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

(11) **EP 4 501 189 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
05.02.2025 Bulletin 2025/06

(21) Application number: **24190696.5**

(22) Date of filing: **24.07.2024**

(51) International Patent Classification (IPC):
A47K 5/10 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A47K 5/10

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
GE KH MA MD TN

(30) Priority: **03.08.2023 IT 202300016674**

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(54) DISPENSER FOR DISPENDING SOAP POWDER

(57) A dispenser (1) for dispensing soap powder, comprising a container (2) for soap powder provided with a mouth (3) for dispensing soap powder, a dispensing mechanism (M) coupled to the mouth (3) of the container (2) comprising a platform (4) placed below the container (2) and provided with a lower channel (41) for dispensing soap powder, the dose mechanism (M) comprising at least one movable element (5) having a collecting portion (51) of soap powder; wherein the at least one movable element (5) is shiftable with respect to the platform (4) from a loading position, wherein the collecting portion (51) is in correspondence with the mouth (3) of the container (2) for collecting a dose of soap powder, to an unloading position, wherein the collecting portion (51) is in correspondence of the lower channel (41) of the platform (4) for dispensing the dose of soap powder.

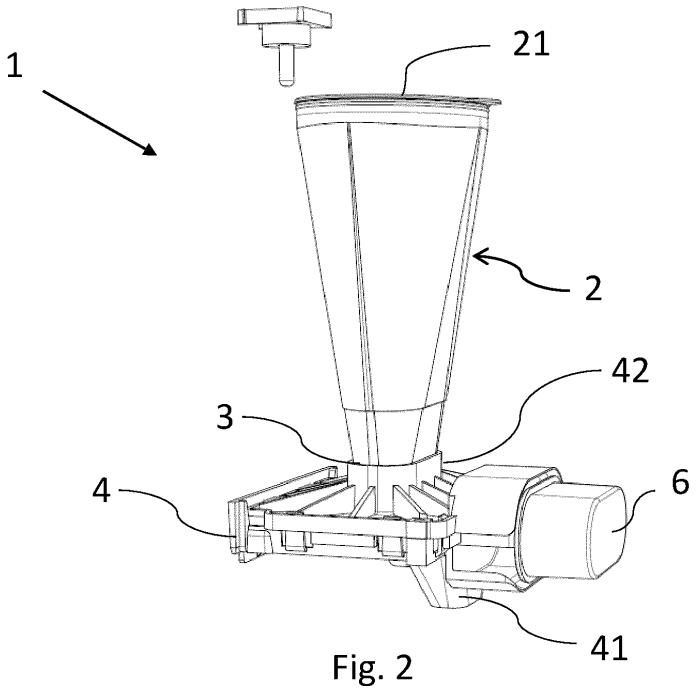

Fig. 2

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Description

FIELD OF APPLICATION

[0001] The present invention relates to a dispenser for dispensing soap powder.

Description of the prior art

[0002] The use of soap dispensers for hygiene in most of the public and non-public toilets is well known in the prior art. These dispensers are configured to allow the dispensing of soap in the liquid state through the presence of a pump dispensing mechanism. These liquid soap dispensers may be of the disposable or refillable type, and may be fixed to the wall or on a special stand. For example, wall-mounted dispensers are very common in public places and have a base fixed to the wall, a dispensing mechanism with a push-button or lever that can be operated to dispense the liquid soap, and a covering body.

[0003] Less common are solid soap dispensers, inside which the entire block of soap is placed in a special housing. Once the mechanism is activated, the block of soap comes into contact with a soap grating element, forming flakes that are released onto the user's hand.
Dispensers are known from documents US 2240030 A, US 1341174 A and DE 29607668 U1, comprising a dispensing mechanism comprising a collecting area configured to collect solid-state soap powder and then dispense it onto the hands of a user as a result of a button being pressed by the user.

Problem of the prior art

[0004] Most popular soap dispensers have a dispensing mechanism designed to dispense liquid soap. This type of soap has several limitations and disadvantages with regard to environmental friendliness.

