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Application No.	Ref.	Date
14 711 791.5 - 1302	EP-21078400	06.04.2017
Applicant Fürstenberg Amfi-Floor Ltd.		

Communication under Rule 71(3) EPC

1. Intention to grant

You are informed that the examining division intends to grant a European patent on the basis of the above application, with the text and drawings and the related bibliographic data as indicated below.

A copy of the relevant documents is enclosed.

1.1 In the text for the Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Description, Pages

1-6	filed in electronic form on	07-12-2016

Claims, Numbers

1-14	as published

Drawings, Sheets

1/2, 2/2	as published

1.2 Bibliographic data

The title of the invention in the three official languages of the European Patent Office, the international patent classification, the designated contracting states, the registered name(s) of the applicant(s) and the other bibliographic data are shown on **EPO Form 2056** (enclosed).

2. Invitation

You are invited, **within a non-extendable period of four months** of notification of this communication,

2.1 to EITHER approve the text communicated above and verify the bibliographic data (Rule 71(5) EPC)

(1) by filing a translation of the claim(s) in the other two official languages of the EPO

		Fee code	EUR
(2a)	by paying the fee for grant including the fee for publication:	**007**	925.00
	minus any amount already paid (Rule 71a(5) EPC):		0.00
		Total amount:	925.00
(3)	by paying additional claims fees under Rule 71(4) EPC; number of claims fees payable: 0	**016**	0.00
	minus any amount already paid (Rule 71a(5) EPC):		0.00
		Total amount:	0.00

Important: If the translations of the claims and fees have already been filed and paid respectively in reply to a previous communication under Rule 71(3) EPC, e.g. in the case of resumption of examination after approval (see Guidelines C-V, 6), **agreement as to the text to be granted** (Rule 71a(1) EPC) must be expressed within the same time limit (e.g. by approving the text and verifying the bibliographic data, by confirming that grant proceedings can go ahead with the documents on file and/or by stating which translations of the claims already on file are to be used).

Note 1: See "Important notes concerning fee payments" below.
Note 2: Any overpaid "minus" amounts will be refunded when the decision to grant (EPO Form 2006A) has been issued.
Note 3: For the calculation of the grant fee under Article 2(2), No. 7, RFees (old fee structure), the number of pages is determined on the basis of a clean copy of the application documents, in which text deleted as a result of any amendments by the examining division is not shown. Such clean copy is made available via on-line file inspection only.

2.2 OR, in the case of disapproval, to request reasoned amendments or corrections to the text communicated above or keep to the latest text submitted by you (Rule 71(6) EPC).

In this case the translations of the claims and fee payments mentioned under point 2.1 above are NOT due.

The terms "amendment(s)" and "correction(s)" refer only to amendments or corrections of the application documents and not of other documents (e.g. bibliographic data, the designation of the inventor, etc.).

If filing amendments, you must identify them and indicate the basis for them in the application as filed. Failure to meet either requirement may lead to a communication from the examining division requesting that you correct this deficiency (Rule 137(4) EPC).

2.3 Bibliographic data

Where you request a change or correction of bibliographic data in response to the Rule 71(3) communication, this will **not** cause the sending of a further communication under Rule 71(3) EPC. You will still have to pay the fees and file translations in reply to the Rule 71(3) communication in the case of 2.1 above, unless you also file

a reasoned request for amendments or corrections in response to the Rule 71(3) communication (see case 2.2 above).

3. Loss of rights

If neither of the two possible actions above (see points 2.1 or 2.2) is performed in due time, the European patent application will be deemed to be withdrawn (Rule 71(7) EPC).

4. Further procedure

4.1 In the case of point 2.1 above

4.1.1 The decision to grant the European patent will be issued, and the **mention of the grant** of the patent will be published in the European Patent Bulletin, if the requirements concerning the translation of the claims and the payment of all fees are fulfilled and there is agreement as to the text to be granted (Rule 71a(1) EPC).

Note on payment of the renewal fee:
If a renewal fee becomes due before the next possible date for publication of the mention of the grant of the European patent, publication will be effected only after the renewal fee and any additional fee have been paid (Rule 71a(4) EPC).

