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(54) DEFORMABLE CONTAINER FOR INJECTING MEDICINAL OR COSMETIC SUBSTANCES

DEFORMIERBARER BEHÄLTER ZUM INJIZIEREN VON HEILMITTELN ODER KOSMETISCHEN
MITTELN

RECIPIENT DEFORMABLE SERVANT A INJECTER DES SUBSTANCES MEDICINALES OU
COSMETIQUES

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• **FABBRI, Evro**
I-41016 Novi Di Modena (IT)

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(74) Representative:
Modiano, Guido, Dr.-Ing. et al
Modiano & Associati SpA
Via Meravigli, 16
20123 Milano (IT)

(73) Proprietor: **LAMEPLAST S.R.L.**
41030 Rovereto di Novi (Modena) (IT)

(72) Inventors:
• **FONTANA, Antonio**
I-41012 Carpi (IT)
• **FERRARI, Giovanni**
I-41012 Carpi (IT)

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Description

[0001] The present invention concerns a deformable container for injecting medical or cosmetic substances, in the form of a liquid or a foam, and injecting it into a cavity of the human body, for example, into the anal cavity, the nose or the ears.

[0002] The state of the art includes the italian patent for utility model No. 213.228 by the same applicant, concerning a bellows dispenser for medicinal substances for microenemas, with incorporated cannula, including bellows with a cylindrical body equipped with a cannula whose axis is aligned with the axis of the bellows.

[0003] The said bellows dispenser is rather uncomfortable to use, in that it obliges the user to rotate his wrist in order to squeeze the body of the bellows; furthermore, it is impossible to completely empty the said body, as the reduction in the axial length of the bellows when it is compressed is limited by the folds of the bellows being brought close with each other.

[0004] The incomplete discharge of the body of the bellows makes it impossible to make use of all the substance contained in the dispenser.

[0005] The state of the art also includes deformable containers, with drip nozzle or atomiser, for introducing liquids in the nasal cavity or in the ears; the said containers also have the defect that they are difficult to empty completely, due to the limited deformability of the said container.

[0006] Examples of collapsible containers for various uses are available from the documents GB-A-775.799 (having the features set forth in the preamble of claim 1), FR-A-2.456.667, GB-A-798.338, FR-A-2.004.243 US-A-3.580.427 and FR-A-2 576 876.

[0007] The present invention sets out to resolve the technical problem of finding a deformable container for injecting medicinal or cosmetic substances, in the form of a liquid or a foam, into cavities of the human body, that can be almost completely emptied, reducing to a minimum the quantity of substance contained in it that can not be used and which does not oblige the user to perform unnatural rotations of the wrist when using the container.

[0008] The present invention resolves the said technical problem by adopting a deformable container having a body in the form of a bellows and a dispensing cannula with the features set forth in claim 1.

[0009] The advantages offered by the invention are: it is easier and more comfortable to use, particularly when the container is used for microenemas; the container can be almost completely emptied, thereby reducing to a minimum the quantity of substance that is not used; simplicity and low production costs.

[0010] Some embodiments of the invention are illustrated, purely by way of example, in the two tables of drawings attached in which Figure 1 is a perspective view of a first version of container as described; Figure 2 is a view as in Figure 1, with the protective stopper

removed; Figure 3 is an exploded, partially sectioned view of the container in Figure 1; Figure 3A is a partial longitudinal section of the container in Figure 1, assembled; Figure 4 is a side view of the container in Figure 1 during use; Figure 5 is a view as in Figure 1, relating to a second version of the container as described with a cannula plug; Figure 6 is a view as in Figure 3, relating to the container in Figure 5; Figure 7 is a view as in Figure 3A, relating to the container in Figure 5.

[0011] Figure 1 shows a container according to the invention, consisting of a body 2 in the form of a bellows, with a neck 3, whose axis is perpendicular to the axis of the bellows. The body 2 of the bellows is made up of a number of pairs of layers folded as in an accordion, with transverse dimensions increasing from the extremities of the bellows towards the centre and with the intermediate layers being annular in shape.

[0012] The outline of the layers can be polygonal or curved.

[0013] The body 2 is therefore collapsible in a double truncated pyramid or cone with the wide bases at the centre.

[0014] The neck 3, (Figure 3) has an external ring 4, in an intermediate position, and a conical enlargement at the opening 6 of the said neck.

