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(54) **PORTABLE AUTOMATIC BATCHING DEVICE EQUIPPED WITH IMPROVED CARTRIDGES**
TRAGBARE AUTOMATISCHE DOSIEREINRICHTUNG MIT VERBESSERTEN KARTUSCHEN
DISPOSITIF DE DOSAGE AUTOMATIQUE ET PORTABLE MUNI DE CARTOUCHES AMELIOREES

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Description

[0001] The present invention refers to a portable, automatic batching device equipped with improved cartridges, which is compact, light-weight and of reduced sizes, for producing at home customized cosmetics, in particular nail enamels.

[0002] As known, dye-meters are batching machines for industrial use for preparing dyeing compounds, such as paints, enamels, dyes, typically comprising a plurality of storage tanks of individual dyeing components and of devices for batching and delivering such components adapted to draw from individual tanks accurate amounts of a component, depending on desired composition, in order to obtain the final desired compound. Such machines have relevant sizes and weights, are relatively costly and therefore are unsuitable for a personal use and at home for producing customized dyeing compounds according to user's will.

[0003] In order to solve the above inconveniences and to comply with the growing request by users to be able to customize their own cosmetic products, the art proposed "on the counter" batching devices and systems which allow producing, upon request, in a shop or at home, such products. Examples of such devices and systems are disclosed in US2003069667, US2004133306, US2002082745, US2006283521, US2007253280, EP0443741, US5903465, WO006457, US6510366, US5399013, DE4110299, US4871262, US5622692, ES2308948, WO2005044041.

[0004] Known devices and systems however are still scarcely practically usable, above all because, due to the presence of solvents inside some cosmetic components and due to their extreme volatility, they generate, during their mixing, the dispersion in the surrounding environment of acute chemical smells, consequently resulting scarcely adapted to be used at home or in small environments.

[0005] Moreover, in known devices and systems, the various cosmetic components are contained inside cartridges which do not prevent their contact with air, causing them to quickly get viscous, till they completely dry, making thereby impossible to correctly store them in time.

[0006] US 2003/0108487 discloses a device for spraying a cosmetic substance contained in a flexible bag.

[0007] Therefore, object of the present invention is solving the above prior art problems, by providing an automatic batching device equipped with improved cartridges which prevents or at least strongly limits the propagation in the external environment of volatile components of the product contained inside the cartridges.

[0008] Moreover, an object of the present invention is providing an automatic batching device equipped with cartridges which guarantee the storage in time of the cosmetic product contained therein.

[0009] Another object of the present invention is providing a portable automatic batching device which is compact, light-weight and of reduced sizes, for producing at

home customized cosmetics, in particular nail enamels, which prevents or at least strongly limits the propagation in the external environment of volatile components of the products contained inside the cartridges of such batching device.

[0010] Moreover, an object of the present invention is providing a portable automatic batching device which is compact, light-weight and of reduced sizes, for producing at home customized cosmetics, in particular nail enamels, which guarantees the storage in time of cosmetic products contained inside the cartridges of such batching device.

[0011] The above and other objects and advantages of the invention, as will appear from the following description, are obtained with a portable automatic batching device as claimed in claim 1. Preferred embodiments and non-trivial variations of the present invention are the subject matter of the dependent claims.

[0012] It is intended that the enclosed claims are an integral part of the present description.

[0013] It will be immediately obvious that numerous variations and modifications (for example related to shape, sizes, arrangements and parts with equivalent functionality) could be made to what is described, without departing from the scope of the invention as appears from the enclosed claims.

[0014] The present invention will be better described by some preferred embodiments thereof, provided as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1 is a side sectional view of a preferred embodiment of the improved cartridge according to the present invention;
- Figure 2 shows an enlarged side sectional view of a component of the improved cartridge according to the present invention;
- Figure 3 shows an exploded perspective view of a preferred embodiment of the portable automatic batching device according to the present invention; and
- Figure 4 shows a side sectional view of a preferred embodiment of the portable automatic batching device according to the present invention.

[0015] With reference to Figure 1, it is possible to note that the improved cartridge 1 according to the present invention for portable automatic batching devices comprises at least one external containing envelope 3, substantially rigid, inside which at least one flexible container 5 is arranged, containing therein at least one dyeing component of a dyeing compound, for example a cosmetic product such as nail enamel, to be delivered outside upon request. The dyeing component is not contained directly inside the external containing envelope 3, like instead occurs in prior art cartridges, but inside the flexible container 5, made as a bag made of a suitably elastic plastic

material, so that the compound itself is not in contact with air in order to prevent any drying or viscous phenomenon from occurring, as happens for this type of compounds.