Under Article 86(2) EPC, the obligation to pay renewal fees to the European Patent Office terminates with the payment of the renewal fee due in respect of the year in which the mention of the grant of the European patent is published.

Note on payment of the designation fee(s):
If the designation fee(s) become(s) due after the communication under Rule 71(3) EPC, the mention of the grant of the European patent will not be published until these fees have been paid (Rule 71a(3) EPC).

4.1.2 After publication, the **European patent specification** can be downloaded free of charge from the EPO publication server https://data.epo.org/publication-server or ordered from the Vienna sub-office upon payment of a fee (OJ EPO 2005, 126).

4.1.3 Filing of translations in the contracting states

As regards translation requirements prescribed by the contracting states under Article 65(1) EPC, please consult the website of the European Patent Office
www.epo.org ➞Law & practice ➞Legal texts, National law relating to the EPC
www.epo.org ➞Law & practice ➞All Legal texts ➞London Agreement

In the case of a valid extension or validation

As regards translation requirements prescribed by the extension or validation states, please consult the website of the European Patent Office
www.epo.org ➞Law & practice ➞Legal texts, National law relating to the EPC

Failure to supply a prescribed translation in a contracting state, or in an extension or validation state may result in the patent being deemed to be void *ab initio* in the state concerned (Art. 65(3) EPC).

4.2 In the case of 2.2 above

If the present communication under Rule 71(3) EPC is based on an auxiliary request and, within the time limit, you maintain the main request or a higher ranking request which is not allowable, the application will be refused (Art. 97(2) EPC).

If the examining division gives its consent to the requested amendments or corrections, it will issue a new communication under Rule 71(3) EPC; otherwise, it shall resume the examination proceedings

(Rule 71(6) EPC).

5. Filing of a divisional application

Any divisional application relating to this European patent application must be filed directly with the European Patent Office in Munich, The Hague or Berlin and will be in the language of the proceedings for the present application, or if the latter was not in an official language of the EPO, the divisional application may be filed in the language of the present application as filed (see Article 76(1) and Rule 36(2) EPC). Any such divisional application must be filed while the present application is still pending (Rule 36(1) EPC; Guidelines A-IV, 1.1.1).

6. Important notes concerning fee payments

6.1 For all payments, please refer to the relevant **fee code(s).**

6.2 Automatic debiting procedure

The fee for grant, including the fee for publication, and any additional claims fees due under Rule 71(4) EPC will be debited automatically on the date of filing of the translations of the claims, or on the last day of the period of this communication. However, if the designation fee(s) become(s) due as set out in Rule 71a(3) EPC and/or a renewal fee becomes due as set out in Rule 71a(4) EPC, these should be paid separately by another permitted way of payment in order not to delay the publication of the mention of the grant. The same applies in these circumstances to the payment of extension and validation fees. For further details see the Arrangements for the automatic debiting procedure (AAD) and accompanying information from the EPO concerning the automatic debiting procedure (Annexes A.1 and A.2 to the Arrangements for deposit accounts (ADA) in Supplementary publication - OJ EPO 3/2015).

Note: If a waiver is expressed in response to a Rule 71(3) communication (see OJ EPO 2015, A52), the fee for grant, including the fee for publication/printing, and any additional claims fees will not be debited automatically. These fees must be paid separately by another means of payment allowed under the Rules relating to Fees.

6.3 Important information relating to fee amounts

Following any amendment to the Rules relating to Fees, the amount(s) mentioned in this communication may be different from the amount(s) **actually due on the date of payment.** The latest version of the Schedule of fees and expenses, published as a Supplement to the Official Journal of the EPO, is also available on the EPO website (www.epo.org) and can be found under www.epo.org/schedule-of-fees, which allows the viewing, downloading and searching for individual fee amounts, both current and previous.
Please note that procedural fees are usually adjusted every two years, on even years, with effect from 1 April.

