

Description

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention refers to a dispensing device for products for the body and, in particular, to a dispensing device of the automated type for products, such as sunscreen products, directly onto the body of a user.

STATE OF THE ART

[0002] In general, products for the body, with particular reference to sunscreen products, like creams or oils, are available at shops in bottles or packages containing a set amount of product. As known, such products have an expiry date within which the product must be used. Indeed, if the product is not finished within such a date it must be disposed of. This can be a drawback if the user requires small amounts of product. For example, in the case of a suncream product, the required amount for one day exposure is small with respect to that which is normally available in a bottle or in a package. If it is necessary to apply small amounts of such a product, the purchase of an entire package of product could be disadvantageous in terms of wasted product, of wastage produced and in terms of its cost.

[0003] Moreover, in wellness centres or solariums there are bottles, for the users, which are provided with a dosing cap of the mechanical type, for manually dispensing preset amounts of product for the body. Such bottles however are foreseen to be used indoors, and are not therefore suitable for permanent or removable outdoor installations. In particular, if such bottles are exposed to atmospheric agents they would not be capable of ensuring a correct preservation of the product and, therefore, efficiency and safety of the product itself.

[0004] Patent application No. US 2005/0279865 describes a device that can be transported for spray dispensing a sunless tanning product. Such a device has at least one reservoir for containing the sunless tanning product and a dispensing gun that is equipped with a mixing chamber in which the sunless tanning product is mixed with at least pressurised air so as to create a spray that can be dispensed.

[0005] German utility model No. DE 9319158 describes a cabin for receiving a user standing in the erect position. In the inner part of such a cabin, there are nozzles for spray dispensing liquid agents for treating the skin.

[0006] Such nozzles are connected to containers for such liquid agents. There is also a protection element that can be adjusted in height, so as to protect the face and the head of the user from contact with the dispensed liquid spray.

[0007] International patent application No. WO 01/17603 describes a cabin device for the application of a product for the body on the skin of a user, in which such a device comprises at least one container and at least

one nozzle for dispensing spray of the product itself towards the body of the user. It is further foreseen for there to be a device for the control of the dispensing in relation to the position of the skin to be treated. Such known cabin dispensing solutions, however, are very bulky and, in order to be applied, they require a the arrangement of a suitable dedicated space.

[0008] The dispensing device according to the present invention is highly simplified and, therefore, cost-effective, easy to maintain and to install and it can be applied anywhere, indoors or outdoors, without requiring a special space.

[0009] Moreover, with respect to known systems for dispensing products for the human body, the present device allows there to be a localised dispensing, so that the user himself can decide on which parts of his body he desires to apply the product.

PURPOSES OF THE INVENTION

[0010] One purpose of the present invention is to provide a dispensing device of at least one product for the body that makes it possible to avoid the drawbacks described above.

[0011] Another purpose of the present invention is to provide a dispensing device of at least one product for the body that is suitable for preventing the product itself from being wasted.

[0012] Another purpose of the present invention is to provide a dispensing device of at least one product for the body that dispenses a set amount of product in an automated manner.

[0013] Another purpose of the present invention is to provide a dispensing device of at least one product for the body that is suitable for ensuring a correct preservation of the product itself.

[0014] In accordance with one aspect of the present invention it is foreseen for there to be a dispensing device of at least one product for the body according to claim 1.

[0015] The dependent claims refer to preferred and advantageous embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Further characteristics and advantages of the present invention shall become clearer from the detailed description of a preferred, but not exclusive, embodiment of a dispensing device of at least one product for the body, illustrated as an indication, but not for limiting purposes, in the attached drawing tables, in which:

figure 1 is a schematic perspective view of a dispensing device according to the present invention;
figure 2 is a schematic perspective view of a dispensing device according to the present invention;
figure 3 is a schematic perspective view of some internal components of a dispensing device according to the present invention;

figure 4 is a schematic perspective view of one version of the dispensing device according to the present invention;

figure 5 is a schematic perspective view of some internal components of the device of figure 4.

EMBODIMENTS OF THE INVENTION

[0017] With reference to the attached figures, reference numeral 1 wholly indicates a dispensing device of at least one product for the body.

[0018] In particular, the dispensing device 1 is foreseen for dispensing and/or nebulising at least one product for the body like, for example, a sunscreen product, a moisturising product or the like.