[0005] Because of the way they are distributed and sold, liquid soaps require the consumption of a large amount of plastic material, which entails a higher cost for packaging the product. In addition, the excessive use of plastic also leads to a not inconsiderable contribution to air pollution, as a significant amount of CO_2 is required for the disposal of single-use plastic waste, the material of which the most common disposable dispensers or refills for refillable dispensers, such as those that can be fixed to the wall, are made.

[0006] In addition, soaps in the liquid state can be found to contain additives and preservatives to maintain the product, which can be harmful to humans and the environment.

[0007] Still further, the storage, transport and packaging of liquid soaps require more space, which could be reduced with other types of soap, and in particular solid soap.

[0008] Finally, in the dispensers of the above-mentioned documents, the amount of soap powder that can be accumulated is fixed because, when the button is not pressed, the soap itself by the effect of gravity is deposited on the collecting area. Therefore, when the button is pressed, a predefined amount of soap powder must be dispensed, which is sometimes excessive.

SUMMARY OF THE INVENTION

[0009] The purpose of the present invention is to present a dispenser for dispensing solid soap, and in particular soap powder, that overcomes the drawbacks of the prior art. In particular, it is an object of the present invention to provide a dispenser capable of regulating the amount of soap that can be dispensed by a user.

[0010] The purpose of the present invention is to present a dispenser for dispensing solid, soap powder as an alternative to those presented in the prior art.

Advantages of the invention

[0011] Thanks to an embodiment, it is possible to obtain a dispenser for dispensing soap powder.

[0012] This type of soap can reduce environmental impact due to the absence or greatly reduced consumption of single-use plastic, as soap powder packaging can be made from recycled or biodegradable material. The soap powder can be placed in the reusable, refillable dispenser.

[0013] Thanks to an embodiment, soap powder allows more advantageous transport and storage as the space required for the same soap content is less than for liquid soap.

[0014] Thanks to an embodiment, soap powder, being in the solid state, comprises all-natural or environmentally friendly ingredients, without the addition of preservatives or other environmentally harmful chemicals, or at least with a reduced use of such potentially harmful components.

[0015] Advantageously, thanks to the present invention, it is possible to avoid wastage of soap powder for each individual user, thus limiting the costs of refilling the dispenser.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The characteristics and advantages of the present invention will become clear from the following detailed description of a possible practical embodiment, illustrated by way of a non-limiting example in the set of drawings, wherein:

- Figure 1 shows a dispenser according to the invention seen in its ordinary use configuration,
- Figure 2 shows different elements of the dispensing mechanism of the dispenser in Figure 1,
- Figure 3a presents a portion of the dose mechanism in detail,

- Figure 3b presents the same portion as Figure 3a, with the addition of further elements that provide structural integrity,
- Figure 4 shows several elements of the dose mechanism arranged in an unloading configuration,
- Figure 5a represents the same elements as Figure 2, with the addition of a supporting element,
- Figure 5b represents the dispenser in Figure 1 in the open configuration.

DETAILED DESCRIPTION

[0017] The object of the present invention is a dispenser 1, illustrated in Figure 1, for dispensing solid soap powder.

[0018] With reference to the accompanying figures, this dispenser 1 comprises several elements, including a container 2 for holding soap powder, comprising a mouth 3 for dispensing soap powder. Preferably, the container 2 is provided with an opening cap 21 to allow the refilling of soap powder. Still preferably, the cap 21 is fitted with a gripping tab 22 to facilitate the opening thereof.

[0019] A further element of the dispenser 1 is a dose mechanism M coupled to the mouth 3 of the container 2. The dose mechanism M comprises a platform 4 placed below the container 2, provided with a lower channel 41 for dispensing soap powder. In addition, the dose mechanism M comprises at least one movable element 5 with respect to the platform 4 having a soap powder collecting portion 51.

[0020] The at least one movable element 5 is configured to shift with respect to the platform 4 from a position, defined as the loading position, in which the collecting portion 51 is in correspondence with the overlying mouth 3 of the container 2 for collecting a dose of the soap powder exiting the container 2 when the dispenser 1 is in use, to a further position, defined as the unloading position, in which the collecting portion 51 is in correspondence with the lower channel 41 of the platform 4 for dispensing the dose of soap powder.