[0016] The flexible container 5 is connected outwards through at least one delivery duct 7 and by interposing at least one delivery head 9 equipped with at least one delivery nozzle 11, the delivery head 9 having a rest position, (like the one, for example, shown in Figure 1) in which such delivery head 9 keeps such delivery duct 7 closed and air-tightly insulates the dyeing component contained inside the flexible container 5, and a delivery position (not shown) in which such delivery head 9 opens such delivery duct 7, communicating it with the delivery nozzle 9 and allowing the dyeing component to go out of the flexible container 5 towards outside through the delivery duct 7 and the delivery nozzle 11.

[0017] The delivery duct 7 and the delivery nozzle 11 are arranged so that the delivery position of the delivery head 9 is reached by relatively approaching the external containing envelope 3 towards the delivery head 9, by pressing, for example along the direction designated by arrow P in Figure 1, the envelope 3 against the head 9 or, vice versa, by pressing, for example along the direction designated by arrow P' in Figure 1, the head 9 against the envelope 3. The rest position is then reached again when the exerted thrusting force P or P' ceases: for such purpose, between the external containing envelope 3 and the delivery head 9, suitable elastic means can be interposed, adapted to take back the delivery head 9 to its rest position when such thrusting force P or P' ceases.

[0018] Moreover, the delivery head 9, in addition to allowing the delivery of the dyeing component contained inside the flexible container 3, can also allow its batching: for example, the delivery head 9 can allow the volumetric batching of the dyeing component depending on the amount of exerted pressure P or P', and therefore depending on the relative approach between the delivery head 9 and the external containing envelope 3, and/or the number of pressure and release cycles P or P' exerted on the delivery head 9 or on the external containing envelope 3.

[0019] Figure 2 shows a preferred embodiment of the delivery head 9 of the cartridge 1 according to the present invention, such head 9 being preferably of a type substantially known in the art. In particular, the delivery head 9 is composed of:

- at least one actuating push-button 13 integral with at least one stem 15 and sliding under the action of the thrusting force P or P' along a longitudinal axis A-A with respect to a supporting body 17 fastened to the external containing envelope 3, for example by interposing at least one screw-type closing member 19 and at least one sealing member 21, composed for example of one or more gaskets;
- at least one piston 23 integral and coaxial with the stem 15;
- at least one ball valve 25 adapted to be opened by

applying the thrusting force P or P' to communicate the delivery duct 7 with the delivery nozzle 11;

- at least one helical spring 27 composing the elastic means and arranged coaxially with the longitudinal axis A-A around the stem 15.

[0020] The present invention further refers to a portable automatic batching device 100, like the one shown for example in Figures 3 and 4, for producing a dyeing compound, for example a nail enamel, starting from one or more dyeing components each one of which is contained inside a cartridge 1 like the previously described one.

[0021] The portable automatic batching device 100 according to the present invention therefore comprises at least one drum 101 radially equipped with a plurality of seats 103, each one of such seats 103 being adapted to house at least one of such cartridges 1, such drum 101 being preferably coupled with at least one internal hub 105 and being rotating, preferably related to such hub 105, around a rotation axis R-R under the action of suitable first actuating means made, for example, as at least one electric motor 107 integral with such hub 105 and rotating such drum 101 around such rotation axis R-R.

[0022] The portable automatic batching device 100 according to the present invention further comprises pushing means 109 adapted to exert, upon a command from suitable second actuating means, a thrusting force P on the external containing envelope 3 of one of such cartridges 1 arranged in a suitable position by the rotation of the drum 105 around the rotation axis R-R, and to take the related delivery head 9 in its delivery position. In particular, the pushing means are composed of at least one pressing member 111 taken to slide by the second actuating means 113 along an axis parallel with such rotation axis R-R to exert the thrusting force P on the cartridge 1, and in particular on the related external containing envelope 3, when arranged by the drum 101 in a suitable position.

[0023] The portable automatic batching device 100 according to the present invention further comprises at least one housing 115 adapted to house a mixing container of the dyeing compound (not shown) inside which the dyeing component delivered by the cartridge 1 is poured.

[0024] The first actuating means are then adapted to rotate, upon a command, the drum 101 around the rotation axis R-R to take at least one of the cartridges 1 (for example the one enclosed by dashed box A of Figure 3) in a delivery position so that its own external containing envelope 3 is coaxially corresponding with the pressing member 111 and its own delivery head 9 corresponds to the housing 115 to be able to deliver the dyeing component contained inside the flexible container 5 through the delivery nozzle 11 inside the mixing container of the dyeing compound, for example a nail enamel, once such pressing member 111 exerts the thrusting force P on the external containing envelope 3.

[0025] Obviously, the portable automatic batching de-

vice 100 according to the present invention further comprises electric supplying means: for example, such means comprise supply batteries 117, for example of the rechargeable type, in order to avoid the more uncomfortable type of supply through mains cables.