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Enclosures: Text intended for grant

EPO Form 2056

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Annex to EPO Form 2004, Communication pursuant to Rule 71(3) EPC

Bibliographical data of European patent application No. 14 711 791.5

For the intended grant of the European patent, the bibliographical data are set out below, for information:

Title of invention:	- VORGEFERTIGTER BODEN - PREFABRICATED FLOOR - PLANCHER PRÉFABRIQUÉ
Classification:	INV. C09D5/18 C09D7/12
Date of filing:	24.03.2014
Priority claimed:	SE / 22.03.2013 / SEA1350361
Contracting States* for which fees have been paid:	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Extension States* for which fees have been paid:	
Validation States* for which fees have been paid:	
Applicant(s):**	Fürstenberg Amfi-Floor Ltd. 75-29 Lacplesa Riga 1011 LV
Inventor(s):	FÜRSTENBERG-RYSJEDAL, Svein Hammerslandgrenda 27 N-5252 Söreidgrend NO

*)	If the time limit for the payment of designation fees according to Rule 39(1) EPC has not yet expired and the applicant has not withdrawn any designation, **all Contracting States/Extension States/Validation States** are currently still deemed to be designated. See also Rule 71a(3) EPC and, if applicable, the above Note to users of the automatic debiting procedure.
**)	If two or more applicants have designated different Contracting States, this is indicated here.

PREFABRICATED FLOOR

Technical field

The present invention relates generally to a pre-fabricated wet room floor. More particularly, the present invention relates to a pre-fabricated wet room floor made of a solid surface material as defined in the introductory parts of claim 1.

Background art

Pre-fabricated wet room floors are often used in e.g. ships, hotels, and apartments. They have historically been made of a number of different types of constructions.

On ships a common construction is to use pre-fabricated steel constructions that are welded together to facilitate a fall to a drain and other structural features that are needed or wanted for a wet room or bathroom floor. The walls are painted to protect the steel from water and to create a nice environment for the user. However, the end result regarding the environment having a painted steel floor is not particularly nice, and the steel construction is easily affected by wear and outer force so that the fall towards the drain may be lost. If the paint is broken, the steel will be affected by corrosion leading to rust, inducing a regular maintenance need for the floor.

A step for improving the above problems somewhat is to have a steel construction with concrete, sometimes floor heating in the concrete, screed or cement for creating a fall to a drain, a liquid tight layer and clinker on top. This has the drawback that the construction becomes very heavy. If the steel starts to corrode, it is very hard to remedy without starting over by removing all layers and rebuild it again.

A further common construction that overcomes the problems of corrosion, rust and weight, is using a glass-fibre reinforced plastic construction covered by a water proof gel-coat in a similar manner as plastic sail yachts and smaller motor yachts are constructed. Although such a construction is light weight and does not corrode, it has a number of

drawbacks. A moulding form has to be made for moulding the glass-fibre reinforced plastic construction. Such a mould is labour intense and expensive to produce. If the gel-coat, which is fairly fragile, is broken, the glass-fibre will absorb moist and swell, leading to a destroyed floor. Even though gel-coat is fairly resistant to stains, the material can absorb dirt and chemicals and get stained in a way that is hard to clean off. The gel-coat surface will only stand for up to 70°C before it starts to react and melt. This is a fire hazard, that may be expensive to handle in hotels and ships.

There is thus a need for an improved pre-fabricated wet room floor that is not heavy as steel and concrete solutions, that does not corrode in wet environments, that is less fragile than the glass-fibre solutions, that is easier to adapt in size and shape than the glass-fibre solution and that can withstand high temperatures to meet higher fire safety standards.

The following relevant patent documents show technical solutions in near-lying technical fields. GB 2 429 712 shows a fire-stop product, US 5 883 182 shows specific coating compositions, EP 0 839 853 shows sprayable silicone emulsions which form smoke ad fire resitant elastomers, WO 87/00852 shows a fire retardant composition, JP S61 293291 shows a putty-like fireproof composition and GB 1 439 191 shows fabrication of structural members.

Summary of the invention

It is an object of the present invention to improve the current state of the art, to solve the above problems, and to provide an improved wet room floor that is fairly light weight, does not corrode, is robust, easy to adjust for different applications and can withstand high temperatures. These and other objects are achieved by a pre-fabricated wet room floor comprising a wear surface that is made of a solid surface material, wherein said solid surface material is composed of aluminium trihydrate (ATH) or aluminium monohydrate (AMH) and a polymer binding medium, wherein said solid surface material has a ATH or AMH content of above 50%.

