(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 712 088 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
23.09.2020 Bulletin 2020/39

(51) Int Cl.:
B65D 83/00 *(2006.01)*

(21) Application number: **20163301.3**

(22) Date of filing: **16.03.2020**

(84) Designated 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
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **22.03.2019 ES 201930473 U**

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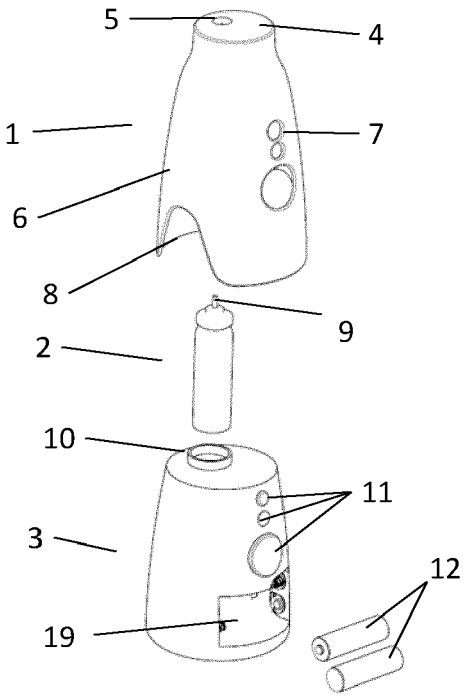
(54) AEROSOL DISPENSER

(57) Automatic aerosol dispenser which comprises a motor block with the mechanisms to drive the aerosol, the aerosol itself housed in a recess in the motor block which guides the aerosol rising and falling cycles, and a hood which covers the set and acts as a stop the hood being replaceable. The dispenser has most of its weight on the base, improves stability compared to other dispensers.

FIGURE 1



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Description

[0001] The object of the present refers, as inferred from its title, to an automatic aerosol dispenser which comprises a motor block with the mechanisms which activate the aerosol, the aerosol itself housed in a cavity in the motor block, and a hood which covers the whole and acts as a stop.

[0002] The dispenser thus built allows it to change its appearance in a very simple way, simply by replacing the hood by another, which makes it very versatile at a decorative level.

[0003] On the other hand, by presenting most of its weight in the base, it improves in stability compared to other dispensers.

[0004] The sector of the technique to which it belongs is that of dispensers of substances especially of aerosols.

BACKGROUND OF THE INVENTION

[0005] Automatic dispensers of substances contained in aerosols are well known, being those being widely spread in which, through a mechanism, the pressure and opening of the valve is achieved causing the release of the content.

[0006] It is common for this type of dispensers to comprise a box or housing inside which the aerosol is accommodated and the mechanism which, through a series of gears, presses the valve causing the release of the liquid.

[0007] An example of this is US patent US3726437 or the most recent one, with publication number WO0126448, which includes means for programming it.

[0008] There are also references to devices where instead of being a mechanism which presses the valve of the aerosol bottle it is the aerosol bottle which is displaced until its valve presses against a fixed element, for example patents US3952916 in which the aerosol bottle was displaced by the action of a rocker arm or the latest EP1370304 where the aerosol bottle is displaced by the action of a cam.

[0009] The problem with these devices is that they require a large base for their stability and so, for example, in the case of EP1370304, the aerosol bottle must go horizontal or alternatively fix the device to a wall.

[0010] Patent EP2581325, from this applicant, perhaps the closest to the proposed solution, refers to a dispenser where it is the aerosol which moves vertically until the valve presses against a fixed point or stop, with the substance being released. In this patent, the device comprises a base with the motor block with mechanisms to drive the aerosol, the aerosol itself, and an upper block which includes a spout, as a guide, through which the aerosol moves vertically until stopping against an upper hood which closes the set.

[0011] Other types of aerosol dispensers are those which refer to an actuator cap which fits on the valve portion of the aerosol leaving the bottle in plain view. These devices, for example the patent US6216925 or the most recent WO2007124554, are distant from the present invention and in addition there is no evidence that they can be used with small aerosols due to the size and stability problems which they could generate.