[0026] Moreover, the portable automatic batching device 100 according to the present invention comprises managing means adapted to control the operation of such actuating means 107, 113: in particular, depending on a formulation of dyeing compound to make by mixing one or more dyeing components, each one of which is contained inside a respective cartridge 1 arranged on the drum 101, the managing means are adapted to drive the operation of the first actuating means 107 to rotate the drum 101 in order to sequentially take the cartridges 1 containing the dyeing components, required by the formulation, in the delivery position to deliver every time such component inside the mixing container of the dyeing compound arranged in the housing 115. Moreover, the managing means are adapted to control the operation of the second actuating means 113 in order to apply the necessary thrusting force P for delivering the amount of dyeing component required by the formulation of the desired dyeing compound.

[0027] Preferably, each cartridge 1 can be equipped with suitable recognizing means, such as for example a RFID label arranged on its related external containing envelope 3, adapted to identify at least the type of dyeing component contained inside the related flexible container 5 and cooperating with related reading means of such recognizing means so that the managing means are able to know the exact position of each dyeing component around the drum 101.

[0028] Obviously, all above operations, and in particular the check, every time, of the dyeing component to be delivered and its related amount could be manually driven by a user through suitable control means which allow directly controlling the operation of the actuating means 107, 113.

[0029] Alternatively, in order to make the operation of the batching device 100 according to the present invention completely automatic, such batching device 100 can comprise at least storage means, composed of at least one database, adapted to store at least one formulation of a dyeing compound desired by the user and cooperating with such managing means to automatically make the dyeing compound depending on such formulation. Obviously, the control means can comprise input and selecting means which allow a user to select the desired formulation among a possible plurality of such formulations stored in such storage means and, possibly, modify such formulation at will.

[0030] In addition, the batching device 100 according to the present invention can comprise connecting means, for example through a USB outlet, a Bluetooth connection, etc., to at least one device capable of being connected to the web, for example a personal computer, a smartphone, etc., through which the above formulations

can be found and downloaded, for example when available on suitable on-line sites, and store such formulations in the storage means of the batching device 100.

[0031] Additionally or alternatively, the same batching device 100 could be equipped with web interface means, cooperating with the managing means and/or the storage means, which allow an Internet connection to such on-line sites to directly find and download the desired formulations in the storage means without needing to interpose such web-connectable device.

[0032] Additionally or alternatively, such web-connectable device or such web interface means could allow connecting the batching device 100 according to the present invention to suitable on-line sites and/or a social network in order to allow sharing such formulations.

Claims

1. Portable automatic batching device (100) for producing a dyeing compound starting from one or more dyeing components, said portable automatic batching device comprising a plurality of cartridges (1), wherein

- each one of said dyeing components is contained inside a respective cartridge (1) comprising at least one external containing envelope (3) and at least one flexible container (5) arranged inside said external containing envelope (3), said flexible container (5) being adapted to contain therein at least one dyeing component of a dyeing compound to be delivered outside upon a command;

- said flexible container (5) is a bag made of an elastic plastic material;

- said flexible container (5) is connected outwards through at least one delivery duct (7) and by interposing at least one delivery head (9) equipped with at least one delivery nozzle (11), said delivery head (9) having a rest position, in which said delivery head (9) keeps said delivery duct (7) closed and air-tightly insulates said dyeing component contained inside said flexible container (5), and a delivery position in which said delivery head (9) opens said delivery duct (7) communicating it with said delivery nozzle (9); and

- between said external containing envelope (3) and said delivery head (9), suitable elastic means are interposed, to take back said delivery head (9) to said rest position upon ceasing a thrusting force (P; P') exerted on said external containing envelope (3) or said delivery head (9) to take said delivery head (9) to said delivery position.

