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(54) **Assembly of a drain hole member and a stench trap, as well as a floor provided with such an assembly, and a method for manufacturing a stench trap**

(57) An assembly of a drain hole member and a stench trap, wherein the drain hole member (3) is provided with a liquid collecting space (4) with a liquid drain (8) for collecting and draining liquid, the stench trap (2) being provided for sealing off said drain (8) substantially stench-proof utilizing liquid collected in the collecting space (4), the stench trap (2) containing, successively,

at least a substantially upward (K1), downward (K2) and upward (K3) liquid path such that during use, this produces at least a double stench trapping action, the stench trap (2) - at least after assembly - being placed in the drain hole member (3) in a detachable manner such that the stench trap (2) can be taken from the drain hole member (3). The invention further provides a floor, and a method for manufacturing a stench trap.

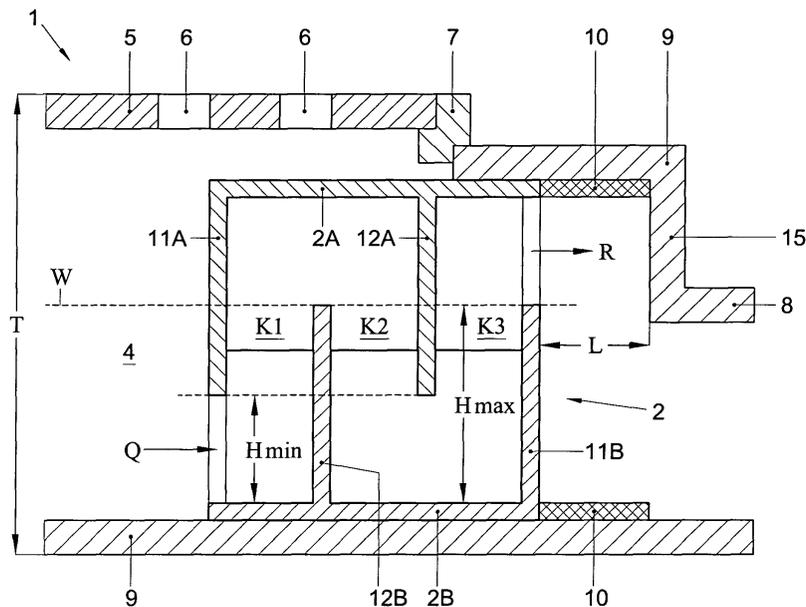


Fig. 7

Description

[0001] The invention relates to an assembly of a drain hole member and a stench trap, the drain hole member being provided with a liquid collecting space with a liquid drain for collecting and draining liquid, the stench trap being designed for sealing this drain off in a substantially stench-proof manner utilizing liquid collected in the collecting space, the stench trap containing, successively, a substantially upward, downward and upward liquid path such that as a result thereof, during use, at least a double stench trap action is produced.

[0002] Such an assembly is known from French patent application FR 2 740 792. An advantage of the known assembly is that it is provided with a stench trap with double stench trap action which prevents diffusion of unpleasant odours coming from the drain well.

[0003] A drawback of the known assembly is that cleaning the assembly is relatively difficult. As a result, dirt can easily accumulate in the assembly, which hinders the liquid draining capacity of the assembly. The drain hole member and/or the stench trap can for instance become clogged so that discharge of liquid is no longer possible.

[0004] The present invention contemplates obviating the drawbacks mentioned of the known assembly while maintaining its advantages. In particular, the invention contemplates an assembly of a drain hole member and a stench trap with which diffusion of stench can be prevented well and with which clogging of the assembly can be combated well.

[0005] To this end, the assembly according to the present invention is characterized in that the stench trap - at least after assembly - is placed in the drain hole member in a detachable manner such that the stench trap can be removed from the drain hole member.

[0006] As the stench trap can be removed from the drain hole member, the stench trap can be cleaned outside the drain hole member in an easy, thorough and rapid manner. The drain hole can then substantially remain behind, simply in mounted condition, for instance in a floor or the like. In this manner, clogging of the assembly can be obviated well. Preferably, the drain hole member as such is also cleaned after the stench trap has been removed from the hole. After cleaning, the stench trap can be rearranged in the drain hole member and be provided with liquid for sealing off the liquid drain of the drain hole member. As the stench trap can be placed into the drain hole member, the assembly can easily be mounted in a desired position, for instance on or in a floor. Further, the assembly can simply be provided with a relatively small built-in height while maintaining a long lasting stench trap action, utilizing a stench trap with at least a double stench trap action.

[0007] The referred-to liquid collecting space of the drain hole member can be accessible via, for instance, an access from a surroundings for removing the stench trap from the drain hole member and replacing it into the

liquid collecting space. Preferably, this access can be closed off, by, for instance, a suitable grid, lid or the like, in order that the liquid evaporation of liquid present in the drain hole, in particular fluid present in the collecting space and/or the stench trap, can be checked or prevented.

[0008] According to a preferred embodiment of the invention, the stench trap is provided with at least two housing parts coupled to each other in a detachable manner.

[0009] As a result, the stench trap can easily be opened for the purpose of cleaning the inside of the trap. Preferably, the stench trap consists of two parts that can be coupled to each other in a detachable manner, so that the stench trap can be of relatively inexpensive, simple and durable design. Here, it is advantageous when the two housing parts have the same shape and dimensions. As a result, the housing parts can be manufactured particularly inexpensively in large amounts, for instance by injection molding the housing parts with the same mold. Furthermore, the stench trap can thus always be composed of two identical parts which renders the assembly of the stench trap uncomplicated.

[0010] The invention further provides a floor which is characterized by the features of claim 28.

