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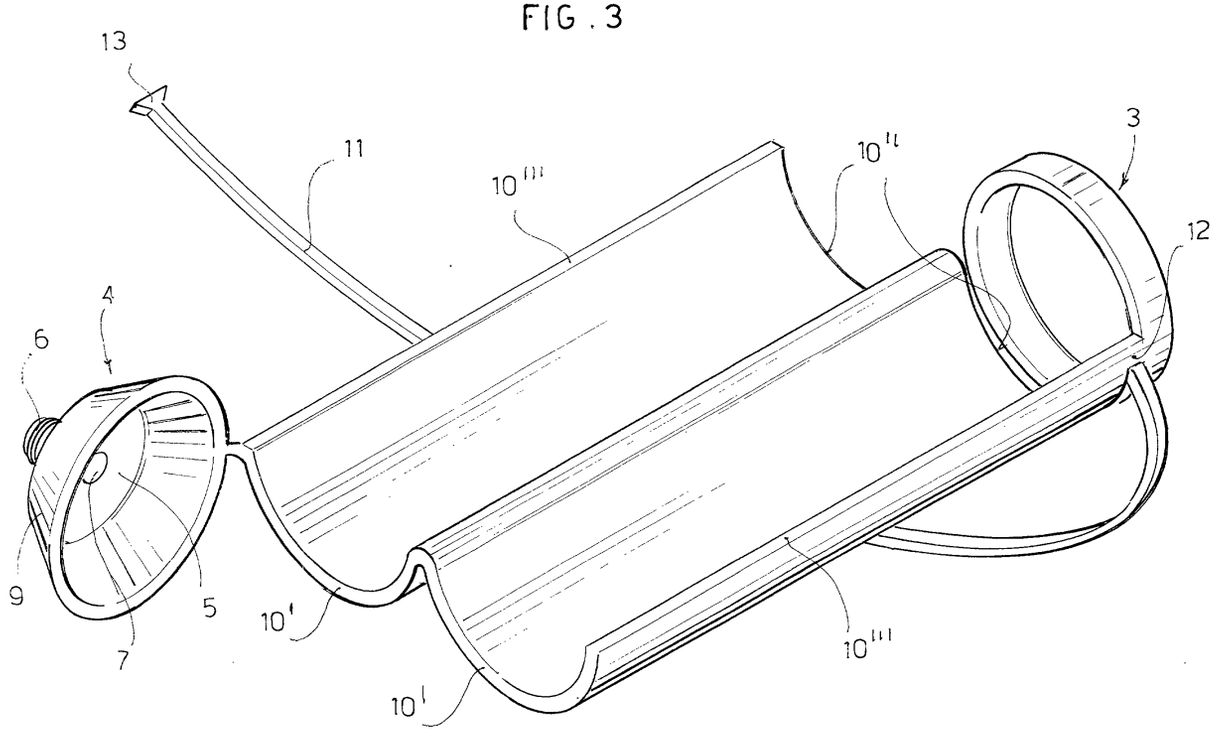
(54) Tube for viscous products

(57) A tube (1) for viscous material comprising a tubular body (2) for containing the viscous product and a head (4) comprising a shoulder (5) from which a product dispensing mouth (6) protrudes axially. Incisions or lines of weakening (10) are provided in said body (2) such as to allow tearing of the body (2) therealong, to open the tube (1) in order to make its inside accessible to the user who can remove the residual product remaining inside the tube.

FIG. 3



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Description

[0001] The present invention refers to a tube for viscous products.

[0002] As is known, viscous products of the semi-solid or paste type such as, for example, creams, ointments, pastes, sauces and the like are used in diverse fields such as cosmetics, medicine, health, foodstuffs, etc., and are sold in special containers which are generally in the form of jars or tubes.

[0003] Jars provide a container, generally rigid, having an open end coupled to a lid. Consequently, each time the user has to use the product, he opens the lid and removes the desired amount of product with a special instrument.

[0004] The jar has the advantage of allowing removal of the product until it is completely consumed, but has several disadvantages. It is awkward and not very practical for the user, who experiences difficulty in removing the desired amount of product. Furthermore, each time the user takes a dose of product, the amount remaining in the container is contaminated by the instrument used.