2. Portable automatic batching device (100) according

- to claim 1, **characterized in that** it comprises at least one drum (101) radially equipped with a plurality of seats (103), each one of said seats (103) being adapted to house at least one of said cartridges (1), said drum (101) being rotating around a rotation axis (R-R) under the action of first actuating means, and **in that** it comprises pushing means (109) adapted to exert, upon a command from second actuating means, a thrusting force (P) on said external containing envelope (3) of one of said cartridges (1) and to take a related one of said delivery heads (9) to said delivery position, and **in that** it comprises at least one housing (115) adapted to house a mixing container of said dyeing compound inside which said dyeing component delivered by said cartridge (1) is poured.
3. Portable automatic batching device (100) according to claim 2, **characterized in that** said pushing means are composed of at least one pressing member (111) made slide by said second actuating means (113) along an axis parallel with said rotation axis (R-R) to exert said thrusting force (P) onto said external containing envelope (3).
4. Portable automatic batching device (100) according to claim 2, **characterized in that** it comprises managing means adapted to control an operation of said actuating means (107, 113) depending on a formulation of one of said dyeing compounds to make by mixing one or more of said dyeing components, each one of which is contained inside a respective cartridge (1) arranged on said drum (101).
5. Portable automatic batching device (100) according to any one of the previous claims, **characterized in that** each cartridge (1) is equipped with suitable recognizing means adapted to identify at least one type of said dyeing component contained inside said flexible container (5) and cooperating with related reading means of said recognizing means so that said managing means are able to know an exact position of each dyeing component around said drum (101).
6. Portable automatic batching device (100) according to any one of the previous claims, **characterized in that** it comprises storage means adapted to store at least one of said formulations of said dyeing compound.
7. Portable automatic batching device (100) according to any one of the previous claims, **characterized in that** it comprises connecting means to at least one web-connectable device to find and download said formulations and store said formulations into said storage means and/or allow sharing said formulations.
8. Portable automatic batching device (100) according to any one of the previous claims, **characterized in that** it is equipped with web interface means cooperating with said managing means and/or said storage means to allow an Internet connection to directly find and download said formulations into said storage means and/or sharing said formulations.
- 10 **Patentansprüche**
1. Tragbarer automatischer Dosierer (100) für die Herstellung einer Farbstoffverbindung aus einer oder mehreren Farbstoffkomponenten, der genannte tragbare automatische Dosierer schließt mehrere Kartuschen (1) ein, in dem:
- jede der Farbstoffkomponenten in einer entsprechenden Kartusche (1) enthalten ist, die mindestens einen äußeren Sicherheitsbehälter (3) und mindestens einen flexiblen Behälter (5) einschließt, der im genannten äußeren Sicherheitsbehälter (3) angebracht ist, der genannte flexible Behälter (5) dient dazu, mindestens eine Farbstoffkomponente einer Farbstoffverbindung zu enthalten, die auf Kommando nach außen abgegeben werden soll;
 - jeder flexible Behälter (5) ein Beutel aus einem elastischen Kunststoffmaterial ist;
 - der genannte flexible Behälter (5) mit dem Außenbereich durch mindestens eine Abgabelleitung (7) und mindestens einem dazwischen angebrachten Abgabekopf (9) verbunden ist, der mit mindestens einer Abgabedüse (11) ausgestattet ist, der genannte Abgabekopf (9) hat eine Ruhestellung, in der der genannte Abgabekopf (9) die genannte Abgabelleitung (7) geschlossen hält und die genannte Farbstoffkomponente, die im genannten flexiblen Behälter (5) enthalten ist, luftdicht isoliert, und eine Abgabeposition, in der der genannte Abgabekopf (9) die genannte Abgabelleitung (7) öffnet und sie mit der genannten Abgabedüse (9) in Verbindung bringt; und
 - zwischen dem genannten äußeren Sicherheitsbehälter (3) und dem genannten Abgabekopf (9) entsprechende elastische Vorrichtungen angebracht sind, um den genannten Abgabekopf (9) in die genannte Ruhestellung zurückzuführen, wenn die Schubkraft (P; P') nachlässt, die auf den genannten äußeren Sicherheitsbehälter (3) oder den genannten Abgabekopf (9) ausgeübt wird, um den genannten Abgabekopf (9) in die genannte Abgabeposition zu führen.
2. Tragbarer automatischer Dosierer (100) gemäß Patentanspruch 1, der **dadurch gekennzeichnet ist, dass** er mindestens eine Trommel (101) einschließt, die radial mit mehreren Aufnahmen (103) ausgestat-