[0015] A cannula shaped dispenser 7 is inserted in the opening 6 of the neck 3, the said dispenser having at its lower end a ring 8 bearing on the rim of the neck 3, and a lower cylindrical enlargement 9 for its insertion in opening 6 of the neck 3 so as to form a seal. A cap 11 is inserted on the cannula 7 and the neck 3, consisting of a hollow cylindrical base 12, whose internal diameter is smaller than the external diameter of the ring 4 to enable the lower edge of the said base to sit on it. Inside the said cylindrical base there are: a seat 13 for the snap insertion of the ring 8 of the cannula 7; a conical seat for the insertion in it of the conical enlargement 5 of the neck 3 of the container 1 and an annular projection 15 acting as undercut for the enlargement 5. The top of the cap 11 ends in a removable stopper 16 connected with the base 12 along a predetermined fracture line 16a. The stopper 16 has an internal protuberance 17 to close the dispensing aperture 18 of the cannula 7.

[0016] Figure 5 shows a second version 19 of the container as described in which the cannula 7 and the cap 11 are replaced with an integrated cap 20 with a cannula 21 (figure 6). The base 22 of the cap 20 is hollow with, on its inside, a conical seat 23 for the enlargement 5 of the neck 3 and annular projection 24 acting as undercut for the enlargement 5. Inside the cap 20 a substantially cylindrical protuberance 25 extends downwards that is inserted in and seals the neck 3.

[0017] A removable closing seal 26 for the opening 27 of the cannula 21 is connected to the said opening along a predetermined fracture line.

[0018] Operation is as follows: once the stopper 16, or the seal of guarantee 26, has been removed, the cannula 7, or 21, is inserted in the cavity of the body in

which the substance contained in the container 1, or 19, has to be introduced, and the body 2 of the container is compressed in a transverse direction with respect to the axis of the cannula, so dispensing the substance contained in the body 2.

[0019] It is to be noted that with the layers of the body 2 of the bellows completely compressed, the configuration of the layers of the bellows, with dimensions decreasing outwards, enable a greater degree of compression and, consequently, a better emptying of the body 2.

[0020] In the case of the first version of container, as in Figures 1 to 3A, it is possible to close the container by inserting stopper 16 in the cannula 7 in such a way that the internal protuberance 17 shuts off the opening 18 of the cannula: this enable one or more subsequent utilisations of the container.

Claims

1. A deformable container for dispensing medical or cosmetic substances, comprising a body in the form of a bellows (2) with cross-sectional dimensions increasing from the extremities towards the center of said body, and an opening (6), the axis of the bellows (2) and the axis of the opening (6) being substantially perpendicular with respect to each other, **characterized in that** the container is provided with a dispensing cannula (7, 21) sealingly engaging said body at said opening (6), coaxial therewith, and in that said bellows has the shape of a double truncated pyramid or cone with the wide bases thereof joining on a plane which includes said axis of the opening (6).
2. A deformable container according to claim 1, characterized in that said bellows (2) comprises a number of pairs of layers folded as in an accordion with transverse dimensions increasing from the extremities of the bellows towards said joining wide bases, whereby said body is collapsible by compression along the axis of the bellows, the pairs of layers more distant from said joining wide bases being adapted to be squeezed inside the ones closer to said joining wide bases.
3. A deformable container according to claim 2, characterized in that the outline of said layers is polygonal or curved.
4. A deformable container according to any of the preceding claims, characterized in that it is further provided with a cap (11, 20) for closing the dispensing aperture (18, 27) of said cannula (7, 21).
5. A deformable container according to claim 4, characterized in that said cap (11, 20) is closed by a removable closing seal (16, 26) connected to said

cap (11, 20) through a predetermined fracture line (16a).

6. A deformable container according to claim 5, characterized in that said closing seal (16) has an internal protuberance (17) adapted to shut off the dispensing opening (18) of the cannula (11) between utilizations.
7. A deformable container according to any of the preceding claims, characterized in that said cannula (7, 21) has devices (8, 9) for sealingly coupling to a neck (3) of the container in which said opening (6) is formed, and in that said cap (11, 20) is provided with devices (13, 14, 15, 23, 24, 25) for sealingly coupling with said neck (3) .
8. A deformable container according to claim 5, characterized in that said cap (20) is made integral with the cannula (21).