[0005] These drawbacks are solved in part with tube containers. The tube comprises a tubular casing, in soft material such as plastic, aluminium or the like, which has a product dispensing mouth coupled with a cap. Widely used are plastic tubes which have a tubular casing in soft plastic heat welded at one end of which is a hard plastic shoulder from which a dispensing mouth protrudes axially.

[0006] The user, after having removed the cap, squeezes the tube manually, exerting pressure on the product to cause a dose of product to be discharged through the dispensing mouth. In this manner the user can dispense precise doses of product while leaving the part of product remaining inside the tube uncontaminated.

[0007] Although very practical and convenient for the user, the tube has the disadvantage of wasting a certain amount of product which remains as an unusable residue inside the tube. In fact, squeezing of the casing does not allow all the product contained therein to be dispensed. As the product is consumed, the decrease in volume of the casing no longer provides a compact mass on which the user can exert finger pressure. Consequently residues of product remain in the folds of the casing and in those rigid parts, such as the shoulder of the opening, in which the pressing action exerted from the outside by the user has no grip.

[0008] For this reason the user is often forced to cut the tube, with the aid of cutting tools such as cutters, scissors or knives to remove the remaining portion of product that has accumulated on the inner walls of the tube. This operation, besides being complex since the material forming the tube is not easy to cut, is also dangerous since the user risks injury with the cutting tools.

[0009] The object of the present invention is to eliminate the drawbacks of the prior art, providing a tube for viscous products that is able to avoid waste of residual product therein.

[0010] Another object of the present invention is to provide a tube for viscous products that is practical and allows simple dispensing of precise amounts by the user.

[0011] Yet another object of the present invention is to provide a tube for viscous products that is able to avoid contamination of the product with outside elements.

[0012] Yet another object of the present invention is to provide a tube for viscous products that is cheap and easy to make.

[0013] These objects are achieved in accordance with the invention with the characteristics listed in appended independent claim 1.

[0014] Advantageous embodiments of the invention are apparent from the dependent claims.

[0015] The tube for viscous material according to the invention comprises a tubular body for containing the viscous product and a head comprising a shoulder wherefrom a product dispensing mouth protrudes axially.

[0016] The peculiar characteristic of the invention lies in the fact that incisions or lines of weakening (score lines) are provided in the body of the tube such as to allow tearing of the body therealong, in order to be able to open the tube and make the inside thereof accessible to the user, who can thus remove the residual product remaining inside the tube.

[0017] The advantages of the tube according to the invention are evident in that it allows simple and easy tearing of its body to make its inside accessible to the user for removal of the remaining product. In fact the user can easily open the tube according to the invention at any time to remove the last remnants of product and opening of the tube takes place without the use of scissors or other inconvenient and dangerous cutting tools.

[0018] Further characteristics of the invention will be made clearer by the detailed description that follows, referring to a purely exemplary and therefore non-limiting embodiment thereof, illustrated in the appended drawings, in which:

Figure 1 is a front view, illustrating the tube for viscous products according to the invention, and an exploded view of the lid shown in axial section;

Figure 2 is a perspective view illustrating the tube in Figure 1 in a partially open position for removal of the product;

Figure 3 is a perspective view illustrating the tube in Figure 1 in a completely open position.

[0019] The tube according to the invention, designated as a whole with reference numeral 1, is described with the aid of the figures.

[0020] The tube 1 comprises a substantially cylindrical body 2, hollow on the inside to contain the viscous product. The body 2 is made of soft material so that it can be squeezed manually by a user. The body 2 is advantageously made of plastic material by extrusion.

[0021] The body 2 of the tube 1 comprises a closed bottom wall 3, which can be in the form of a rigid plate, or can be obtained by heat welding the terminal edges of the body 2. The tube 1 has a head 4 in the opposite end to the wall 3.

[0022] The head 4 comprises a discoid shoulder 5 that has a central hole 7 around which a dispensing mouth 6 extends axially. The shoulder 5 and the dispensing mouth 6 are preferably made of hard plastic material.

[0023] The dispensing mouth 6 has an outer thread intended to engage with an inner thread of a cap 8. However, the cap 8 can be coupled to the dispensing mouth 6 with other types of coupling, such as, for example, a snap and a grooving coupling.

[0024] The cap 8 can also have a through hole around which a dispensing nozzle, destined to be put in register with the opening of the mouth 6, protrudes axially. In this case the cap 8 has a stopper able to plug the dispensing nozzle. The stopper can be connected to the cap by means of a hinge.

