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(54) Drain with flange plate

(57) The invention relates to a drain (1), comprising:
- a collecting tray (2,11,21,31,41) provided with a bottom with an outflow and upright walls arranged along the bottom;
- a flange plate (4,14,22,33,44) arranged against the bottom of the collecting tray, wherein the flange plate is provided with an opening for passage of the outflow.

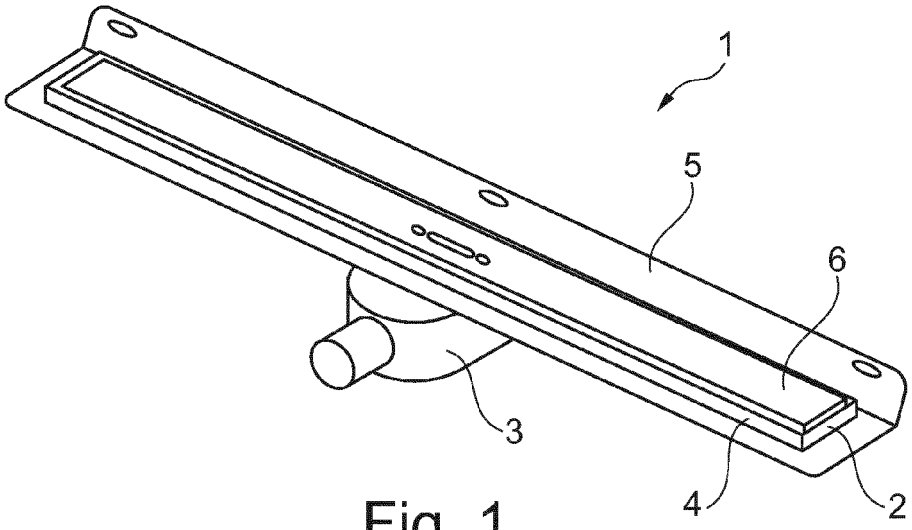

Fig. 1

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Description

[0001] The invention relates to a drain. Drains are available in numerous embodiments. Apart from having different lengths, a drain may optionally be further provided with a flange for fixing of a sealing membrane. This flange can further also be bent upward for arrangement against a wall.

[0002] Because of all these variations a supplier or manufacturer has to hold a large number of different drains in stock. This requires considerable storage space.

[0003] A sealing membrane can further be arranged on the flange, or the flange can be sand-coated. This results in even more variations.

[0004] In order to also provide a space-saving solution for the variations with or without sealing membrane it is known to provide drains with a flange and, subject to demand, to optionally also supply a separate sealing membrane. The plumber him/herself then has to arrange the sealing membrane during installation of the drain. This however increases the chance of errors, and therefore the chance of leakage. It is therefore recommended to provide a drain with a sealing membrane in the factory, even though this involves the necessity of extra storage space.

[0005] It is an object of the invention to reduce or even obviate the above stated drawbacks.

[0006] This object is achieved according to the invention with a drain comprising:

- a collecting tray provided with a bottom with an outflow and upright walls arranged along the bottom;
- a flange plate arranged against the bottom of the collecting tray, wherein the flange plate is provided with an opening for passage of the outflow.

[0007] Arranging a separate flange plate thus makes it possible using a single collecting tray to provide either a drain without flanges or a drain with flanges.

[0008] The manufacturer or supplier can thus stock collecting trays of different lengths and, in addition, a number of flange plates of different lengths. Subject to the demand for a drain with flange, a collecting tray of a desired length and a corresponding flange plate can then be taken from the storage location. It is thus no longer necessary to stock a determined length of a drain without flanges as well as of a drain with flanges.

[0009] Another advantage of the two separate components is that acid treatment of the drain is easier and that there are no cavities between the fixed flange and collecting tray in which acid may remain as in the prior art.

[0010] A further advantage is that bending of the separate collecting tray and the separate flange plate is considerably simpler.

[0011] Finally, the flange plate and the collecting tray can be made from different materials. The collecting tray can for instance be made from the usual stainless steel, while the flange plate can be made of plastic or galvanized iron.

[0012] The flange plate preferably extends on at least one side beyond the bottom of the collecting tray in order to form a flange.

