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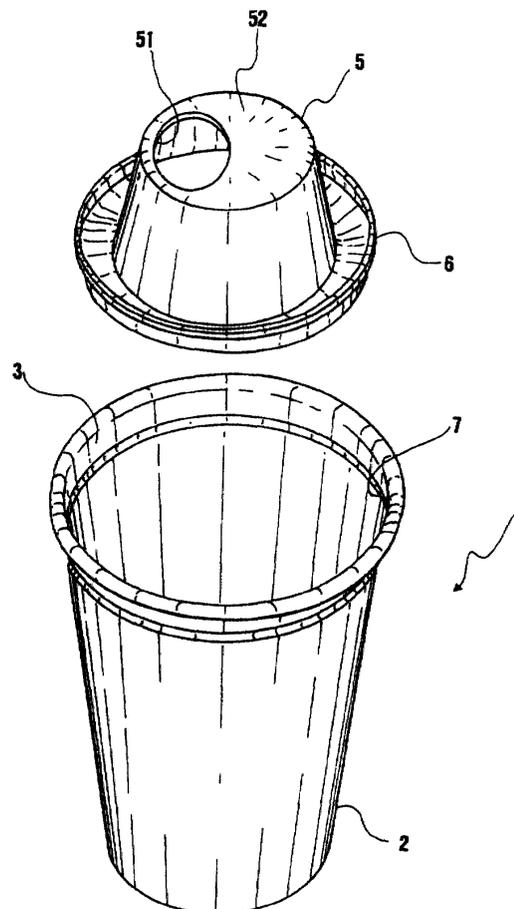
(72) Inventor: **D'Amato, Gianfranco**  
**80022 Arzano, NA (IT)**

(74) Representative: **Leone, Mario et al**  
**Società Italiana Brevetti S.p.A.**  
**Piazza di Pietra 39**  
**00186 Roma (IT)**

(71) Applicant: **SEDA S.p.A.**  
**I-80022 Arzano-Napoli (IT)**

(54) **Process for making a squeezable container for solid or frozen foods and container so obtained**

(57) The present invention provides a process for making a squeezable container for solid or frozen food comprising a main body (2) having a top opening (3) and a closing member (5) of said top opening (3) removably locked therein and having a product dispensing opening (51), and sealing means (8) of said dispensing opening (51).



**FIG.2**

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## Description

**[0001]** The present invention relates to a process for making a foodstuff container, and more precisely to a process for making a squeezable container for solid or frozen food, and also to a container obtained according to such process.

**[0002]** To date, containers for the containing and for the sale of solid food products such as pralines, sweets and the like, and wherein once opened they are also apt to dispense individual product units contained therein, are already known in the art. Such containers have various shapes and are made of different materials and are provided with a dispensing port, usually sealed or inaccessible at the moment of purchase, formed onto the container with dimensions which allow the unitary dispensing of a product. Moreover, according to the shapes of such containers, the dispensing port is formed at an area of the container which allows a nearing of the user's mouth to the dispensing port, therefore rendering easy the dispensing of the product directly to the mouth. Thus, a contact of the food product with the user's hands can be avoided, partially improving the cleanliness required for the consumption of the product.

**[0003]** However, this type of container is disadvantageous in that it is suitable to contain only solid and non-sticky products, since the sticking of the products could hinder the dispensing thereof through the container port, the sticky mass being unable to pass through the port unless partially destroying the container.

**[0004]** Moreover, another type of dispensing containers is known in the art, specifically for dispensing frozen product units or the like, apt to dispense the individual product units by means of a dispensing port formed onto the container, previously sealed and of suitable dimensions. This type of containers, due to the use thereof, is usually made in a material such as cardboard, and apt to be stored in very cold sites.

**[0005]** This type of container is disadvantageous in that the individual product units, being frozen, tend to stick one to the other during the consumption thereof, thus preventing a smooth dispensing thereof through the dispensing port, unless the user intervenes on the latter by partially destroying the container. Moreover, the container is not designed for directly bringing the food to the user's mouth.

**[0006]** Therefore, an object of the present invention is to solve the above-mentioned drawbacks providing a dispensing container of unitary solid and/or frozen food products which is apt to ensure the dispensing of single units of product even of sticky food.

**[0007]** Another object of the present invention is to provide a dispensing container of individual units of solid and/or frozen food, which is apt to be squeezed in a non-destructive manner for physically detaching single sticky food units one from the other.

**[0008]** A further object of the present invention is to provide a dispensing container of individual units of solid

and/or frozen food having a shape apt to safely and hygienically ease the dispensing of the products towards the user's mouth.

**[0009]** Therefore, according to the present invention, a dispensing container for solid and/or frozen food is provided, comprising a main body having a top opening and a closing member of said main body, the container is characterised in that said closing member further comprises:

locking means for removably lock said closing member on said top opening;  
a product dispensing opening; and  
sealing means of said dispensing opening.

**[0010]** Moreover, the present invention provides a process for making a dispensing container for solid and/or frozen food products, characterised in that it comprises the following steps:

arranging a container having an opened top end;  
inserting a solid and/or frozen food product inside the container through said opened top end;  
arranging on said top end of the container and in a fixed manner a closing member, the latter having an opening for dispensing a food product; and  
arranging a removable seal member at said dispensing opening.

