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54 **Container with a sliding open-and-close device for liquid or creamy products.**

57 The container -whatever its shape, and whether capable of being grasped or no, or whether rigid or flexible, squeezable or otherwise- is designed to contain liquids, or products having a creamy or paste-like consistency, and is furnished with an open/close device consisting of a slider (2) whose uppermost part is humped, so that when pushed by finger or thumb back and forth, a sliding motion is produced by dint of its pairing with a raised, or relief portion (5) located either at one corner of the container, or along one of its faces; said raised portion being provided with a hole wherein a cylindrical body (7) incorporating the actual pourer-orifice may be pushed to a tight grommet-type fit. The pourer itself allows no passage out whatever of liquid, or cream or paste, once the slider is in closed position.

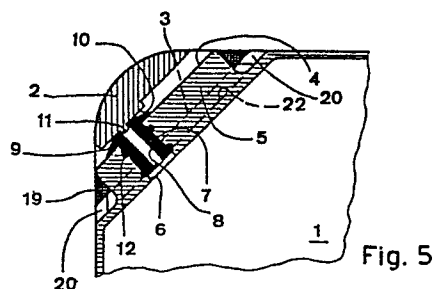


Fig. 5

Container for cosmetics, pharmaceuticals, foodstuffs, detergents, and liquid, cream or paste products in general, with sliding open-and-close device.

The invention relates to a container for cosmetic and
5 pharmaceutical products, foodstuffs, detergents, as well
as liquids and substances of a creamy or paste-like
consistency, having a sliding open/close device -in other
words, a container incorporating a sliding mechanism
by means of which to control the flow out of whatever
10 product might be contained therein, be it liquid, viscous
or non-viscous, cream or paste.

The prior art makes provision for phials or bottles
for cosmetics, pharmaceuticals, foodstuffs and detergents
-liquid, cream or paste- whence the substance may be
15 extracted having once removed a cap and an inner seal
in order to permit passage out of said substance, which
can then be poured out into the palm of the hand, for
instance, whereupon the phial or bottle may be set
down in an upright position upon some convenient
20 surface near to hand, before being taken up once again
for further extraction of whatever substance is contained
therein, or until such time as both user's hands are
left free to perform the somewhat laborious operation
of replacing its cap, which normally speaking involves
25 grasping the said phial or bottle with one hand and
screwing down the cap with the other.

The prior art stands in need of further improvement
with regard to the requirement for quick and simple
re-closing of the container with one hand only once
30 having poured or shaken out the substance, before sett-
ing it down in any position -upright or otherwise-
upon some convenient surface -level or no- until such
time as it may be re-used or put away in a more suitable
place -or even left to drop into the bath-water for a
35 short while, in such a way that the substance therein
is prevented from flowing out.

The foregoing preamble evokes the need for solution of
the technical problem posed by embodiment of a container

furnished with a device which will permit opening and closing of the pour-orifice speedily, and with one hand only, and which will allow for the said container's being set down in any position whatever without occasioning
5 leakage-out of the substance duly contained therein. Moreover, the opening/closing movement thus produced must needs be brought about at a single stroke and without a slip -even by a wet or soapy hand.

The invention resolves the problem outlined above by
10 adopting a container of size and shape such as may be grasped in one hand -similar, for instance, to a bar of soap, a small bottle, or even a tube- and furnished with a slide-type device invested with a hump-backed longitudinal profile and worked back and forth by thumb or
15 forefinger (even when soapy or wet) whilst the hand itself grips the container, thus opening and closing the orifice through which the substance contained therein may pour or flow out.

Advantages obtained by the invention are: speed and ease
20 of manoeuvre, it being possible to pour out the container's contents into one hand having opened the container at a single stroke, quickly and without any difficulty, with the other; the ability to set down or drop the container anywhere -even in water- with no
25 fear of the substance seeping out from within; also, a more efficient seal for liquids, and products of creamy or paste-like consistency: all this very much in direct contrast to traditional types of phial, bottle or tube, which offer no sure means of screwing down their relative
30 cap with one hand only, and which therefore require a longer and more carefully-effected closing operation in order to provide a true hermetic seal.

A number of ways of embodying the invention are illustrated, by way of example, in the six sheets of drawings
35 attached, wherein:

Figure 1 is the side view of a container in the form of a bar of soap, parallelepiped in shape, squeezable or rigid, with the open/close device positioned at one corner; Figure 2 is the view from the right of Figure 1;

Figure 3 is a similar view to that of Figure 1, showing the same container provided with a flattened-off rest-base at its bottom face;

Figure 4 is the view from the right of figure 3;

5 Figure 5 is the longitudinal section through V-V Figure 2 in part, and on larger scale, with the open/close device in its closed position;

Figure 6 is a similar section to that in Figure 5, with the difference that the device is shown in open position;

10 Figure 7 is a plan from above of the device proper, seen on larger scale and without its slider;

Figure 8 is a cross section of Figure 7 through VIII-VIII;

Figure 9 shows a part-sectional side view of a container in the shape of a bar of soap -viz, parallelepiped,

