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(54) Title: DISPENSER FOR PROVIDING WARM WIPES

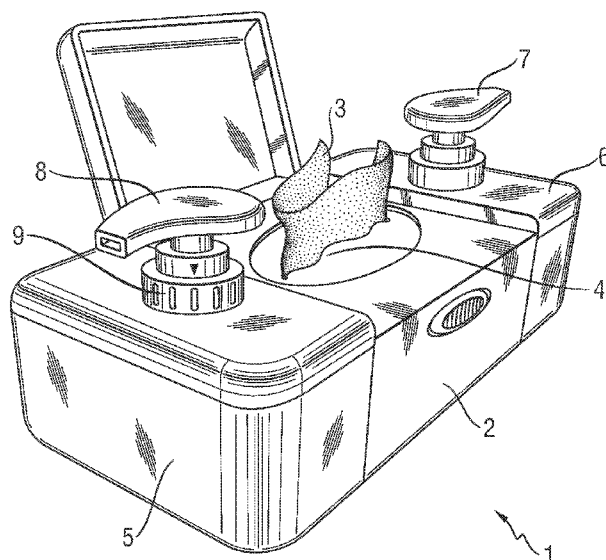


Fig. 1

(57) Abstract: A wipes dispenser (1) enabling the dispensing on-demand of one or more warm wet wipes. The dispenser comprises three containers (2, 5, 6), at least one dosing device (9) and dispensing devices (7, 8).



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DISPENSER FOR PROVIDING WARM WIPES

FIELD OF THE INVENTION

The invention relates generally to disposable cleansing wipes. Specifically, the invention
5 is directed to a warm wipes dispenser for enabling a user to tailor the wipes to his/her
needs.

BACKGROUND OF THE INVENTION

Disposable cleansing wipes for personal cleansing are known in the art. Typically,
10 disposable cleansing wipes comprise a fibrous or film-like substrate. Depending on the
use for which the wipes are intended, the wipes may also include compositions to aid in a
particular cleaning process. For example, wipes which are intended to be used for
cleaning babies or young children may include a mild detergent composition, sanitizing
agent, and/or moisturizing agent.

15 Wipes generally come in wet or dry forms. In the case of wet-wipes, *i.e.*, wipes that are
pre-moistened with one or more liquid compositions, the container or package containing
the wet-wipes may be liquid or vapor impermeable in order to keep the wet-wipes at a
desired moisture level. The temperature of a wet-wipe, which is properly stored in a
suitable container or package, will typically be about the same as the temperature of the
20 immediately surrounding environment where the container or package of wet-wipes is
stored. Since wet-wipes are often stored in an accessible location in the home of a user,
the temperature of the wet-wipes may be around room temperature, for example between
20°C and 25°C. However, it is well known that when a liquid evaporates a cooling effect
may be achieved due to the removal of heat by the evaporating liquid. Therefore, when
25 the wet-wipe is removed from the wet-wipe container, the temperature of the wet-wipe
may decrease below the ambient temperature of the storage environment as a result of
evaporation of the liquid composition comprised by the wet-wipe.

The average body temperature of a human may vary, for example, between 36°C and
38°C. As a result, a wet-wipe having a temperature of less than 20° C, 25° C, or even 30°
30 C may impart an undesirable cold sensation when brought into contact with the skin of

person. The undesirability of the cool or cold sensation may be even more pronounced when the wet-wipe is contacted with the sensitive skin of a baby or young child during the cleaning process that often accompanies diaper changing. In addition, the longer the wet-wipe is exposed to an environment outside of the wet-wipes container the more the temperature of the wipe may decrease. A warm wipe may help to release this potential discomfort.

Electrical devices have been marketed to provide warm wipes. Those “wipe warmers” exhibit drawbacks as for instance they tend to increase the wipes dry-out. Furthermore, parents are often concerned about the safety of such device for use in the baby’s room. Hence, there is a need for safer means of delivering warm wipes, both in facts and in consumers’ perception.

Use of chemicals has been investigated to rise the temperature of wipes prior to use. Actually, the energy produced as the result of an exothermic reaction between a heating agent and a co-reactant can be used to increase the local temperature of a wipe. One method is based on the encapsulation of a heating agent reacting with water to provide a warming effect, see for instance patents WO 2005/068916 and WO 2007/138498. The encapsulated heating agent can be embedded inside the fibrous sheet material of a dry wipe or comprised within a cleansing composition that will be applied to a wet wipe. Just prior to use or during use, the microcapsules are ruptured, exposing the heating agent to the co-reactant and generating heat. While this method may provide a warm wet-wipe under ideal conditions, potential problems associated with reproducing the phenomenon in real practical situations may discourage manufacturers from adopting this method. In some instances, the capsule may break prior to the moment of intended use (e.g. during manufacture, shipping or storage) causing the composition in the microcapsule to be exposed to the outside environment. In some other instance, the wet-wipe may be heated prematurely (i.e. before the moment of intended use by a consumer). In order to address the issues of microcapsule integrity, a manufacturer may increase the durability of the microcapsule, for example, by using more mechanical resistant material or providing thicker capsule walls. However, this may result in a wet-wipe with an abrasive-feeling surface texture, which is typically undesirable in a personal cleansing wet-wipe. The use

of such microcapsules may also result in a wet-wipe that requires an excessive amount of pressure to rupture the microcapsules, resulting in an undesirable cleaning experience.

Another approach is the application prior to use of a composition comprising a heating agent in a neat form to a wet-wipe, see for instance patent WO 2007/138498. The heating agent reacts exothermically, for instance, with the water comprised in the wet-wipes. While this method overcomes the drawbacks associated with the encapsulated method, a repeatable warming effect can not be guaranteed for each single wipe within a stack of wipes. Indeed, the liquid content of the wipes within a stack of wipes tends to decrease gradually from the bottom to the top of the stack due to a migration of the liquid toward the bottom by gravity. This unevenly distribution of liquid within a stack of wipes may result in a varying effectiveness of the warming effects for each single wipe.

None of the approach mentioned above provides the consumer with a wipe on-demand adapted to his/her needs. Indeed, depending on the cleaning task and/or the external temperature conditions, the user may desire to have a wipe which is adapted to his/her needs. Hence, there is a need for warm wet wipes that the user could tailor to the cleaning task and/or to the external temperature conditions. For instance, a warmer wipe may be needed to improve the cleaning task, thereby improving the dissolution of certain contaminants and providing a better overall cleaning experience. In another instance, such as during a diaper change, the user may appreciate to have a wetter warm wipe at the beginning of the change and a dryer warm one at the end or even a dry one. In some other instance, if the wet-wipes are stored or used in a relatively warm environment the consumer may desire only a modest increase in temperature or even no increase in the temperature of the wet-wipe.

