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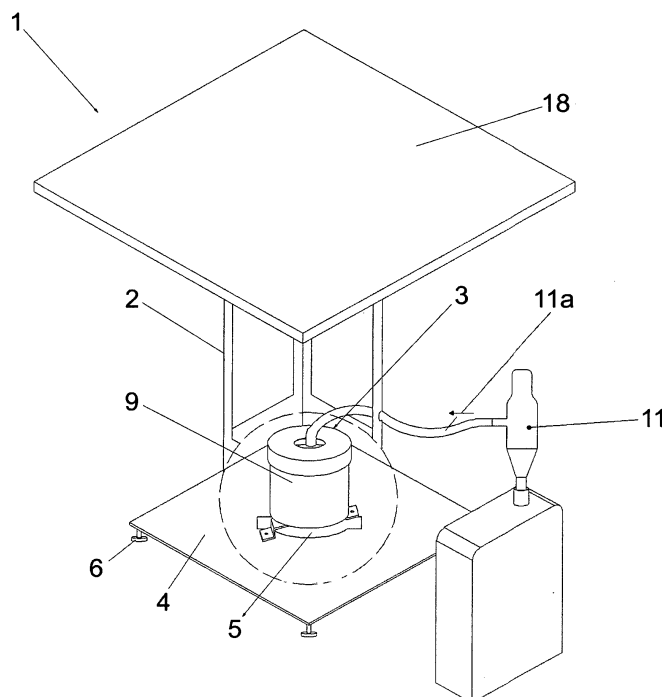
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(54) **HEATER FURNITURE ITEM FOR INDOORS OR OUTDOORS**

(57) Heater furniture item (1) for outdoor or indoor spaces which comprises a supporting body (2) provided with an intake and an outlet for hot air coming from a burner (3) of a biofuel, such as bioethanol, characterised in that said burner (3) is housed in a non-withdrawable manner inside said supporting body (2), said supporting body (2) including a hole (10) configured for introducing a fuel injection pipe (11a), said hole (9) allowing the re-

loading of fuel from the outside without having to withdraw said burner (3) from the supporting body (2) of the item of furniture (1). In a preferred embodiment, the heater furniture item (1) also comprises at least one non-withdrawable cover (13) for adjusting the height of the flame of said burner (3) from the outside of the item of furniture (1).



**FIG.4**

## Description

[0001] The present invention relates to a heater furniture item for outdoor spaces or sufficiently ventilated indoor spaces, which comprises a burner of biofuel, such as bioethanol. This type of furniture is used on bar or restaurant terraces to heat the outdoor atmosphere when the temperature is uncomfortable.

## Background of the invention

[0002] Heater furniture is used in winter in hotels, bars and restaurants to give heat to users on terraces. This heater furniture includes a burner for combustion of a biofuel, such as liquid bioethanol. Bioethanol, like other agrofuels originating from agricultural production, produce heat without generating black smoke which is bothersome for the user.

[0003] Some of the heater furniture items known to date are configured in the form of a table with a supporting body provided with an inlet and outlet of air from a biofuel burner which is housed in a withdrawable manner in a drawer within the body of said support. When it is necessary to reload the fuel, the user of the item of furniture removes the drawer to access the burner and fill the tank.

[0004] These heater furniture items present various drawbacks which make use thereof unsafe and inconvenient. On the one hand, there is the fact that reloading the fuel entails a risk of fire for the user through having to handle the burner to fill the tank, by withdrawing said burner from the supporting body. On the other hand, there is the impossibility of regulating the heat provided by the furniture item to adjust it to the environmental needs of the moment (the need to provide more or less heat depending on the ambient temperature).

## Description of the invention

[0005] The aim of the present invention is to provide a heater furniture item for outdoor spaces or sufficiently ventilated indoor spaces which resolves the aforesaid drawbacks, presenting other benefits to be described below.

[0006] In line with this aim, the present invention provides a heater furniture item which comprises a supporting body provided with an inlet and outlet for hot air coming from a burner of a biofuel, such as bioethanol, which is characterised in that the burner is housed in a non-withdrawable manner inside said supporting body, said supporting body including a hole configured for introducing a fuel injection pipe from the outside without having to withdraw said burner from the supporting body of the furniture item.