15 squeezable or rigid, with a simplified open/close device located on one of its longer and narrower faces;

Figure 10 is the view from the left of Figure 9;

Figure 11 is the side view of a squeezable or rigid cylindrical container with open/close device located

20 centrally;

Figure 12 is the view from the right of Figure 11;

Figure 13 shows the side view of a squeezable or rigid disc-shaped container with open/close device located at a tangent to its lateral cylindrical surface;

25 Figure 14 is the view from beneath of Figure 13;

Figure 15 is the side view of a disc-shaped container having a flattened-off tangential rest-base and with open/close device located diametrically opposite thereto;

Figure 16 is the view from the left of Figure 15;

30 Figure 17 shows the side view of a container somewhat similar to an oval cake of soap, having its main walls flattened off to give a stable rest-base at either side;

Figure 18 is the view from beneath of Figure 17;

Figure 19 and Figure 20 are the side view and the view
35 from the left, respectively, of the open/close device as located on a trapezoidal-embodied container;

Figure 21 is a part-sectional frontal view of a fully-squeezable tube-type container (e.g. for creams, tooth-

paste, oily, -and more especially, viscous substances) with open/close device located perpendicularly to the container longitudinal axis;

Figure 22 is the view from the left of Figure 21;

5 Figure 23, is the frontal view of a container as in Figure 21, in this case having open/close device located at an angle with respect to the longitudinal axis;

Figure 24 is the view from the right of Figure 23.

With reference to the drawings:

10 1 denotes the body of the container however shaped.
2 denotes the open/close device's slider whose longitudinal profile presents an upper "hump-backed" outline, the slider itself engaging and forming a sliding pair with a relief portion 5 offered by the container and
15 exhibiting a flat top with raked sides, thus dovetailed when seen in cross-section.

Provision is made for a peripheral locking-collar 3 located tightly about said portion 5 serving both to seal in the substance and embellish the package, perhaps
20 by colour contrast. The flat top 4 (see Figure 5) of said relief portion 5 offers a through hole 6 -for initial introduction of the paste, cream or liquid- this in turn accomodating a self-locking, grommet-type plug whose cylindrical body 7 is provided with a longitudinal hole
25 or orifice 8 affording controlled outflow of the substance within , and with a domed head 9 making for effective seal-in of said substance during the course of its mating with the lower surface 10 of the open/close slider 2.
The final and effective seal of such liquid, cream or
30 paste as the container may contain comes about with the insertion of a hemispherical protrusion 11, issuing from lower surface 10 aforesaid, into orifice 8 at the latter's entry-point. A pair of peripheral rings indicated by 12 are located about said cylindrical body 7 thus
35 establishing a labyrinth-type seal, whether by close fit or compression, between said body and hole 6.

A pair of protrusions issuing from the dove-tailing internal flanks of slider 2 are indicated by 16 (see Fi-

gure 6); 1' denotes the matching pair of dove-tailing guides formed from the flanks of relief portion 5 so as to create the longitudinal sliding pair aforementioned with guide-flanks 13 presented thereto by slider 2.

5 15 denotes a pair of pins extending downward from the two downwardly-directed side-faces 16 of slider 2, these designed to slide within a corresponding pair of longitudinal recesses, or slots 17 located in similar fashion upon the matching side-faces 18 of said collar 3, in
10 such a way as to limit the degree of travel allowed to slider 2 -thereby safeguarding against its separation from guides 14. A pair of relief portions shaped from the longitudinal ends 19 of said relief portion 5 serve to create respective unions with those parts of the
15 container conjoining as it were, "fore and aft" of the open/close device proper.

A pair of notches 20 located in the base-sections of relief portions 19 provide for said conjunction between the lower surface 21 of collar 3 (see Figure 8) and the
20 flat container-section 22 whence said relief portion 5 is drawn up, even in those cases where body 1 of the container exhibits a raised centre-seam or burr, either of necessity or through defective moulding.

It should be observed that the hole 6, hence orifice 8,
25 may be located concurrently with the longitudinal centre-seam aforementioned, or may be offset to one side; in any event it would be positioned to the fore for convenience's sake. As will be seen from Figure 9, collar 3 may be eliminated by making provisions for a special relief portion
30 23 in container body 1 able to assume the function thereof, being embodied as an integral part at the collar's would-be conjunction with the container body "fore and aft" as aforesaid, and at the prescribed limits defining the travel of slider 2 -slots 17 for the latter purpose
35 being located in the top surface of relief 23 itself.