[0019] In one version of the invention, the dispensing device 1 is foreseen for dispensing and/or nebulising at least one product for the body like a cleansing product such as a shampoo, a cleansing product for the body or for the face, a skin and/or hair care or conditioning product, etcetera.

[0020] In particular, the products for the body can be in the form of a liquid solution, a cream, an oil or the like.

[0021] The dispensing device 1 comprises a housing 2, a door 3 and at least one reservoir 4 arranged in the housing 2 itself.

[0022] The door 3 makes it possible for the housing 2 to open and close.

[0023] The door 3 can comprise a safety lock 5 of the conventional type.

[0024] A specific type of product for the body is introduced into the at least one reservoir 4.

[0025] When the product for the body has run out, it is possible to replace the relative reservoir 4 with a reservoir containing the product in question. Alternatively, the reservoir 4 can be of the fixed type, and can be refilled with the product for the body, once the latter has run out.

[0026] In one version of the invention it is foreseen for there to be at least two reservoirs 4, each filled with a specific product for the body.

[0027] Since the product for the body is contained inside the at least one reservoir 4, positioned inside the housing 2, it is protected from the atmospheric agents. Therefore, the dispensing device 1 can be easily installed both indoors and outdoors.

[0028] In one further version of the present invention, inside the housing 2 there are refrigerating means of the known type, not shown in the figures, that are suitable for maintaining a set temperature inside the housing 2.

[0029] As illustrated in the embodiment of figure 3, the at least one reservoir 4 comprises an opening 6 for the filling of the product and/or for the product to come out.

[0030] In a further version of the present invention, the at least one reservoir 4 can comprise a filling opening 6, that is provided with a removable closure cap, and an opening for the product to come out, not illustrated in the figures.

[0031] The at least one reservoir 4 is operatively con-

nected to at least one corresponding dispensing means 7.

[0032] In particular, the number of the dispensing means 7 corresponds to the number of reservoirs 4 that are foreseen inside the housing 2 of the dispensing device 1. Therefore, each dispensing means 7 is connected to a single reservoir 4.

[0033] In the figures, as an example, five dispensing means 7 and five reservoirs 4 are shown. However, it is possible to make a dispensing device 1, according to the present invention, comprising a different number of dispensing means 7 or reservoirs 4 without for this reason departing from the scope of protection of the present invention.

[0034] The dispensing of a single product for the body can be carried out, in an independent manner with respect to the other products contained inside the device 1, through a corresponding dispensing means 7. In such a way it is possible to prevent the single products for the body contained in corresponding reservoirs 4 from becoming mixed and contaminated.

[0035] The operation of the at least one dispensing means 7 is ensured through electric supply means 8.

[0036] In one version of the present invention, the electric supply means 8 can comprise batteries, rechargeable batteries, solar panels or equivalent devices that are suitable for ensuring the electric supply of the at least one dispensing means 7.

[0037] In particular, figures 3 and 4, as an example and not for limiting purposes, show solar panels 8 that are installed at the housing 2.

[0038] In such a way, the dispensing device 1 constitutes an electrically autonomous unit, which is capable of operating without needing to be connected to external energy sources.

[0039] In a further version of the present invention, the electric supply means 8 can comprise means of the conventional type for connecting to the electric mains.

[0040] In one version of the dispensing device 1 according to the present invention, the at least one dispensing means 7 comprises a dispenser 21, for dispensing the product for the body in the form of a liquid or cream.

[0041] The dispenser 21, in one version of the invention, is connected, on one side, to the opening 6 of a corresponding reservoir 4, through respective ducts that are not shown in the figures, and, on the other side, to a duct 10 of the flexible type, at the end of which it is foreseen for there to be a corresponding dispensing terminal 11.

[0042] The dispenser 21 can comprise a mechanically or electrically actuated pump or similar means that are suitable for determining the controlled exit of the at least one product for the body from the reservoir 4.

[0043] By "controlled exit" we mean that a certain amount of product is dispensed in a single dispensing operation or that the dispensing occurs for a set amount of time.

[0044] The at least one dispensing means 7 is suitable

for dispensing the product for the body contained inside the at least one reservoir 4, causing it to come out through a corresponding dispensing terminal 11.

[0045] In a further version of the dispensing device 1 according to the present invention, the at least one dispensing means 7 comprises nebulising means 9, of the known type. Such nebulising means 9 are connected to a reservoir 4 and to a dispensing terminal 11, respectively, in an analogous manner to what has been described previously for the dispenser 21.