[0007] Thanks to these characteristics, a furniture item is obtained which is very safe and easy to handle for the user, as reloading the fuel can be done by means of a pump or through an injection pipe introduced in the hole of the supporting body to access the burner tank's filling

hatch. This avoids the risk of fire due to unexpected spills or incorrect handling of the liquid fuel.

[0008] Preferably, the supporting body in which the burner is housed includes at least one non-withdrawable cover to regulate the height of the flame of said burner from outside of the item of furniture, and advantageously, said cover is installed in a pivoting manner on a substantially horizontal plane and joined to an actuation lever which can be actuated from the outside.

[0009] In this way, the user can switch off or adjust the heat provided by the item of furniture according to ambient temperature, covering the burner hatch more or less to regulate the height of the flame. This produces a very versatile item of furniture which can be used during both the winter season and during the spring-autumn season when the ambient temperature is much milder.

[0010] Advantageously, the item of furniture can have another additional cover to regulate the heat, with one of said covers having a central hole for regulating the size or diameter of the flame.

[0011] Again preferably, the biofuel burner is housed in a safety tank provided inside the aforementioned supporting body.

[0012] In this way, if the furniture accidentally tips over, the liquid fuel of the burner is collected in the safety tank, preventing it from spilling inside the supporting body with the ensuing risk of fire.

[0013] According to a preferred embodiment, the item of furniture comprises a supporting base for the supporting body, said supporting base including an opening for the air intake into the supporting body, and supporting feet to level and adjust the height of said supporting base above the ground.

[0014] In this way, the intake and circulation of air is ensured through the supporting body of the item of furniture to an air outlet situated in an upper segment of the same body.

[0015] Advantageously, the supporting body of the item of furniture comprises an upper segment of translucent or transparent walls which is disposed on the burner, and means to illuminate the cavity of said upper segment when the burner is not in use.

[0016] In this way, the item of furniture is ideal for using also on summer nights, with the illumination providing an ideal atmosphere of many colours to be selected or which change automatically, which illuminate the burner when it is not in use.

[0017] Preferably, the illumination means comprise a light emitting diode (LED) and a battery to supply electricity to said diode and, advantageously, said LED is installed in a withdrawable manner aimed towards the burner on a supporting element inside said supporting body.

[0018] In this way, a very simple configuration is obtained which facilitates illumination of the supporting body in a very simple manner.

[0019] Again preferably, the upper segment of the supporting body of the table is joined to a diffuser body with

a truncated cone shape which is provided with a plurality of openings for the outlet of hot air coming from the burner and, advantageously, said diffuser body includes an access door to said illumination means.

**[0020]** This diffuser body with a truncated cone shape facilitates the effective diffusion of hot air in all of the area surrounding the item of furniture.

**[0021]** According to a preferred embodiment, said diffuser body with a truncated cone shape is joined to a panel, said panel and the diffuser and supporting bodies configuring a heater table. The length of the supporting body of the heater table can vary according to the type of table (high or low table).

**[0022]** Preferably, the table panel is made of resin capable of heating to transmit heat to the user also and, advantageously, said panel is foldable and capable of acquiring a position substantially parallel to the supporting body.

**[0023]** In the present invention, biofuel will be understood to mean an agrofuel, or fuel from the agricultural production of vegetable plants, such as for example, cane sugar or beet. In particular, the bioethanol or ethanol of the biomass is a fuel produced by the alcoholic fermentation of the sugars of different vegetable plants, such as for example, the sugar from sugar cane, beet or cereals.

### Brief description of the drawings

**[0024]** To improve understanding of that set out herein, a set of drawings is attached which, schematically and by way of a non-limiting example only, represent a practical case of embodiment of an item of furniture which, in this case, is a heater table.

- Figure 1 shows a view in perspective of a heater table.
- Figure 2 is an exploded view of the table of Figure 1 which shows all of its components.
- Figure 3 shows a section view of the table in which the air intake and outlet circuit has been schematically represented with arrows.
- Figure 4 is a schematic representation of the table of Figure 1 and of a pump with a fluid injection pipe which shows how the fuel is loaded in the burner.
- Figure 5 is a schematic representation of the table of Figure 1 which shows the operation of switching on the burner.