The device to which the invention relates is used thus: having grasped the container about body 1 with the device proper to the front, and orifice 8 directed upwards,

the ball of the thumb urges either the front or the humped part of the slider 2 so as to draw the same back far enough to uncover orifice 8. The user now proceeds to pour out the paste, cream or liquid -into the palm of his other, 5 hand, for instance- either by simply tipping the container forward or by squeezing same, whereupon the thumb is once again employed in pushing slider 2 forward far enough to ensure engagement of protrusion 11 with orifice 8, pressure this time exerted either on the hump of the slider or on 10 its rear part. In this state, the actual container may be set down upon any surface, and in any position, without there being any outflow of the contents -indeed the container may be discarded completely; moreover, being hump-backed, the slider 2 affords ample purchase to the ball of thumb, 15 which may push comfortably against the said jump -even though wet or soaped whilst so doing- without slipping. The opening and closing movement thus accomplished can also be brought about holding the container 1 between thumb and middle finger, in which case the forefinger will be employed 20 in working the slider 2. When carrying through the closing movement, protrusion 11 issuing from the lower surface 10 of the slider snaps back into position in pourer-orifice 8 after being drawn over the flat top 4 of relief portion 5. When carrying the invention into effect, materials, dimensions, 25 design, shape of the container and the actual profile of the slider 2 may all differ from as much described and illustrated, nonetheless retaining equivalent technical character and by no means straying from within the bounds of protection afforded to the concept as supported by claims, 30 -for instance, container body 1 could be embodied as a hexagonal prism with the open/close device located upon one of its lateral surfaces. Likewise, the uppermost surface of slider 2 might incorporate a milled gripper, or thumb-impression, notwithstanding the latter feature is far from 35 being indispensable.

CLAIMS

1. Container for cosmetics, pharamaceuticals, foodstuffs, detergents and liquid, cream or paste products in general, with sliding open/close device, characterised - in that
5 the container (1) is of shape and size such as may be grasped by one hand, whilst being rigid or flexible, squeezable or no, and is furnished at its pouring-end/side with a slider (2) exhibiting a jump uppermost and designed to be worked through a path lying either perpendicular or
10 inclined with respect to the container axis, guided thus back and forth between prescribed limits by the pad of thumb or of forefinger belonging to the same hand as grasps the said container; and, - in that said slider exhibits a longitudinal hollow and is provided to the fore thereof with a
15 surface (10) giving downwards thereto, the latter offering an eccentric hemispherical protrusion (11) designed to snap into the orifice of a pourer-hole (8) below, this in turn being furnished with a cylindrical element (7) whose domed head (9) urges against said downwardly-disposed
20 surface (10) in order to seal in the liquid, cram or paste aforesaid; said dome (9) standing proud of the flat top (4) of a raised portion of relief (5) to an extent comparable with the depth of protrusion (11) aforesaid from its respective said surface (10); and said cylindrical
25 element (7) being located together with fitted locking-rings (12) in a hole (6) serving for initial introduction of the liquid, cream or paste contents -said hole situated eccentrically in relief (5) and disposed perpendicularly with respect to said slider (2).
- 30 2. Container according to claim 1 characterised in that the pair of side walls (14) offered by said relief portion (5) describes an upwardly-diverging dove-tail designed to match with the internal walls (13) of the slider (2) thus forming a sliding pair with same.
- 35 3. Container according to claim 1 characterised in that the slider's (2) two downward-facing side-faces (16) are each furnished at the fore with a respective protrusion in the form of a pin (15) designed to mate with a correspond-

ing slot (17) located upon the slide surface from where
said relief portion (5) is caused to issue and with which
the container (1) conjoins fore and aft of the device proper;
the ends of said slot pair (17) determining said slider's
5 limit positions in opening and closing said pourer-hole.
4. Container according to claim 1 characterised in that
provision is made for a collar (3) lodged between the down-
wardly-directed side-faces (16) of slider (2) and the mat-
ching upper side-faces of container-body (1), between which
10 relief portion (5) aforesaid is located, said collar (3)
sealing-in said liquid, cream or paste, and provided to
the fore of its top face with a pair of slots (17) designed
to accommodate the slide of a corresponding pair of pins
(15) protruding from said downwardly-directed slider side-
15 faces (16) so as to determine the prescribed limits of tra-
vel of said slider in opening and closing the pourer-hole;
said collar being furnished at front and rear with further
relief portions (19) matching uppermost with respective
flanks in the slider's longitudinal hollow aforesaid, the
20 latter said relief portions (19) each exhibiting a centre
notch (20) affording space to any possible raised seam
exhibited by the container moulding (1).

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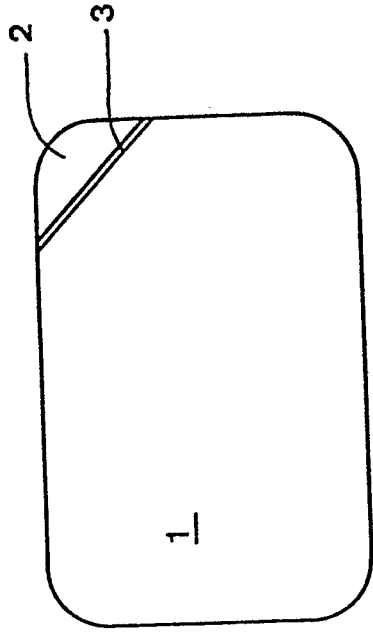