The wear surface, that is the upper surface of the floor subjected to wear from usage of the wet room floor, being made of said solid surface

material, will produce a very wear-resistant surface, that is light weight and does not corrode. A minimum of maintenance will be needed having such a wet room floor.

The pre-fabricated wet room floor preferably further has a solid surface material with a ATH or AMH content of 50 – 90% by weight, more preferably 60 – 80% by weight and most preferably 70-80% by weight. The high ratio of ATH or AMH to binder material will give the material good heat resistance. Tests has shown that by having 80% ATH or AMH to binder in the solid surface material, the material will withstand temperatures of up to 200°C, which will make the pre-fabricated floor much easier to incorporate into the fire safety standards of e.g. hotels and large ships. Especially on off-shore oil rigs, the fire safety standards are extremely high making the pre-fabricated wet room floor of the present invention ideal.

The pre-fabricated wet room floor according to the invention further preferably has a binding medium that is a polymer or an equivalent material to a polymer. The polymer may e.g. be a acryl-modified polyester. ATH or AMH and a polymer are so similar to each other in their chemical structure so that, when the solid surface material has cured, it will not absorb liquids or other chemical agents. The material is so insensitive to other substances that it can even stand most acids without being stained or absorbing any of it. This has the effect that the wet room floor will be easy to clean, and since it does not absorb other substances easily it is hard to stain. This makes the floor durable with a long lifetime which will bring down maintenance costs to a minimum.

The pre-fabricated wet room floor discussed above, preferably has a wear surface area of 1 – 10 m^2, which is a reasonable area range for pre-fabrication and later transportation.

It is further preferred that the wear surface of the pre-fabricated wet room floor is moulded in said solid surface material. Moulding the wear surface, makes it easy to adapt it to any shape that is desired and no welding has to be performed to fit parts together, e.g. the wall parts of the wet room floor. Structures for fastening equipment or guiding water can also be made. It is e.g. usual that a shower wall is to be installed in the bathroom at a later

stage. The fall towards the drain of the wet room floor may also easily be pre-fabricated by moulding.

It is further preferred that substantially the entire structure of the pre-fabricated wet room floor is made of said solid surface material. The entire floor is then made of the same material that is used as wear surface. It is then more or less impossible to damage the floor so that it starts to leak, since the solid surface material is extremely strong and is liquid tight throughout its thickness or cross section. It is also possible to mould in drainage piping into the floor itself, removing some of the need for external pluming. The floor may e.g. be made to directly be attached to drainage pipes in the room it is intended to be placed. The thickness of the floor, when substantially its entire structure is made of the solid surface material is preferably above 10 mm, more preferably above 15 mm, most preferably above 20 mm.

However, to make the floor less heavy or for other practical reasons, the pre-fabricated wet room floor may be made by a structure of any common floor material covered by said solid surface material. As long as the wear surface is made by said solid surface material, the most important advantages of the invention will still be obtained, as e.g. durability, resistance to stains and its high temperature resistance properties.

If only the wear surface is of the solid surface material the thickness of said solid surface material may be below 10 mm, even below 5 mm. A thin layer of the solid surface material may be desirable, if a structure is coated by a sheet of the solid state material instead of using moulding.

According to a further aspect of the present invention the pre-fabricated wet room floor further comprises a floor drain, wherein the outlet of the floor drain is located on the side of said pre-fabricated wet room floor. In that way the drainage may be attached to a drainage in the wall of the space that the wet room floor is intended for. That will save ceiling height, which may be very important, e.g. on ships.

According to a still further aspect of the invention the pre-fabricated wet room floor contains floor heating conductor elements moulded into said solid surface material. The possibility to mould the floor makes it easy to embed any equipment that may be desired in the wet room floor. Further equipment that may be embedded are e.g. thermal sensors, moist sensors etc.