**[0011]** A first advantage of the present invention is provided by the fact that a container which is remarkably children-proof is provided.

**[0012]** A second advantage of the container of the present invention lies in the fact that the same so assembled has a remarkable handiness, due to the shapes and to the easiness of opening thereof.

**[0013]** A third advantage of the present invention lies in the fact that the container so assembled is particularly suitable for solid foodstuffs, both frozen or at room temperature, as well as for liquid foodstuffs.

**[0014]** A fourth advantage of the present invention lies in the fact that the container is formed so as to be apt to dispense individual food units at all times towards the hand or directly towards the mouth of the user by means of a suitable shaping of the dispensing opening, ensuring a remarkably hygienic food consumption.

**[0015]** A fifth advantage of the present invention lies in the fact that the container ensures an integral and unaltered product preservation over the time, it being suitable for the use thereof in a cold food processing line.

**[0016]** A sixth advantage of the present invention lies in the fact that the container is formed by materials and in shapes which allow the shaking/squeezing thereof in order to ease the extraction of the product therefrom, concomitantly ensuring the integrity of the assembly, thereby preventing dangerous ruptures or accidental spillage of the product.

**[0017]** The present invention will be hereinafter better

disclosed according to a preferred embodiment thereof, given by way of example and not for limiting purposes. Reference will be made to the annexed drawings, wherein:

figures 1 (a) to 1 (e) schematically and subsequently show the steps of the process according to the present invention;  
 figure 2 is an exploded view of a first embodiment of the container and of the closing member according to the present invention;  
 figure 3 is a cross-sectional view of the closing member of the container of figure 2;  
 figure 4 is a longitudinal section view of the container with the closing member of figure 2;  
 figure 5 is an exploded view of a second embodiment of the container of the present invention;  
 figure 6 is a cross-sectional view of the closing member of the container of figure 5;  
 figure 7 is a longitudinal section view of the container with the closing member of figure 5;  
 figure 8 is an exploded view of a third embodiment of the container of the present invention;  
 figure 9 is a cross-sectional view of the closing member of the container of figure 8; and  
 figure 10 is a longitudinal section view of the container with the closing member of figure 8.

**[0018]** Hereinafter the process for making the container of the present invention will be disclosed making reference to figures 1 (a) to 1 (b).

**[0019]** According to the first step of the process of the present invention, there is provided a container 1 having a main body 2 substantially cylinder shaped with a top opening 3 and arranged in an operative condition. In this condition, the main body 2 is filled up from the top with a solid and/or frozen food product 4.

**[0020]** Subsequently, according to a second step there is provided a closing member 5 having a shape and dimensions complementary to those of the top opening 3 of the main body 2. The closing member 5 has, at the top end thereof, a dispensing opening 51 with dimensions apt to guarantee the unitary dispensing of the individual food product units housed in the container (better illustrated hereinafter). Moreover, the closing member 5 has clamping means 6 for the fitting thereof at the top opening 3. Subsequently, the closing member 5 is mounted in a fixed manner at the perimetral area of the top opening 3, where second clamping means 7 complementary to the clamping means 6 of the closing member 5, are made integral to the main body 2 of the container (all better illustrated hereinafter).

**[0021]** In this closed condition, the container 1 thus assembled is subsequently conveyed to a sealing step where a sealing member 8 is applied at the area of the opening 51. The sealing step is carried out by heat-sealing the sealing member 8 onto the peripheral area of the top opening 51. It has to be pointed out that the shape,

as well as the material of the sealing member 8, is selected beforehand according to the shape and the material in which the closing member 5 is made. This is due to the fact that the sealing process of the sealing member 8 onto the body 2 is carried out according to the material in which the closing member 5 is made. In this condition, the container 1 is ready to be conveyed to the distribution line for the consumption of the food contained therein.

**[0022]** It has to be pointed out that the main body 2 has a shape which enables the stackability thereof during the dispensing step in the production line of the body 2 from a pile of bodies 2, and in such a manner that it can be provided by an automatic downloading of the former from the pile of bodies 2 and to a loading system in the food filling line.

**[0023]** Likewise, also the closing member 5 has a shape which enables the stackability thereof, in order to be loaded in stacks into an automatic downloading system and to loading system in the product filling line.

**[0024]** Referring now to Figures 2 to 4, a first embodiment of the container 1 of the present invention is shown therein.

**[0025]** According to this embodiment, the container 1 has a main body 2 with a substantially inverted frustoconical shape, with a blind bottom and a top opening 3. At the peripheral area of the top opening 3 a peripheral creasing generating an inner groove 7 is formed.

**[0026]** Furthermore, the closing member 5 for the container is provided with a frustoconical shape closed at the top thereof by a wall 52 and with an annular bottom area having an edge 6, outwardly tapered and ending with a protruding annular member. It has to be pointed out that the edge 6 has the same slope of that of the wall of the container 2. Moreover, onto the top wall 52 of the closing member 5 and near to an edge area between the top wall 52 and the side wall thereof, a dispensing opening 51 is formed.