[0011] As the floor is provided with an assembly according to the invention, the above-mentioned advantages are offered to the floor. As the assembly can be provided with a relatively small built-in height, the floor can be of relatively thin design. Thin floors are for instance advantageous in buildings having many floors, for instance with a view to saving space. Furthermore, floor material can be saved when the floor is of thin design. This offers the additional advantage that thus, the floor can be designed to be relatively light-weight, in particular when the floor is a concrete floor. Furthermore, such a light-weight floor in itself only needs a relatively light supporting construction, which leads to a further saving of material, space and costs. The floor can for instance comprise an inside floor, outside floor, balcony floor, terrace floor and/or other floor.

[0012] The invention further provides a method characterized by the features of claim 33.

[0013] As the stench trap is injection molded, the stench trap can be manufactured relatively easily, simply and accurately. As mentioned, different parts of the stench trap are preferably injection molded by means of one mold, which leads to relatively low costs of manufacture of the stench trap.

[0014] Further elaborations of the invention are described in the subclaims. Presently, the invention will be clarified with reference to two exemplary embodiments and the drawing. In the drawing:

Fig. 1 shows a perspective front view of a first exemplary embodiment of the invention, in assembled condition;

Fig. 2 shows a similar view as Fig. 1 of the first ex-

emplary embodiment in disassembled condition; Fig. 3 shows a perspective top plan view of the drain hole member of the exemplary embodiment represented in Fig. 1; Fig. 4 shows a front view of a housing part of the stench trap of the exemplary embodiment represented in Fig. 1; Fig. 5 shows a top plan view of the front view represented in Fig. 5; Fig. 6 shows a side view of the top plan view represented in Fig. 5; Fig. 7 shows a cross-sectional view of the first exemplary embodiment represented in Fig. 1; and Fig. 8 schematically shows a vertical cross section of a second exemplary embodiment of the invention.

[0015] Figs. 1, 2 and 7 show an assembly 1 of a drain hole member 3 and a stench trap 2. The drain hole member 3 is designed to be built-in in, for instance, a floor or the like, for instance for draining liquids present on the floor. The drain hole member of the present exemplary embodiment comprises a substantially cylindrical chamber 3 with a block-shaped side chamber 9 which are in open communication with each other. The two chambers 3, 9 surround a liquid collecting space 4. In a wall 14 remote from the cylinder chamber 3, the side chamber 9 is provided with a liquid drain, comprising a drain opening with a substantially horizontal, cylindrical drain part 8. After assembly, the drain 8 can for instance be connected to one or more drainpipes, reservoirs or the like (not represented).

[0016] Fig. 1 shows the assembled condition of the assembly 1. In this condition, the cylindrical chamber 3 is closed off at an upper side by a lid or grid 5 provided with liquid passages 6. The grid 5 is detachably provided on a covering section 7 of the cylindrical chamber 3. The cover sectioning 7 is provided with a square outer edge, to be worked into a tile floor or the like.

[0017] The grid 5 can be taken from the drain hole member 3 to obtain access to the liquid collecting space 4. Such access is for instance desired for cleaning the liquid collecting space 4. In addition, such access is advantageous for removing the stench trap 2, which is further elucidated in the following.

[0018] During use, liquid can flow from a surrounding via the grid 5 into the cylindrical chamber 3. After a suitable liquid level is reached, the liquid can pass the stench trap 2 and reach the drain 8.

[0019] The stench trap 2 is designed for sealing off the drain 8 of the drain hole 3 in a substantially stench-proof manner, utilizing the liquid collected by the drain hole 3 member. As shown in Fig. 7, the stench trap 2 comprises thereto, viewed in a downstream direction towards the drain 8, alternately, a substantially upward and downward liquid path. In the exemplary embodiment, successively, a first substantially upward path K1, a downward path K2 and a second upward liquid path

K3 are provided. The stench trap 2 can therefore produce a double stench trap action.

[0020] In assembled condition, the present stench trap 2 consists of a block-shaped trap housing bounding the liquid paths K1, K2, K3. The housing 2 consists of two housing parts 2A, 2B, detachably coupled to each other and preferably injection molded. These two housing parts 2A, 2B are of the same shape and size. The shape of each of the housing parts 2A, 2B is represented in Figs. 4 - 6. Each housing part 2A, 2B comprises a bottom 20 and two opposite sidewalls 21, 22 extending at right angles relative to the bottom 20. The edge of one of the sidewalls 21 remote from the bottom 20 of each housing part 2A, 2B is provided with complementary projections 13 and recesses 14 for positioning the housing parts 2A, 2B relative to each other. Each of the housing parts 2A, 2B is provided with vertical partition 12A, 12B extending at right angles between the sidewalls 21, 22 for separating the paths K1, K2, K3 from each other. The partitions 12 are designed to be higher than the sidewalls 21, 22 so that after assembly, the partitions 12 reach into the opposite housing part 2B, 2A over a particular distance. This distance is such that a liquid passage is available between the partition 12A, 12B and the bottom 20 of the opposite housing part 2B, 2A.

[0021] Moreover, the housing parts 2A, 2B are designed such that the housing composed therefrom is provided, adjacent an underside of the upward, rising liquid path K1, with a liquid inlet for receiving liquid from said liquid collecting space 4. Furthermore, adjacent an upper side of the downstream, rising path K3, the assembled housing 2 is provided with a liquid outlet for dispensing liquid to the drain 8. To this end, each housing part 2A, 2B comprises an end wall 11, which has the same height as the partition 12.

[0022] The two housing parts 2A, 2B can be coupled to each other in various manners. To this end, for instance gripping means, clamping means, connecting means, snap means, screws, bolts, coupling pins and/or the like (not represented) can be provided. The housing parts 2A, 2B can further be designed, for instance, to hold each other by means of clamping force. The housing parts 2A, 2B can further be provided at insides with, for instance, guiding grooves (not represented) for sliding in the parts of the partitions 12 and/or end walls 11 extending over the sidewalls 21.