It is hence an object of the present invention to provide a warm wipes dispenser enabling the user to tailor the wipe to his/her needs. It is another object of the present invention to provide a warm wipes dispenser overcoming all the above cited disadvantages.

SUMMARY OF THE INVENTION

The present invention provides a wipes dispenser enabling the dispensing on-demand of at least one warm wet wipe. The wipes dispenser comprises:

- (a) a first container for storing and dispensing at least one dry wipe
- (b) a second container storing a heat-generating composition comprising at least one
5 heating agent;
- (c) a third container storing an activating composition comprising at least one activating agent reacting exothermically with said at least one heating agent;
- (d) at least one dosing device enabling the user to select a pre-set amount of heat-generating composition or a pre-set amount of activating composition or both;
- 10 (e) dispensing devices for dispensing the heat-generating composition and the activating composition to the dry wipe.

BRIEF DESCRIPTION OF THE DRAWINGS

15 Figure 1 is a view of one embodiment of a wipes dispenser according to the present invention.

Figure 2 is a view of another embodiment of a wipes dispenser according to the present invention.

Figure 3A is a view of another embodiment of a wipes dispenser according to the present
20 invention.

Figure 3B is an enlarged view of a part of a wipes dispenser according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

25 As used herein the term “nonwoven” refers to a fibrous structure made from an assembly of continuous fibers, coextruded fibers, noncontinuous fibers or combinations thereof, without weaving or knitting. Non-limiting examples of suitable processes for making a nonwoven include spunbonding, carding, meltblowing, air laying, wet laying, coform, and
30 the like. The nonwoven structure may comprise one or more layers of such fibrous

assemblies, wherein each layer may include continuous fibers, coextruded fibers, noncontinuous fibers and combinations thereof.

As used herein, the term “chemical reaction” generally refers to a chemical transformation or change resulting from the interaction of chemical entities.

- 5 As used herein the term “exothermic reaction” generally refers to a chemical reaction that releases heat to the external environment.

As used herein, the term “heat generating composition” refers to a composition comprising at least one heating agent.

- As used herein, the term “heating agent” generally refers to an element of a heat-generating composition that undergoes a chemical reaction when it is combined with a co-reactant, resulting in the evolution of heat energy (i.e., an exothermic reaction). Non-limiting examples of suitable heating agents are provided in more detail herein below.
- 10

As used herein, the term “activating composition” refers to a composition comprising at least one activating agent.

- 15 As used herein, the term “activating agent” generally refers to an element of an activating composition that undergoes a chemical reaction when it is combined with a heating agent, resulting in the evolution of heat energy (i.e., an exothermic reaction). Non-limiting examples of suitable activating agent are provided in more detail herein below.

20 WIPES DISPENSER

The wipes dispenser according to the present invention comprises:

- (a) a first container for storing and dispensing at least one dry wipe
- (b) a second container for storing a heat-generating composition comprising at least one heating agent;
- 25 (c) a third container for storing an activating composition comprising at least one activating agent reacting exothermically with said at least one heating agent;
- (d) at least one dosing device enabling the user to select a pre-set amount of heat-generating composition or a pre-set amount of activating composition or both;
- (d) dispensing devices for dispensing the heat-generating composition and the activating
- 30 composition to the dry wipe.

Each parts of the wipes dispenser according to the present invention will be described in details herein below.

The first, second and third containers can be three physical distinct entities that may be held in assembly. According to an embodiment of the present invention, the second and
5 third container can be enclosed or partially enclosed within the first container for storing and dispensing the dry wipes.

The wipes dispenser according to the present invention is particularly suitable for use in the context of baby or child care, such as during a diaper change process. However, as it will be understood at the reading of the present disclosure, it can also be used in any
10 situations where warm wet wipes might be needed as for instance during the cleaning of adult post bowel movements, floors, dishes. Warm wet wipes may also be used in any situations where feminine hygiene wipes, polishing wipes, dry or wet body cleansing wipes might be needed.

15 *The first container for storing and dispensing dry wipes*

The wipes dispenser according to the present invention comprises a first container for storing and dispensing at least one dry wipe, typically a plurality of dry wipes (e.g., 2 to 150). The dry wipes described herein may comprise a fibrous nonwoven web of material. The fibers for making the web may include natural fibers, such as, for example fibers
20 from wood pulp, starch, plant sources, and/or animal sources. The fibers may also include synthetic fibers, such as, for example fibers made from polyesters, polyolefins, polyethers, polyamides, polyesteramides, polyvinylalcohols, polyhydroxyalkanoates, and/or polysaccharides. The fibers may also include a combination of natural and synthetic fibers in any proportion, as desired. However, it is to be understood that in
25 certain embodiments it may be desirable to have particular combinations of fibers to provide desired characteristics. For example, it may be desirable to have fibers of certain lengths, widths, coarseness or other characteristics combined in certain layers or separate from each other. The fibers may be of virtually any size and may have an average length from 1 mm to 60 mm. Average fiber length refers to the length of the individual fibers if
30 straightened out. The fibers may have an average fiber width of greater than 5 micrometers. Suitable examples of fibers and fibrous webs are described in copending

U.S. Patent Application No. 11/796,984, filed by Sawin, *et al.*, on April 30, 2007. The dry wipes may also be woven or partly woven substrate. The wipes may be adapted for a variety of uses. While particular examples may describe wipes for use with the cleaning of a baby or toddler such as during a diaper changing process, it is to be understood that the wipes described herein may, in fact, be utilized to great advantage in any situation wherein a wipe exhibiting the above described characteristics is required. The container for storing the dry wipes is configured to enable the dispensing of the wipes. Typically, a container has at least one opening that enables a user to access the wipes. The container may be of any shape known to the skilled person. Typically, the container may be rectangular, square, cylindrical and may be made of flexible or solid material. The container may also include a lid or other means to substantially cover the opening of the container. The container may comprise an opening to enable the consumer to refill it. The container may be adapted for a single use (e.g., the container is manufactured containing a predetermined number of wipes, which are not intended to be replaced after use) or the container may be reusable (e.g., the container may be adapted for storing a replaceable cartridge of wipes). Within the container, the wipes may be independently folded and stacked in a pile of pre-cut wipes or they may be provided in the form of a roll of wipes with lines of weakness for an easier dispensing of individual wipes.

The second and third containers

The wipes dispenser according to the present invention comprises a second container for storing a heat-generating composition comprising at least one heating agent and a third container for storing an activating composition comprising at least one activating agent.

The second and third containers may be two physical separate containers or may be two parts of a same container as far as a physical separation is ensured between their respective storage spaces to prevent undesirable mixing of the two compositions. The containers may be held physically separate from each other or held in assembly.