Fig. 1

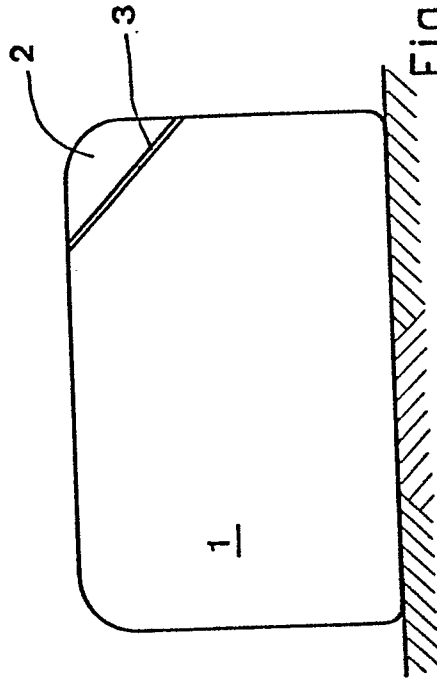


Fig. 3

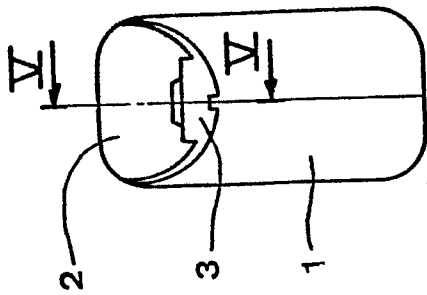


Fig. 2

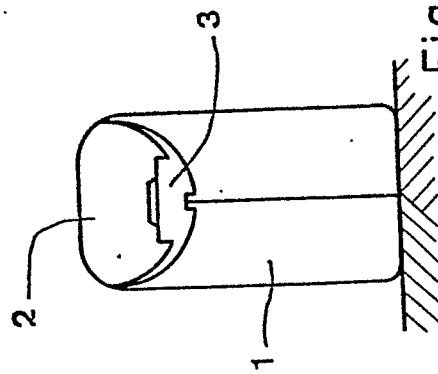


Fig. 4

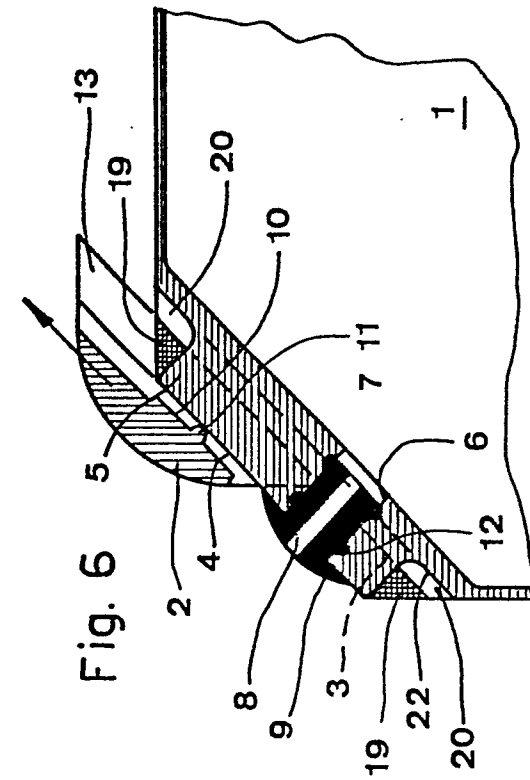


Fig. 5

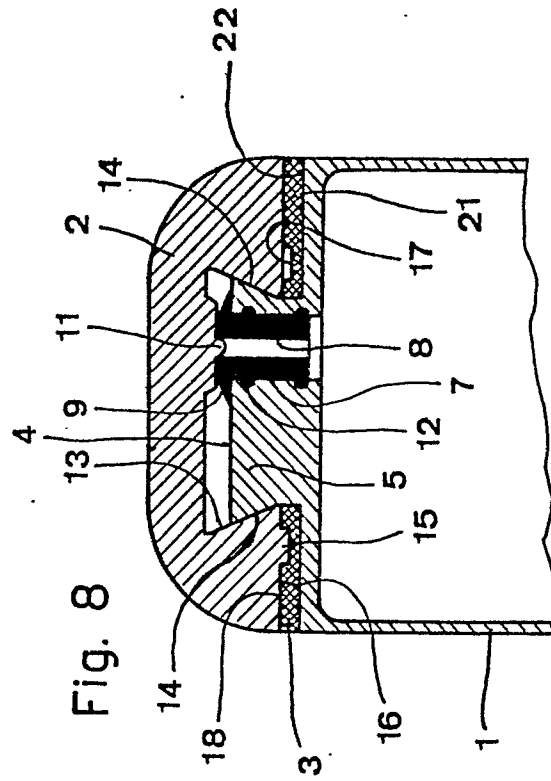