[0046] The dispensing of the product for the body, in the nebulised or vapour form, through the nebulising means 9, allows the product itself to be applied onto the body of a user more simply and evenly. Indeed, it is not necessary to spread the product like, on the other hand, occurs with conventional products such as creams.

[0047] A further version of the dispensing device 1 according to the present invention can comprise at least one dispenser 21 and/or at least one nebulising means 9. Therefore, the presence of at least one dispenser 21 and of at least one nebulising means 9 inside the dispensing device 1 makes it possible to dispense liquid products both having low viscosity, for example liquid solutions, emulsions, etcetera, and high viscosity, for example creams or the like. Each dispensing terminal 11 comprises a dispensing nozzle 13.

[0048] In one version of the invention, each dispensing terminal 11 comprises a grip 12.

[0049] Through the grip 12, the user can easily manipulate the dispensing terminal 11 and direct the jet of product for the body dispensed or nebulised by the dispensing nozzle 13.

[0050] Furthermore, through the dispensing terminal 11 equipped with the grip 12, the single user is capable of applying the product also on portions of the body that are normally difficult to reach, like for example the back. In such a case, the flexible duct 10 will have a length such as to allow the user to move the dispensing terminal 11 away from the housing 2 by a distance that is easy to dispense the product on the body of the user.

[0051] According to the variants foreseen, one of the advantages of the dispensing device 1 is the capability of dispensing the product for the body in a specific, well-defined and delimited area. Indeed, the user can select for the dispensing to occur, for example, on his hand or in a special container that is suitable for containing a dose of product (like for example illustrated in figures 3 and 4) or on a specific area of the human body. In such a way, the user can have the correct dose of product available, avoiding waste, and the possibility of selecting, according to his requirements, the area on which to apply the product itself.

[0052] The dispensing terminal 11 can comprise an enabling device 14, through which the user can control the exit of the product for the body, as shall be explained in greater detail in the rest of the description.

[0053] As an example, the enabling device 14 can be made through a control button, a lever, a trigger or a

similar element, a proximity sensor or through a similar device, for controlling the voluntary actuation of each dispensing means 7.

[0054] The dispensing device 1 comprises a processing and control unit 15, for the automated operation of the dispensing device 1 itself, indeed making it autonomous according to the programming foreseen by an operator.

[0055] The processing and control unit 15 comprises a programmable logic controller of the known type, not illustrated in the figures, a display 16, a device for introducing and recognising money 17, a keypad 18 or the like, and dosing means 19.

[0056] In a further version of the present invention the processing and control unit 15 can comprise, in addition or as an alternative to the elements previously indicated, electronic payment means.

[0057] Such electronic payment means are suitable for allowing the payment through electronic/magnetic devices such as, for example, magnetic bracelets, magnetic keys, magnetic cards or similar devices.

[0058] The means foreseen in the dispensing device 1, in particular at least the dispensing means 7, or the display 16, or the money introduction or recognition device 17, or the possible electronic payment means, or the keypad 18 or the dosing means 19 are connected and slaved to the processing and control unit 15. Through the display 16 it is possible to visualise the instructions to be provided to the user for the correct use of the dispensing device 1 or, in the case in which it is necessary to carry out maintenance on the dispensing device 1 itself, operative information, alarms or possible malfunctioning signals.

[0059] The keypad 18 is operatively associated with the dispensing means 7 comprised in the dispensing device 1.

[0060] Through the keypad 18 it is possible to select the type of product for the body to be dispensed, contained in a corresponding reservoir 4.

[0061] In order to avoid waste in the dispensing of a product for the body selected by the user or accidental spilling thereof, the dispensing of the product occurs following an enabling signal, determined by the actuation of an enabling device 14, sent to the processing and control unit 15.

[0062] The amount of product for the body, dispensed by the dispensing device 1, is controlled by the dosing means 19.

[0063] In one version of the invention, the dosing means 19 can foresee timer means which determine the dispensing time of the product for the body through the dispensing means 7. Such an actuation time, for example, can be set by an operator according to the type and to the characteristics of the product to be dispensed.

[0064] The housing 2 of the dispensing device 1 according to the present invention can comprise at least one seat 20 in which to put away the dispensing terminal 11 before and after dispensing the product.

[0065] The number of seats 20 corresponds to the number of dispensing terminals 11.