The compositions are stored in the storage spaces of the containers. The compositions may be disposed directly within the containers which may be conceived to be refillable or replaced once they are empty. For instance, the containers may have a removable closure permitting to refill the container once the composition has been exhausted. In an example

according to the invention, where the activating composition comprises water, a user may refill the container by simply pouring tap water in it. The containers for use according to the present invention can be any containers known to the skilled man of the art. They may be of any forms such as cylindrical, rectangular, square and may be made of flexible or solid material. The second and third containers may be of same constructions or may be different. Suitably, the containers may be independently a bottle, a jar, a pouch, an open bowl. The containers may also be respectively one storage space of a dual chambered container such as for example two containers grouped as subdivided parts of a unitary container (e.g. bottle). The containers may be individually held in assembly with the dry wipes container or they may be enclosed or partially enclosed in the dry wipes container. The containers may be replaceably detachable for convenient refilling after the contents of the containers have been exhausted. In embodiments wherein the heat-generating composition is an anhydrous heat-generating composition, the container may be preferably air-sealed.

The dosing devices

The wipes dispenser according to the present invention comprises at least one dosing device enabling the user to select a pre-set amount of heat-generating composition or a pre-set amount of activating composition or both that will be dispensed from the second and/or from the third container and delivered to the dry wipe once the user actuates the dispensing devices described herein below. Typically the dosing device according to the present invention enables to select a pre-set amount of composition among at least two pre-settings. By 'pre-set amount' as used herein, it is meant an amount which is defined by the provider or manufacturer of the wipes dispenser. By 'pre-setting' as used herein, it is meant a setting defined by the provider or manufacturer of the wipes dispenser enabling to dispense corresponding pre-set amount of composition. Suitably, the dosing device of the present invention enables to select a pre-set amount among 2 to 15 pre-settings, 2 to 10 pre-settings or 3 to 5 pre-settings. Thus the user may tailor the wipes to his/her needs and dispenses a wipe with a desired level of wetness or a desired level of warmth or both. In one embodiment, the wipes dispenser comprises one dosing device enabling the user to select a pre-set amount of heat-generating composition among at least 2 pre-settings. In

such an embodiment, the amount of activating composition dispensed is not selected by the user. By selecting the amount of heat-generating composition dispensed, the user can increase or decrease the warmth of the wipe on-demand. In another embodiment, the user can select a pre-set amount of activating composition among at least 2 pre-settings. In
5 such an embodiment, the amount of heat-generating composition dispensed is not preselected by the user. By selecting the amount of activating composition dispensed, the user can increase the wetness of the wipe. In another embodiment, the user can select a pre-set amount of heat-generating composition among at least 2 pre-settings and a pre-set amount of the activating composition among at least 2 pre-settings. For instance, the
10 selections of pre-settings dispensing a larger amount of heat-generating composition and a larger amount of activating composition will provide, once dispensed and applied to the wipe, wetter and warmer wipe than if the dispensing of smaller amounts of heat-generating composition and activating composition were selected. The dosing device for use according to the present invention may be any dosing device known to the skilled
15 person that enables to select at least one pre-set amount dispensed from a container among at least two pre-settings. In an example according to the present invention, the dosing device may be finger operated triggers enabling the selection of pre-set amounts of composition dispensed from a container. The dosing devices are linked to systems varying the amount of composition delivered. In an example, the dosing device may be dispensing
20 pumps wherein the pistons may be designed to have different preselected displacements. For instance the selection of a pre-setting will limit the stroke of the piston within the pump to a predetermined position delivering a predetermined amount of composition. Alternatively, the actuation of the dosing device may change the size of the pump's dose chamber delivering more or less of the compositions.

25

The dispensing devices

The wipes dispenser according to the present invention comprises dispensing devices for dispensing the heat-generating composition and the activating composition from their
30 container to the dry wipe. The dispensing devices according to the present invention may

be any dispensing devices known to the skilled person that may be mounted on the second and third containers for dispensing the two compositions. Suitable dispensing devices are manually operated pump or trigger type sprayer. The dispensing devices mounted on the second and third container may be actuated by a single trigger with an appropriate linkage that physically coordinates the movement. Devices with dual pump cylinders may also be used. The actuation of the dispensing devices causes the flow out of the two compositions from the containers towards the dry wipe. The manually operated are suitably selected in function of the physical state of the composition: liquids, fluids, solids.

Applicator and applicator controlling device

The wipes dispensers according to the present invention may further comprise an applicator facilitating the application of the compositions on the wipe. The applicator according to the present invention can be any applicator known to the skilled man of the art. Particularly suitable applicators are roller application assemblies, sponge applicators, flexible or rigid edge, assemblies acting by wicking via capillary forces. The compositions may also be applied onto the dry wipe by dipping, brushing. Examples of applicators are described in U.S. Pat. No. 4,538,745 to Dunning, *et al.* and U.S. Pat. No. 4,646,973 to Focarracci. In one embodiment, a more uniform application of the compositions on the dry wipes may be insured by a device controlling the application, herein called the applicator controlling device. Hence the wipes dispenser according to the present invention might further comprise an applicator controlling device. The application control device allows adjusting the amount of composition that is delivered to the dry wipe via the applicator. The applicator controlling device enables the user to select a position of the applicator (typically a roller) among different possible positions in relationship with a reservoir. For example in an embodiment wherein the applicator is a roller raising or lowering the applicator in relationship with the reservoir controls the amount of composition applied to the dry wipe.

Mixing chamber

The wipes dispenser according to the present invention may further comprise a mixing chamber wherein the two compositions are intermingled prior to the dispensing to the dry wipe. The term “mixing chamber” as used herein defines a space wherein the heat-

generating and the activating compositions enter into contact after having been dispensed from respective second and third containers via respective dispensing devices. The exothermic reaction takes place in the mixing chamber and the resultant warm composition is then delivered to the dry wipe. In one embodiment, the mixing chamber
5 may be a channel wherein the heat-generating composition and the activating composition enter in contact. In an example, two dispensing devices (e.g, two separate pumping systems) one for the second container and one for the third container, may be used to deliver the output of each dispensing devices to a mixing chamber. The two dispensing devices may be actuated by a single trigger with an appropriate linkage that physically
10 coordinates the movement. Dispensing devices such dual pump cylinders may also be used. An applicator as described above may help to apply uniformly the mixed compositions to the dry wipe. The mixing chamber may be in connection with the second and third container and with the applicator when present. In addition, within the mixing chamber, the mixing of the two compositions may be facilitated dynamically or statically
15 by any mixing device known to the skilled person. Particularly suitable mixing devices are dynamic devices such as magnetic device, ultrasonic device. The configuration of the mixing chamber may also contribute to the interminglement of the two compositions. In an example, the end-orifice of a mixing chamber restricting the flow-path of the two compositions toward an applicator may assist the mixing. In another example, the entry of
20 the two compositions from the containers into the mixing chamber with opposed stream directions may facilitate the contact between the two compositions.