### Description of a preferred embodiment

**[0025]** What follows is a description of an embodiment of the heater furniture item of the present invention which has materialised in the form of a table 1. Figures 1 to 5 represent this heater table 1 which incorporates a supporting body 2, a diffuser body 7 with a truncated cone shape and a panel 18 disposed on the diffuser body 7. In the described embodiment, the panel 18 is made of a

resin which can be heated to transmit heat also to the user.

**[0026]** As can be seen from the figures mentioned above, the heater table 1 of the present invention comprises a supporting body 2 inside of which an agrofuel burner 3 is housed in a non-withdrawable manner. In particular, the agrofuel is bioethanol or the ethanol of biomass, obtained from the alcoholic fermentation of the sugars of plant vegetables.

**[0027]** In the described embodiment, the supporting body 2 is installed on a supporting base 4 which comprises an opening 5 to allow the intake of air into the supporting body 2. This supporting base 4 includes adjustable supporting feet 6 which make it possible to level or adjust its height above the ground.

**[0028]** As can be seen from Figure 3, the air which enters through the opening 5 in the supporting base 4 penetrates inside the supporting body 2 of the table 1 and rises above the burner 3 to a diffuser body 7 with a truncated cone shape which is joined to an upper segment 2a of the supporting body 2. The diffuser body 7 includes a plurality of openings 8 which ensure effective diffusion of the hot air from the burner 3 around the table 1. In the described embodiment, upper segment 2a of the supporting body 2 presents transparent walls 2b which give visibility to the flame of the burner 3.

**[0029]** Burner 3 is housed in a non-withdrawable manner inside a safety tank 9 provided inside the supporting body 2 of the table 1. This safety tank 9 collects the liquid fuel that might accidentally spill if the table 1 were to tip over.

**[0030]** As explained in the description of the invention, to reload the fuel of the burner 3, a hole 10 has been contemplated in the supporting body 2 configured for introducing a fuel injection pipe. Figure 4 represents schematically the fuel loading operation which is carried out by means of a fluid pump 11 and a fuel injection pipe 11a which is introduced through the hole 10. Thanks to this, fuel handling can be carried out in a very safe manner, noticeably reducing the risk of fire produced by incorrect handling of the fuel. Also, the same hole 10 serves to introduce the long (kitchen) lighter 12 which lights the bioethanol of the burner 3 (see figure 5). In the described embodiment, the pump 11 is electric.

**[0031]** The supporting body 2 in which the burner 3 is housed includes one or more non-withdrawable covers 13 to adjust the height of the flame from the outside by means of an actuating lever 14. This cover 13 is mounted in a pivoting manner on a substantially horizontal plane to be able to close to a greater or lesser extent the mouth of the 3 depending on the ambient temperature outdoors.

**[0032]** Thanks to this cover 13, the user of the table 1 can regulate the heat that the burner 3 generates according to the ambient temperature, meaning that table 1 can be used in both the winter season and in spring-autumn when the ambient temperature is still mild.

**[0033]** In the described embodiment, the supporting body 2 also incorporates a light emitting diode 15 of col-

ours (which can change or not automatically) and which is installed in a withdrawable manner aimed towards the burner 3 on an inner supporting element 16. This diode 15 is associated to a battery (not represented) which ensures the supply of electricity, and it is accessed through a door 17 provided in the diffuser body 7 with a truncated cone shape.

**[0034]** The light which the diode 15 provides is visible from the outside through the transparent walls 2b of the supporting body 2 of the table 1, which means that the table 1 can be used on summer nights, leaving the burner 3 illuminated.