- tet ist, jede der genannten Aufnahmen (103) dient dazu, mindestens eine der genannten Kartuschen (1) aufzunehmen, die genannte Trommel (101) dreht sich unter der Wirkung der ersten Antriebsvorrichtungen um eine Drehachse (R-R), und ist durch die Tatsache, Schubvorrichtungen (109) einzuschließen, die dazu dienen, auf Kommando von zweiten Antriebsvorrichtungen eine Schubkraft (P) auf den genannten äußeren Sicherheitsbehälter (3) einer der genannten Kartuschen (1) auszuüben und dazu, ihren entsprechenden genannten Abgabekopf (9) in die genannte Abgabeposition zu führen, und durch die Tatsache gekennzeichnet, mindestens eine Aufnahme (115) einzuschließen, die dazu dient, einen Mischbehälter der genannten Farbstoffverbindung aufzunehmen, in den die genannte Farbstoffkomponente geschüttet wird, die von der genannten Kartusche (1) abgegeben wird.
3. Tragbarer automatischer Dosierer (100) gemäß Patentanspruch 2, der **dadurch gekennzeichnet ist, dass** die genannten Schubvorrichtungen aus mindestens einem Niederhalterelement (111) bestehen, das dazu gerührt wird, von den genannten zweiten Antriebsvorrichtungen (113) längs einer parallelen Achse zur genannten Drehachse (R-R) zu gleiten, um die genannte Schubkraft (P) auf den genannten äußeren Sicherheitsbehälter (3) auszuüben.
4. Tragbarer automatischer Dosierer (100) gemäß Patentanspruch 2, der **dadurch gekennzeichnet ist, dass** er Steuervorrichtungen einschließt, die dazu dienen, die Funktionsweise der genannten Antriebsvorrichtungen (107, 113) aufgrund einer Formulation einer genannten Farbstoffverbindung zu kontrollieren, die durch die Mischung von einer oder mehreren der genannten Farbstoffkomponenten hergestellt werden soll, die jeweils in einer entsprechenden genannten Kartusche (1) enthalten sind, die an der genannten Trommel (101) angebracht ist.
5. Tragbarer automatischer Dosierer (100) gemäß einem der vorhergehenden Patentansprüche, der **dadurch gekennzeichnet ist, dass** jede Kartusche (1) mit entsprechenden Erkennungsvorrichtungen ausgestattet ist, die dazu dienen, mindestens eine Typologie der genannten Farbstoffkomponente zu identifizieren, die im genannten flexiblen Behälter (5) enthalten ist, und die mit den entsprechenden Lesevorrichtungen der genannten Erkennungsvorrichtungen zusammenarbeiten, sodass die genannten Steuervorrichtungen eine genaue Position jeder Farbstoffkomponente im Bereich der genannten Trommel (101) kennen können.
6. Tragbarer automatischer Dosierer (100) gemäß einem der vorhergehenden Patentansprüche, der **dadurch gekennzeichnet ist, dass** er Speichervorrichtungen einschließt, die dazu dienen, mindestens eine der genannten Formulationen der genannten Farbstoffverbindung zu speichern.
7. Tragbarer automatischer Dosierer (100) gemäß einem der vorhergehenden Patentansprüche, der **dadurch gekennzeichnet ist, dass** er Anschlussvorrichtungen für mindestens eine Vorrichtung einschließt, die mit dem Web verbunden werden kann, um die genannten Formulationen zu finden und herunterzuladen und um die genannten Formulationen in den genannten Speichervorrichtungen zu speichern und/oder die Gemeinnutzung der genannten Formulationen zu ermöglichen.
8. Tragbarer automatischer Dosierer (100) gemäß einem der vorhergehenden Patentansprüche, der **dadurch gekennzeichnet ist, dass** er mit Web-Verbindungsvorrichtungen ausgestattet ist, die mit den genannten Steuervorrichtungen und/oder den genannten Speichervorrichtungen zusammenarbeiten, um eine Internetverbindung, um die genannten Formulationen direkt finden und in die genannten Speichervorrichtungen herunterladen zu können und/oder die Gemeinnutzung der genannten Formulationen zu ermöglichen.

Revendications

1. Doseur automatique portatif (100) pour la production d'un mélange colorant à partir d'un ou plusieurs composants colorants, ce doseur automatique portatif comprend une pluralité de cartouches (1), où :
- chaque composant colorant est contenu dans sa cartouche (1) constituée au moins d'une enveloppe de contenance externe (3) et au moins d'un conteneur flexible (5) placé à l'intérieur de l'enveloppe de contenance externe (3) ; le conteneur flexible (5) peut contenir au moins un composant colorant, faisant partie d'un mélange colorant, à distribuer sur commande ;
 - le conteneur flexible (5) est un sachet en matière plastique élastique ;
 - le conteneur flexible (5) est relié à l'extérieur par au moins une conduite de distribution (7) et l'interposition au moins d'une tête de distribution (9) dotée au moins d'une buse de distribution (11) ; la tête de distribution (9) possède une position de repos où elle maintient fermée la conduite de distribution (7) et elle isole de l'air, de manière étanche, le composant colorant inséré dans le conteneur flexible (5) ainsi qu'une position de distribution où la tête de distribution (9) ouvre la conduite de distribution (7) en la mettant en communication avec la buse de distribution (11) ; et