**[0027]** For the assembly of the container 1 subsequently to the filling thereof with the food product (not shown in the figures), the closing member 5 is inserted at the area of the top opening 3 until the edge 6 abuts to the walls of the main body 2. In this condition, the protruding portion of the edge 6 is inserted in the complementary groove 7 onto the wall of the container 2 until locked for interference. The clamping thus obtained is maintained by the elasticity of the material of the closing member 5.

**[0028]** The container 1 thus assembled is ready for the subsequent step of sealing of the dispensing opening 52.

**[0029]** With reference to figures 5 to 7, a second embodiment of the container 1 of the present invention is shown. For the sake of simplicity, same parts will have same numbers, and a detailed description thereof will be omitted since already given in the above.

**[0030]** According to such second embodiment of the invention, the container 1 has a main body 2 having a

substantially inverted frustoconical shape, with a blind bottom and a top opening 3. A peripheral creasing 30 is formed at the area of the peripheral edge, by curling the latter and in the already known manner.

**[0031]** Furthermore, is provided the closing member 5 for the container with a substantially dome-shaped and annular bottom area 53 having a downward-tapered edge 6, and an annular groove 60 is internally formed therein. It has to be pointed out that the dimensions of the groove 60 are complementary to those of the creasing 30 onto the edge of the opening 3 of the container 2. Moreover, the dispensing opening 51 is formed onto the top portion of the closing member 5, at the centre area thereof.

**[0032]** For the assembling of the container 1 subsequently to the filling thereof with the food product (not shown in the figures), the closing member 5 is inserted from the top at the top opening 3 until the groove 60 of the edge 6 interfere with the respective creasing 30 onto the edge of the opening 3. At this point, a subsequent pressure exerted downwardly on the closing member 5 engages the creasing 30 inside the groove 60 against the elasticity of the closing member 5, thus realising the interference locking therebetween. The clamping thus obtained is obtained by means of the elasticity of the material in which the closing member 5 is made. The container 1 so assembled is ready for the subsequent step of sealing the dispensing opening 52.

**[0033]** Referring now to figures 8 to 10, they show a third embodiment of the container 1 of the present invention. For the sake of simplicity, same parts will have the same numbers, and a further detailed description thereof will be omitted since already given.

**[0034]** According to this third embodiment of the invention, the container 1 has a substantially inverted frustoconical shaped main body 2, with a blind bottom and a top opening 3. A peripheral creasing 30 is formed by cockling the edge in the already known manner at the peripheral edge area of the top opening 3.

**[0035]** On the other hand, the closing member 5 of the container, having a substantially frustoconical shape, with a top closing wall 52 and a horizontal annular bottom area 53 having an edge 6, is provided. The edge 6 is substantially "n" shaped when viewed in cross section, wherein at the inner edge thereof an annular groove 60 is formed. It has to be pointed out that the dimensions of the groove 60 are complementary to those of the cockled creasing 30 onto the edge of the opening 3 of the container 2. Furthermore, onto the top portion 52 of the closing member 5, at an edge area between the top wall 52 and the side wall, the dispensing opening 51 is formed.

**[0036]** For the assembling of the container 1 subsequently to the filling thereof with a food product (not shown in the figures), the closing member 5 is mounted from the top at the area of the top opening 3, until interfering the groove 60 of the edge 6 with the respective cockled creasing 30 onto the edge of the opening 3.

**[0037]** Then, a further downwardly pressure onto the closing member 5 causes the creasing 30 to abut inside the groove 60, against the elasticity of the closing member 5, thereby implementing the interference locking of one inside the other. The locking thus obtained is maintained against the elasticity of the material in which the closing member 5 is made. The container 1 thus assembled is ready for the subsequent sealing step of the dispensing opening 52.

**[0038]** For the consumption of the food product, firstly the tab 22 is manually torn out, thereby opening the dispensing opening 51. Then, with a partial overturning of the container 1, the food product can be dispensed towards the hand or the mouth of the user.

**[0039]** Of course, the container can have specific shapes and dimensions that differ from the above-disclosed ones, as long as the locking of the closing member 5 onto the main body 2 is guaranteed. This lies in the fact that the container can be made of materials and in shapes that allow a shaking and/or squeezing thereof in order to ease the output of the product therefrom in the case that single food product units are lumped or fused together, concomitantly ensuring the integrity of the structure.

**[0040]** For instance, the main body 2 can typically be made of cardboard coupled with polyethylene having inserts of other different materials or not.

**[0041]** Likewise, also the closing member 4 can be made of a suitable material, e.g. plastics or polyethylene-coated aluminium, in order to allow the closing of the container as well as the sealing thereof with a suitable sealing process. For instance, a material allowing the heat-sealing of the sealing member 8 is preferred and selected in order to make the sealing process faster and easier. Also the sealing member 8 is preferably selected in a material, for example the aluminium coupled to the polyethylene or the like, in order to allow the latter to be heat-sealed to the closing member 5, as well as being easily detachable therefrom, for example by a tear tab.

**[0042]** Furthermore, the whole container 1 can be entirely made in the same material, according to the type of product to be contained therein.