[0023] The stench trap 2 can be placed in a detachable manner in the liquid collecting space 4 of the drain hole member 3. In particular, the drain hole member 3 and the stench trap 2 are designed to cooperate such that due to this cooperation, the stench trap 2 can be held in the liquid collecting space 4, represented in Fig. 7 in the position suitable for sealing off from stench. To this end, the assembly may for instance be provided with at least one clamp and/or snap connection for holding the stench trap 2 in the drain hole member 3 in an easily detachable manner.

[0024] As shown in Figs. 2 - 7, the present trap housing 2 in its assembled condition can be slid partly into the side chamber 9 of the present drain hole member 3. The side chamber 9 can for instance be designed, for instance be suitably dimensioned, to engage the trap housing 2 for holding the trap housing 2 in a detachable manner.

[0025] In the exemplary embodiment, the drain hole member 3 and the stench trap housing 2 are furthermore designed to link up with each other substantially fluid-tightly. To this end, the lock housing 2 and/or a side chamber 9 engaging thereon can be provided with, for instance, somewhat resilient material. In addition, for instance sealing means (not represented), for example resilient sealing strips or the like extending in grooves can be provided for effecting a fluid-tight sealing between an outside of the trap housing 2 and an inside of the drain hole member 3. With such a fluid-tight sealing, stench can be prevented from flowing from the drain 9, in between the trap housing 2 and the inside of the drain hole member 4 to a surrounding. Such a sealing, for instance a resilient sealing ring, can additionally serve as coupling for holding the stench trap 2 in the drain hole member 3 in a detachable manner.

[0026] The present assembly 1 is provided with spacing means 10 for keeping the stench trap 2 in the drain hole member 3 at a particular distance L from the drain 8. In the present exemplary embodiment, these spacing means comprise a number of projections 10 located at the insides of the side chamber 9. Naturally, such spacing means can be designed in various other manners and for instance be provided on the stench trap 2.

[0027] During use, at least after assembly, the paths K1, K2, K3 of the stench trap 2 can be filled with liquid, from the liquid collecting space 4 up to a particular maximum filling level H_{max} . With a higher liquid level, liquid from the stench trap 2 can first flow into a downstream part of the side chamber 9 and then into the drain 8. When the stench trap 2 is filled with sufficient liquid, the stench trap produces a double sealing from stench. There is, on the other hand, a gas communication between the liquid collecting chamber 4 and the drain 8 when the paths K1, K2, K3 are filled with liquid below a minimum filling level H_{min} .

[0028] Due to the at least double sealing from stench, the assembly can be of relatively low design. Preferably, the built-in height of the assembly, indicated with an arrow T, is no more than approximately 55 mm. To this end, the difference between the maximum and minimum filling levels of each upward path K1, K3 can for instance be smaller than approximately 25 mm. With such a difference in maximum and minimum filling level, the stench trap 2 can still produce a desired, relatively long stench sealing of the drain 8.

[0029] As the stench trap 2 is placed in a detachable manner in the liquid collecting space 4 of the drain hole member 3, the stench trap 2 can be removed from the drain hole member 3 while the drain hole member 3 can

remain behind substantially in a desired mounting position, for instance in a floor or the like. For the purpose of removing the stench trap 2, the grid 5 can simply be taken from the drain hole member 3. Then, the stench trap 2 can be slid out of the side chamber 9. Thereafter, the two halves 2A, 2B of the stench trap 2 can be disassembled. Due to the described design of the stench trap 2, all inside surfaces of the stench trap 2 are directly accessible from a surrounding with the housing parts 2A, 2B in disassembled condition. What is to be understood by the term "directly accessible" is that the inside surfaces mentioned are substantially not screened off from the surrounding with the trap 2 in disassembled condition. Therefore, the stench trap 2 can be cleaned particularly well in this disassembled condition. After the interior of the housing parts 2A, 2B has been cleaned, the housing 2 can be reassembled from those parts 2A, 2B, to then be returned to the position shown in Fig. 7. Finally, the grid 5 can be replaced on the drain hole member 3 for the purpose of using the assembly 1.

[0030] Fig. 8 schematically shows a second exemplary embodiment of the invention. The second exemplary embodiment comprises an outside floor 50 of a building G, for instance a balcony floor and/or a roof floor or the like. The floor 50 extends for instance along an outer wall M of the building. The outer wall M contains a passage with a door 43, for instance a front door, gallery door, balcony door, roof terrace door or the like, and a door threshold 42 extending along the floor 50.

[0031] The outside floor 50 is provided with a water drain 1. The water drain 1 is arranged at a distance from a wall M of the building G in the floor 50, for instance on or adjacent a side of the outside floor 50 remote from the building G. As shown in Fig. 8, the outside floor 50 is designed for feeding water collected on the floor 50 to the drain hole 1. To that end, the outside floor - viewed from the outside wall M of the building G - proceeds at a slight inclination. In particular, the top surface of the floor 50 includes an angle α with a horizontal plane, which angle α is for instance in the range of approximately 1- 10°, in particular in the range of approximately 1- 5°. What can further be prevented in this manner is that for instance rainwater accumulates at the wall side of the building G on the floor 50 so that water seepage, fungus, leakage along the threshold 42 of the door and the like can be avoided. In this manner too, legal requirements regarding a maximum admissible threshold height of the door threshold 52 can be satisfied well. As the water can be drained via the floor 50 of the wall M, the door threshold 52 in particular can be of relatively low design, which is desired, inter alia for security reasons.

[0032] Advantageously, the drain hole member 1 provided in the outside floor 50 comprises an assembly according to the present invention, for instance the assembly 1 shown in Figs. 1- 7. The built-in height of the assembly 1 is relatively small, preferably less than approximately 55 mm. The drain 9 of the assembly 1 is con-

nected to a water drainpipe 51 extending downwards at a slight inclination. In particular, the drain pipe 51 includes an angle β with a horizontal plane, which angle β is in the range of approximately $1-10^\circ$, in particular in the range of approximately $1-5^\circ$. Therefore, sufficient slope is available for draining rainwater collected by the assembly 1. Downstream of the drainpipe 51, for instance, a vertical drain 54 is arranged for further discharge of water.