- entre l'enveloppe de contenance externe (3) et la tête de distribution (9) sont interposés des moyens élastiques servant à ramener la tête de distribution (9) dans la position de repos quand cesse la force de poussée (P; P') exercée sur l'enveloppe de contenance externe (3) ou sur la tête de distribution (9) pour mettre la tête de distribution (9) en position de distribution.
2. Doseur automatique portatif (100), selon la revendication 1, **caractérisé en ce qu'il** comprend au moins un tambour (101) doté radialement d'une pluralité de logements (103) dont chacun peut accueillir au moins une cartouche (1); le tambour (101) tourne autour d'un axe de rotation (R-R) sous l'action de premiers moyens d'actionnement, et **en ce qu'il** comprend des moyens de poussée (109) aptes à exercer, sur commande de seconds moyens d'actionnement, une force de poussée (P) sur l'enveloppe de contenance externe (3) d'une des cartouches (1) et à mettre la tête de distribution relative (9) en position de distribution, et **en ce qu'il** comprend au moins un logement (115) apte à accueillir un conteneur de malaxage du mélange colorant où est versé le composant colorant distribué par la cartouche (1).
 3. Doseur automatique portatif (100), selon la revendication 2, **caractérisé en ce que** les moyens de poussée sont composés au moins d'un élément presseur (111) qui glisse, sur commande des seconds moyens d'actionnement (113), le long d'un axe parallèle à l'axe de rotation (R-R) pour exercer la force de poussée (P) sur l'enveloppe de contenance externe (3).
 4. Doseur automatique portatif (100), selon la revendication 2, **caractérisé en ce qu'il** comprend des moyens de gestion en mesure de contrôler le fonctionnement des moyens actionneurs (107, 113) selon une formulation du mélange colorant à réaliser à travers le malaxage d'un ou plusieurs composants colorants, dont chacun est contenu dans sa propre cartouche (1) qui se trouve sur le tambour (101).
 5. Doseur automatique portatif (100) selon l'une des revendications précédentes, **caractérisé en ce que** chaque cartouche (1) est dotée de moyens de reconnaissance permettant d'identifier au moins un type de composant colorant inséré dans le conteneur flexible (5) et qui coopèrent avec les moyens de lecture des moyens de reconnaissance afin que les moyens de gestion puissent connaître la position exacte de chaque composant colorant sur le tambour (101).
 6. Doseur automatique portatif (100) selon l'une des revendications précédentes, **caractérisé en ce qu'il** comprend des moyens de mémorisation permettant
- d'enregistrer au moins une des formulations du mélange colorant.
7. Doseur automatique portatif (100) selon l'une des revendications précédentes, **caractérisé en ce qu'il** comprend des moyens de connexion à un dispositif au moins pouvant être relié au Web pour trouver et télécharger les formulations puis enregistrer ces formulations sur des moyens de mémorisation et/ou permettre le partage de ces formulations.
 8. Doseur automatique portatif (100) selon l'une des revendications précédentes, **caractérisé en ce qu'il** est doté de moyens d'interface Web qui coopèrent avec les moyens de gestion et/ou les moyens de mémorisation pour permettre une connexion Internet afin de trouver et de télécharger directement les formulations sur ces moyens de mémorisation et/ou de partager les formulations.