[0021] Preferably, the platform 4 has an upper channel 42 connected to the mouth 3 of container 2 to receive the soap powder. It should be noted that the upper channel 42 allows for the coupling of the dose mechanism M with the mouth 3 of the container 2. Still preferably, the upper channel 42 has a truncated cone-shaped connecting portion to the mouth 3, reinforced by special stiffening ribs 43. In the preferred embodiment shown in the accompanying figures, the platform 4 has two interlocking shells, specifically an upper shell in which the upper channel 42 is provided and a lower shell in which the lower channel 41 is provided. The at least one movable element 5 is enclosed between the two shells and is shiftable within the platform 4.

[0022] This dispenser 1, in particular, dispenses soap powder, instead of liquid soap as in the prior art. The choice of soap powder has several advantages, one of which is that it reduces the environmental impact typical of liquid soap. It should be noted here that dispensing systems known for liquid soap are not suitable for dispensing soap powder.

[0023] Preferably, the container 2 has a funnel or truncated cone shape to convey the soap powder towards the mouth 3, which can be seen in Figure 2. The container 2, in addition to the mouth 3, comprises an upper end, from which the soap powder for refilling the dispenser 1 is inserted by means of the relevant cap 21. At the end of this operation, for example, the cap 21 of the container 2 can be closed to preserve the integrity of the soap powder, especially protecting it from contact with water. This can be seen, for example, in Figures 5a and 5b.

[0024] In the preferred embodiment of the invention, the collecting portion comprises a hole passing through the at least one movable element 5. The hole is positioned centrally to the at least one movable element 5 and is configured for the collection of the soap powder dose exiting the mouth 3, when the collecting portion is in the loading position, and for the dispensing of the soap powder dose, when the collecting portion is in the unloading position.

[0025] The loading position, not shown in the accompanying figures, is defined as the configuration in which the hole passing through the at least one movable element 5 is at least partially or completely aligned with the overlying mouth 3 of the container 2, thereby allowing the collection of soap powder, which passes from the container 2 to the at least one movable element 5 due to the effect of gravity.

[0026] The unloading position, on the other hand, is defined as the configuration in which the hole passing through the at least one movable element 5 is completely superimposed and aligned with the underlying lower channel 41 of the platform 4, on which the at least one movable element 5 rests (as shown in Figure 4), thus allowing the soap powder to be dispensed as it passes from the platform 4 to the user's hand, again due the effect of gravity.

[0027] Still preferably, the aforementioned hole has a substantially rectangular shape, more preferably with rounded corners, a shape that replicates the same shape as the mouth of the lower channel 41 of platform 4, as is also shown in Figure 4.

[0028] In accordance with the present invention, the at least one movable element 5 comprises a slider 52, substantially rectangular in shape, in which the collecting portion 51 is provided, and in particular central to the hole described above. It should be noted that the dose of soap powder collected in the recess defined laterally to the hole and on the bottom of the wall of the platform 4 when the slider 52 is in the loading position, after being dragged by the slider 52 along the bottom of the platform 4 is subsequently discharged by gravity when the slider 52 moves to the unloading position in which the hole is superimposed and aligned with the lower channel 41 of the platform 4.

[0029] In accordance with the present invention, the dose mechanism M comprises at least one elastic element. This at least one elastic element is active on the slider 52 and is configured to be preloaded in the loading position. The above-mentioned at least one elastic element is also configured to allow the return of the slider 52 from the loading position to the unloading position.

[0030] The at least one elastic element, in the preferred embodiment of the invention, comprises at least one coiled spring 7, preferably a compression spring, configured to be shortened in the loading position. Alternatively, expansion springs 7 can be used, and thus with an opposite operating principle, i.e. they are preloaded with elongation in the loading position. This element is most clearly visible in Figures 3a and 4. Still preferably, two springs 7 located on opposite sides of the slider 52 are provided (not shown in the accompanying figures). Preferably, each spring 7 arranged laterally, is constrained at one end to the platform 4 and at the opposite end to a projecting portion 53 of the slider 52, like a flap. This allows the at least one spring 7 not to disengage from the slider 52 or the platform, thus preventing the elastic return necessary to move the slider 52 from the loading position to the unloading position.