[0066] The operation of the present invention is as follows. Following the insertion of money in the money introduction and recognition device 17 or of the possible activation of the electronic payment means through special payment devices such as magnetic bracelets, keys and or cards, the processing and control unit 15 determines the operation of the keypad 18, allowing a user to select the type of product for the body to be dispensed through the dispensing device 1.

[0067] After selecting the product to be dispensed, the processing and control unit 15 activates the dispensing means 7 that is associated with the selected product and the dosing means 19.

[0068] In one version of the invention, the user can grip the dispensing means 7, associated with the selected product, so as to extract it from the seat 20. Alternatively, the user can select to dispense on his hand, in a dedicated container or on a specific area of the human body.

[0069] The dispensing of the selected product occurs subsequently to the activation, by the user, of the enabling device 14 present in the dispensing terminal 11. In such a way the product comes out, through dispensing or nebulisation thereof, from the dispensing nozzle 12.

[0070] The dosing means 19, after dispensing the set amount of product for the body, send a signal to the processing and control unit 15 that blocks the operation of the dispensing means 7 and, consequently, the dispensing of product for the body from the dispensing terminal 11.

[0071] Once the product for the body has been dispensed, in one version of the invention, the user can put the dispensing terminal 11 back into the corresponding seat 20.

[0072] If the user desires to dispense a further dose of product for the body he can repeat the steps that have been previously described.

[0073] The dispensing device 1 makes it possible to avoid waste of product for the body. Indeed, through the dispensing device 1, a set amount of product for the body is dispensed, based upon the requirements of each user.

[0074] Moreover, by avoiding the user having to buy entire bottles of product for small amounts, the production of rubbish, consisting of empty or even partially full bottles of expired or useless product, to be disposed of, is limited.

[0075] Furthermore, since the dispensing device 1 can be positioned both indoors and outdoors, it can be installed in areas that can be easily accessible to users, avoiding them having to carry around containers of product for the body.

[0076] Moreover, if the selected product for the body to be dispensed is not very viscous, it can be dispensed through nebulisation.

[0077] The invention thus conceived can in any case undergo numerous modifications and variants all covered by the same inventive concept.

[0078] Moreover, all the details can be replaced by oth-

er technically equivalent elements. In practice, the materials used, as well as the shapes and contingent sizes, can be any according to the technical requirements without for this reason departing from the scope of protection of the following claims.

Claims

1. Dispensing device (1) for at least one product for the body of a user, comprising a housing (2), a door (3) for closing said housing (2), at least one reservoir (4) arranged inside said housing (2), a processing and control unit (15) for the automated operation of said dispensing device (1), wherein said dispensing device (1) comprises at least one dispensing means (7) for said at least one product for the body, wherein said at least one dispensing means (7) is operatively associated with said at least one reservoir (4) and with said processing and control unit (15), **characterized in that** said dispensing device (1) comprises dosing means (19) operatively associated to said at least one dispensing means (7).
2. Dispensing device (1) for at least one product for the body according to claim 1, wherein said product for the body is a sun care product and/or a moisturizing product, such as a liquid solution, an oil, a cream or similar.
3. Dispensing device (1) for at least one product for the body according to claim 1, wherein said product for the body is a cleaning product, a shampoo, a cleaning product for the body or for the face, a skin and/or hair care or conditioning product, etc., in form of a liquid solution, a cream, a mousse, an oil or the like.
4. Dispensing device (1) for at least one product for the body according to claim 1, wherein said at least one dispensing means (7) comprises a dispenser (21) for dispensing said product for the body in liquid or cream form and/or nebulising means (9) for nebulising said product in nebulised or vaporised form.
5. Dispensing device (1) for at least one product for the body according to claim 1, wherein said at least one dispensing means (7) dispense said at least one product for the body directly on the body of said user.
6. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said at least one dispensing means (7) comprises a flexible duct (10) and a dispensing terminal (11), wherein said dispensing terminal (11) is connected through said duct (10) to one of said at least one reservoir (4).
7. Dispensing device (1) for at least one product for the

body according to any one of the previous claims, wherein the number of said at least one dispensing means (7) corresponds to the number of said at least one reservoir (4).

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8. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein each dispensing means (7) is connected to only one reservoir (4).

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9. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said dispensing terminal (11) comprises a dispensing nozzle (13) suitable for directing said product for the body or a handgrip (12) and a dispensing nozzle (13) suitable for directing said product for the body.