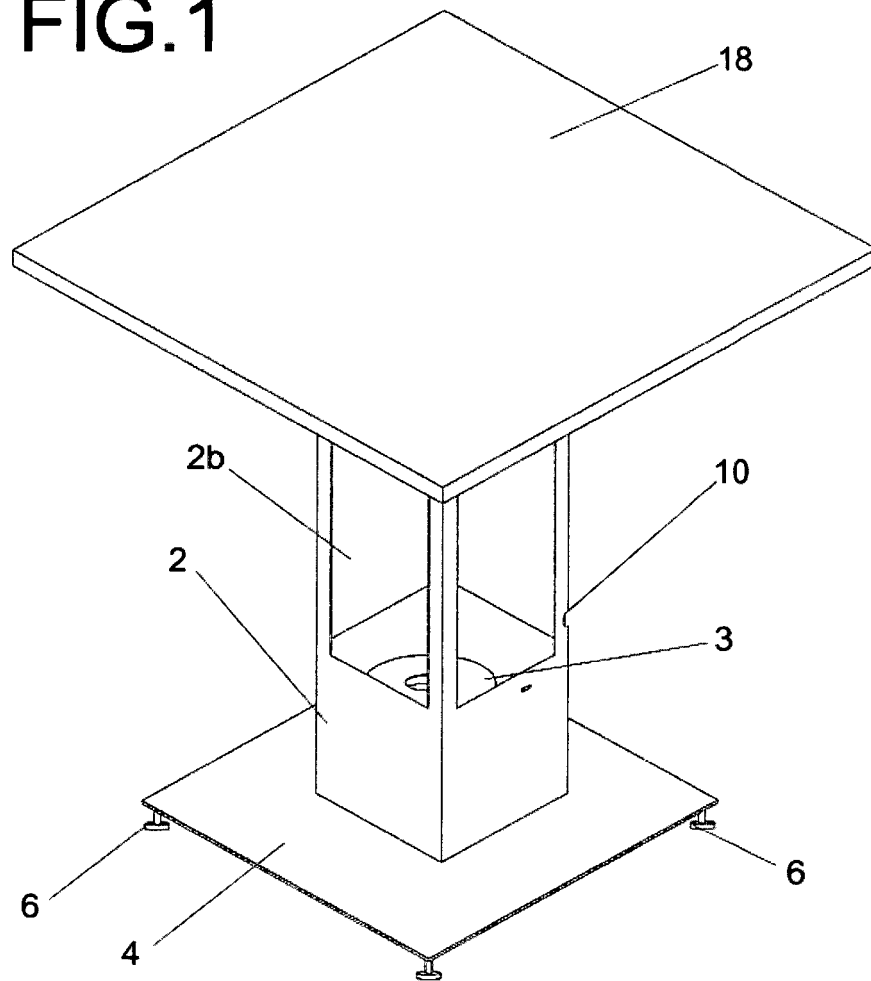
**[0035]** Unlike other items of furniture of the state of the art, the heater table 1 of the present invention is very practical and safe to use in public venues, and, also, very versatile as it can be used in both summer and in winter.

**[0036]** Although reference has been made to a specific embodiment of the invention, it is evident for a person skilled in the art that the described item of furniture is capable of numerous variations and modifications, and that all of the details mentioned may be replaced by others which are technically equivalent, without departing from the scope of protection defined by the attached claims. For example, although in the figures a item of furniture has been represented and described which is a table 1, the same item of furniture could have a different functionality to that of a table 1, or have a height equal to or of more than 2 m, performing the function of a heating device for outdoor spaces. Similarly, although a table 1 has been described having a diffuser body 7 with the shape of a truncated cone, this diffuser body 7 could have a different shape which would likewise allow it to effectively diffuse the hot air provided by the burner 3 around the item of furniture.