[0031] To ensure the correct trajectory of movement of the at least one spring 7, in the preferred form of the invention, the platform 4 has at least one guide G, preferably arranged laterally to the slider 52. Still preferably, the platform 4 comprises a central seat 44 within which the slider 52 slides.

[0032] The aforementioned at least one guide G comprises at least one opening 45, which allows at least in part the housing and sliding of the extension 53 of the slider 52 to determine the end stop of the loading and unloading positions of the slider 52. This mechanism is most clearly observable in Figure 4.

[0033] According to the present invention, the dose mechanism M comprises a button 6, integral with the slider 52. The button 6 is configured to be pressable by the user to shift the slider 52 from the unloading position to the loading position when the user wishes to receive a dose of soap powder.

[0034] In the preferred embodiment of the invention, the button 6 is shaped like a parallelepiped with preferably rounded corners, or shaped like a cylinder or elliptical cylinder.

[0035] With reference to the accompanying figures, it should be noted that in use, initially in the unloading position, the collecting portion 51 is in a rest configuration in correspondence with the lower channel 41. When the button 6 is operated, the loading portion 51 is positioned below the upper channel 42 in the loading position, so as to be loaded with soap powder, and under the return thrust provided by the springs 7 the collecting portion 51 returns to the unloading position in correspondence with the lower channel 41, to release the soap powder.

[0036] Also in the preferred embodiment of the invention, the at least one elastic element, the slider 52 and the button 6, are positioned in space in such a way that they are arranged horizontally in series to each other (arrangement most clearly visible in Figure 3a). Accordingly, when the user presses the button 6, the slider 52 moves horizontally, reaching the loading position, i.e. when the hole of the slider 52 is at least partly or completely centred on the overlying mouth 3 of the container 2. It should be noted here that the degree of alignment and superposition of the hole of the slider 52 (or more generally of the collecting portion 51) to the mouth 3, determines the quantity or dose of soap powder that will be dispensed when the button 6 is released. Therefore, the duration of pressing the button 6 affects the amount of soap powder that will be collected and dispensed, as the principle governing the passage of soap powder from the container 2 to the slider 52 is similar to that of an hourglass. In other words, in the loading position the amount of soap powder deposited from container 2 to the platform 4 depends on the time for which the button 6 is pressed. In addition, the greater the pressure, the greater the amount of soap powder in a single dose. In fact, the linear displacement imposed by the same button 6 on the slider 52, by means of the gradual pressure of the button 6 to the stroke end, determines an increasing alignment between the collecting portion 51 (specifically, the hole) and the mouth 3, and therefore an increasing amount of soap powder collected in the hole of the slider 52 per unit of time. The hole of the slider 52 is only fully aligned with the overlying mouth 3 of the container 2 when the button 6 is fully pressed. Also in the same position, due to the shift of the slider 52, the at least one elastic element is preloaded. Said at least one elastic element is configured to allow the return of the slider 52 from the loading position to the unloading position, i.e. when the hole of the slider 5 is superimposed on the lower channel 41 of the platform 4. This shift is made possible by the elastic return of the at least one elastic element, following the release of the button 6 by the user.

[0037] The hole of the slider 52 is only fully superimposed with the lower channel 41 of the platform 4 when the button 6 is fully released, at which time soap powder is dispensed from the lower channel 41 of the platform 4 to the user's hand, due to the effect of gravity.

[0038] Preferably, the dispenser 1 comprises a support structure 8 to support the dose mechanism M.

[0039] Additionally, in order to facilitate the user in pressing the button 6, the dispenser 1 comprises a fixed grip element 10 arranged near the button 6, preferably fixed to the support structure 8. Still preferably, the lower channel 41 of the platform 4 is located in an intermediate position between the button 6 and the grip element 10. The use of this grip element 10, such as a handle in the preferred embodiment of the invention, allows the user's fingers to grip it to facilitate pressing the button 6 with the palm of the hand. In this way, when the button 6 is released, the dose of soap powder passes from the lower channel 41 of platform 4 directly into the palm of the user's hand.