#### Claims

1. A process for making a dispensing container (1) for solid and/or frozen food, **characterised in that** it comprises the following steps:

arranging a container body (2) having an open top end (3);  
 inserting a solid and/or frozen food product (4) inside the container through said open top end (3);  
 fitting on said top end (3) a closing member (5) having a dispensing opening (51) for the dis-

- dispensing of the food product; and  
arranging a removable sealing member (8) at  
said dispensing opening (51).
2. A dispensing container (1) for solid and/or frozen  
products comprising a main body (2) having a top  
opening (3) and a closing member (5) of said top  
opening (3), **characterised in that** said closing  
member (5) comprises:
- locking means (6;60) for removably lock said  
closing member (5) on said top opening (3);  
a product dispensing opening (51); and  
sealing means (8) of said dispensing opening  
(51).
3. The dispensing container (1) for solid and/or frozen  
products according to claim 2, wherein said remov-  
able locking means comprises a clamping area (6;  
60) for the engagement to a respective complemen-  
tary clamping area (7; 30) formed onto said main  
body (2) of the container.
4. The dispensing container (1) for solid and/or frozen  
products according to the preceding claim, wherein  
said clamping area (6;60) is formed at the periph-  
eral area of said closing member (5).
5. The dispensing container (1) for solid and/or frozen  
products according to claims 2 to 4, wherein said  
closing member (5) has a substantially convex  
shape toward the outside of the container, and  
wherein said dispensing opening (51) is formed at  
the top area thereof.
6. The dispensing container (1) for solid and/or frozen  
products according to claims 2-5, wherein said seal-  
ing means (8) are arranged on said dispensing  
opening (51) in a removable manner.
7. The dispensing container (1) for solid and/or frozen  
food according to the preceding claim, wherein said  
sealing means is an adhesive membrane (8) apt to  
be welded onto the peripheral area of said dispens-  
ing opening (51) in order to tight-seal the latter.
8. The dispensing container (1) for solid and/or frozen  
food according to claims 2-7, wherein said comple-  
mentary clamping area (7;30) is formed on said  
main body (2) at the peripheral area of said top  
opening (3).
9. The dispensing container (1) for solid and/or frozen  
products according to claims 2-8, wherein said  
clamping area of said closing member (5) is an out-  
wardly tapered edge ending with a protruding an-  
nular member (6).
10. The dispensing container (1) for solid and/or frozen  
products according to the preceding claim, wherein  
said main body (2) has an annular grooved area (7)  
formed internally to the peripheral area of said top  
opening (3) and apt to interference engaging with  
said annular member (6) of said closing member  
(5).
11. The dispensing container (1) for solid and/or frozen  
products according to claims 2 to 8, wherein said  
clamping area of said closing member (5) is a down-  
wardly tapered peripheral edge wherein an annular  
groove (60) is internally formed.
12. The dispensing container (1) for solid and/or frozen  
products according to the preceding claim, wherein  
said main body (2) of the container has a peripheral  
creasing (30) formed at the edge area of said top  
opening (3) and apt to engage with said annular  
groove (60) of said closing member (5).