## Claims

1. Heater furniture item (1) for outdoor or indoor spaces which comprises a supporting body (2) provided with an intake and an outlet for hot air coming from a burner (3) of a biofuel, such as bioethanol, **characterised in that** said burner (3) is housed in a non-withdrawable manner inside said supporting body (2), said supporting body (2) including a hole (10) configured for introducing a fuel injection pipe (11 a), said hole (9) allowing the reloading of fuel from the outside without having to withdraw said burner (3) from the supporting body (2) of the item of furniture (1).
2. Furniture item (1) according to claim 1, wherein the supporting body (2) in which the burner (3) is housed includes at least one non-withdrawable cover (13) for adjusting the height of the flame of said burner (3) from the outside of the item of furniture (1).
3. Furniture item (1) according to claim 1, wherein said cover (13) is installed in a pivoting manner on a substantially horizontal plane and joined to an actuating lever (14) so that it may be actuated from the outside.
4. Furniture item (1) according to claim 1, wherein the biofuel burner (3) is housed inside a safety tank (9) provided inside the aforementioned supporting body (2).
5. Furniture item (1) according to claim 4, which comprises a supporting base (4) of the supporting body (2), said supporting base (4) including an opening (5) for the intake of air and supporting feet (6) to level or adjust the height of said base (4) above the ground.
6. Furniture item (1) according to claim 1, wherein said supporting body (2) comprises an upper segment (2a) of translucent or transparent walls (2b) which is disposed on the burner (3), and means (15) for illuminating the cavity of said upper segment (2a) when the burner (3) is not lit.
7. Furniture item (1) according to claim 6, wherein said illumination means comprise a light emitting diode (15) and a battery to supply electricity to said diode (15).
8. Furniture item (1) according to claim 7, wherein said light emitting diode (15) is installed in a withdrawable manner aimed towards the burner (3) on a supporting element (16) inside said supporting body (2).
9. Furniture item (1) according to claim 6, wherein the upper segment (2a) of the supporting body (2) of the table (1) is joined to a diffuser body (7) with a truncated cone shape which is provided with a plurality of openings (8) for the outlet of hot air coming from the burner (3).
10. Furniture item (1) according to claim 9, wherein said diffuser body (7) with a truncated cone shape includes a door (17) to access said illumination means (15,16).
11. Furniture item (1) according to claim 9, wherein said diffuser body (7) is joined to a panel (18), said panel (18) and said supporting and diffuser bodies (2,7) configuring a heater table.
12. Furniture item (1) according to claims 10 and 11, wherein said panel (18) is made of a resin capable of heating to transmit heat to the user also.
13. Furniture item (1) according to claim 11, wherein said panel (18) is foldable and capable of acquiring a position substantially parallel to the supporting body (2).

