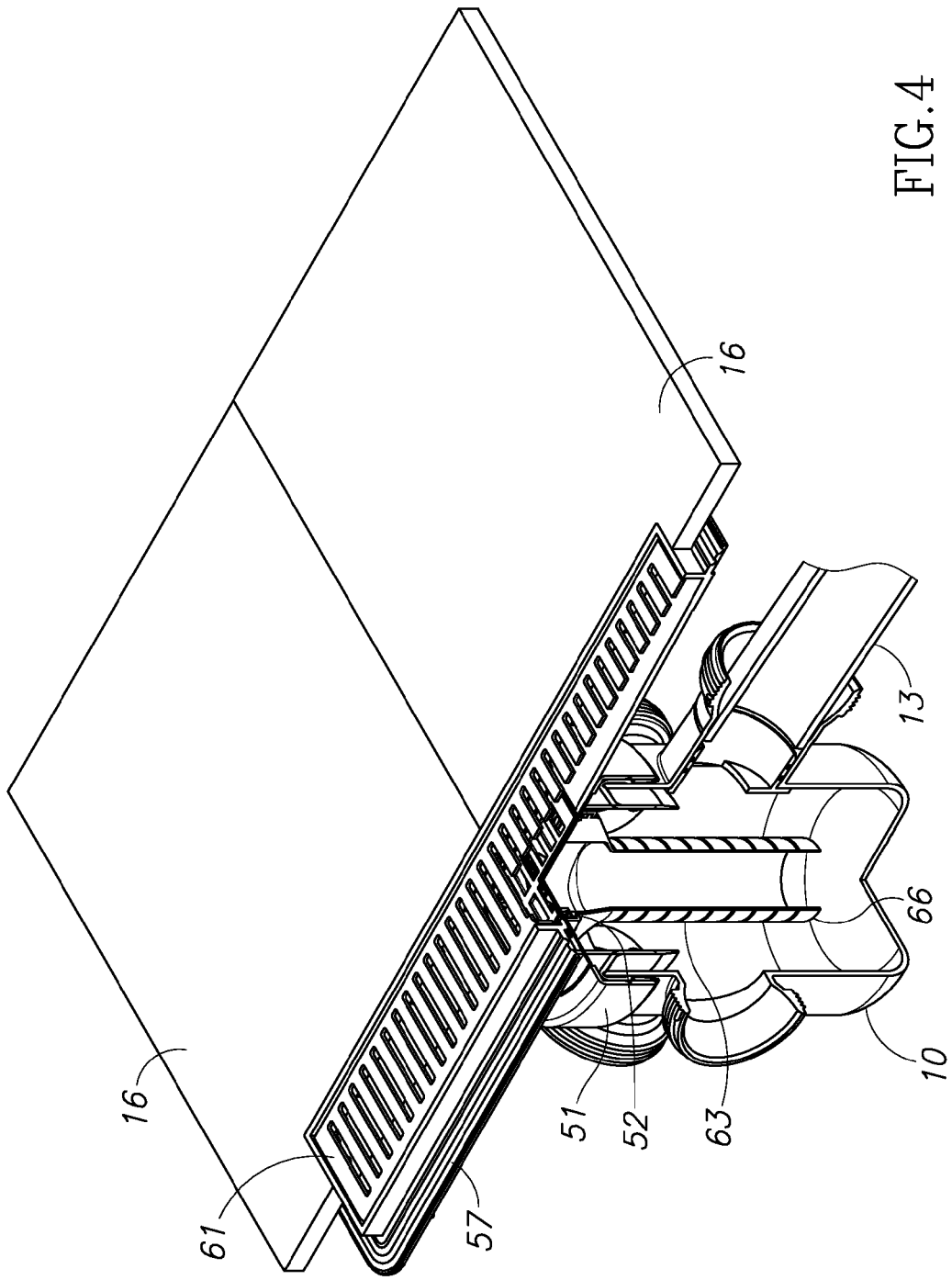


FIG. 4



EUROPEAN SEARCH REPORT

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Place of search Munich		Date of completion of the search 24 April 2015	Examiner Isailovski, Marko
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ANNEX TO THE EUROPEAN SEARCH REPORT  
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