[0013] When the flange extends beyond the bottom, the flange can be used in simple manner to level the surrounding floor for the purpose of manually arranging a sealing membrane, or the flange can serve as anchor for the collecting tray.

[0014] In an embodiment of the drain according to the invention the flange plate is adhered to the bottom, for instance by means of a sealant or a double-sided adhesive tape.

[0015] A foam layer with an adhesive layer on both surfaces is preferably arranged between the flange plate and the bottom. A foaming sealant or glue can also be used.

[0016] The foam plate or foam layer first and foremost provides for the adhesion of the flange plate to the bottom of the collecting tray, but in addition provides sound insulation. When water falls into the collecting tray the sound can usually be transmitted easily into the floor. This is at least partially prevented by the sound-insulating effect of the foam plate.

[0017] In a preferred embodiment of the drain according to the invention the flange plate has a recessed middle part for accommodating the bottom of the collecting tray.

[0018] When relatively thin floor tiles are used on the surrounding floor, it may be the case that the depth of the collecting tray is greater than the thickness of the tiles. By now providing the flange plate with a recess, the resulting flanges will lie higher than the bottom of the collecting tray.

[0019] Also in the case a tile is used as grating in the collecting tray the depth of the collecting tray will always be greater than the thickness of the tile.

[0020] In another embodiment of the drain according to the invention the flange plate comprises at least one flange standing at a right angle. The right-angled flange has to be arranged against the wall.

[0021] When the upright flange is however not arranged against the wall, it can also serve as anchor for the collecting tray by incorporating the upright flange into the sub-floor.

[0022] In yet another embodiment of the drain according to the invention the flange plate has at least one edge sloping away in downward direction.

[0023] The downward sloping edge can be embedded in the surrounding floor, whereby the drain is anchored. A firm fixing of the drain in the floor is thus obtained.

[0024] In a further preferred embodiment of the drain according to the invention a filler part is arranged along the edge of the flange plate.

[0025] The filler part preferably comprises a foam layer and a finishing layer, such as a thin steel sheet.

[0026] The filler part makes it possible to determine at

the last moment which finishing layer will be arranged adjacently of the drain. If a thin finishing layer is chosen, a fitting filler part can be provided on the flange, after which the floor can be levelled and the finishing layer arranged. The height of the upper edge of the collecting tray can thus be adapted to the upper surface of the finishing layer.

[0027] In yet another embodiment of the drain according to the invention the flange plate comprises at least one tongue which is bent out of the surface of the flange plate.

[0028] The tongue bent out of the surface can be used as adjusting foot for the drain. In addition, the tongue can be embedded in the underlying floor, thereby anchoring the drain.

[0029] In yet another embodiment of the drain according to the invention a sealing membrane is arranged on the flange plate.

[0030] It is further possible in a drain according to the invention for at least a part of the flange plate to be sand-coated.

[0031] These and other features of the invention are further elucidated with reference to the accompanying drawings.

Figure 1 is a perspective view of a first embodiment of the drain according to the invention.

Figure 2 is a perspective cross-sectional view of a variant of the drain according to figure 1.

Figure 3 is a perspective cross-sectional view of a second embodiment of the drain according to the invention.

Figure 4 is a perspective cross-sectional view of a third embodiment of the drain according to the invention.

Figures 5 and 6 are cross-sectional views of a fourth and a fifth embodiment.

Figure 7 is a perspective view of a flange plate for a drain according to the invention.

[0032] Figure 1 is a perspective view of a first embodiment of a drain 1 according to the invention. Drain 1 has a collecting tray 2 which is connected with an outflow to a siphon 3. Arranged around collecting tray 2 is a horizontal flange 4 which is provided along one long side with a vertical flange part 5 for fixing against a wall. A grating 6 is further arranged in collecting tray 2.

[0033] Figure 2 shows a variant 10 of drain 1 according to the invention. This variant 10 has a collecting tray 11 with an outflow 12.

[0034] Arranged against the underside of collecting tray 11 is an adhesive tape 13 against which a flange plate 14 is adhered. Flange plate 14 is provided with a vertical flange part 15 for fixing against a wall.