With reference to Figure 1, one embodiment of a wipes dispenser (1) enabling the dispensing on-demand of warm wipes is illustrated. The dispenser comprises a dry wipes container (2) in which one or more dry wipes (3) are disposed. The dry wipes container
25 comprises a generally rectangular-shaped tub having a front panel, a back panel, opposite side panels and a bottom panel defining the internal compartment of the dry wipes container. The dry wipes container comprises one opening (4) to enable the user to access the wipes. The dispenser comprises one container (5) for storing the heat-generating composition and one container for storing the activating composition (6). Dispensing
30 devices such as manually operated pumps are mounted on the containers (7, 8). A linkage between the manually operated pumps may coordinate the movement of the two pumps

(not represented). One of the manually operated pumps comprises a dosing device in the form of a finger operated trigger (9) enabling to select a pre-set amount of one of the compositions to be dispensed (in particular the heat-generating composition as illustrated in Figure 1). In this example, prior to use, the user selects a pre-set amount of heat-generating composition to be dispensed that will meet his/her needs, then he/she actuates the pumps sequentially or in parallel to dispense the heat-generating composition and the activating composition on the dry wipe and finally he/she crumples the wipe to assist the interaction between the two compositions leading to a warm wet wipe.

With reference to Figure 2 and 3A, another embodiment of a wipes dispenser (11, 111) enabling the dispensing on-demand of a warm wipe is illustrated. The dispenser comprises a dry wipes container (12, 112) in which one or more dry wipes (13, 113) are disposed. The dry wipes container comprises a generally rectangular-shaped tub having a front panel, a back panel, opposite side panels and a bottom panel defining the internal compartment of the dry wipes container. The dry wipes container comprises one opening to enable the user to access the wipes (14, 114). The wipes dispenser comprises one container (15) for storing the heat-generating composition and one container (16) for storing the activating composition (not represented in figure 3A). Dispensing devices such as manually operated pumps are mounted on the containers (17, 18, 117, 118). A dual activation lever (20, 120) is provided to coordinate the movement of the two pumps. The two manually operated pumps comprise a dosing device in the form of a finger operated trigger (19, 21, 119, 121) enabling to select pre-set amounts of the two compositions to be dispensed among at least two pre-settings. The wipes dispenser comprises a mixing chamber (22, 122) wherein the outputs of the two pumps once actuated enter in contact. Then the compositions are delivered to an applicator represented as a roller (23, 123) which transfers the compositions to the dry wipe as the wipe passes over the roller. The applicator in Figure 3A is controlled by an applicator controlling device (124). Figure 3B is an enlarged view of the applicator controlling device (124) of Figure 3A. The application control means comprises a dial (125). The dial (125) allows a user to select a position of the applicator (123) among at least two positions in relationship with a reservoir (126). The applicator controlling device (124) adjusts the amount of mixed composition that is delivered to the dry wipe as it passes through the applicator (123). The

applicator (123) is mounted on a sub frame (127) that is sprung in a way which forces it upwards. The dial works against the sprung sub frame, gradually pushing it down.

To tailor the wipes to the cleaning task, the user, prior to use, selects a pre-set amount of heat-generating composition and a pre-set amount of activating composition to be
5 dispensed. He/she actuates the dual activation lever (20, 120) to dispense the two compositions and then withdraws the wipe from the container (12, 112). As the dry wipe passes through the applicator (23, 123), the roller transfers the mixed composition to the wipe leading to a warm wet wipe.

10 *The heat-generating composition*

The heat-generating composition for use with the wipes dispenser of the present invention enables a user to heat at least one of the dry wipes provided in the container described above. The heat-generating composition includes at least one heating agent and may include one or more adjunct ingredients. The heat-generating composition may be
15 configured as a liquid solution, however, it is to be understood that the heat-generating composition may also be configured as a solid, semi-solid or a gas, as desired. For example, the heat-generating composition may be a material that is a solid at room temperature, but has a low melting point.

The at least one heating agent comprised in the heat-generating composition is selected
20 such that the heat-generating composition will release heat upon contact with the activating composition. Suitable heating agents include agents having an exothermic heat of reaction, such as, for example agents demonstrating an exothermic heat of hydration when reacted with an aqueous solution. Examples of suitable heating agents include, without limitation, salts of calcium, magnesium, aluminum, sodium, and potassium;
25 zeolites; metals; slaked lime; quick lime; glycols; and combinations thereof. The heating agents may be in either hydrous or anhydrous forms. Particularly suitable examples of heating agents include anhydrous salts of magnesium chloride, calcium chloride, polyethyleneglycol and/or magnesium sulphate. One particularly suitable example of an embodiment is a heat-generating composition comprising magnesium sulphate and an
30 activating composition comprising an aqueous composition that once contacted generate

heat. Exothermic reactions involving anhydrous salts and an aqueous solution may be exemplified, however, it is to be understood that any suitable exothermic chemical reaction is contemplated herein. In one embodiment, two or more heating agents may be comprised in the heat-generating composition that act individually or cooperatively to produce heat, for example through an exothermic chemical reaction with one or more ingredients of an activating composition.

The heating agent may be provided in the heat-generating composition in any suitable concentration. For example the heat-generating composition may comprise from 0.001% to less than 50% of a heating agent or mixtures thereof; from 0.01% to less than 25%; less than 10%; or even less than 1%, by weight of the heat-generating composition. Preferably, the heat-generating composition is anhydrous. By anhydrous, it is meant that the heat-generating composition does not comprise more than 5 % of water, preferably no more than 2% of water and more preferably no more than 0.5% of water.

In addition to a heating agent, the heat-generating composition may include at least one neurosensory agent or a mixture thereof. As used herein, the term “neurosensory agent” refers to ingredients that give a perception of heat when applied to the skin, (i.e., compositions that induce a perception of temperature change without involving an actual change in temperature, such as, for example peppermint oil, eucalyptol, eucalyptus oil, methyl salicylate, camphor, tea tree oil, ketals, carboxamides, cyclohexanol derivatives, cyclohexyl derivatives, and the like). A suitable neurosensory agent may enhance the warming effect perceived by a user of a warm wipe described herein. Suitably, the heat-generating composition may comprise between 0 and 15%, or between 0.001 and 10% or between 0.01 and 1% of neurosensory agents by weight of heat-generating compositions. In one example, a heat-generating composition having a heating agent that comprises magnesium sulphate and a neurosensory agent that comprises methyl salicylate may be provided. In this example, when the heat-generating composition is contacted with an aqueous cleaning composition, the magnesium sulphate chemically reacts with the aqueous cleaning composition to produce an increase in the temperature of the compositions applied to the wipe and the methyl salicylate may produce a sensory perception of heat when the wipe is contacted with the skin of a user.