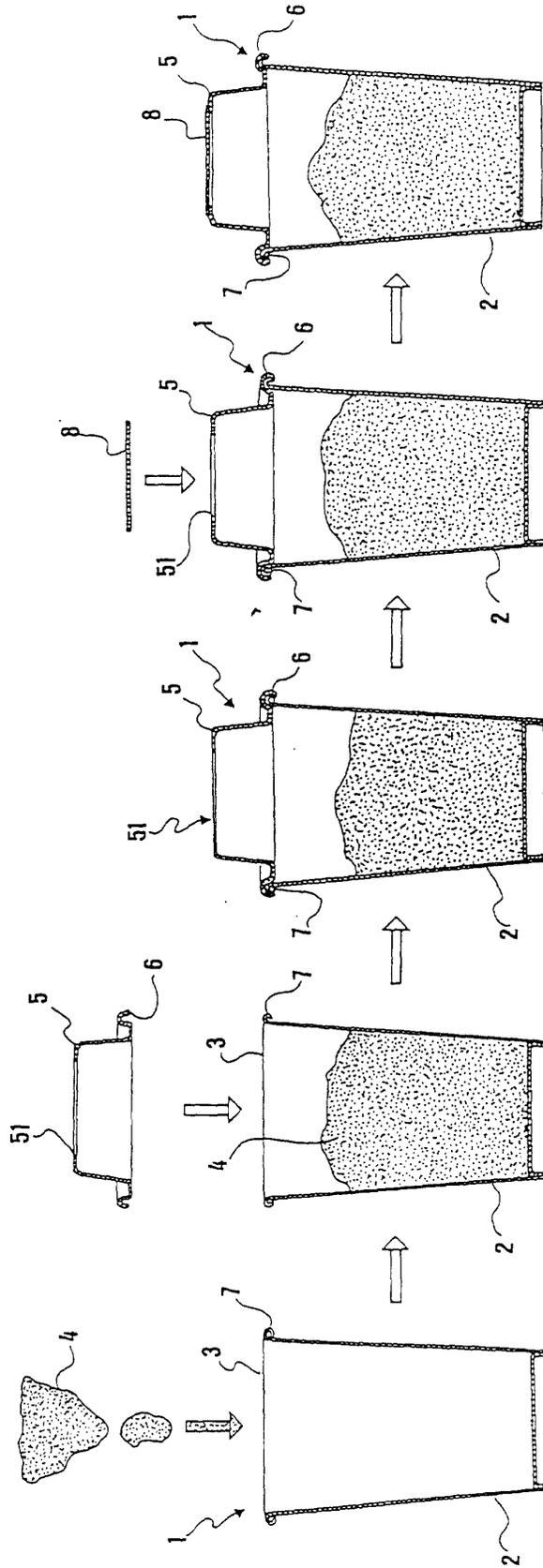


FIG. 1A

FIG. 1B

FIG. 1C

FIG. 1D

FIG. 1E

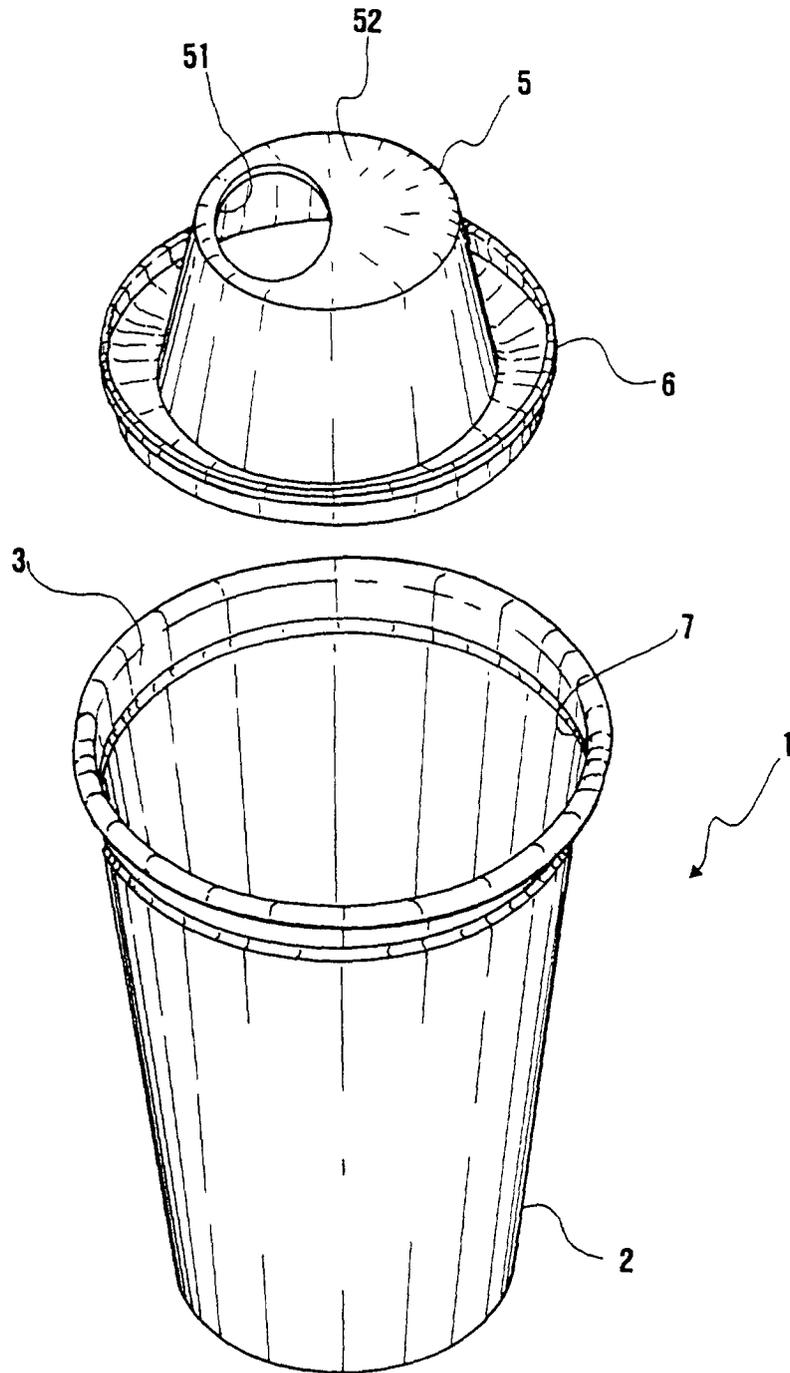


FIG. 2

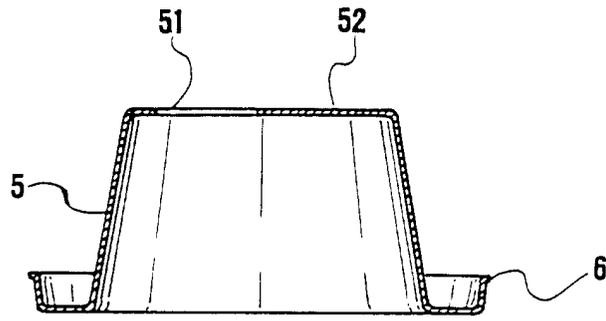


FIG. 3

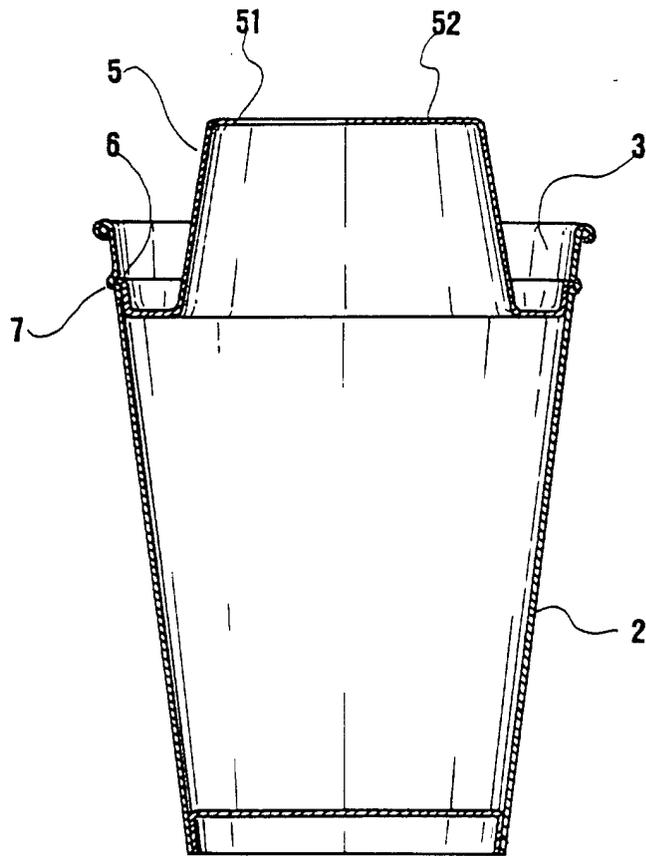