[0035] A so-called tile tray 16 is placed in collecting tray 11. A floor tile can be placed herein. In order to now reduce the height difference between flange plate 14 and the upper side of a tile tray 16, filler parts 17, 18 are arranged on the flange plate in this embodiment. These filler parts 17, 18 are finished on the upper side with thin metal sheeting 19.

[0036] Figure 3 shows a second embodiment 20 of the drain according to the invention. A flange plate 22 is here also arranged under a collecting tray 21. A tile tray 23 is here also arranged in collecting tray 21, and a filler part 24 is provided on flange plate 22 to reduce the height difference with tile tray 23.

[0037] Figure 4 shows a third embodiment 30 of the drain according to the invention. This drain 30 has a collecting tray 31 with an outflow 32. Arranged around this outflow 32 and against the underside of collecting tray 31 is a flat flange plate 33.

[0038] A more usual grating 34 is arranged in collecting tray 31. Owing to the relatively small height of grating 34, filler parts are not required in this embodiment.

[0039] Figure 5 shows a cross-section of a fourth embodiment 40 of the drain according to the invention. This drain 40 once again has a collecting tray 41 with an outflow 42. Arranged against the underside of collecting tray 41 is a foam layer 43 which provides for sound insulation. Against this is adhered a flange plate 44. This flange plate has a downward sloping edge which can be incorporated into the surrounding floor and thereby provides for an anchoring of drain 40.

[0040] Figure 6 shows a fifth embodiment of a drain 50 according to the invention. Here too a foam layer 53 and a flange plate 54 are arranged against collecting tray 51 with outflow 52. Flange plate 54 is provided with a stepped flange, whereby the height difference between flange 54 and the upper side of collecting tray 51 can be reduced.

[0041] It is conversely also possible to increase the distance by arranging flange plate 54 upside down against the collecting tray.

[0042] Figure 7 is a perspective view of a flange plate 60. Provided in the centre of flange plate 60 is an opening 61 for passage of an outflow of a collecting tray.

[0043] Edge 62 of opening 61 is bent outward so that the usual weld between the outflow and the bottom of the collecting tray can be accommodated and flange plate 60 can lie closely against the bottom of the collecting tray.

[0044] Further provided in flange plate 60 are tongues 63 which can be bent out of plate 60 and can serve as adjusting foot or as anchor.

Claims

1. Drain, comprising:

- a collecting tray provided with a bottom with an outflow and upright walls arranged along the bottom;
- a flange plate arranged against the bottom of the collecting tray, wherein the flange plate is

provided with an opening for passage of the outflow.

2. Drain as claimed in claim 1, wherein the flange plate extends on at least one side beyond the bottom of the collecting tray in order to form a flange.

3. Drain as claimed in claim 1 or 2, wherein the flange plate is adhered to the bottom, for instance by means of a sealant or a double-sided adhesive tape.

4. Drain as claimed in claim 3, wherein a foam layer with an adhesive layer on both surfaces is arranged between the flange plate and the bottom.

5. Drain as claimed in any of the foregoing claims, wherein the flange plate has a recessed middle part for accommodating the bottom of the collecting tray.

6. Drain as claimed in any of the foregoing claims, wherein the flange plate comprises at least one flange standing at a right angle.

7. Drain as claimed in any of the foregoing claims, wherein the flange plate has at least one edge sloping away in downward direction.

8. Drain as claimed in any of the foregoing claims, wherein a filler part is arranged along the edge of the flange plate.

9. Drain as claimed in claim 8, wherein the filler part comprises a foam layer and a finishing layer, such as a thin steel sheet.

10. Drain as claimed in any of the foregoing claims, wherein the flange plate comprises at least one tongue which is bent out of the surface of the flange plate.