[0012] To overcome the aforementioned problems, a dispensing device is proposed which, despite its small base, is highly stable.

DESCRIPTION OF THE INVENTION

[0013] The proposed invention is a dispenser comprising a base, an aerosol and a hood that covers the assembly where:

1.- The base comprises:

- Drive mechanism. Usually composed of a motor and a series of gears, although other forms are not ruled out.
- A guide geometry which keeps the aerosol upright.
- A support on which the aerosol rests. This support is located at the bottom of the guide and is linked to the driving mechanism in such a way that such support, and consequently the aerosol, move vertically, said driving mechanism causes the vertical displacement of the same and, consequently, of the aerosol.
- The power source, which can be the batteries housed in a specific compartment.
- Means of anchoring to the hood.

2.- The aerosol comprises a valve in its upper part, which we will call *stem* and which, when pressed, releases the substance contained within the aerosol.

3.- The hood covers the whole and comprises:

- A closed upper base.
- A skirt that falls covering the base.
- Means of anchoring to the base.
- Holes matching the buttons and utilities of the base.

[0014] The hood and the base are inserted vertically, the base being inserted in the hood and being the support of the same while the hood covers the base from its upper position.

[0015] This drive mechanism causes a support to rise and fall on which the aerosol bottle sits in such a way that the rising or falling movement of the platform is transmitted to the aerosol bottle.

[0016] The aerosol bottle, in an upward and downward movement, is guided by a guide comprising a geometry which conforms to its own in such a way that it prevents the aerosol from changing its trajectory or vertical position.

[0017] This guidance is essential to keep the aerosol

in the vertical position of the striker, which will press the stem causing the product to escape.

[0018] This guide geometry is arranged on the base, thus facilitating the replacement of the aerosol when necessary and making its weight revert to the base, giving greater stability to the set.

[0019] Also in the base is the power supply, preferably batteries, easily accessible for their replacement and which give weight to the base, making the set more stable.

[0020] The hood comprises a closed upper base with a striker on its inner face, this striker being associated with the exit hole for the aerosol substance to the outside of the dispenser. The lower base is open.

[0021] The sides of the hood comprise skirts which extend from the upper base to the feet or lower part of the base, these skirts being able to form waves or undulations with parts which come closer to the bottom of the base and parts which remain at a greater height.

[0022] These skirts include suitable holes, once the hood is correctly mounted on the device, to allow visual and physical access to existing indicators, detectors and controls on the base. These indicators, detectors and controls, which we will generically call services, are preferably arranged in a cascade, that is, the upper one is always closer to the vertical axis of the set than the lower one. This facilitates the assembly of the hood.

[0023] On the other hand, between the hood and the base there are means of joining such as fastening, magnetic, bayonet or clip systems, amongst others.

[0024] The spraying cycle includes the activation of the device, the raising of the support, and therefore the aerosol, until the stem of the aerosol collides with the striker in the hood and the stem is pressed, releasing the content of the aerosol which comes out of the exterior of the dispenser. After spraying, the support falls and so does the aerosol which remains at rest, normally in its lowest position, until the start of the next cycle.

[0025] The cycle is started either by the wish of the user by pressing a button or a specific programming or because a sensor determines that the circumstance in which it is desired to spray is present. This sensor can be a presence detector, a light sensor, a temperature sensor or any other. Preferably, a sensor will be chosen to detect the presence in the vicinity of the device.

BRIEF DESCRIPTION OF THE FIGURES

[0026]

FIGURE 1 shows an exploded view of the device, showing the hood (1), the aerosol (2) and the base (3) and, in the hood, the upper base (4) with the outlet hole (5) of the product, the skirts (6) with the access holes (7) to the base and its services, the undulations (8) in the lower part of the skirts, in the aerosol the stem (9), in the base the guide (10) the indicators, detectors and controls which we will call services (11), the power supply (12), in this case batteries, and the battery compartment (19).

FIGURE 2 shows an exploded view of the device although in this case the aerosol (2) is situated inside the guide (10).