[0025] The head 4 has a tapered part 9 that connects the shoulder 5 to the side wall of the body 2.

[0026] Incisions or lines of weakening 10 able to facilitate tearing of the material of the body therealong are formed in the body 2. For this purpose, disposed in the incisions is a thread 11 which, when pulled by the user, facilitates tearing of the body 2 along the incisions 10.

[0027] The thread 11 has a first end 12 fixed integrally in the body 2 and a second end that carries a tongue 13 which can be gripped by the user. In this manner the user, by gripping the tongue 13 and pulling the thread 11, causes tearing of the incisions 10 and thus makes the inside of the tube 2 accessible for removal of the residues of product remaining inside the tube 1.

[0028] In the embodiment shown in the Figures, the incisions 10 have a preferential pattern, that is to say, a first annular incision 10' is provided beneath the head 4, a second annular incision 10" is provided above the bottom 3 and a longitudinal incision 10"' is provided that connects between the first annular incision 10' and the second annular incision 10".

[0029] Operation of the tube 1 is described below. When the user must use the product contained in the tube 1 he removes the cap 8 and squeezes the body 2 of the tube 1, causing pressure on the product contained inside the tube 1, which is discharged from the dispensing mouth 6.

[0030] When the product contained in the tube 1 is about to be finished, the pressure exerted on the body 2 no longer causes discharge of product, consequently the user grips the tongue 13 and pulls the thread 11 causing tearing of the incisions 10. As shown in Figure 2, when the user has caused tearing of the first annular incision 10' the inside of the tube is already accessible and the user can remove the residue of product that remain inside the tube and accumulate on the inside wall of the shoulder 5.

[0031] Pulling this thread 11 further, as shown in Figure 3, the user opens the tube completely, making its content fully accessible for removal of the remaining product.

[0032] Numerous changes and modifications within the reach of a person skilled in the art can be made to the present embodiment of the invention without departing from the scope of the invention set forth in the appended claims.

Claims

1. A tube (1) for viscous products comprising a tubular body (2) for containing the viscous product and a head (4) comprising a shoulder (5) from which a product dispensing mouth (6) protrudes axially, **characterized in that** in said body (2) incisions or lines of weakening (10) are provided such as to allow tearing of the body (2) therealong to open the tube (1) in order to make its inside accessible to the user who can remove residual product left inside the tube.

2. A tube according to claim 1, **characterized in that** a thread (11) that can be pulled by the user is provided in said incisions (10) to facilitate tearing of the body along said incisions.

3. A tube according to claim 2, **characterized in that** said thread (11) has one end (12) fixed integrally to said body and another end fixed by a tongue (13) that can be gripped by the user to pull the thread.

4. A tube according to any one of the preceding claims, **characterized in that** it has a first annular incision (10') disposed beneath said shoulder (5) of the head (4).

5. A tube according to claim 4, **characterized in that** it comprises a second annular incision (10") disposed above the bottom (3) of said body and a longitudinal incision (10"') connecting said first annular incision and said second annular incision.