Fig. 6

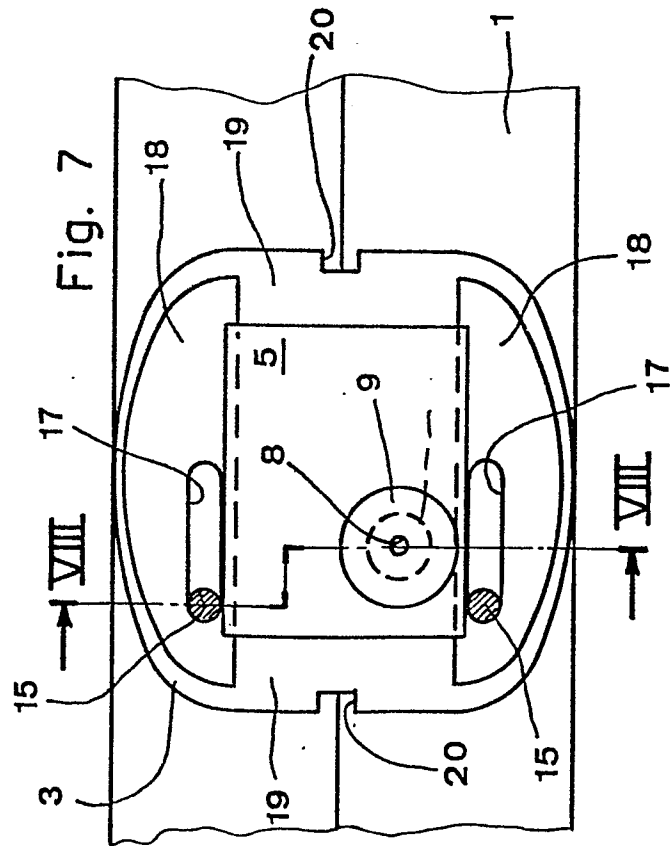


Fig. 7

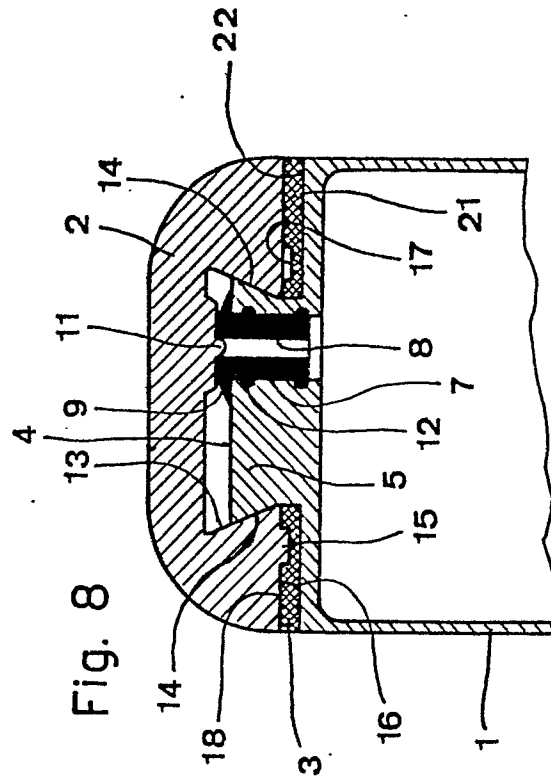


Fig. 8

Fig.9

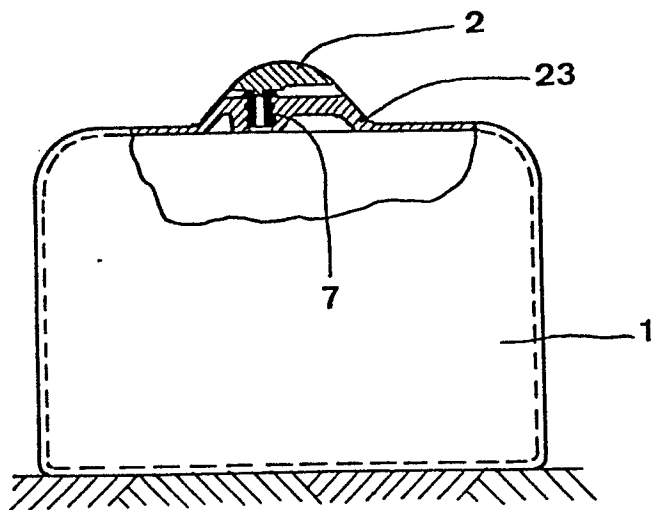


Fig.10

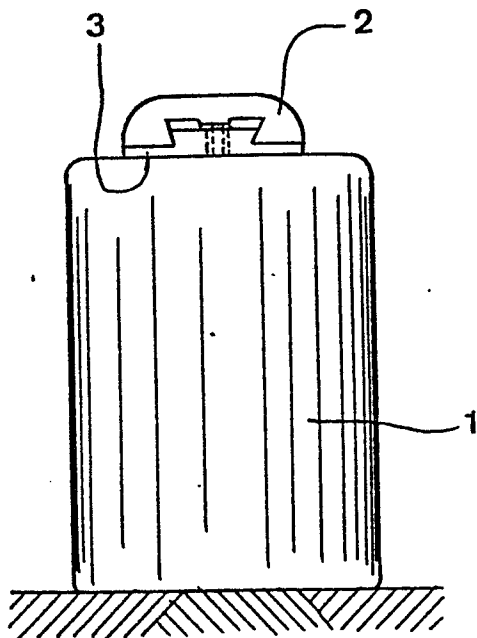