[0033] Preferably, the water drain 51 extends completely in the outside floor 51, as is schematically represented in Fig. 8. A further advantage of the exemplary embodiment represented in Fig. 8 is that the floor 50 is designed to be relatively thin and light-weight while the water drain 51 can still extend substantially completely in the floor 50 and can also ensure a good discharge of water.

[0034] It is self-evident that the invention is not limited to the exemplary embodiments described. Various modifications are possible within the framework of the invention as set forth in the following claims.

[0035] For instance, the stench trap 2 can consist of different parts which can be coupled to each other in a detachable manner. These parts can for instance comprise parts that can be brought onto each other in a vertical direction, for instance an upper housing part and a lower housing part. In addition, the parts of the trap 2 can for instance be connectable to each other in horizontal direction and/or in a different direction.

[0036] The different parts of the stench trap can each be manufactured in different manners, in different forms and/or from different materials. The housing parts can for instance also have different dimensions and/or shapes. Further, the trap housing itself can for instance be formed to be angular, round, block-shaped, cylindrical, straight, bent and/or have a different shape.

[0037] Moreover, the stench trap can for instance be manufactured from one or more plastics, metals, alloys, steel and/or a combination of these and other materials.

[0038] Further, the liquid paths K1, K2, K3 of the stench trap can for instance extend substantially in vertical direction and/or include particular angles with a vertical plane. Moreover, the substantially upward and downward paths K1, K2, K3 can be in fluid communication with each other in different manners, for instance direct and/or by means of substantially horizontal intermediate paths or the like.

[0039] The liquid drain of the drain hole member can be designed in different manners. For instance, the drain can comprise a side part 8, 9 or the like of a liquid collecting chamber 4. In addition, the drain can for instance comprise an opening of the wall of the liquid collecting chamber 3 or the like.

Claims

1. An assembly of a drain hole member and a stench

trap, wherein the drain hole member (3) is provided with a liquid collecting space (4) with a liquid drain (8) for collecting and draining liquid, the stench trap (2) being provided for sealing off said drain (8) substantially stench-proof, utilizing liquid collected in the collecting space (4), the stench trap (2) containing, successively, at least a substantially upward (K1), downward (K2) and upward (K3) liquid path such that during use, this produces at least a double stench trapping action, the stench trap (2) - at least after assembly - being placed in the drain hole member (3) in a detachable manner such that the stench trap (2) can be taken from the drain hole member (3).

2. An assembly according to claim 1, wherein said stench trap (2) is provided with at least two, and preferably consists of two housing parts (2A, 2B) coupled to each other in a detachable manner.

3. An assembly according to claim 2, wherein said two housing parts (2A, 2B) have the same shape and dimensions.

4. An assembly according to claim 2 or 3, wherein engaging edges of said housing parts (2A, 2B) are provided with complementary projections (13) and recesses (14) for positioning the housing parts (2A, 2B) relative to each other.

5. An assembly according to any one of claims 2 - 4, wherein all inside surfaces of the stench trap (2) are directly accessible from a surrounding with the said housing parts (2A, 2B) in disassembled condition.

6. An assembly according to any one of the preceding claims, wherein the stench trap (2) consist of a stench trap housing (2) substantially bounding said liquid paths (K1, K2, K3).

7. An assembly according to at least claims 2 and 6, wherein each of said housing parts (2A, 2B) is provided with at least one partition (12A, 12B) for separating said paths (K1, K2, K3) from each other.

8. An assembly according to claim 7, wherein the partition (12A, 12B) of at least one of said housing parts (2A, 2B) is designed for reaching into the opposite housing part (2B, 2A) over a distance such that a liquid passage is available between this partition (12A, 12B) and the opposite housing part (2B, 2A).

9. An assembly according to any one of claims 6 - 8, wherein the trap housing (2) is provided, adjacent an underside of the upstream, rising liquid path (K1), with a liquid inlet for receiving liquid from said liquid collecting space (4).