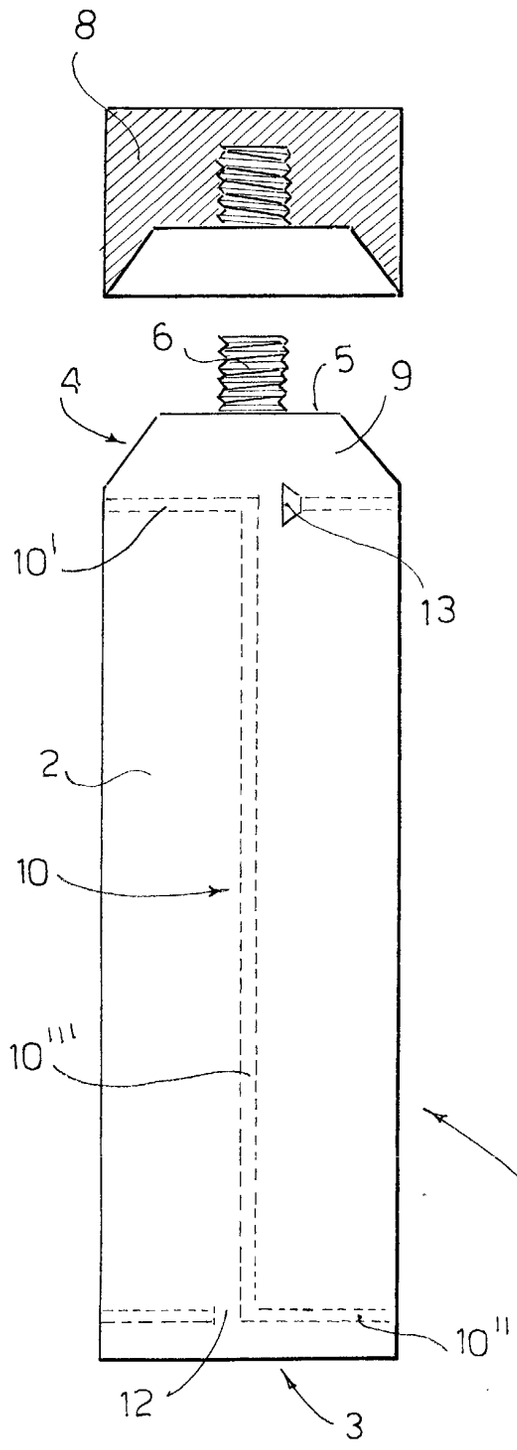


FIG. 1

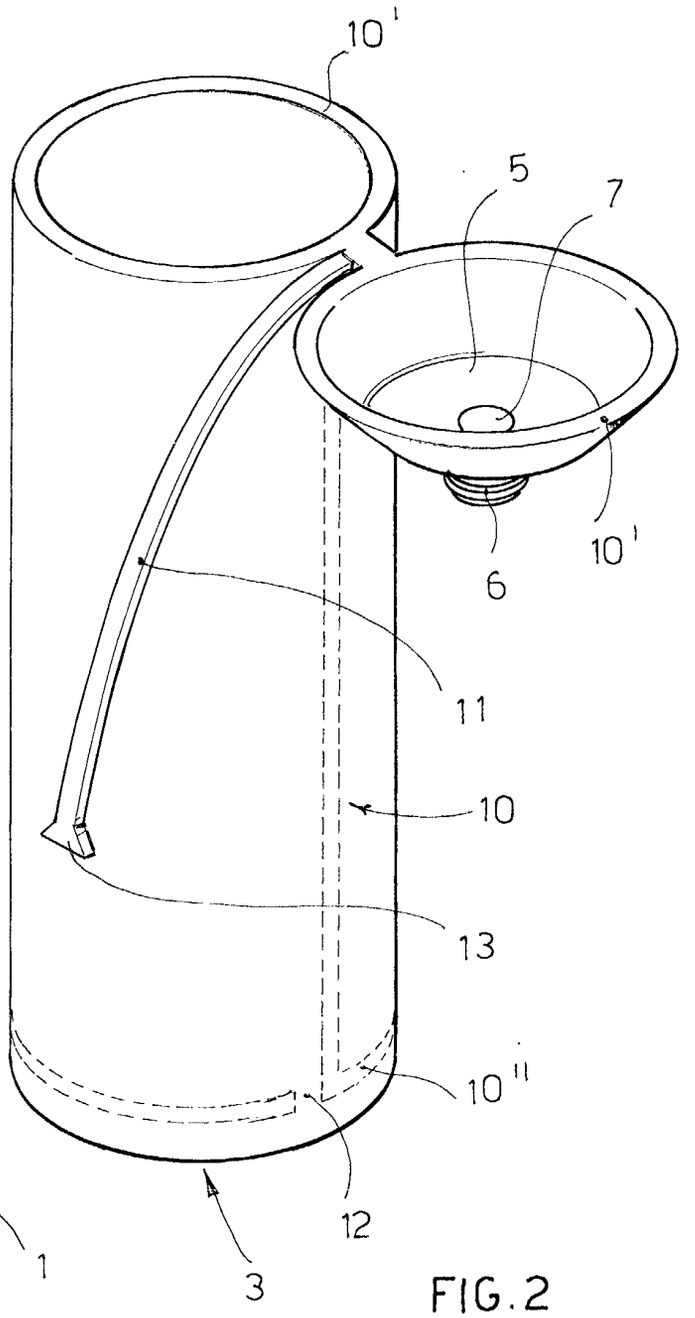
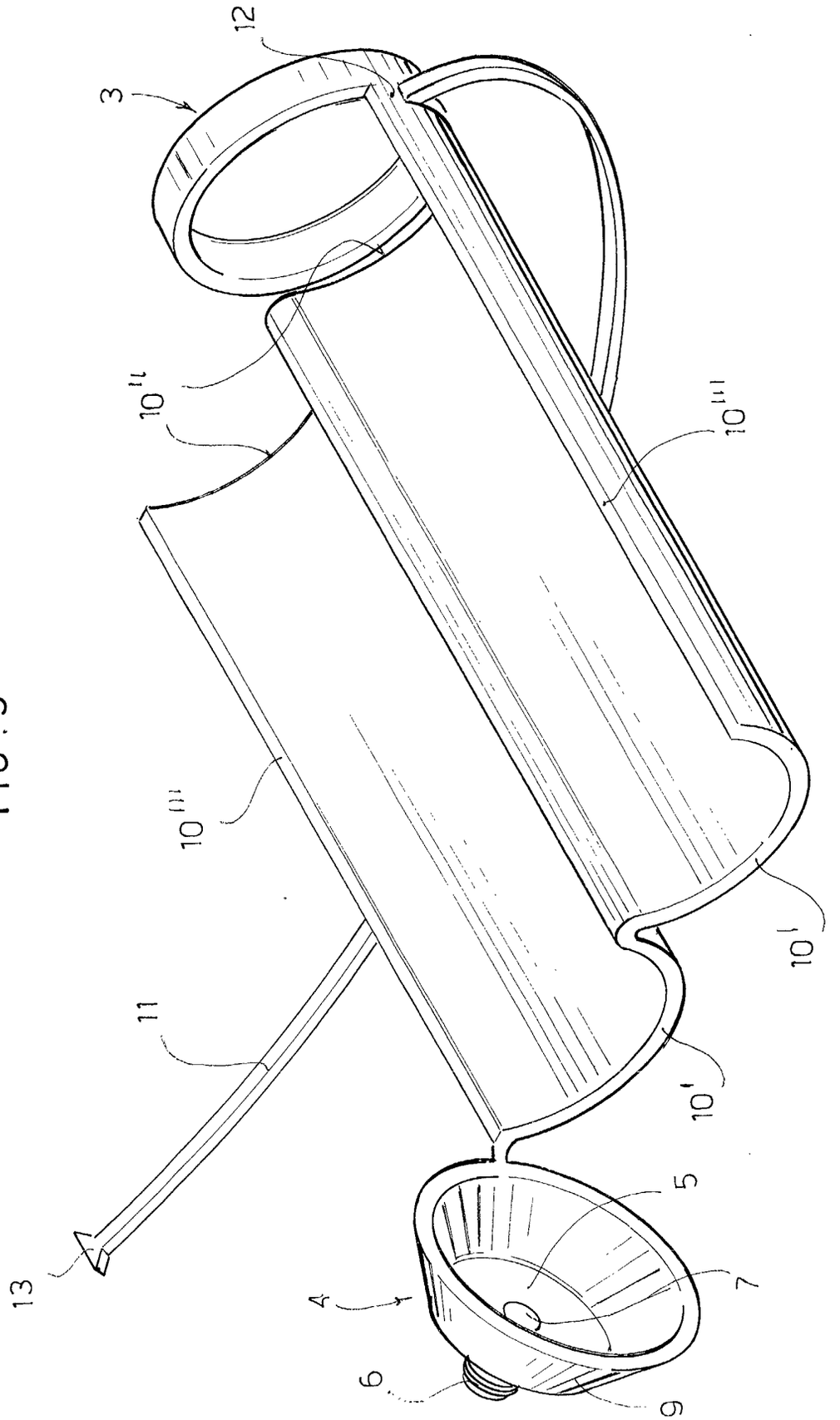


FIG. 2

FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 01 83 0316

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X Y	FR 2 695 376 A (KACI PIERRE) 11 March 1994 (1994-03-11) * page 1, line 10 - line 20; figures *	1-4 5	B65D35/08 B65D35/24
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Y A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 358 (M-1633), 6 July 1994 (1994-07-06) & JP 06 092339 A (MASASHI TSUCHIDA), 5 April 1994 (1994-04-05) * abstract *	5 3	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 October 2001	Kamerbeek, M

CATEGORY OF CITED DOCUMENTS

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03-10-2001

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