The heat-generating composition may comprise at least one adjunct ingredient or a mixture thereof. A number of adjunct ingredients are suitable for inclusion in the heat-generating composition, such as, for example, cleansing agents, appearance modifying agents (e.g., exfoliation agents, skin-firming agents, anti-callous agents, anti-acne agents, 5 anti-aging agents, anti-wrinkle agents, anti-dandruff agents, antiperspirant agents, wound care agents, scar repair agents, colorants, humectants, powders, skin coloration agents, tanning agents, lightening agents, brightening agents, and shine control agents), enzymes, nutrients (e.g., anti-oxidants, transdermal drug delivery agents, botanical extracts, vitamins, magnets, foods, and drugs), anti-bacterials, anti-virals, anti-fungals, 10 preservatives, insect repellants, anti-parasite agents, surface conditioning agents (e.g., pH adjusting agents, moisturizers, shaving lubricants, and skin lipids), anti-inflammatory agents (e.g., skin conditioners, external analgesic agents, anti-irritant agents, and anti-allergy agents), and emotional benefit agents (e.g., fragrances, odor neutralizing materials, soothing agents, calming agents) and mixture thereof. Suitably, the heat-generating 15 composition may comprise between 0 and 50%, or between 0.001 and 10% or between 0.01 and 1% of adjunct ingredients by weight of heat-generating composition, depending on function of the adjunct ingredient and desired performance.

The heat-generating composition may include a matrix material for carrying the heating agent and the adjunct ingredient(s), if present. Suitable examples of matrix materials 20 include, without limitation, mineral oil, isopropyl myristate, silicones, copolymers (e.g., block copolymers), waxes, butters, exotic oils, dimethicone, glycols (e.g. ethyleneglycol, propyleneglycol and any polyethyleneglycols), thermoionic gels, plant oils, animal oils, and combinations thereof. Particularly suitable matrix materials are hydrophilic, but anhydrous materials, e.g. polyethyleneglycol's with molecular weight from 200 to 10000, 25 Glycols, Glycerin and the like. Suitable matrix materials include oils commonly used in commercial cosmetic applications that may impart some skin benefit to the user, such as a moisturizing or lubricating benefit. Generally, these oils are hydrophobic oils. The heat-generating composition may comprise any suitable proportion of matrix material, heating agent, and adjunct ingredients. For example, the heat-generating composition may 30 comprise from 1% to 99% of a matrix material, by weight of the heat-generating composition.

In certain embodiments, the heat-generating composition may also include a surfactant or a mixture thereof. Any one of a number of surfactant types including anionic, cationic, nonionic, zwitterionic, and combinations thereof may be utilized. One skilled in the art will recognize, based on the disclosure herein, that different heating agents in combination with different matrix materials and adjunct ingredients may benefit from one type of surfactant more than another; that is, the preferred surfactant for one chemistry may be different than the preferred surfactant for another. Particularly desirable surfactants will allow the heat-generating composition to have a suitable viscosity for thorough mixing; that is, the surfactant will not result in the mixture having an undesirably high viscosity. Suitably, the heat-generating composition may comprise between 0 and 50 %, or between 0.001 and 10% or between 0.01 and 1% of surfactants by weight of heat-generating composition. The heat-generating composition may also comprise auxiliary raw materials influencing the physical state of the formulation, e.g. rheology modifiers to induce shear sensitivity, thickeners, and waxes. The heat-generating composition may also include raw materials that influence the solubility of the exothermic material to ensure a fast and complete reaction with the heating agent comprised in the heat-generating composition.

In one embodiment according to the present invention the heat-generating composition stored in the second container is formulated as disclosed in example A.

20 *The activating composition*

The activating composition may comprise at least one activating agent that, upon contact with at least one heating agent comprised in the heat-generating composition, leads to an exothermic chemical reaction.

The activating composition may be water or may be an aqueous solution or may be an oil-in-water or water-in-oil emulsion. Suitably, the activating composition comprises between 1% and 100%, or between 5% and 100% or between 20% and 100% of water by weight of the activating composition.

The activating composition might also be added within the third container of the wipe dispenser just prior use by the user in the form of water (e.g. tap water) as activating agent. Alternatively the activating composition might be in a solid form or in a

concentrated form and is diluted with water just prior use to add thereto the activating agent.

- The activating composition may comprise at least one adjunct ingredient or a mixture thereof. A number of adjunct ingredients are suitable for inclusion in the activating composition, such as, for example, cleansing agents, appearance modifying agents (e.g., exfoliation agents, skin-firming agents, anti-callous agents, anti-acne agents, anti-aging agents, anti-wrinkle agents, anti-dandruff agents, antiperspirant agents, wound care agents, scar repair agents, colorants, humectants, powders, skin coloration agents, tanning agents, lightening agents, brightening agents, and shine control agents), enzymes, nutrients (e.g., anti-oxidants, transdermal drug delivery agents, botanical extracts, vitamins, minerals, foods, and drugs), anti-bacterials, anti-virals, anti-fungals, preservatives, insect repellants, anti-parasite agents, surface conditioning agents (e.g., pH adjusting agents, moisturizers, shaving lubricants, and skin lipids), anti-inflammatory agents (e.g., skin conditioners, external analgesic agents, anti-irritant agents, and anti-allergy agents), and emotional benefit agents (e.g., fragrances, odor neutralizing materials, soothing agents, calming agents). Suitably, the activating composition may comprise between 0 and 50%, or between 0.001 and 10% or between 0.01 and 1% of adjuncts ingredients by weight of activating composition, depending on function of the raw material and desired performance.
- In certain embodiments, the activating composition may also include a surfactant or a mixture thereof. Any one of a number of surfactant types including anionic, cationic, nonionic, zwitterionic, and combinations thereof may be utilized. Suitably, the activating composition may comprise between 0 and 50%, or between 0.001 and 10% or between 0.01 and 1% of surfactants by weight of activating composition.
- The activating composition may also comprise auxiliary raw materials influencing the physical state of the formulation, e.g. rheology modifiers to induce shear sensitivity, thickeners, and waxes. The activating composition may also include raw materials that influence the solubility of the exothermic material to ensure a fast and complete reaction with the heating agent comprised in the heat-generating composition.