[0040] In the preferred embodiment of the invention, the dispenser 1 comprises a wall-fixable base 9 comprising a vertical section, arranged to be fixed to the wall, connected to or made as a single piece with the horizontally arranged support structure 8, below which the grip element 10 extends. The base 9 can be fixed to a wall in a conventional manner, e.g. by means of wall plugs or double-sided adhesive tape.

[0041] To protect the dose mechanism M for soap powder described above, the dispenser 1 comprises a body 11, which can be separated from the base 9 and optionally movable with respect to the base 9 by means of a hinge mechanism (not shown in the accompanying figures). Removing or opening the body 2 provides access to the dose mechanism M for cleaning, maintenance and repair, as well as access to the container 2 for refilling the soap powder. This body 11, preferably in the form of a hollow parallelepiped, comprises at the front a perforated central portion through which the button 6 passes when the body 11 is closed in relation to the base 9, as shown in Figure 1. Advantageously, the button 6 is visible and accessible externally through the body 11 of the dispenser 1. It should be noted that the container 2 fits onto the upper channel 42 and is not easily removable. Therefore, it is preferable to use a compressed air jet for internal cleaning.

Claims

1. Dispenser (1) for dispensing soap powder, comprising:

- a container (2) for soap powder provided with a mouth (3) for dispensing soap powder,
- a dose mechanism (M) coupled to the mouth (3) of the container (2) for receiving soap powder from the container (2), comprising a platform (4) placed below the container (2) and provided with a lower channel (41) for dispensing the soap powder, the dose mechanism (M) comprising at least one movable element (5) having a soap powder collecting portion (51); wherein the at least one movable element (5) is shiftable with respect to the platform (4) from a loading position, wherein the collecting portion (51) is in correspondence of the mouth (3) of the container (2) for collecting a dose of soap powder, to an unloading position, wherein the collecting portion (51) is in correspondence of the lower channel (41) of the platform (4) for dispensing the dose of soap powder, wherein the movable element (5) comprises a slider (52) and the dose mechanism (M) comprises a button (6), integral with the slider (52), and an elastic element active on the slider (52), **characterized in that**
- the button (6) is configured to be pressed by the user to shift the slider (52) from the unloading position to the loading position configured to be preloaded in the loading position, the at least one elastic element being configured to be preloaded in the loading position and move the slider (52) from the loading position to the unloading position.

2. Dispenser (1) for dispensing soap powder according to claim 1, in which the collecting portion (51) comprises a hole passing through the at least one movable element (5), configured to collect the dose of soap powder when the collecting portion (51) is in the loading position and to dispense the dose of soap powder when the collecting portion (51) is in the unloading position.

3. Dispenser (1) for dispensing soap powder according to any of the preceding claims, comprising a fixed grip element (10) arranged near the button (6).

4. Dispenser (1) for dispensing soap powder according to any one of the preceding claims, wherein the at least one elastic element is configured to bring the slider (52) from the loading position to the unloading position, due to the elastic return effect, upon releasing the button (6).

5. Dispenser (1) for dispensing soap powder according to any one of the preceding claims, wherein the at least one elastic element comprises at least one spring (7).

6. Dispenser (1) for dispensing soap powder according to any of claims from 4 to 9, in which the platform (4) comprises at least one guide (G) wherein the at least one elastic element is at least partially inserted.