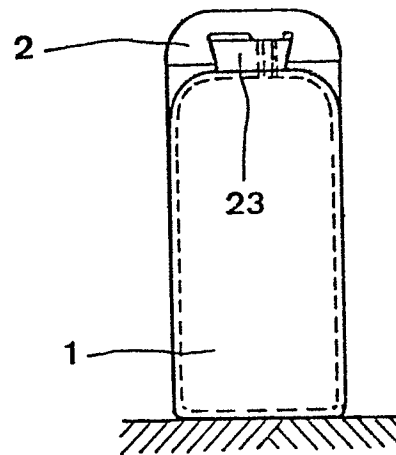


Fig.12

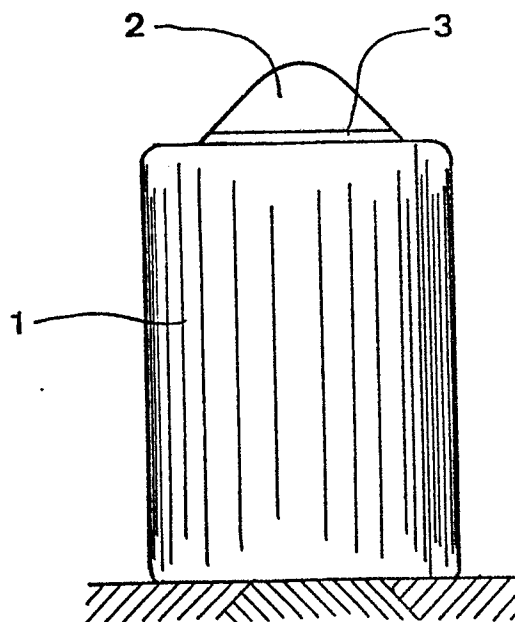
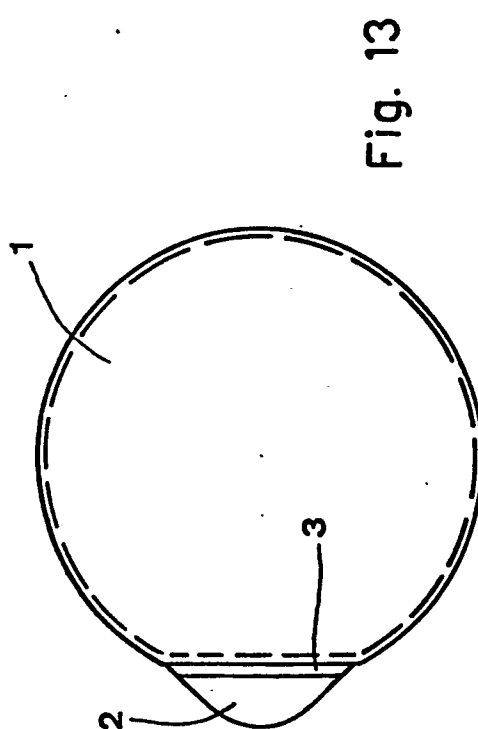
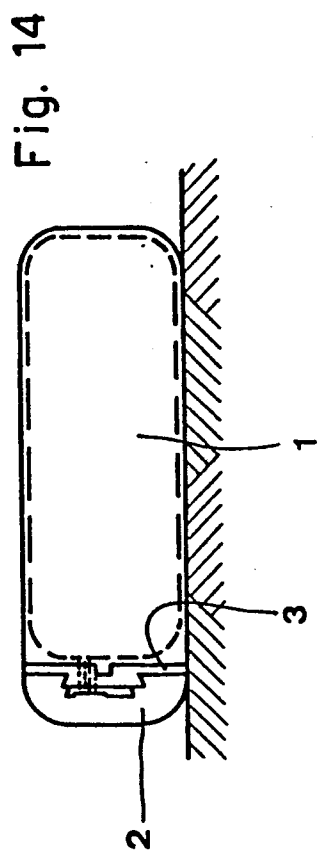
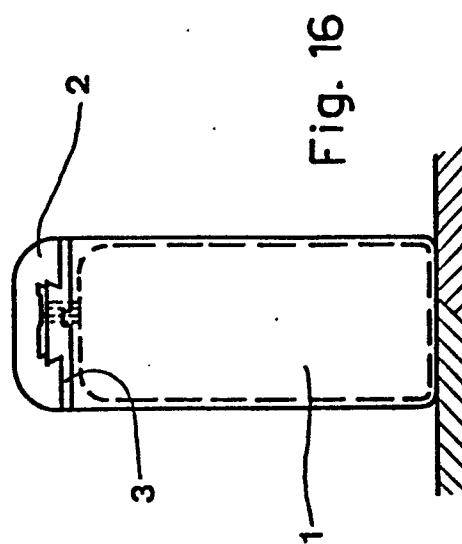
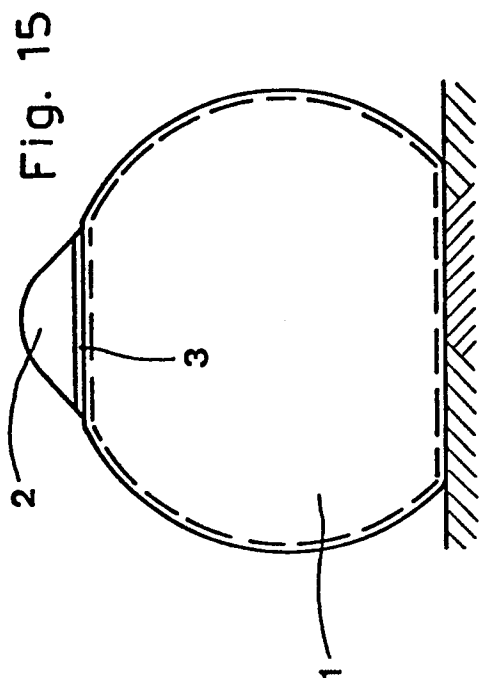