FIG. 4

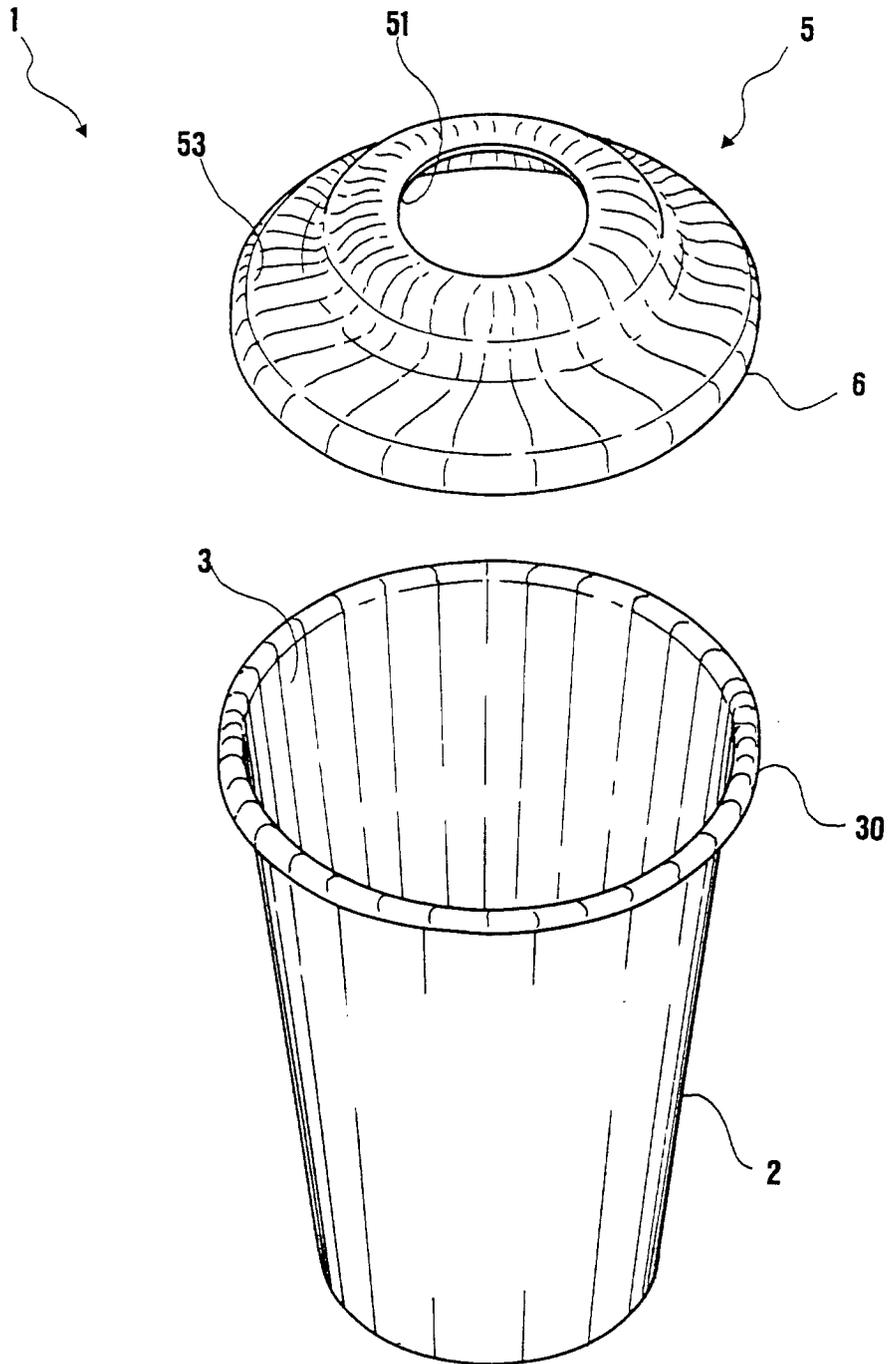


FIG. 5

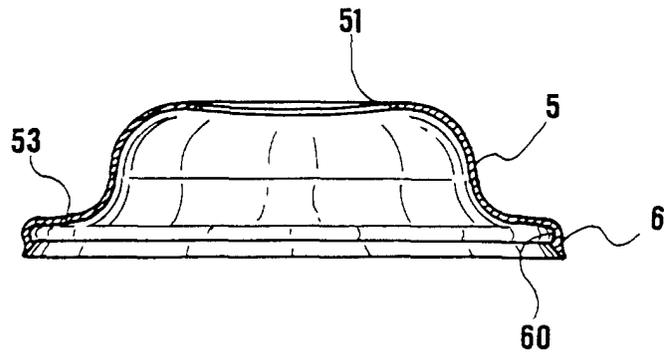


FIG. 6

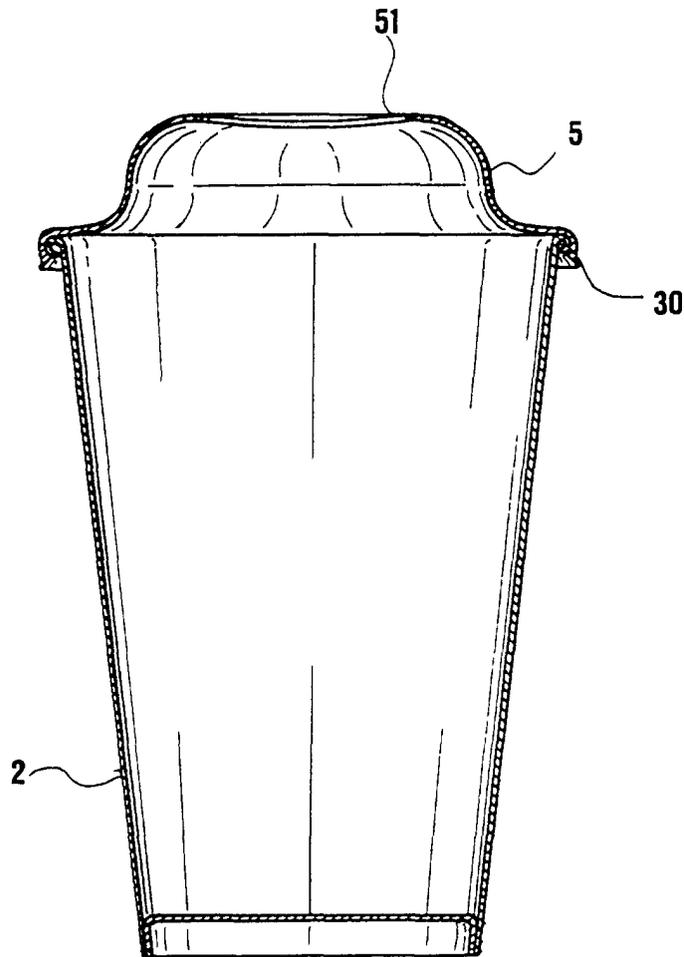


FIG. 7

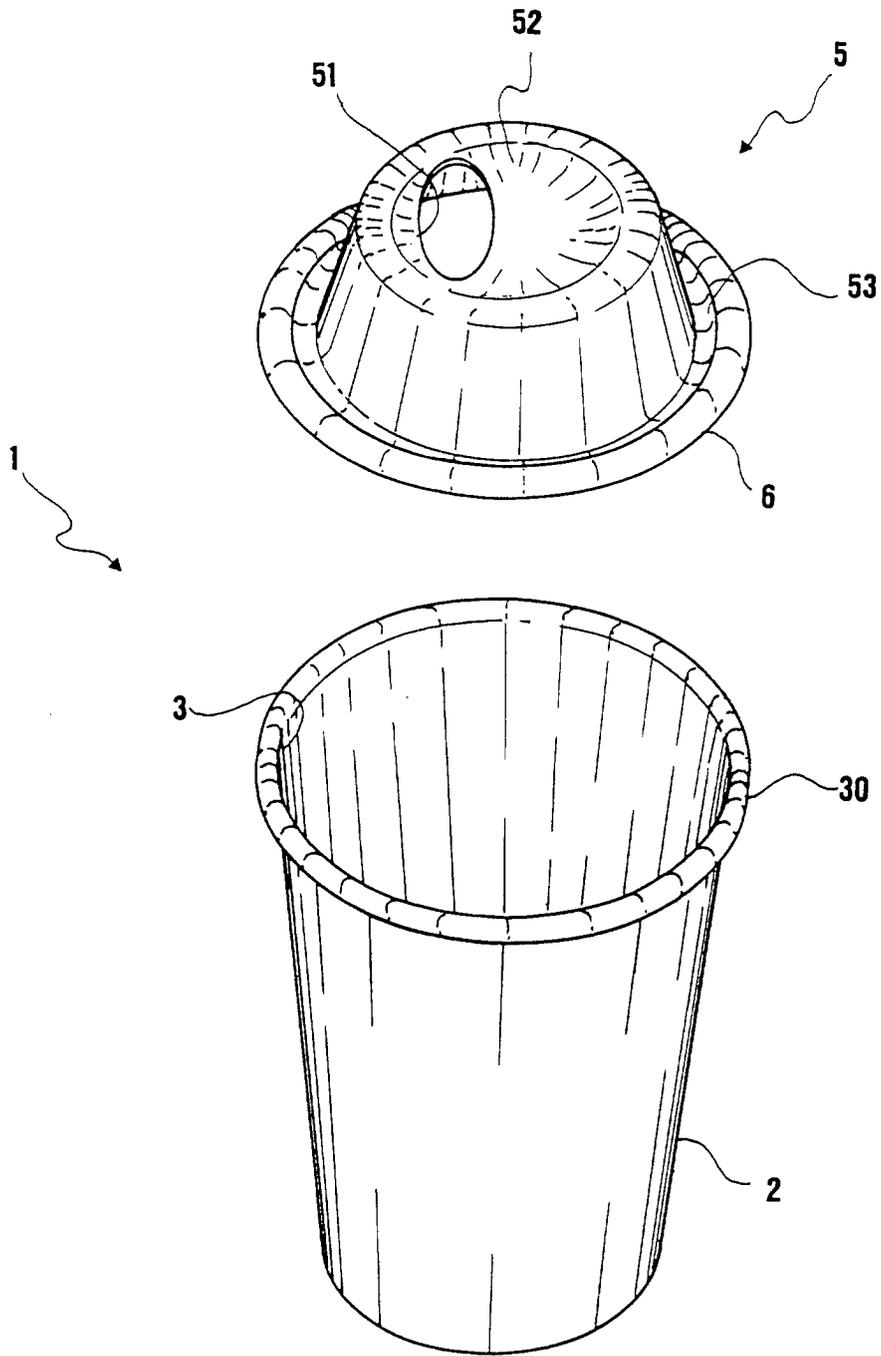


FIG. 8

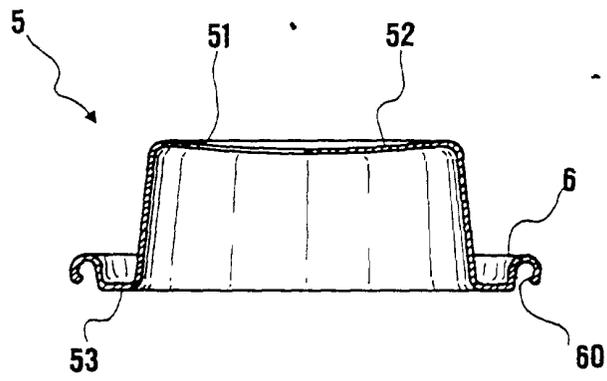