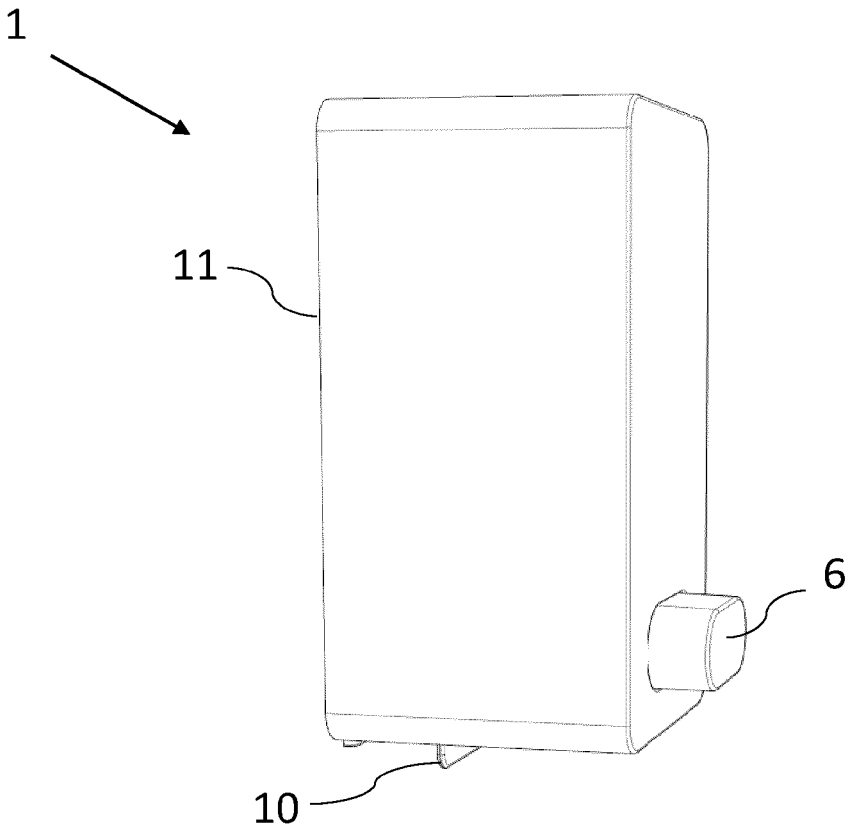

Fig. 1

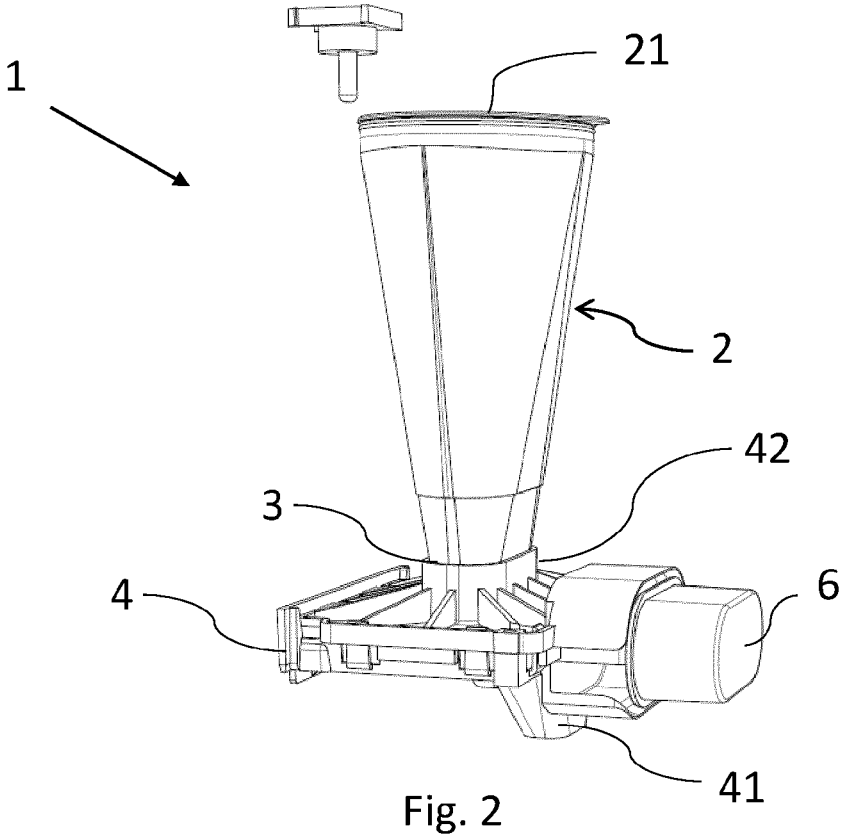

Fig. 2

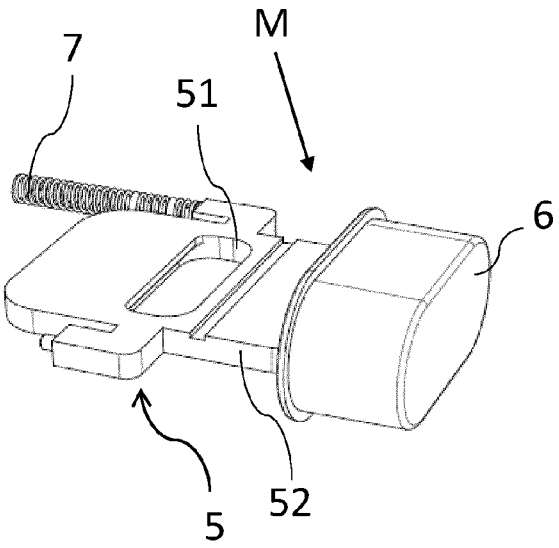

Fig. 3a

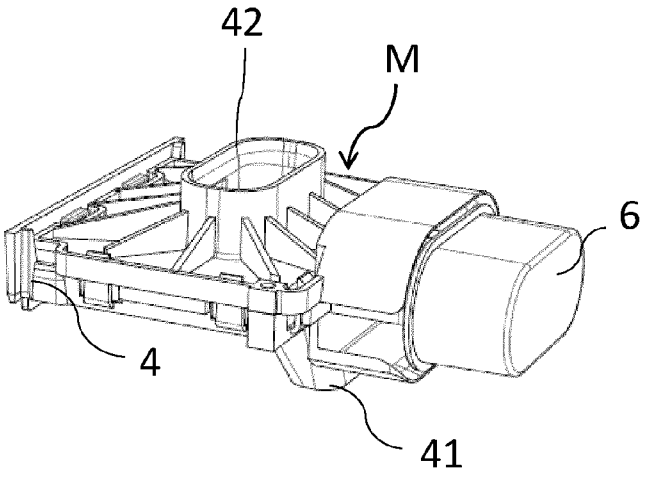

Fig. 3b

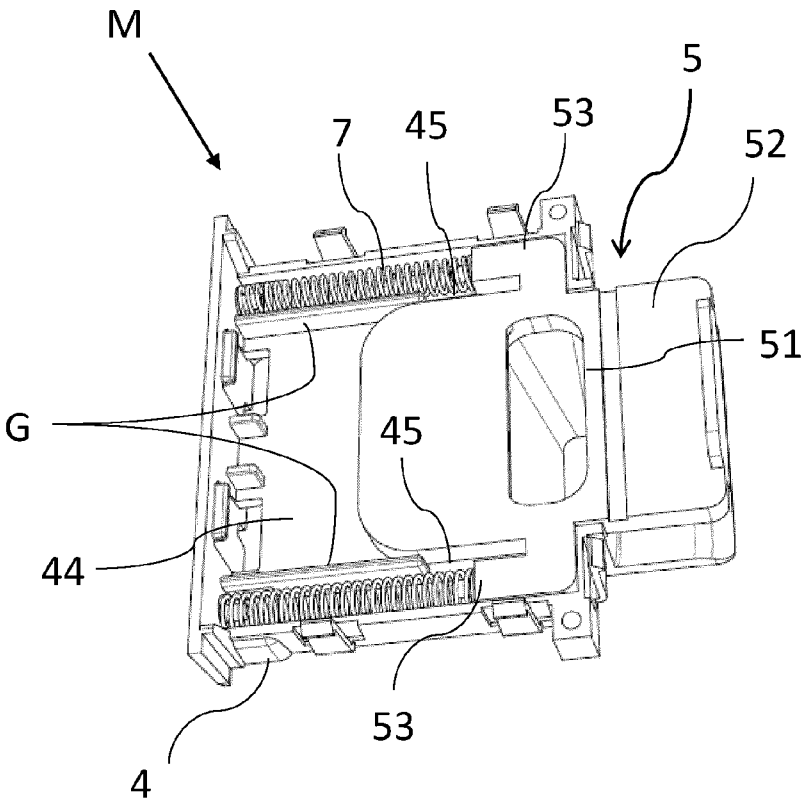

Fig. 4

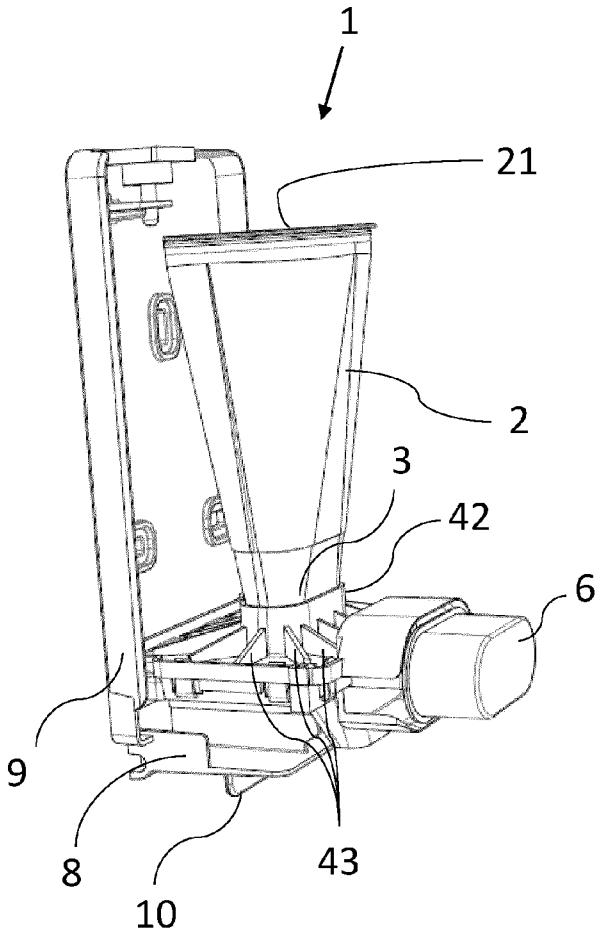

Fig. 5a

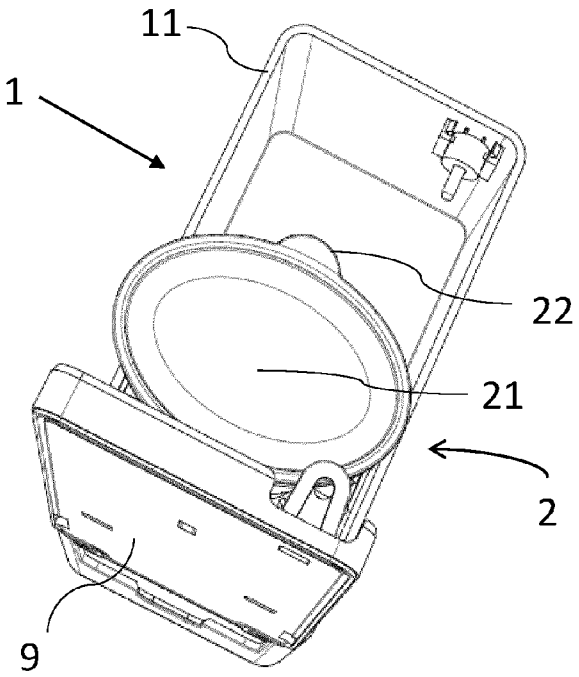

Fig. 5b

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EUROPEAN SEARCH REPORT

Application Number
EP 24 19 0696

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	ES 2 084 565 B1 (GONZALEZ MEJIAS DAVID [ES]) 16 November 1996 (1996-11-16) * figures 1-6 * -----	1-6	INV. A47K5/10

TECHNICAL FIELDS SEARCHED (IPC)

A47K
A47L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 November 2024	Zuurveld, Gerben

CATEGORY OF CITED DOCUMENTS

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
ES 2084565 B1	16-11-1996	NONE	

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

REFERENCES CITED IN THE DESCRIPTION

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- US 1341174 A **[0003]**
- DE 29607668 U1 **[0003]**