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10. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said handgrip (12) comprises an enabling device (14), such as a button, a lever, a proximity sensor or a similar device, suitable for actuating said at least one dispensing means (7).

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11. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said processing and control unit (15) comprises dosing means (19) operatively associated with said at least one dispensing means (7).

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12. Dispensing device (1) for at least one product for the body according to claim 1, wherein said dosing means (19) comprise timer means suitable for determining the dispensing time of said product for the body from said at least one dispensing means (7).

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13. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said at least one dispensing means (7) is powered by electric power supply means (8).

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14. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said electric power supply means (8) comprise rechargeable batteries and/or solar panels and/or equivalent devices and/or conventional means for connecting to the mains power supply.

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15. Dispensing device (1) for at least one product for the body according to any one of the previous claims, wherein said processing and control unit (15) comprises a device for inserting money (17) and recognising it and/or electronic payment means suitable for paying for the dispensing of a predetermined amount of said product for the body.

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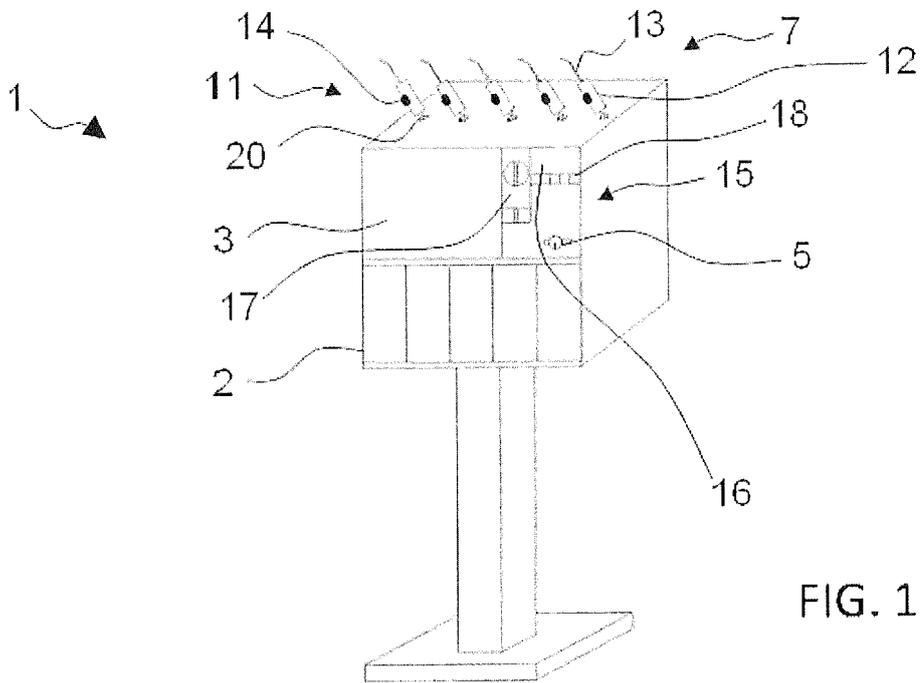