10. An assembly according to any one of claims 6 - 9, wherein the trap housing (2) is provided, adjacent an upper side of the downstream, rising path (K3), with a liquid outlet for dispensing liquid to said drain (8). 5
11. An assembly according to any one of claims 6 -10, wherein the trap housing (2), at least the outside thereof, is block-shaped. 10
12. An assembly according to at least claim 6, wherein the drain hole member (3) and the stench trap (2) are designed for linking up with each other substantially fluid-tightly. 15
13. An assembly according to any one of the preceding claims, wherein the drain hole member (3) is provided with a chamber which bounds at least a part of said liquid collecting chamber (4). 20
14. An assembly according to any one of the preceding claims, wherein the drain hole member (3) and the stench trap (2) are designed to cooperate with each other such that due to this cooperation, the stench trap (2) can be held in the drain hole member (3) in a position suitable for sealing off from stench. 25
15. An assembly according to any one of the preceding claims, provided with at least one clamping and/or snap connection (9) for holding the stench trap (2) in the drain hole member (3) in a detachable manner. 30
16. An assembly according to any one of the preceding claims, wherein the drain hole member (3) is provided with a side chamber (9) designed for receiving at least a part of the stench trap (2). 35
17. An assembly according to any one of the preceding claims, wherein the assembly (1) is provided with spacing means (9, 10) for holding the stench trap (2) at a particular distance (L) from the drain (8). 40
18. An assembly according to any one of the preceding claims, wherein said drain of the drain hole member (3) is at least provided with a drain part (8) extending substantially in horizontal direction. 45
19. An assembly according to any one of the preceding claims, wherein the paths (K1, K2, K3) of the stench trap (2) can be filled during use with liquid up to a particular maximum filling level (H_{max}) before the liquid flows into the drain (8), while there is a gas communication between said liquid collecting chamber (4) and the drain (8) when the paths (K1, K2, K3) are filled with liquid below a particular filling level (H_{min}), the difference between the maximum and minimum filling level of each upward path (K1, K3) being smaller than approximately 25 mm. 50
20. An assembly according to any one of the preceding claims, wherein said liquid collecting space (4) of the drain hole member (3) is accessible via an access from a surrounding for removing the stench trap (2) from the drain hole member (3). 55
21. An assembly according to claim 20, wherein said access can be closed off.
22. An assembly according to claim 20 or 21, wherein a grid or lid (5) is provided for closing off said access.
23. An assembly according to any one of the preceding claims, wherein the stench trap (2) consists of injection molded parts (2A, 2B).
24. An assembly according to any one of the preceding claims, wherein the total built-in height of the assembly is no more than approximately 55 mm.
25. An assembly according to at least claim 2, wherein each housing part (2A, 2B) is provided with:
- a bottom (20);
 - two opposite sidewalls (21, 22) extending substantially at right angles relative to the bottom (20);
 - at least one partition (12) extending between the side walls (21, 22), substantially at right angles relative to the bottom (20); and
 - an end wall (11) extending between the sidewalls, which is substantially parallel to said partition (12).
26. An assembly according to claim 25, wherein said end wall (11) has substantially the same height as said partition (12).
27. An assembly according to claim 25 or 26, wherein said partition (12) is higher than said sidewalls (21, 22).
28. A floor, provided with an assembly (1) according to any one of the preceding claims.
29. An outside floor of a building, for instance a balcony and/or roof floor, wherein at least one assembly (1) according to any one of claims 1- 27 is provided in the outside floor (50), the assembly (1) being arranged at a distance from a wall (M) of the building (G), for instance on or adjacent a side of the outside floor (50) remote from the building (G), while preferably, a water drain (51) extending at a slightly downward inclination is connected to the drain (8) of the assembly (1).

- 30.** An outside floor according to claim 29, wherein the outside floor (50) is designed for draining water collected on this floor (50) to said assembly (1), while preferably, - viewed from the wall (M) of the building (G) - the outside floor (50) inclines slightly. 5
- 31.** A stench trap of an assembly according to any one of claim 1- 27.
- 32.** A drain hole member of an assembly according to any one of claims 1- 27. 10
- 33.** A method for manufacturing a stench trap according to claim 31, wherein the stench trap (2) is injection molded. 15
- 34.** A method according to claim 33, wherein different parts (2A, 2B) of the stench trap (2) are injection molded by means of one mold. 20

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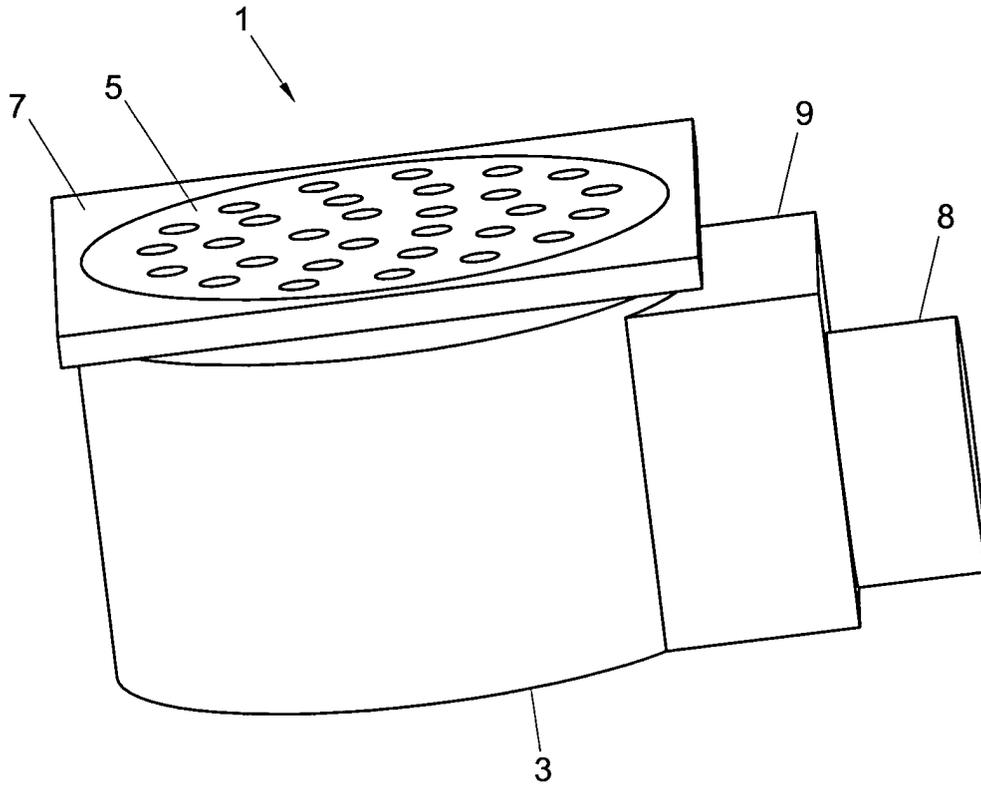