FIG.1



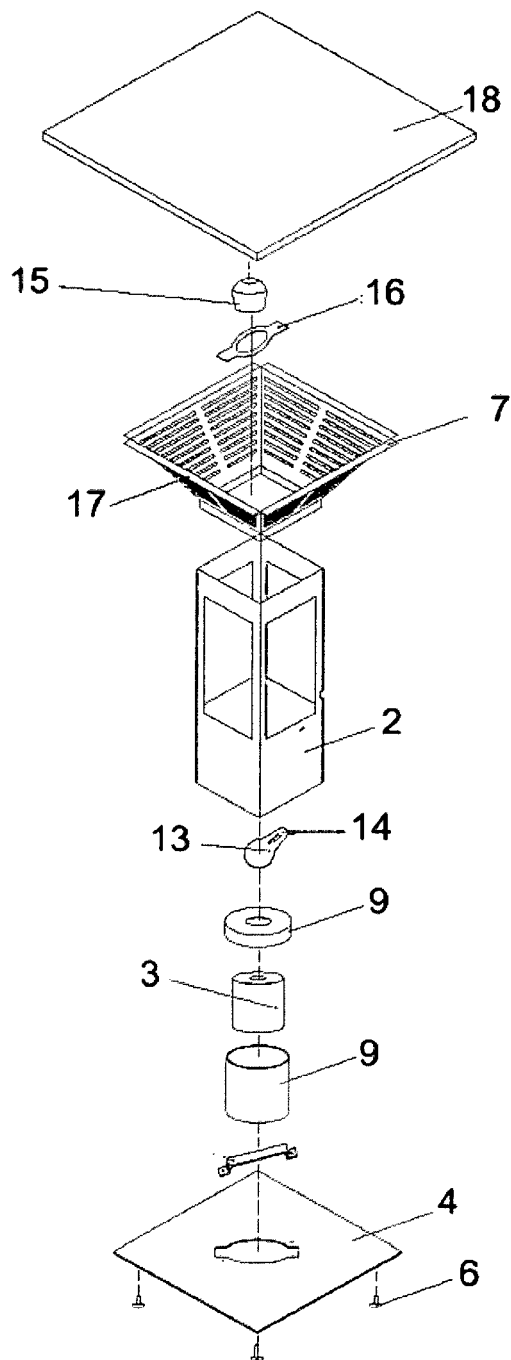


FIG.2

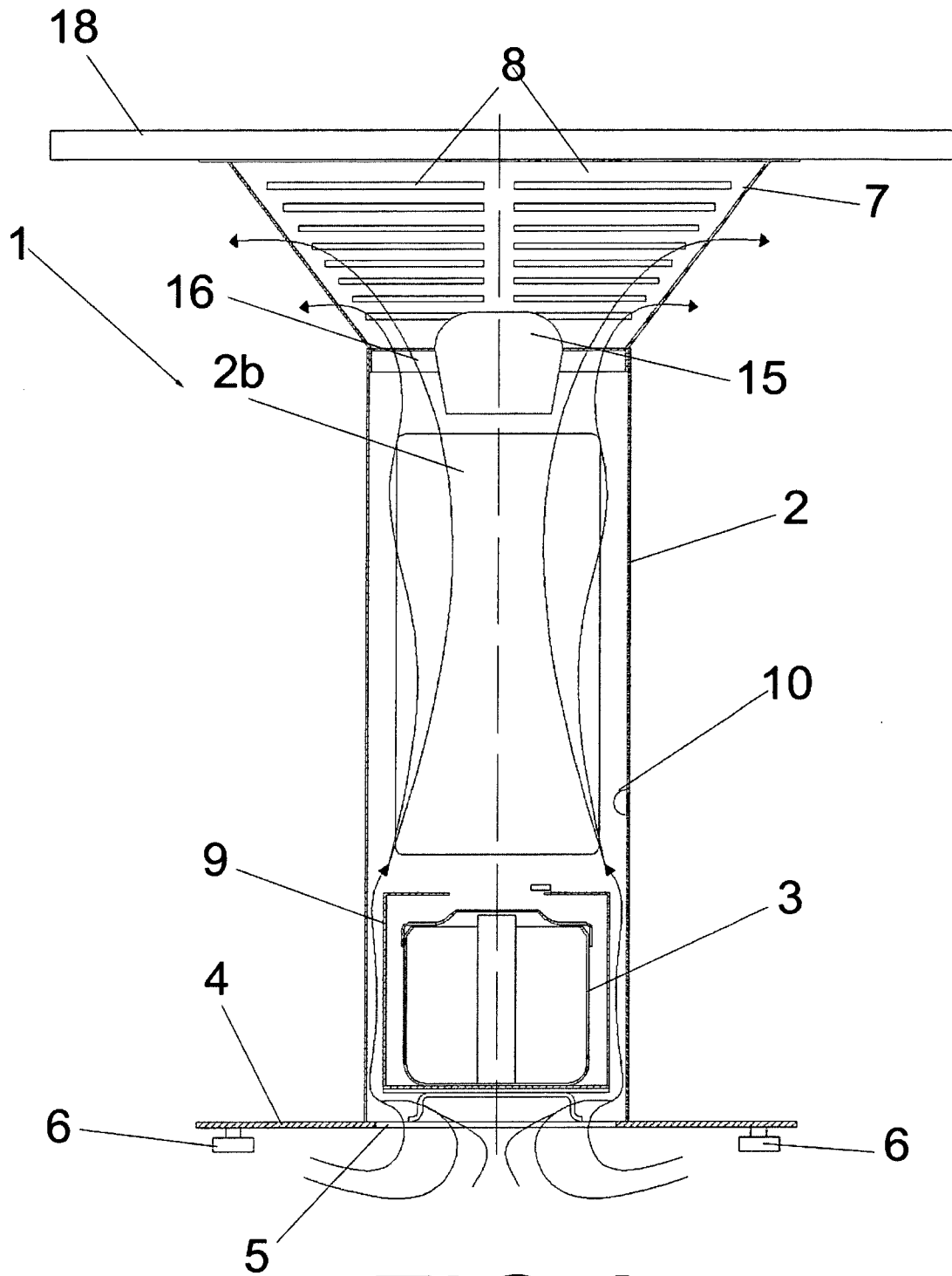


FIG.3

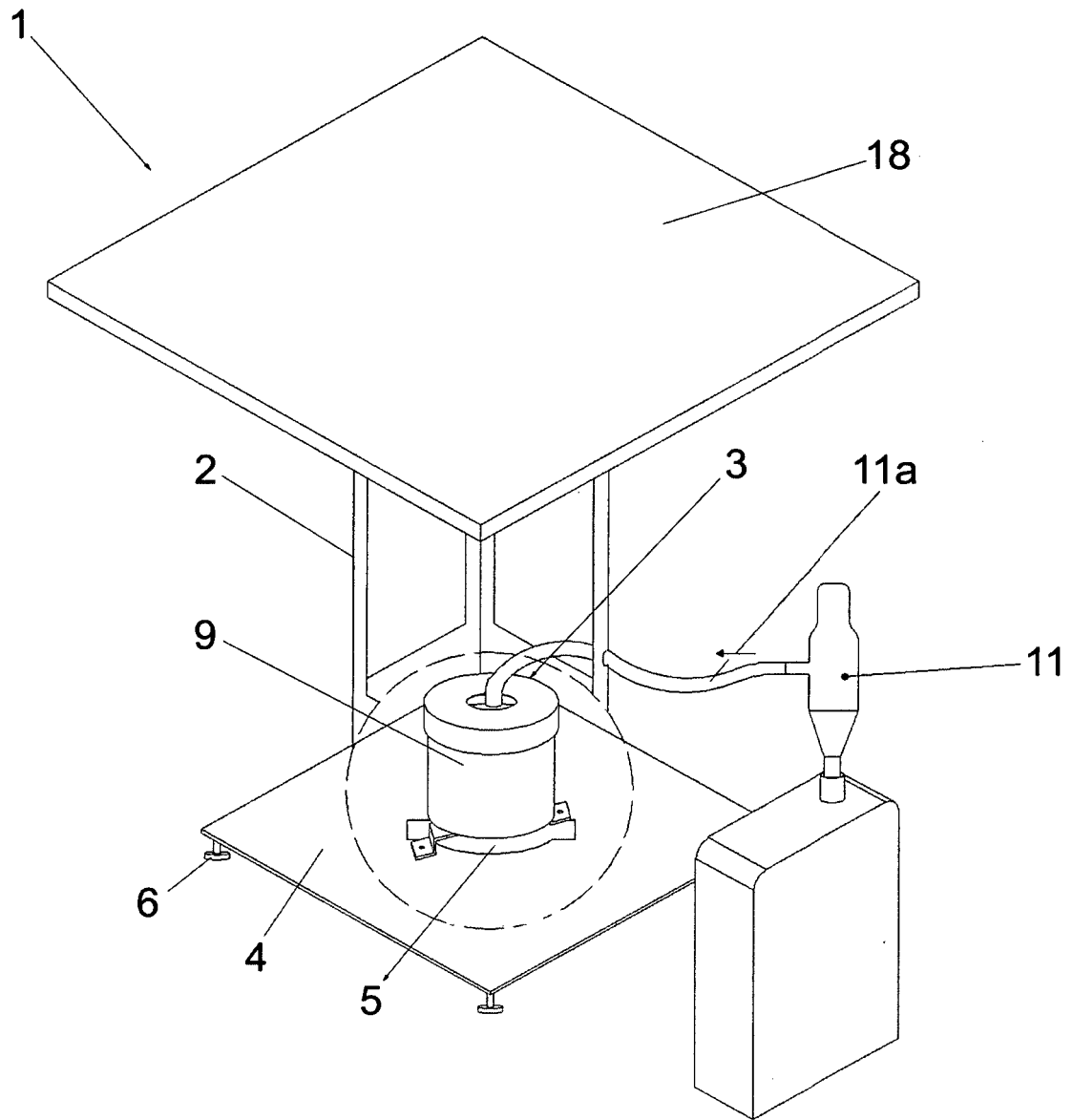


FIG.4

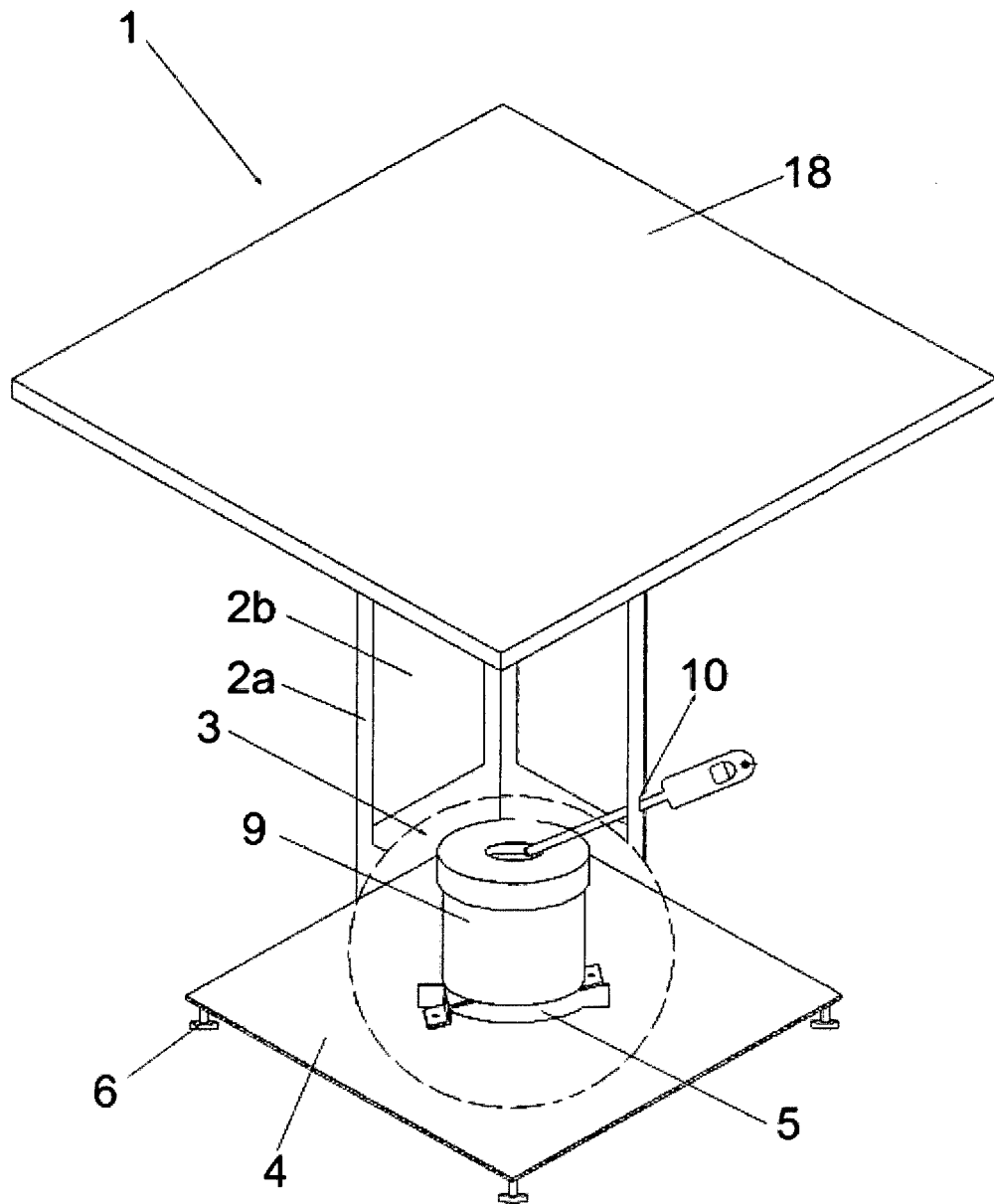


FIG.5



## EUROPEAN SEARCH REPORT

Application Number  
EP 15 38 2253

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                               |                                                     |                                                       |
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| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                                 | Relevant to claim                                   | CLASSIFICATION OF THE APPLICATION (IPC)               |
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| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                                                                                                                                               |                                                     |                                                       |

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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16-10-2015

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