Patentansprüche

1. Verformbarer Behälter zur Abgabe von medizinischen oder kosmetischen Substanzen, mit einem Körper in Form eines Balges (2), dessen Querschnittabmessungen von den Außenseiten zur Mitte des Körpers hin zunehmen, und mit einer Öffnung (6), wobei die Achse des Balges (2) im wesentlichen senkrecht zu der Achse der Öffnung (6) verläuft, dadurch gekennzeichnet, daß der Behälter mit einer Kanüle (7, 21) für die Abgabe versehen ist, die dicht mit dem Behälter an der Öffnung (6) verbunden ist und koaxial dazu verläuft, und daß der Balg die Form eines doppelten Pyramidenstumpfes oder Kegelstumpfes aufweist, deren abmessungsgrößen Basen in einer Ebene aneinander angrenzen, die die Achse der Öffnung (6) enthält.
2. Verformbarer Behälter nach Anspruch 1, dadurch gekennzeichnet, daß der Balg (2) eine Anzahl von Paaren von Schichten, die ziehharmonikaförmig angeordnet sind, aufweist, deren Querabmessungen von den Außenseiten des Balges in Richtung der verbundenen abmessungsgrößen Basen ansteigen, wobei der Körper zusammendrückbar ist, indem entlang der Achse des Balges Druck ausgeübt wird, und wobei die Paare von Schichten, die von den verbundenen abmessungsgrößen Basen entfernt liegen, so angeordnet sind, daß sie nach innerhalb der Schichten gedrückt werden, die näher an den verbundenen abmessungsgrößen Basen liegen.
3. Verformbarer Behälter nach Anspruch 2, dadurch gekennzeichnet, daß die Außenkontur der Schichten polygonal oder gekrümmt ist.

4. Verformbarer Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß er weiterhin eine Kappe (11, 20) aufweist, die die Öffnung (18, 27) zur Abgabe in der Kanüle (7, 21) verschließt.

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5. Verformbarer Behälter nach Anspruch 4, dadurch gekennzeichnet, daß die Kappe (11, 20) durch einen entfernbaren Verschuß (16, 26) verschlossen ist, der mit der Kappe (11, 20) an einer Sollbruchstelle (16a) verbunden ist.

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6. Verformbarer Behälter nach Anspruch 5, dadurch gekennzeichnet, daß der Verschuß (16) einen innenliegenden Vorsprung (17) aufweist, der so ausgelegt ist, daß er die Öffnung (18) zur Abgabe der Kanüle (11) bei Nichtbenutzung verschließt.

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7. Verformbarer Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Kanüle (7, 21) Einrichtungen (8, 9) aufweist, die eine dichte Verbindung zu einem Hals (3) des Behälters herstellen, an dem die Öffnung (6) ausgebildet ist, und daß die Kappe (11, 20) mit Einrichtungen (13, 14, 15, 23, 24, 25) versehen ist, die eine dichte Verbindung mit dem Hals (3) herstellen.

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8. Verformbarer Behälter nach Anspruch 5, dadurch gekennzeichnet, daß die Kappe (20) einstückig mit der Kanüle (21) ausgebildet ist.

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Revendications

1. Récipient déformable pour la distribution de substances médicales ou cosmétiques comprenant un corps ayant la forme d'un soufflet (2) possédant des dimensions en coupe transversale qui augmentent depuis les extrémités en direction du centre dudit corps, et une ouverture (6), l'axe de soufflet (2) et l'axe de l'ouverture (6) étant sensiblement perpendiculaires entre eux, caractérisé en ce que le récipient comporte une canule de distribution (7, 21) s'appliquant de façon étanche au niveau de ladite ouverture (6) contre ledit corps, coaxialement à cette ouverture, et en ce que ledit soufflet possède la forme de deux troncs de pyramide ou de deux troncs de cône, qui sont réunis par leurs grandes bases dans un plan qui contient ledit axe de l'ouverture (6).

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2. Récipient déformable selon la revendication 1, caractérisé en ce que ledit soufflet (2) comprend un certain nombre de couches repliées comme dans un accordéon, les dimensions transversales augmentant depuis les extrémités du soufflet en direction desdites bases larges de jonction, ce qui a pour effet qu'on peut aplatir ledit corps par compression le long de l'axe du soufflet, les couples de couches

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les plus distantes desdites bases larges de liaison étant adaptées pour être comprimées à l'intérieur des couches plus proches desdites bases larges de jonction.

3. Récipient déformable selon la revendication 2, caractérisé en ce que ledit contour desdites couches a une forme polygonale ou courbe.

4. Récipient déformable selon l'une des revendications précédentes, caractérisé en ce qu'il comporte en outre un capuchon (11, 20) servant à fermer l'ouverture de distribution (18, 27) de ladite canule (7, 21)

5. Récipient déformable selon la revendication 4, caractérisé en ce que ledit capuchon (11, 20) est fermé par un joint de fermeture étanche amovible (16, 26) raccordé audit capuchon (11, 20) par l'intermédiaire d'une ligne de rupture prédéterminée (16a).

6. Récipient déformable selon la revendication 5, caractérisé en ce que ledit joint de fermeture étanche (16) possède une protubérance interne (17) adaptée pour fermer l'ouverture de distribution (18) de la canule (11) entre des utilisations.

7. Récipient déformable selon l'une quelconque des revendications précédentes, caractérisé en ce que ladite canule (7, 21) comprend des dispositifs (8, 9) destinés à réaliser un accouplement étanche au goulot (3) du récipient, dans lequel ladite ouverture (6) est formée, et en ce que le capuchon (11, 20) comporte des dispositifs (13, 14, 15, 23, 24, 25) pour réaliser un accouplement étanche avec ledit goulot (3).