Fig. 1

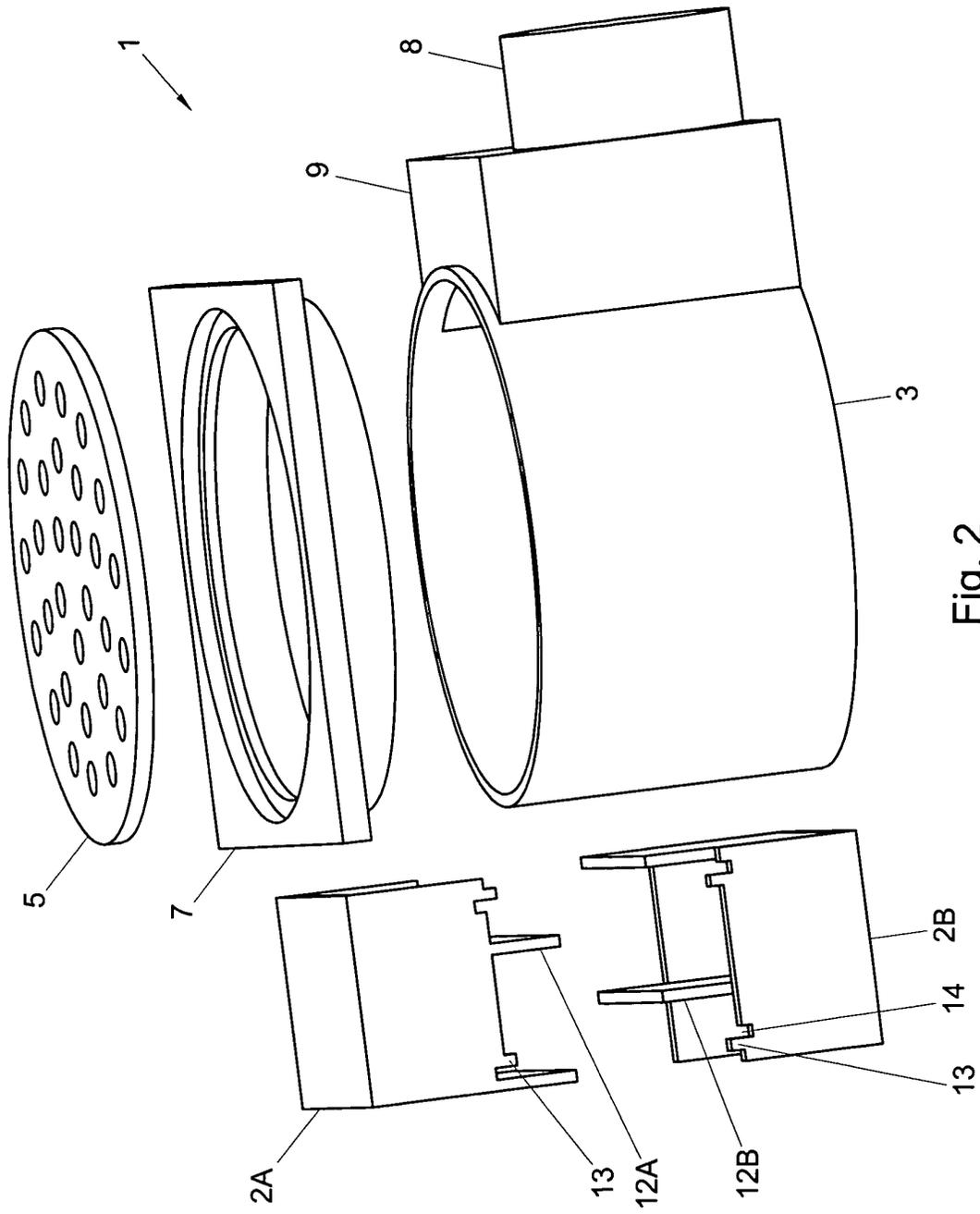


Fig. 2

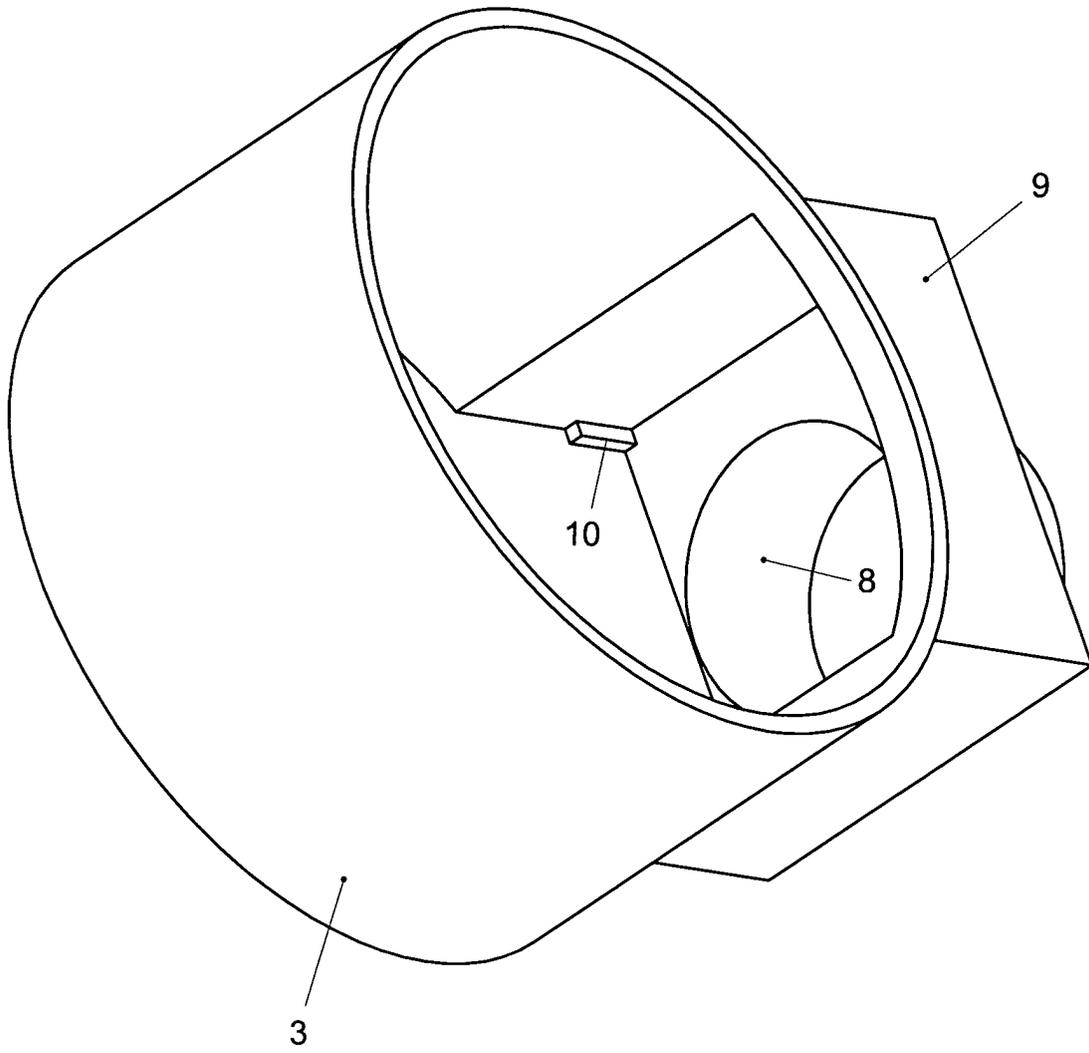


Fig. 3

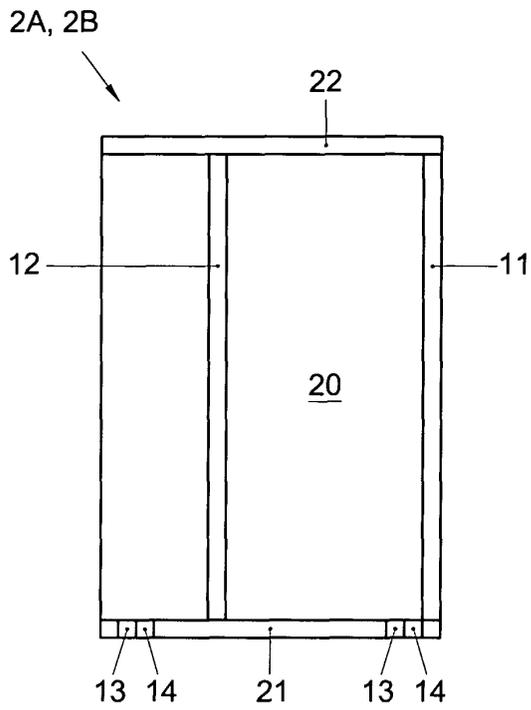


Fig. 5

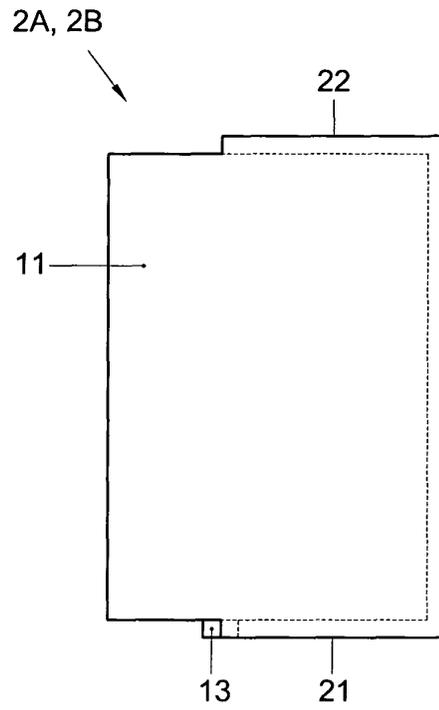


Fig. 6

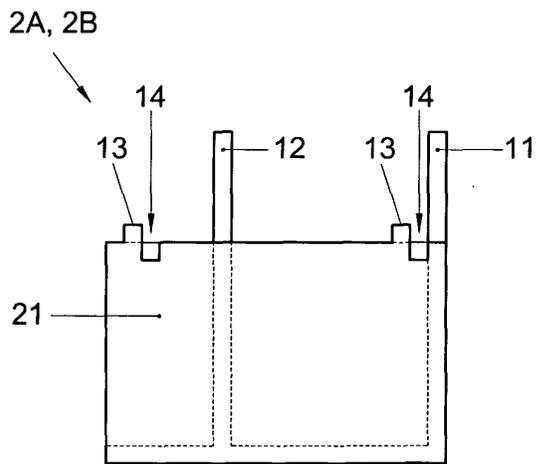


Fig. 4

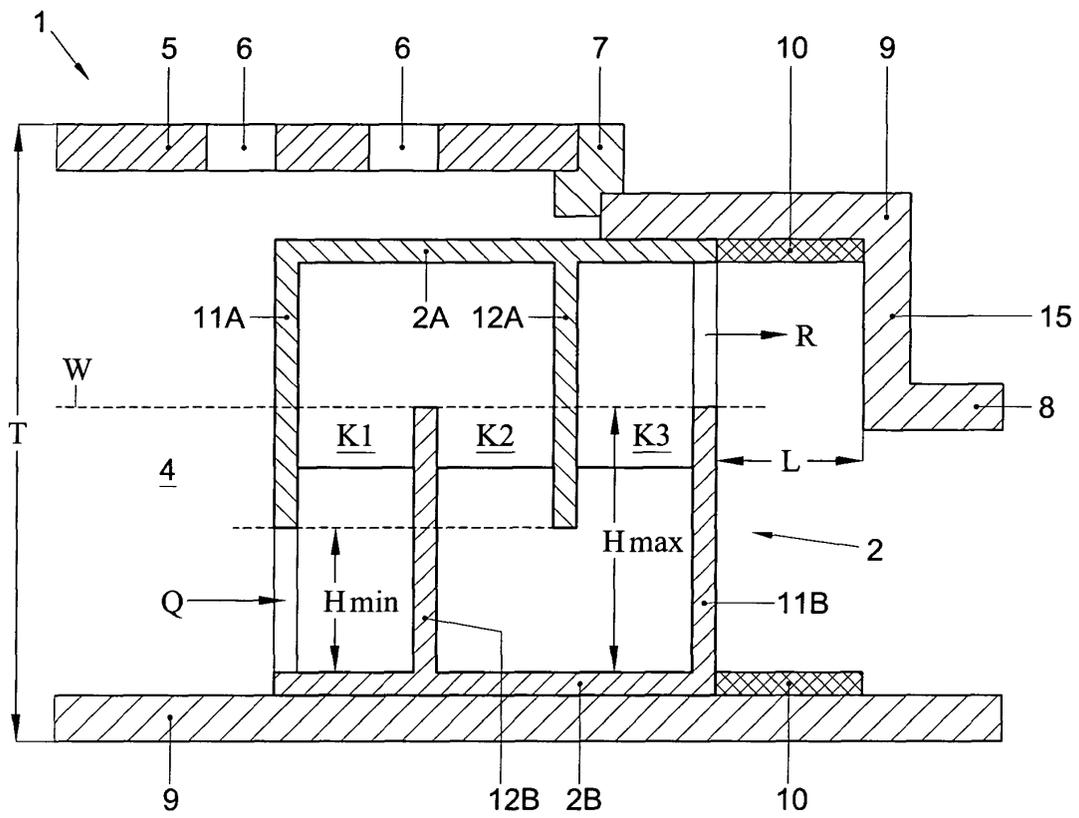