According to a still further aspect of the invention the pre-fabricated wet room floor contains floor has a dedicated portion intended for a shower. The dedicated portion may e.g. have an increased fall for water to be more effective transported by gravity to the drain of the floor. The remaining portions of the wet room floor may facilitate a portion for changing cloths, a portion above which a sink is intended to be placed etc.

Brief description of the drawings

The above objects, as well as additional objects, features and advantages of the present invention, will be more fully appreciated by reference to the following illustrative and non-limiting detailed description of preferred embodiments of the present invention, when taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a perspective view of a pre-fabricated wet room floor according to the present invention.

Fig. 2 is a photograph of a pre-fabricated wet room floor according to the present invention.

Detailed description of preferred embodiments of the invention

Fig. 1 shows a perspective view of a pre-fabricated wet room floor 1, having a wear surface 2 that is made of solid surface material 2, the material being made by a major portion ATH or AMH and a binder, preferably a polymer. To have a high melting point for fire safety reasons, the solid surface material 2 preferably has around 80% of ATH or AMH and 20% binder. The wet room floor 1 is moulded and has a fall portion 2' having a fall towards a drain 4, which drain 4 in Fig. 1 penetrates the side wall 3. The fall portion 2' is

naturally intended to be the floor of the shower part of a bathroom. Although not clearly visible in Fig. 1, also the remaining parts of the wear surface 2 of the wet room floor 1 may have a fall towards the drain so that water will drain away also from the rest of the wear surface 2. This makes cleaning with water easier.

The pre-fabricated wet room floor of Fig. 1 also has moulded structure 5 for fitting to its intended destination room. The floor also has floor heating elements (not shown) moulded into the floor, the connection cables 6, being visible in Fig. 1.

Fig. 2 is a photograph of a pre-fabricated wet room floor 1 according to the present invention. This pre-fabricated floor also has a wear surface 2 that is made of solid surface material 2, the material being made by a major portion ATH or AMH and a binder, preferably a polymer. To have a high melting point for fire safety reasons, the solid surface material 2 preferably has around 80% of ATH or AMH and 20% binder.

The wet room floor 1 of Fig. 2 is moulded and has a fall 2' towards a drain 4, which drain 4 in Fig. 2 is located entirely in the horizontal fall surface 2' of the floor surface, naturally at the lowest point of the fall portion 2'. As can be seen in Fig. 2, the entire floor is moulded in the solid surface material. The pre-fabricated wet room floor 1 of Fig. 2 also has structural portions 7 intended for fitting to the intended bathroom where the wet room floor 1 is intended to be mounted, e.g. a compartment for water supply hoses or pipes. In Fig. 2, small structures may also be seen on the upper edge of the side walls 3, intended to facilitate easier fitting to the wall portions of the bathroom having the pre-fabricated wet room floor 1 of Fig. 2.

CLAIMS

1. A pre-fabricated wet room floor (1) for increasing the fire safety of a wet room comprising a wear surface (2, 2') that is made of a solid surface material,

wherein said solid surface material is composed of aluminium trihydrate (ATH) or aluminium monohydrate (AMH) and a polymer binding medium,

wherein said solid surface material has a ATH or AMH content of above 50%.

2. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein said solid surface material has a ATH or AMH content of 50 – 90% by weight.

3. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein said solid surface material has a ATH or AMH content of 60 – 80% by weight.

4. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein said solid surface material has a ATH or AMH content of 70-80% by weight.

5. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein said polymer material is an acrylic modified polyester.

6. Pre-fabricated wet room floor (1) according to any one of the preceding claims having a wear surface area (2, 2') of 1 – 10 m^2.

7. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein the wear surface (2, 2') of the pre-fabricated wet room floor (1) is moulded.

8. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein substantially the entire structure of the wet room floor (1) consists of said solid surface material.

9. Pre-fabricated wet room floor (1) according to claim 8, wherein the thickness of the pre-fabricated wet room floor (1) is above 10 mm, preferably above 15 mm, most preferably above 20 mm.

10. Pre-fabricated wet room floor (1) according to any one of claims 1-6, wherein the wet room floor (1) is made by a structure of any common floor material covered by said solid surface material.

11 . Pre-fabricated wet room floor (1) according to claim 8, wherein the thickness of said solid surface material is below 10 mm, preferably below 5 mm.