The heat-generating composition and the activating composition may be configured to facilitate dispensing and application onto a substrate. In certain embodiments, the heat-generating composition may be provided as a powder and the activating composition provided as a liquid to provide a warm composition with a viscosity suitable for applying the composition onto a substrate. In some other embodiments, the heat-generating composition may be provided as a liquid and the activating composition provided as a solid or liquid to provide a warm composition with a viscosity suitable for applying the composition onto a substrate.

Set of instructions.

The wipes dispenser of the present invention may comprise a set of instructions for communicating to a consumer how to use the wipes dispenser to get warm wet wipes. Thus, the set of instructions may communicate to a consumer to select a pre-set amount of heat-generating composition and/or a pre-set amount of activating composition and to actuate the dispensing devices to dispense the compositions from their respective containers onto the dry wipe. The set of instructions according to the present invention may be in any form. Suitably, the set of instruction is in the form of text, graphics, charts, visuals cues, other indicia or combination thereof.

The wipes dispenser may also comprise a set of instructions for communicating to a consumer the relationship between the selection of a pre-set amount of heat-generating composition and/or a pre-set amount of activating composition and the temperature increase of the wipe and/or the wetness of the wipe after both compositions have been dispensed on the wipe. The set of instructions may be in any forms. Typically, the set of instruction is in the form of text, graphics, charts, visuals cues, other indicia or combination thereof.

The set of instructions may be either directly printed on the wipes container and/or on the second and third containers. It may also be presented in a separated manner including, but not limited to, a brochure, printed advertisement, so as to communicate the set of instructions to a consumer. The first, second and third containers may include the same or

similar set of instructions in the form of text, graphics, visuals cues or combination thereof.

Examples

- 5 A representative example of heat-generating composition according to the present invention is given as example A below.

Example A:

Component	Amount (% by weight)
(1) Magnesium sulfate anhydrous	15
(2) Glyceryl Monostearate	2
(3) PEG-4	Balance
Total	100

- 10 A representative example of an activating composition according to the present invention is given as Example B below.

Example B:

Component	Amount (% by weight)
(1) Disodium EDTA	0.10
(2) Arlatone-V 175 TM *	0.80
(3) Decylglycoside	0.05
(4) Cyclopentasiloxane Dimethiconol	0.45
(5) 1,2-Propyleneglycol	1.50
(6) Phenoxyethanol	0.80
(7) Methylparaben	0.15
(8) Propylparaben	0.05
(9) Ethylparaben	0.05
(10) PEG-40 Hydrogenated Castor Oil	0.80
(11) Perfume	0.05
(12) Purified water	Balance

Total	100
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* Arlatone-V 175 TM comprises sucrose palmitate, glyceryl stearate, glyceryl stearate citrate, sucrose, mannan, xanthan gum and is commercialized by Uniqema GmbH&Co. KG 46429 Emmerich, Germany, www.uniqema.com.

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A representative example of wipes useful in embodiments is given below.

The dry wipes are made of a carded nonwoven comprising a 40/60 blend of viscose fibers and polypropylene fibers having a basis weight of 58 grams/m² as available from Suominen of Tampere, Finland as FIBRELLA 3160.

10

The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as “40 mm” is

15 intended to mean “about 40 mm”.

CLAIMS

What is claimed is:

1. A wipes dispenser enabling the dispensing on-demand of at least one warm wet wipe, said wipes dispenser comprises a first container for storing and dispensing at least one dry wipe and characterized in that said wipes dispenser further comprises:

- (a) a second container storing a heat-generating composition comprising at least one heating agent;
- (b) a third container storing an activating composition comprising at least one activating agent reacting exothermically with said at least one heating agent;
- (c) at least one dosing device enabling the user to select a pre-set amount of heat-generating composition or a pre-set amount of activating composition or both;
- (d) dispensing devices for dispensing the heat-generating composition and the activating composition to the dry wipe.

2. The wipes dispenser according to claim 1 wherein the wipes dispenser comprises one dosing device enabling the user to select a pre-set amount of heat-generating composition among at least two pre-settings and/or one dosing device enabling the user to select a pre-set amount of activating composition among at least two pre-settings.

3. The wipes dispenser according to any of the preceding claims wherein the wipes dispenser further comprises a mixing chamber.

4. The wipes dispenser according to any of the preceding claims wherein the wipes dispenser further comprises an applicator and optionally an applicator controlling device.

5. The wipes dispenser according to any of the preceding claims wherein the first, second and third containers are held in assembly.

6. The wipes dispenser according to any of the preceding claims wherein the second and third container are enclosed or partially enclosed within the first container.

7. The wipes dispenser according to any of the preceding claims wherein the heat generating composition is an anhydrous composition comprising at least one heating agent.

8. The wipes dispenser according to claim 7 wherein the heating agent is selected from the group consisting of salts of calcium, magnesium, aluminum, sodium, potassium; zeolites; metals; slaked lime; quick lime; glycols; and combinations thereof.

9. The wipes dispenser according to any of claim 3 to claim 8 wherein the mixing chamber comprises a static device or a dynamic device.

10. The wipes dispenser according to any of claim 4 to claim 9 wherein the applicator is one of a trigger type sprayer, a roller assembly, a wicking device, a flexible edge or rigid edge.

11. The wipes dispenser according to any of the preceding claims wherein the at least one dosing device is a finger operated trigger.

12. The wipes dispenser according to any of the preceding claims wherein the wipes dispenser further comprises a set of instructions for communicating to a consumer to select a pre-set amount of heat-generating composition and/or a pre-set amount of activating composition and to actuate the dispensing devices to dispense the compositions from their containers onto the dry wipe.

13. The wipes dispenser according to any of the preceding claims wherein the wipes dispenser further comprises a set of instructions for communicating to a consumer the relationship between the selection(s) of a pre-set amount of heat-generating composition and/or a pre-set amount of activating composition and the temperature increase of the

wipe and/or the wetness of the wipe after both compositions have been dispensed on the wipe.

14. The wipes dispenser according to claims 12 or 13 wherein the set of instructions is in the form of text, graphics, charts, visuals cues, other indicia or combination thereof.

15. The wipes dispenser according to any of the preceding claims wherein the first container comprises dry wipes therein.