Fig. 7

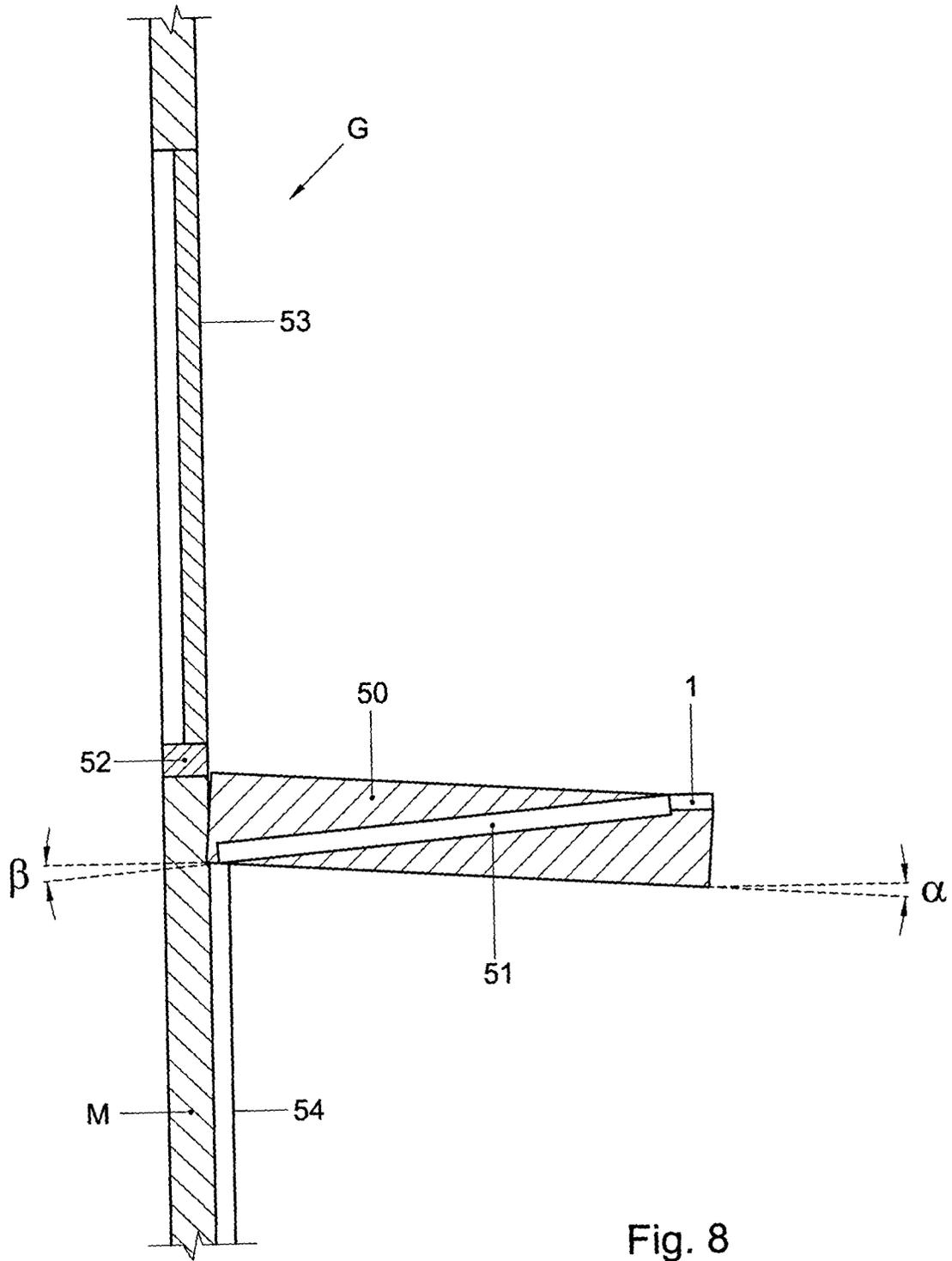


Fig. 8



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y A	DE 295 17 550 U (PASSAVANT WERKE) 18 January 1996 (1996-01-18) * the whole document *	1 6-8, 12-15, 17,20-22	E03F5/04
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E03F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 1 June 2005	Examiner Clasing, M
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EPO FORM 1503 03/02 (P04CO1)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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