FIGURE 3 shows an exploded and sectional view of the device showing the interior of the base where the gears (13) which transmit the movement of the motor (14) to the support (15) on which the aerosol sits (2) can be seen, which, guided by the guide (10) and pushed by the support (15), will rise and fall vertically during the aerosol cycle and, on its way up, will reach the existing striker (16) on the internal face of the outlet hole (5) .
On the other hand, the services (11) and the holes (7) which allow their access from the outside also appear once the hood is mounted.
On the base can be seen a deformable button (18) suitable for fitting by pressure into the existing fixing hole (17) in the hood, thereby being permanently attached to the hood and base. This button can comprise a hanger, that is, a hole or slot so that the device can be hung.

FIGURE 4 shows the installed device.

DESCRIPTION OF A METHOD OF ACHIEVING THE INVENTION

[0027] A way of achieving the invention which is neither unique nor limiting of the invention is set out below.

[0028] The proposed invention relates to an automatic dispenser for substances with a motor contained in aerosol (14), a series of gears (13) which transmit movement to a support (15) for the aerosol (2). This support (15), which transmits the movement to the aerosol (2), presents a rising and falling vertical movement in such a way that on its rise, the stem (9) of the aerosol collides with a striker (16) and releases the substance, then starting its fall.

[0029] For this, the dispenser is divided into base (3), aerosol (2) and hood (1).

1.- the base comprises:

- A motor (14).
- A guide (10) which keeps the aerosol (2) upright.
- A support (15) on which the aerosol sits (2). This support is in a lower position than the guide (10) and is linked to the motor (14) and to the gears (13) so that the support presents an upward and downward vertical movement which transports the aerosol.
- Batteries (12) housed in a battery compartment (19).
- Some services (11) arranged in cascade.

- A deformable button (18).

2.- The aerosol (2) with a stem (9) which when pressed releases the substance contained within the aerosol.

3.- The hood covers the whole and includes:

- A closed upper base (4) and an open lower base.
- A skirt (6) which falls covering the base (3).
- A fixing hole (17) suitable for housing the deformable button (18)
- Holes correlative and coincident (7) with the services (11).
- An outlet hole (5).
- A striker (16).

[0030] The dispenser which comprises the said elements allows easy joining and separation between the hood and the base, facilitating the operations of replacing the aerosol or the batteries. Similarly, it allows the easy substitution of the hood by another one of a different colour, different decoration, texture, material or external geometry allowing the user to easily change the appearance of the dispenser but taking advantage of the mechanical and electronic part.

[0031] The hood and the base are inserted vertically to each other, the hood being in an upper position and covering the base, in such a way that the striker (16) is in the vertical position of the stem (9).

[0032] The spraying cycle is started either at the user's wish, or by programming with a timer or because a sensor is activated in a specific circumstance. Preferably, sensors which detect the presence of people or animals in the vicinity of the device will be used.

[0033] For spraying, the support (15), by the action of the motor (14) and the gears (13), begins its rise by pushing the aerosol (2) which also rises, maintaining its vertical position thanks to the action of the guide (10).

[0034] In its rising path, the stem (9) of the aerosol encounters an existing striker (16) on the internal face of the exit hole (5), which causes the product to spray, starting at this point the fall of the aerosol to the next spraying cycle.

[0035] The hood and the base are joined thanks to the means of anchoring to the hood and the base which include a deformable button (18) in the base which retracts in order to allow the passage of the section of the hood and is released when finding the hole for fixing (17) of the hood, thereby fixing the assembly, preventing the vertical movement of the hood and its rotation.

[0036] In this way, a correct positioning of the hood on the housing is also guaranteed, which is necessary for the striker to press the stem and the services (11) to face the holes (7).

[0037] In order to facilitate the passage of the hood section to its operational position, the services (7) are cascaded.

Claims

1. AEROSOL DISPENSER of the type which includes a motor (14) and gears (13) suitable for causing the rise and fall of an aerosol (2) featuring a base (3), a hood (1) and the aerosol itself, where:

   The hood (1) comprises a closed upper base (4), with an outlet hole (5) and a striker (16) on its internal face, skirts (6) with access holes (7) for services (11) and means for anchoring the hood and base.
   The base comprises the motor (14) and the gears (13) the support (15), associated with the gears, on which the aerosol sits, a guide (10) suitable for keeping the aerosol vertical and in the vertical position of the striker, the services (11) and means for anchoring the hood and the base.
   The base is inserted into the hood by its open base and the hood is fixed to the base by means of the anchoring means.