1 / 3

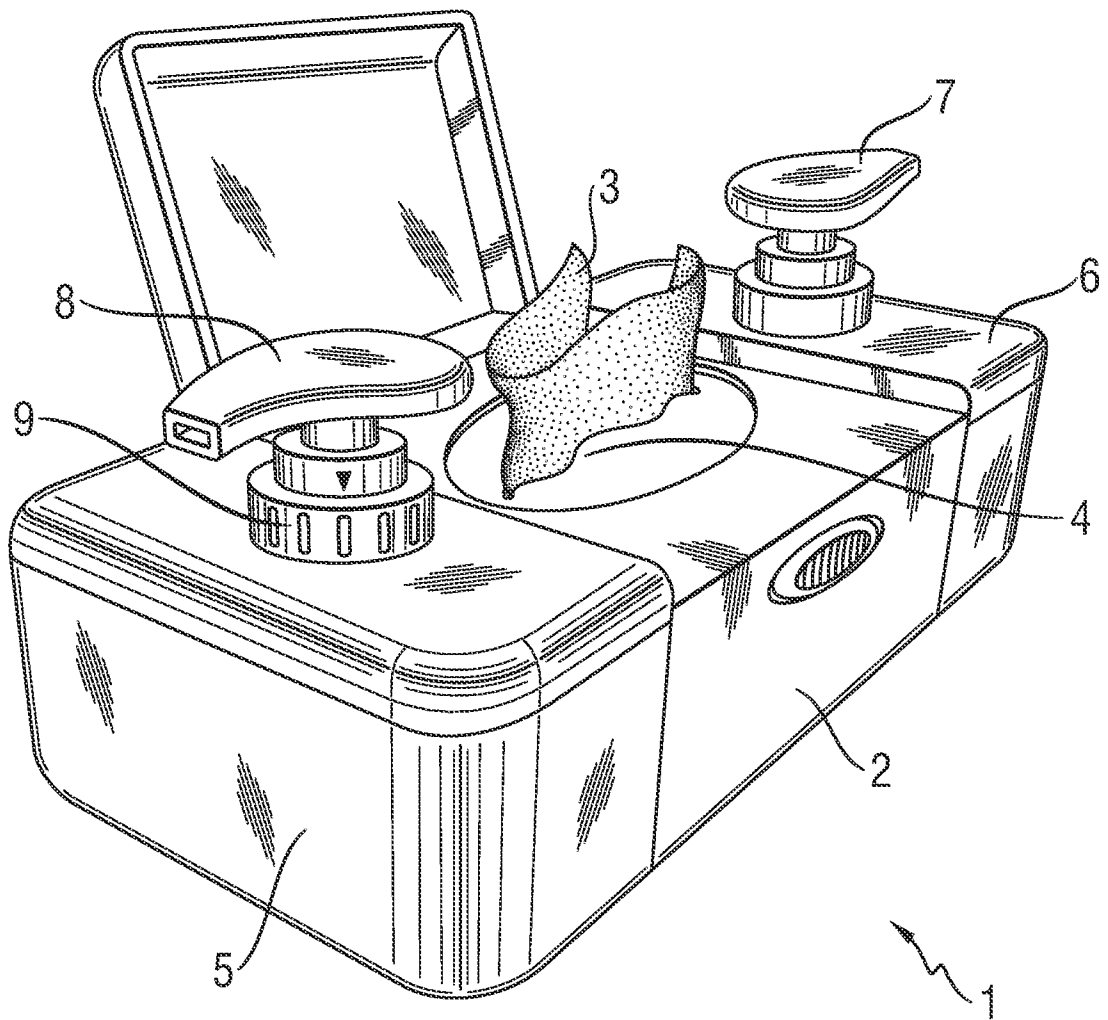


Fig. 1

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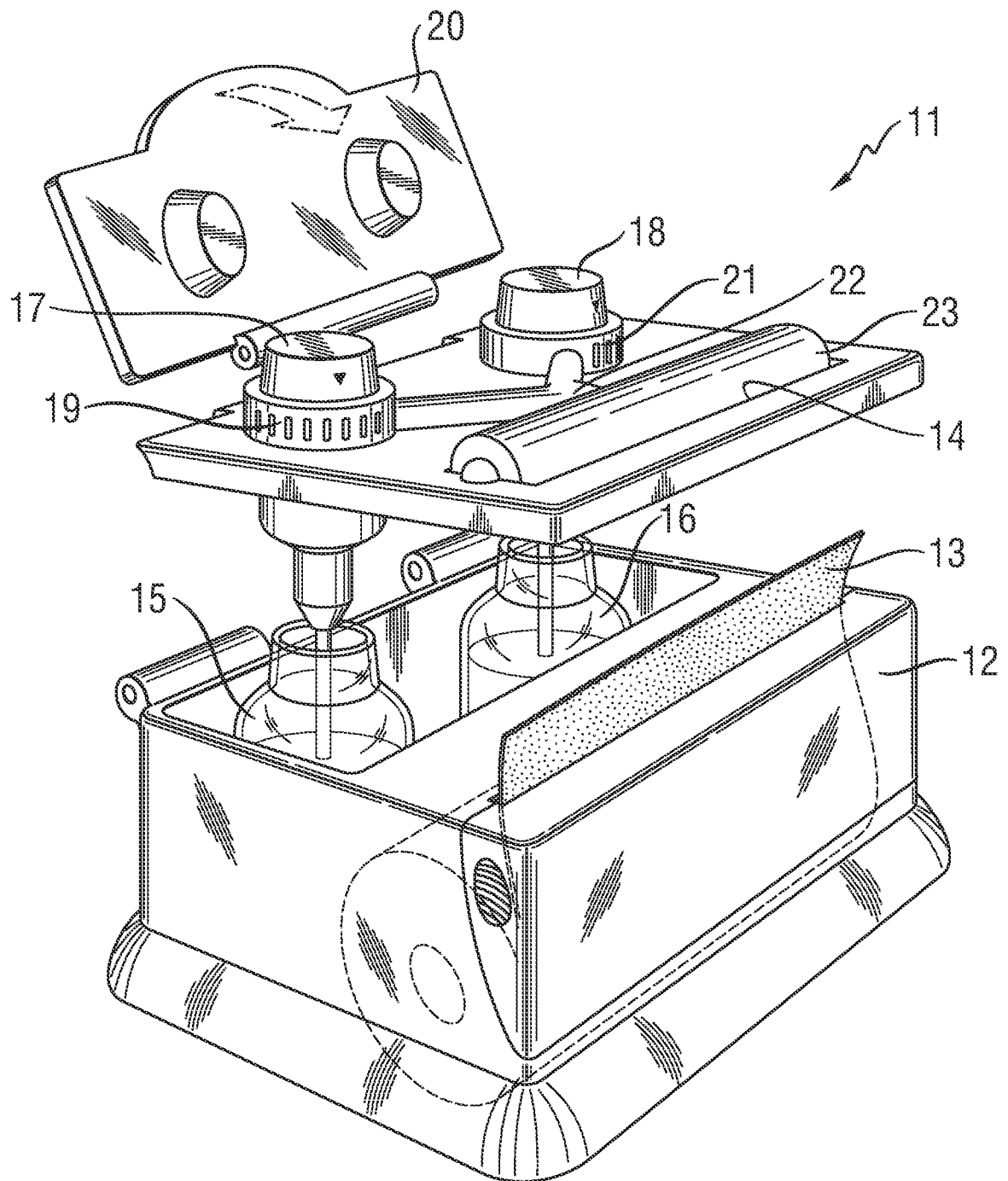