FIG. 1

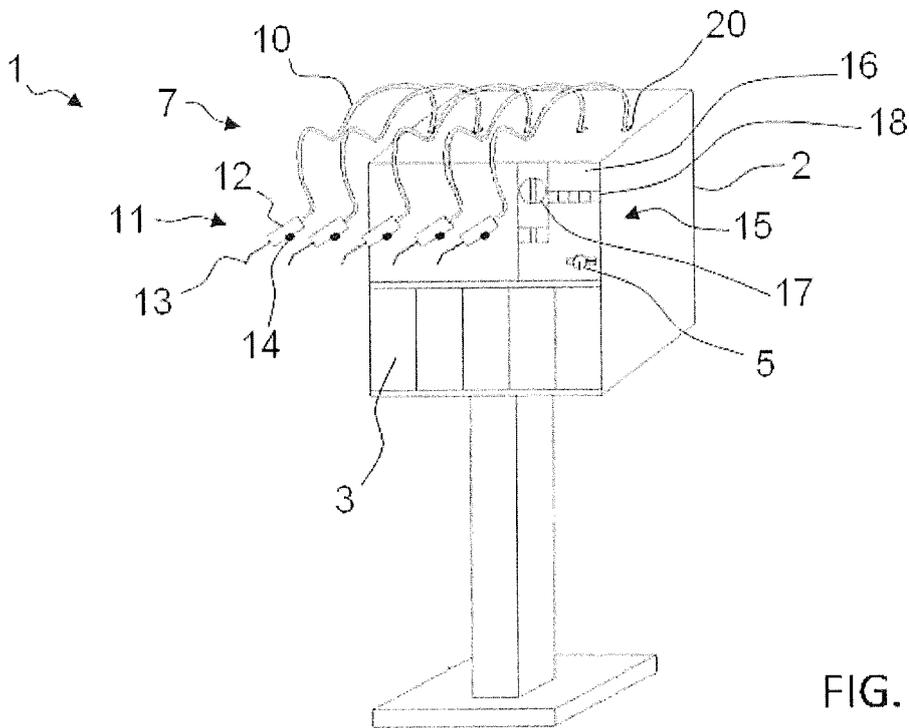


FIG. 2

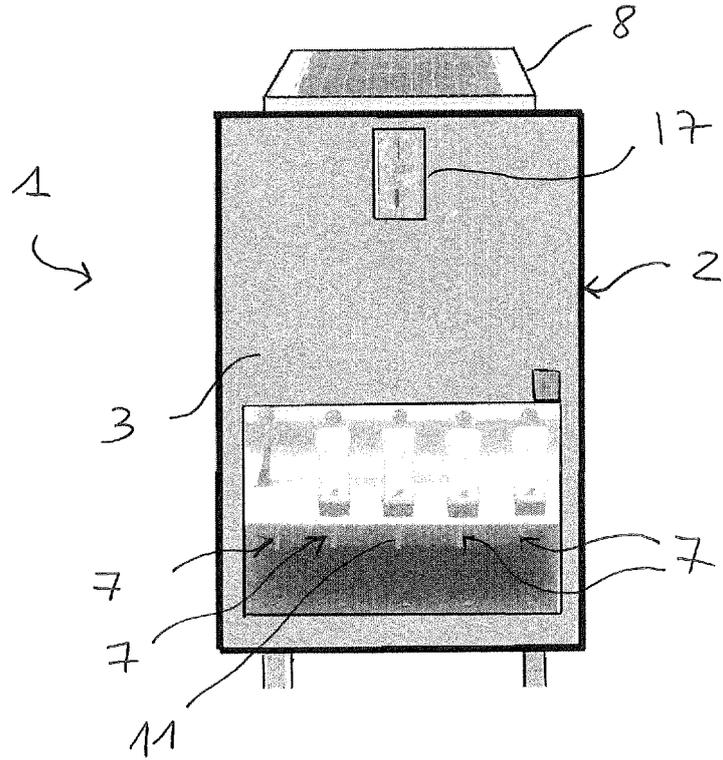


FIG. 4

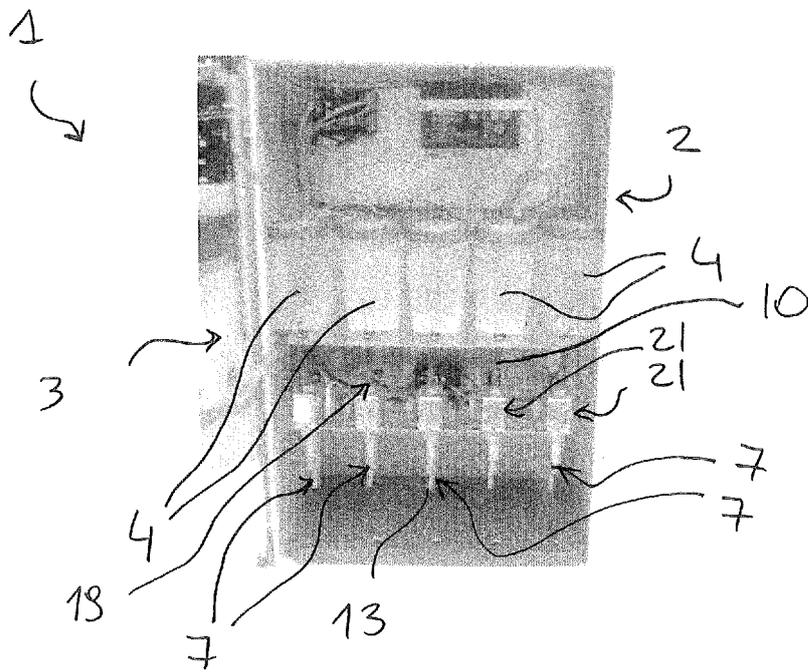


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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