11. Drain as claimed in any of the foregoing claims, wherein a sealing membrane is arranged on the flange plate.

12. Drain as claimed in any of the foregoing claims, wherein at least a part of the flange plate is sand-coated.

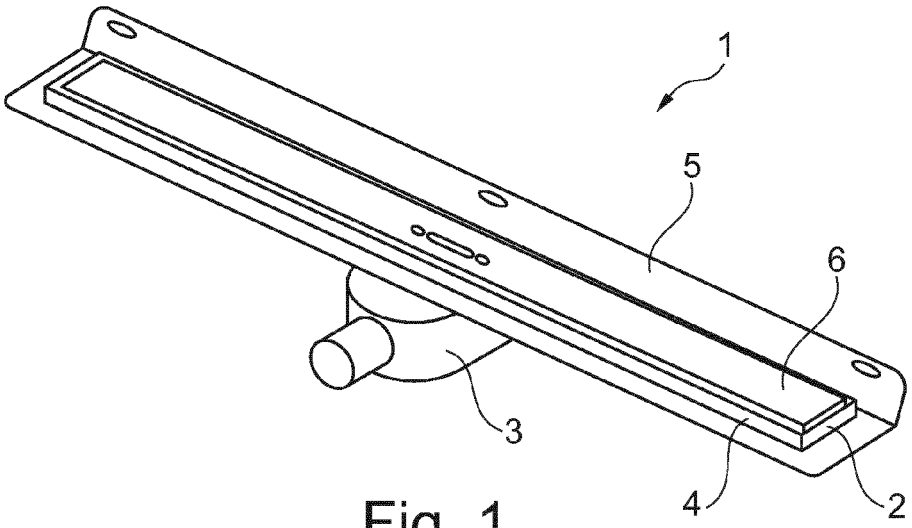

Fig. 1

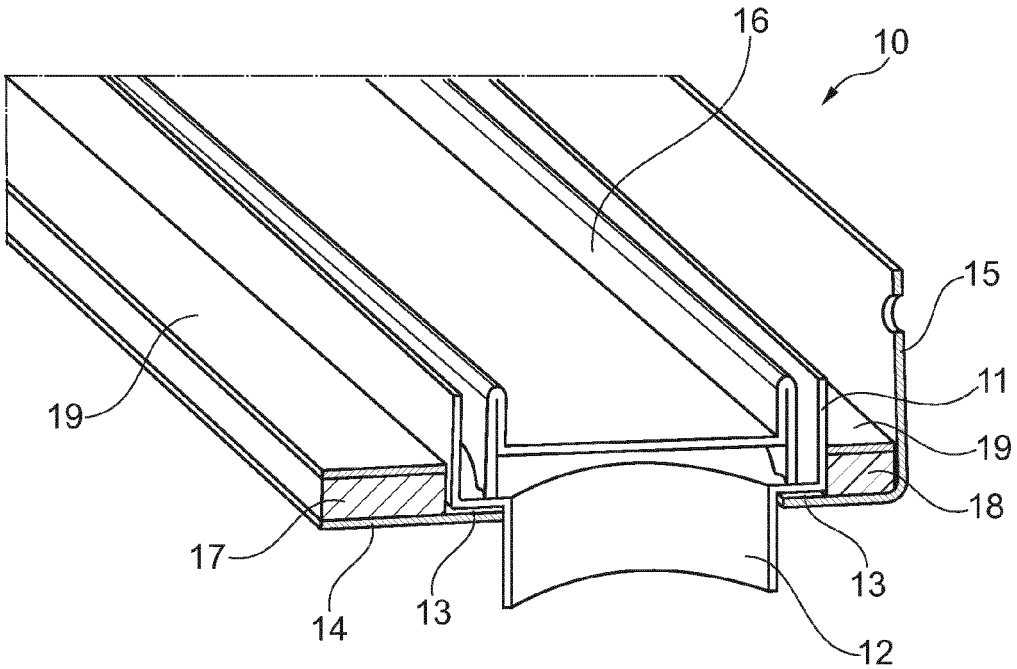

Fig. 2

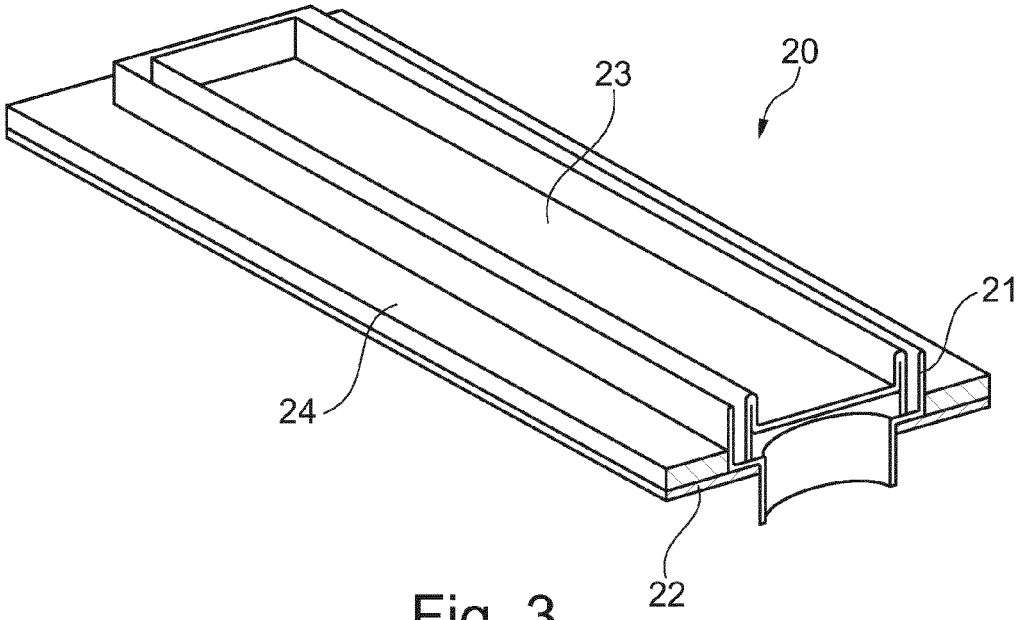

Fig. 3

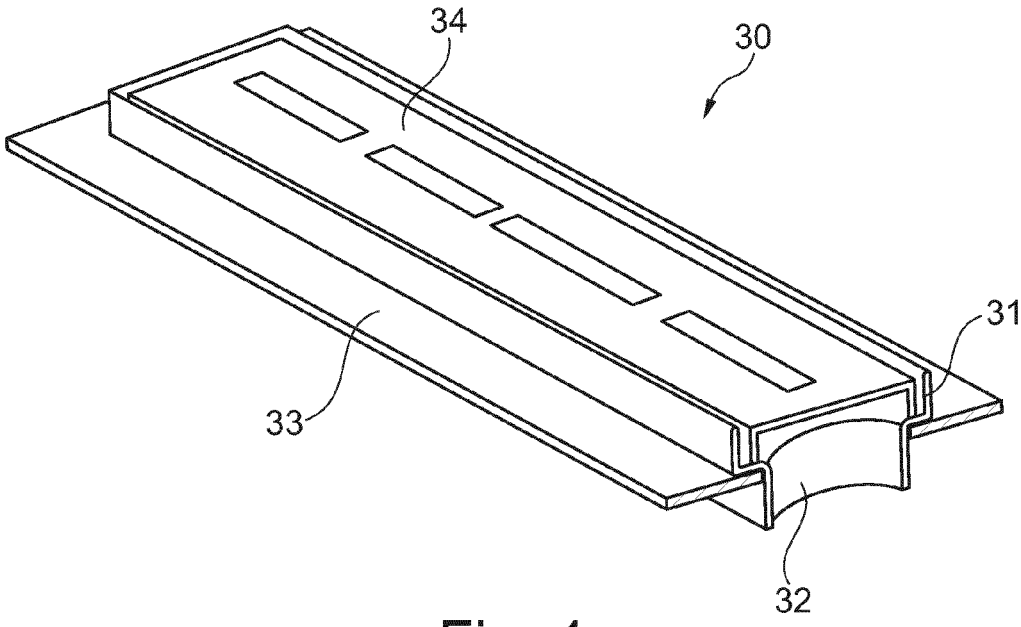