12. Pre-fabricated wet room floor (1) according to any one of the preceding claims, further comprising a floor drain (4), wherein the outlet of the floor drain (4) is located on the side of said pre-fabricated wet room floor (1).

13. Pre-fabricated wet room floor (1) according to any one of the preceding claims wherein said floor contains floor heating conductor elements moulded into said solid surface material.

14. Pre-fabricated wet room floor (1) according to any one of the preceding claims, wherein said floor has a dedicated portion intended for a shower.

WO 2014/147258 PCT/EP2014/055824

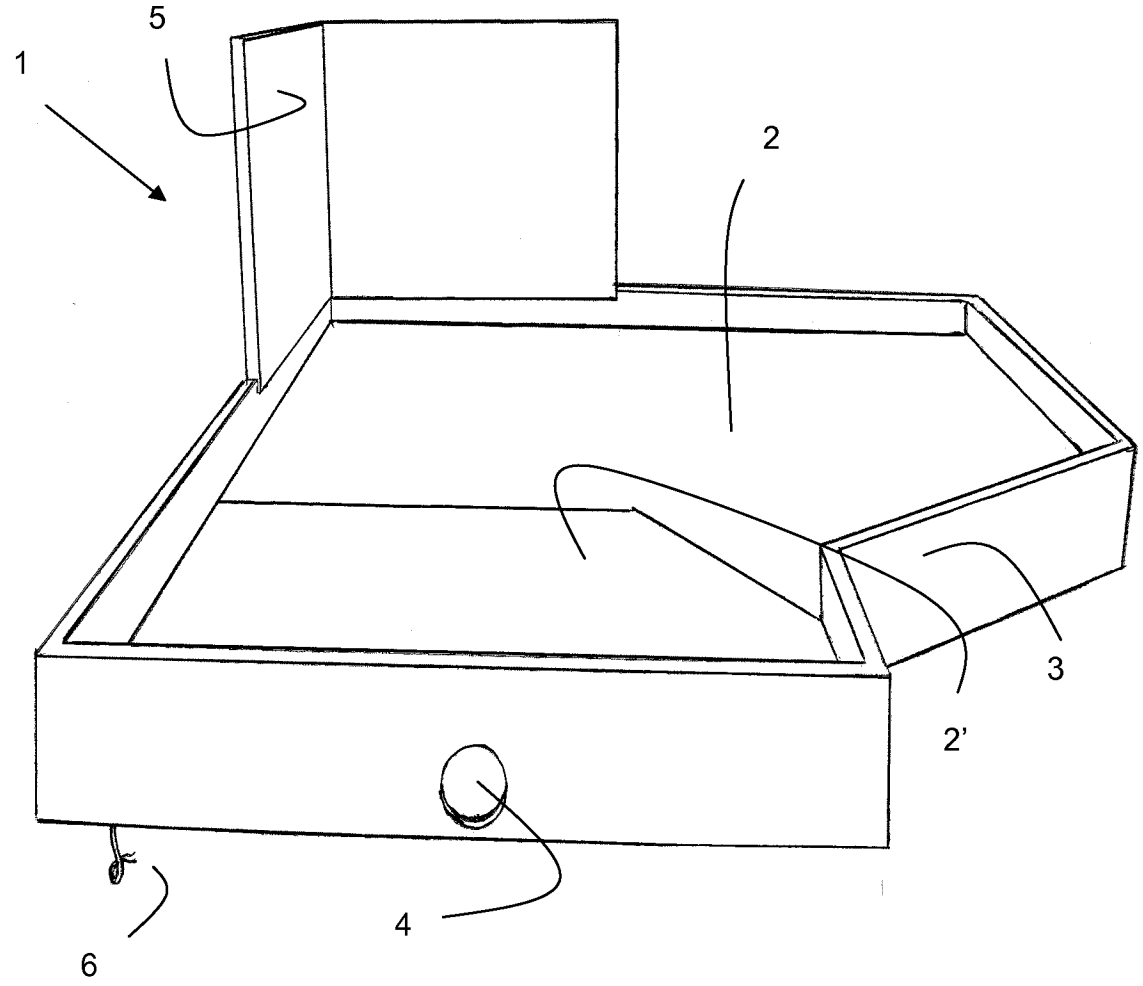

Fig. 1

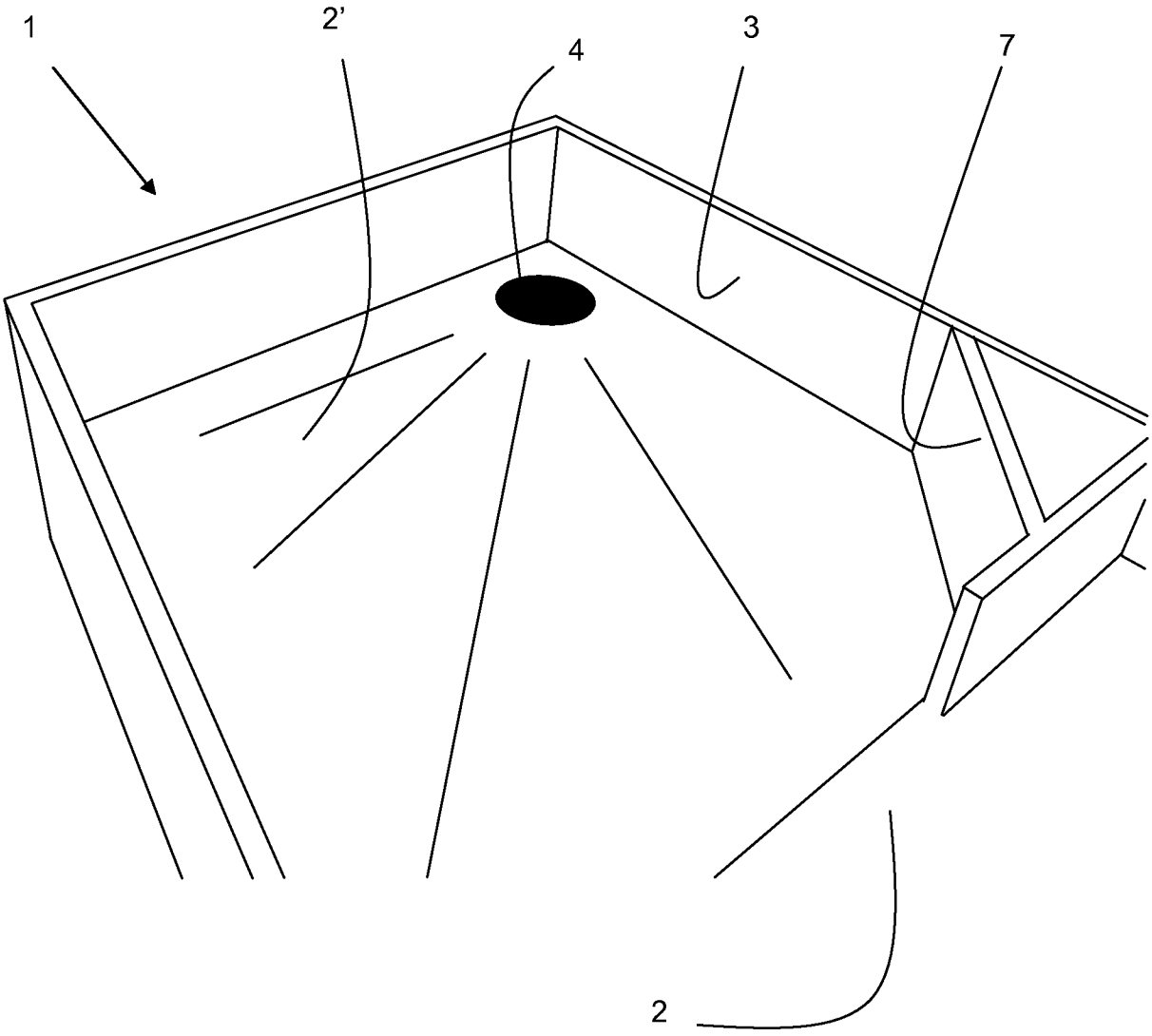

Fig. 2