2. AEROSOL DISPENSER according to claim 1, featuring the means for anchoring the hood and the base comprising a deformable button (18) in the base and a fixing hole (17) in the hood.

3. AEROSOL DISPENSER according to claim 1 featuring the services (11) being arranged in cascade.

4. AEROSOL DISPENSER according to claim 2 featuring the deformable button (18) comprising a hanger.

FIGURE 1

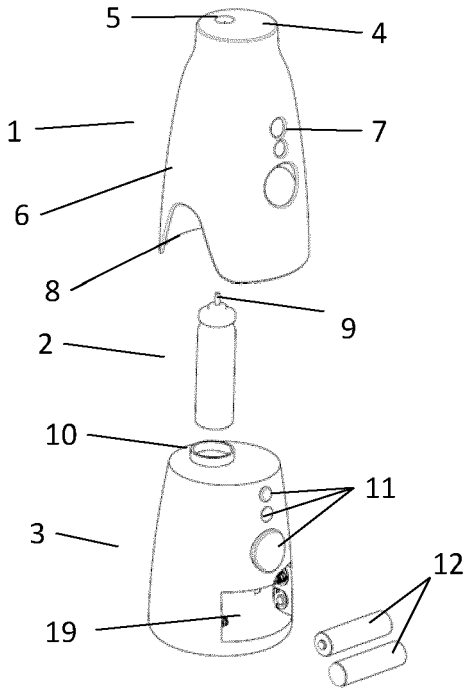


FIGURE 2

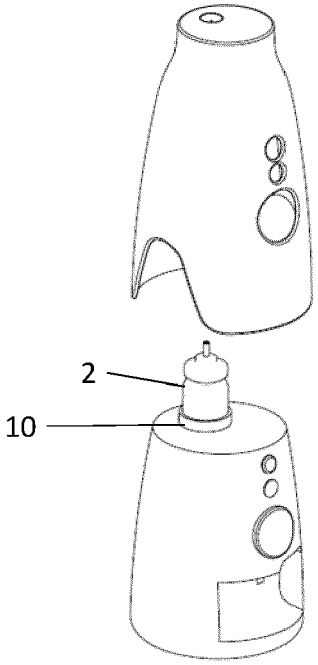


FIGURE 3

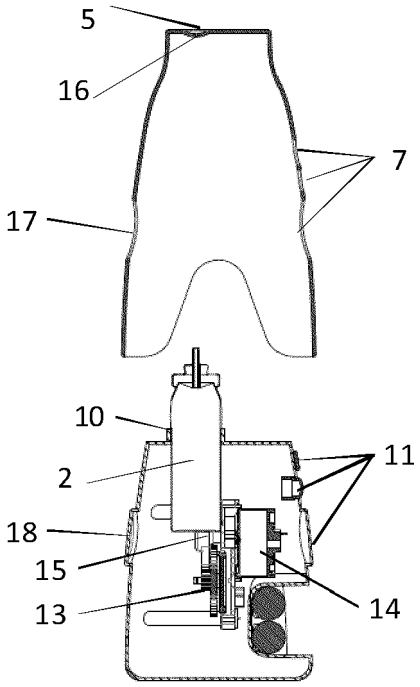
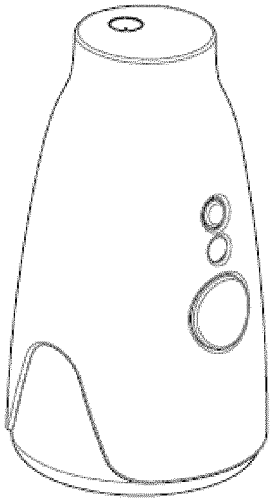


FIGURE 4



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EUROPEAN SEARCH REPORT

Application Number
EP 20 16 3301

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TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	5 June 2020	Eberwein, Michael

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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