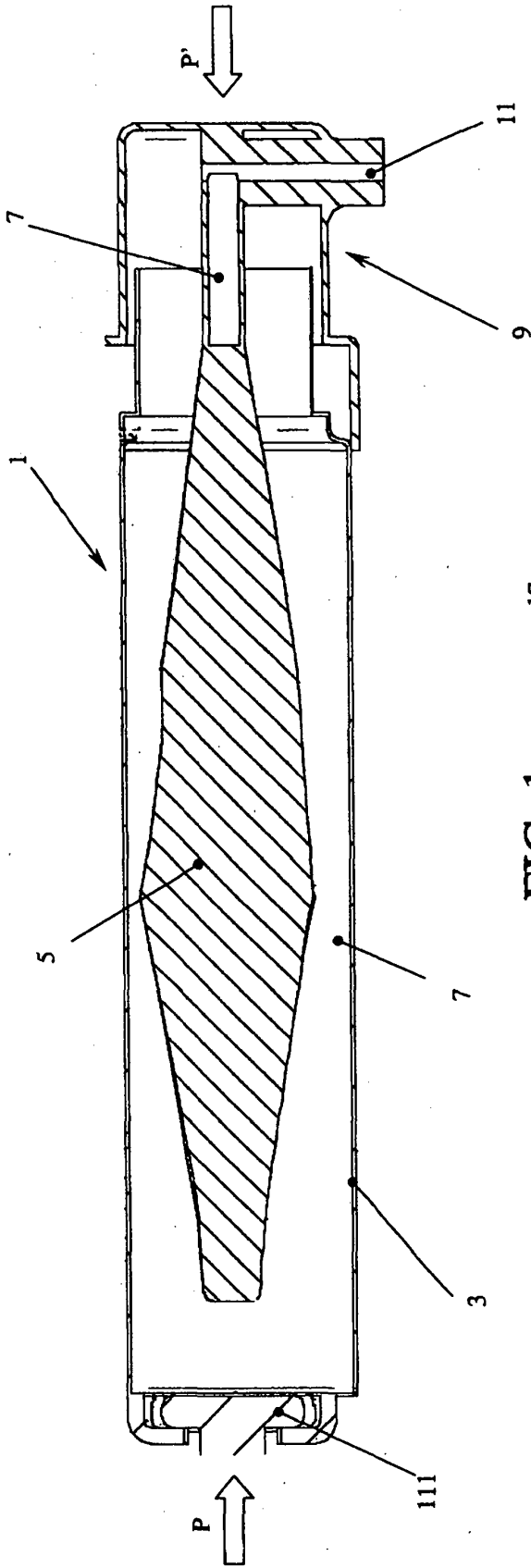


FIG. 1

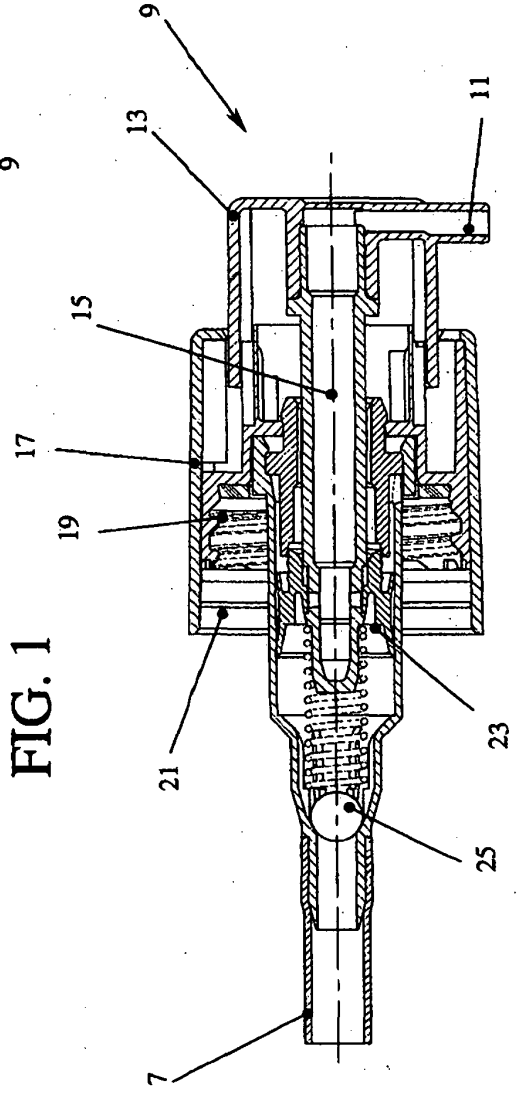


FIG. 2

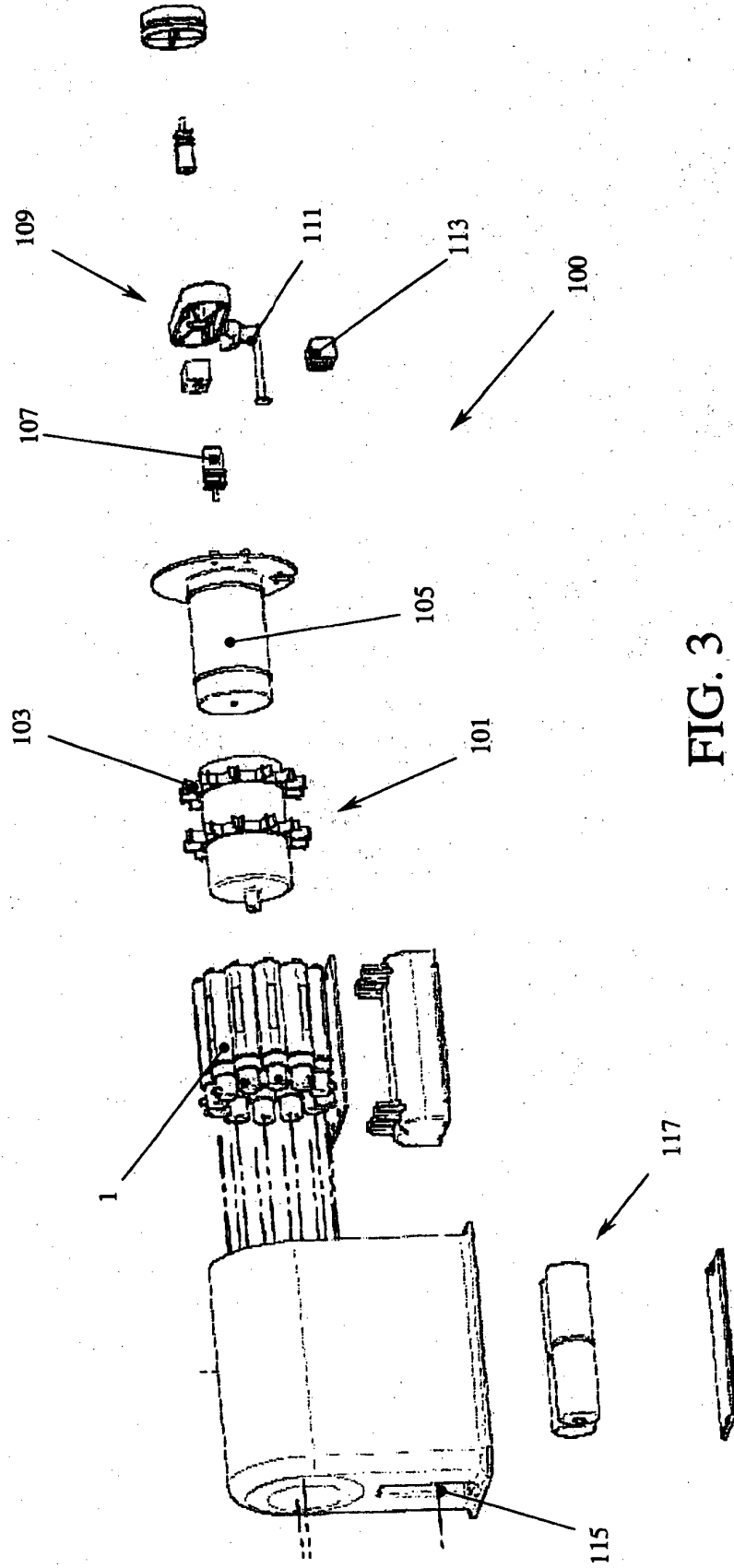


FIG. 3