FIG. 9

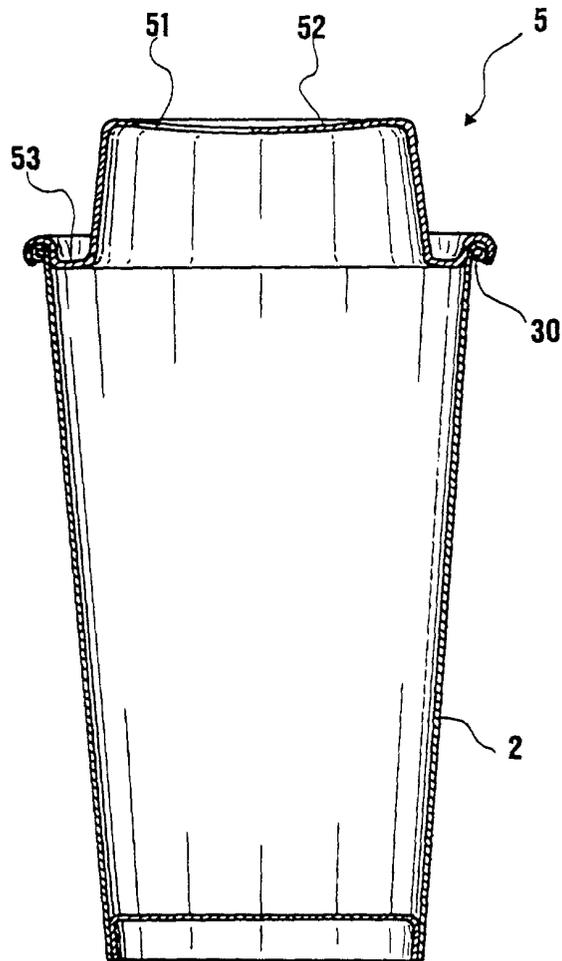


FIG. 10



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EUROPEAN SEARCH REPORT

Application Number  
EP 00 83 0192

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The present search report has been drawn up for all claims				
Place of search		Date of completion of the search	Examiner	
THE HAGUE		12 September 2000	Vollering, J	
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