Fig. 2

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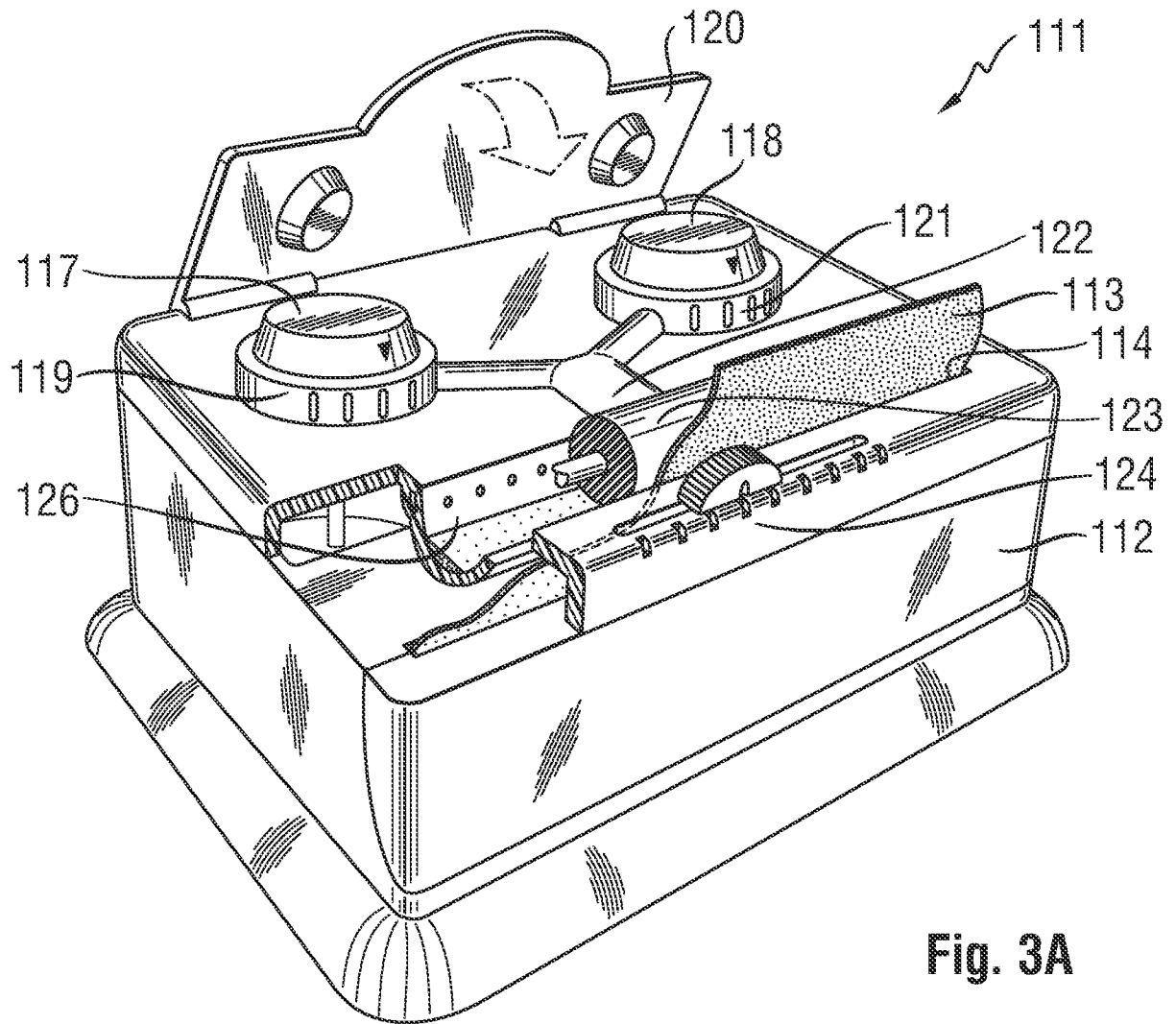


Fig. 3A

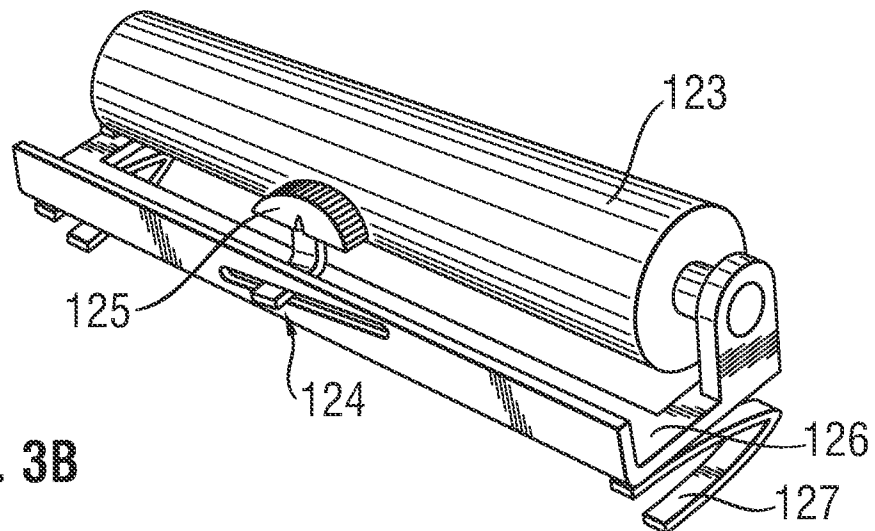


Fig. 3B

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/052175

A. CLASSIFICATION OF SUBJECT MATTER

INV. A45D34/00 A45D34/04 A47K10/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47K A45D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7 022 945 B1 (WESTERN STEPHANIE) 4 April 2006 (2006-04-04) column 2, line 20 - column 4, line 26 figures 3-5	1-15
A	WO 2007/138498 A (KIMBERLY CLARK) 6 December 2007 (2007-12-06) paragraphs [0267] - [0270], [0274] - [0277] figures 28,29	1
A	FR 2 554 700 A (IPPOLITO MARCEAU) 17 May 1985 (1985-05-17) the whole document	1,3-5, 10,11
A	WO 2007/010562 A (ORLANDI) 25 January 2007 (2007-01-25) paragraphs [0039] - [0061] figure 2	1,4-6,10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 December 2009

Date of mailing of the international search report

10/12/2009

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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