Fig.11



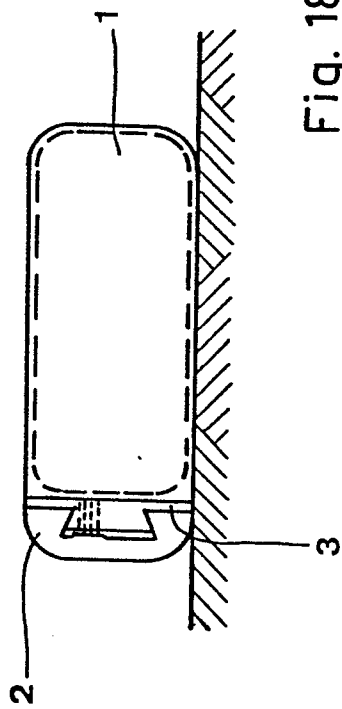


Fig. 18

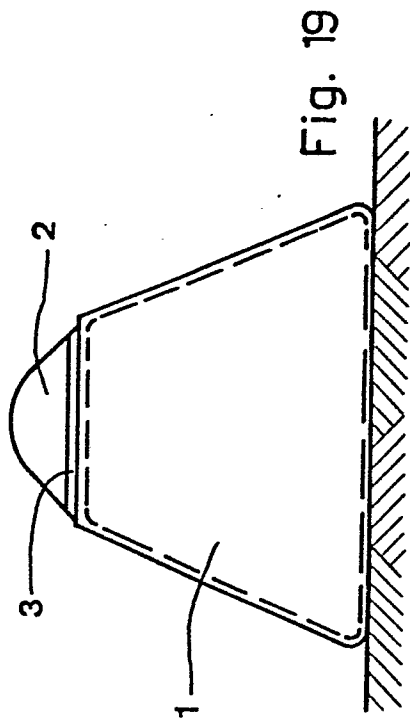


Fig. 19

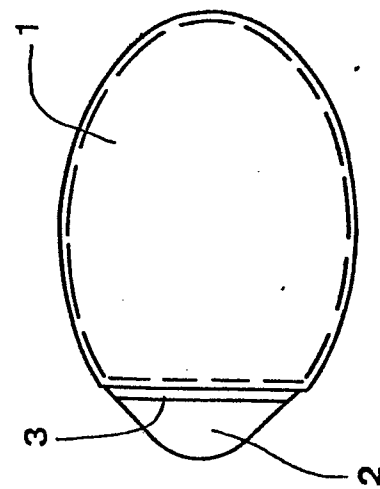


Fig. 17

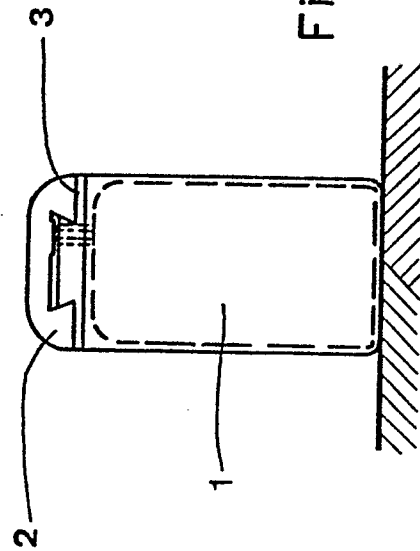


Fig. 20

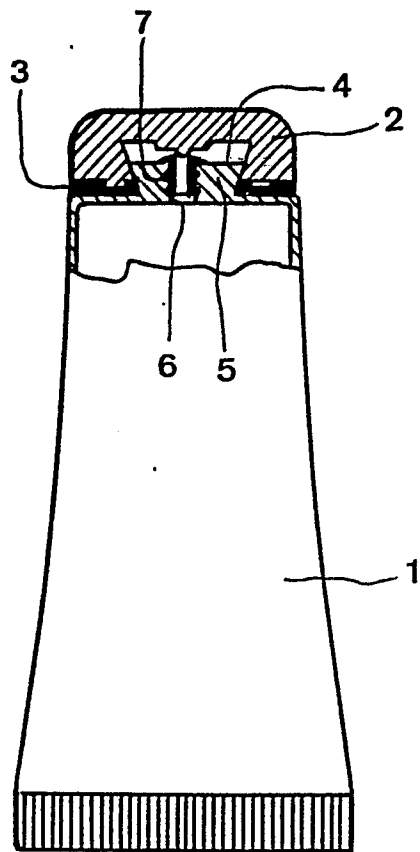


Fig. 21

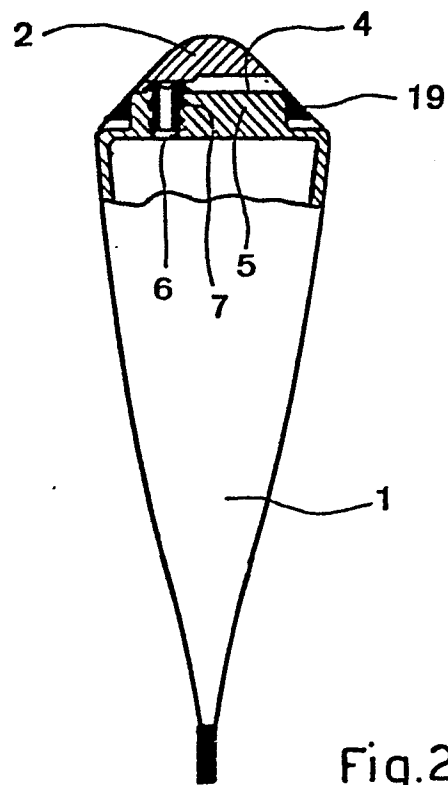


Fig. 22

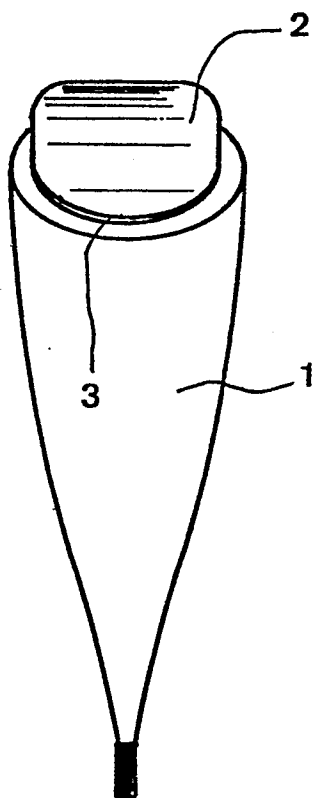


Fig. 24

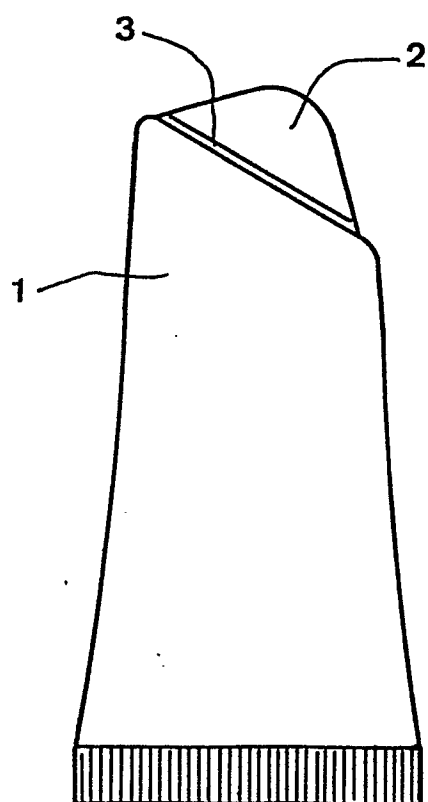


Fig. 23



European Patent
Office

EUROPEAN SEARCH REPORT

0084296

Application number

EP 82 83 0232

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Y	--- US-A-2 030 054 (G.DESSON) *Page 1, left-hand column, line 42 to right-hand column, line 31; figures 1-5*	1,2	B 65 D 47/28 B 65 D 47/18
Y	--- FR-A-1 059 567 (M & E.PROJECTS) *Page 1, right-hand column, line 39 to page 2, left-hand column, line 57; figures 1-4*	1,2	
Y	--- FR-A-1 159 634 (BESSE) *The whole document*	1	
A	--- US-A-2 532 690 (ZIMMERMAN) *Column 2, line 41 to column 4, line 5; column 4, lines 29-72; figures 1-8*	3	
A	--- US-A-2 171 175 (GRAFE) *The whole document*	3	
A	--- US-A-2 838 213 (KINLEY)		
A	--- DE-C- 851 610 (MERCK) -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 05-01-1983	Examiner MARTENS L.G.R.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			