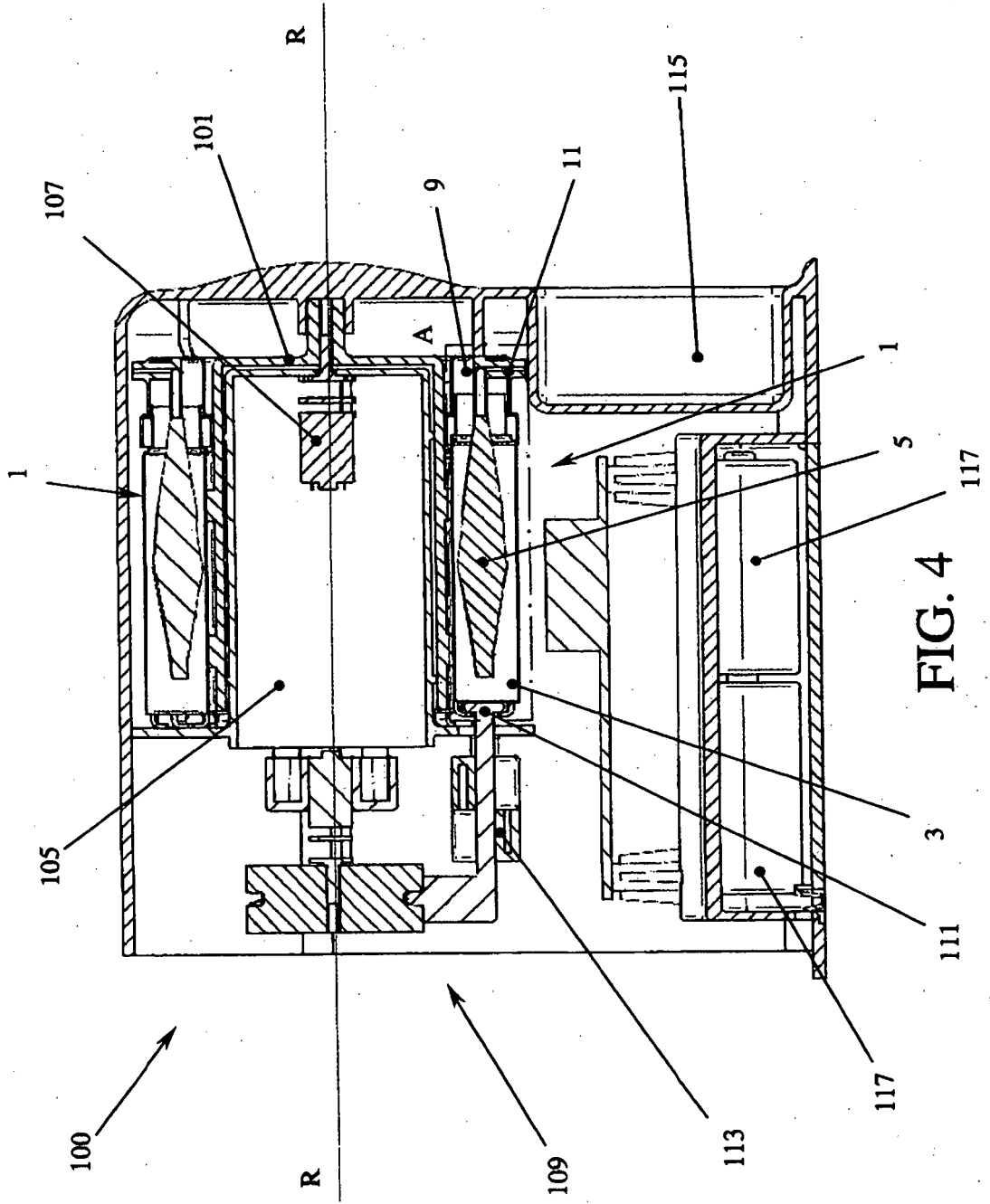


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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