Fig. 4

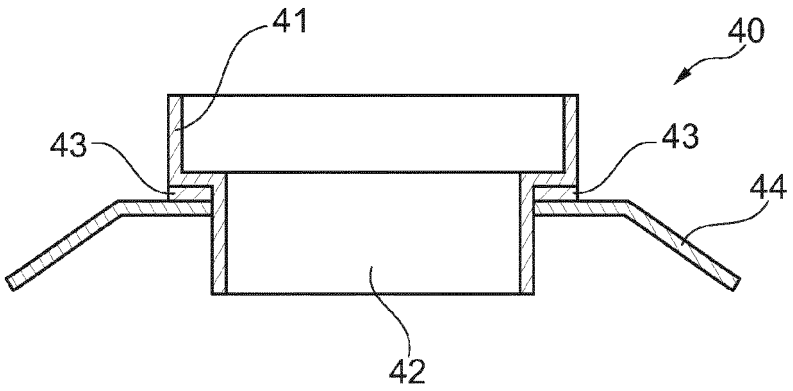

Fig. 5

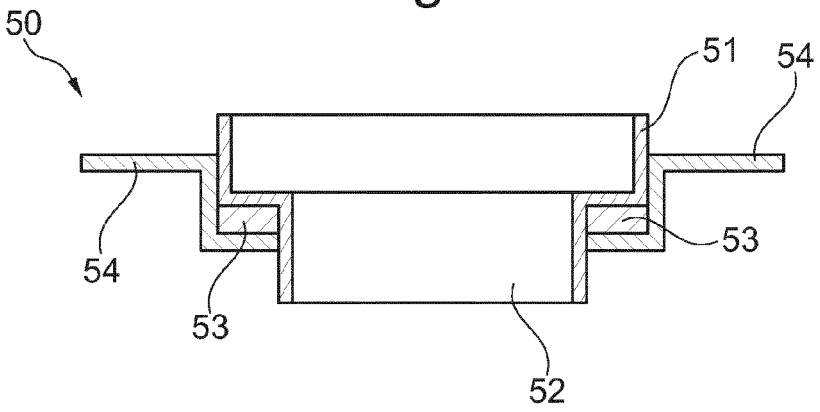

Fig. 6

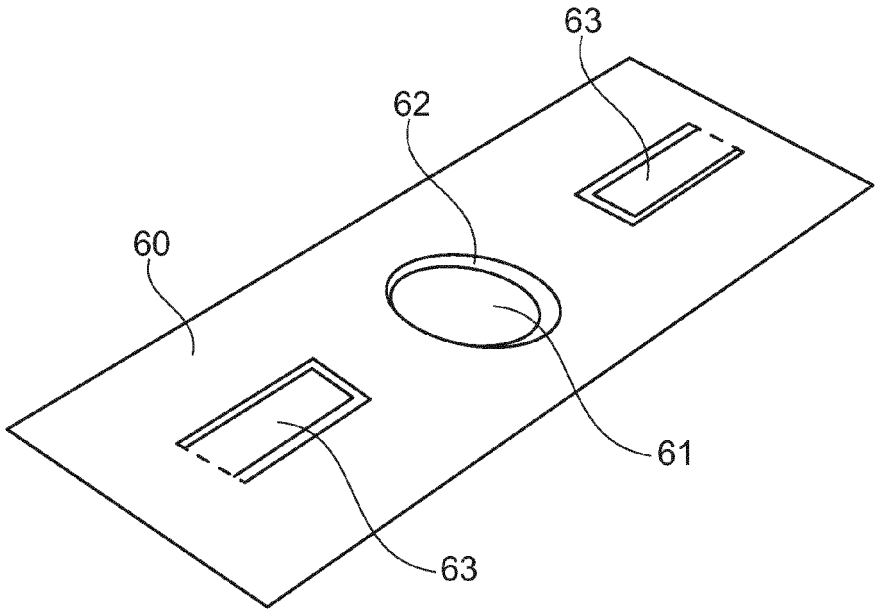

Fig. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 13 16 8656

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 10 2010 024018 A1 (BUCHBERGER GMBH PROFILSYSTEME [DE]) 22 December 2011 (2011-12-22) * the whole document * -----	1-3,5-8	INV. E03F5/04
X	EP 2 333 173 A1 (PURUS AB [SE]) 15 June 2011 (2011-06-15)	1,2	
A	* the whole document * -----	3,5-8	

TECHNICAL FIELDS SEARCHED (IPC)

E03F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 September 2013	Flygare, Esa

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 16 8656

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10-09-2013

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