8. Récipient déformable selon la revendication 5, caractérisé en ce que ledit capuchon (20) est réalisé d'un seul tenant avec la canule (21).

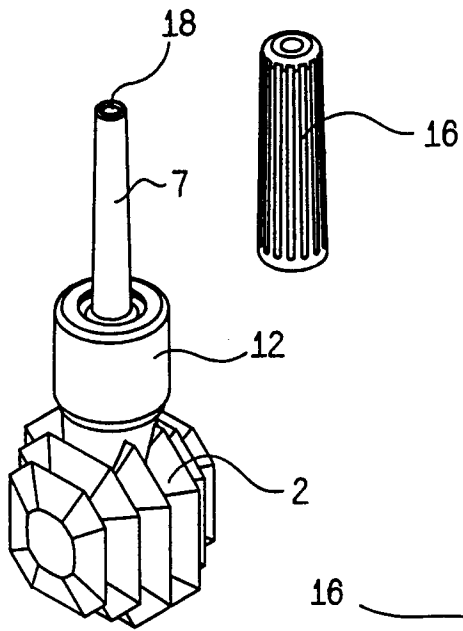


FIG. 2

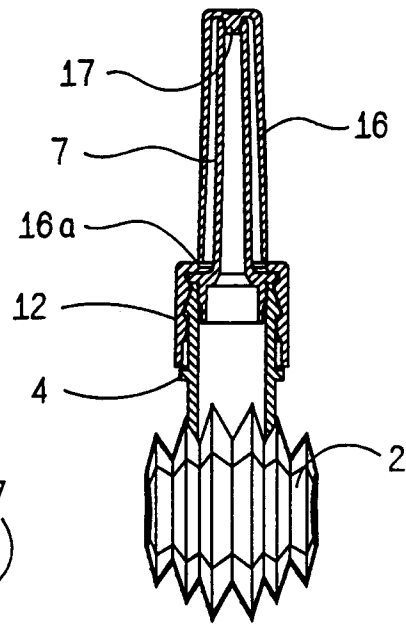


FIG. 3A

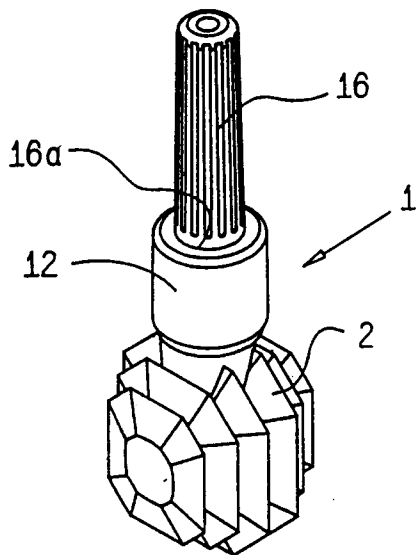
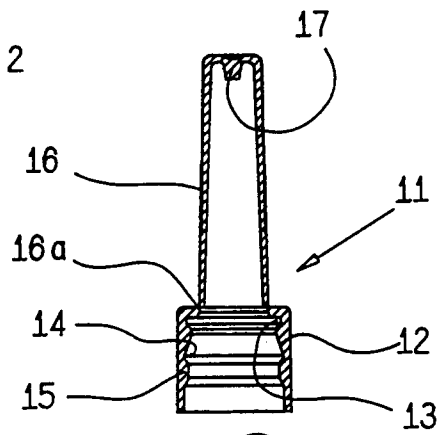


FIG. 1

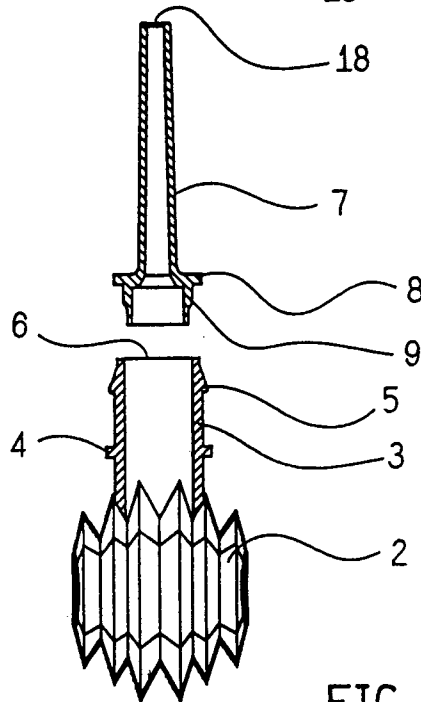


FIG. 3

