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**REF Expediente No 02 100 840 - Solicitud de Patente FASE NACIONAL
a favor de COLGATE – PALMOLIVE COMPANY
Titulada RECIPIENTE CON VÁLVULA DE MEMORIA DE FORMA**

RAMIRO CASTRO DUQUE, vecino de Bogotá, portador de la tarjeta profesional No 1003, obrando como apoderado de la Sociedad COLGATE – PALMOLIVE COMPANY, según lo acredita el documento de Poder presentado en esa División bajo el No 131, me permito anexar al presente escrito los siguientes documentos

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De la señora jefe atentamente,

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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111**

APPLICATION NUMBER. 09/543,797**FILING DATE April 06, 2000**

**By Authority of the
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TRANSMITTAL FOR FILING A NEW UTILITY PATENT APPLICATION

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Case Docket No. 6422

Transmitted herewith for filing is the UTILITY patent application of-

Inventor(s) Issac Zakzenberg
For (title) CONTAINER WITH FORMED MEMORY VALVE
Docket No. 6422
Deposited for Filing: EL424690323 on April 6, 2000

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Enclosed are:

- ☒ Utility Patent Application consisting of 16 Total Pages including 21 Total Claims consisting of 12 pages of specification, 3 pages of claims, 1 page of abstract.
- ☒ Executed Declaration
- ☒ An assignment of the invention to the Colgate-Palmolive Company. A separate "Recordation Form Cover Sheet - PTO Form-1595" is also attached
- ☒ FORMAL drawings No. of Sheets. 6 Figures: 21

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3c #1 CALCULATIONS FOR PATENT APPLICATION FEE				Other Than a Small Entity		
FOR		CLAIMS		EXTRA NO	RATE	FEE
Basic Fee						690.00
		Column 1 Total Claims	Column 2 Extra Claims			
Total Claims		21 20	= 1	1	X18	18
Independent Claims		2 3	=		X78	
Multiple Dependent Claims Presented < >					+260	
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Respectfully submitted,

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CONTAINER WITH FORMED MEMORY VALVEField of the Invention

5 This invention relates to a thermoformed dispensing container that has a positive seal formed memory valve. This invention further relates to a container having a valve comprised of a channel wherein a suckback can be designed into the valve whereby the dispensing container can substantially retain its original shape.

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Background of the Invention

15 The present invention is directed to the problem of sealing a container once it has been opened and a portion of the contents removed. These containers usually are opened by removing a part of the container to expose an opening. This usually is a tear away tab. Upon putting pressure on the main body of the container, some of the contents can be dispensed. The remainder of the contents stay in the container. The present invention provides a positive
20 sealing valve arrangement so that after each dispensing the contents are positively sealed within the body of the container. The valve is comprised of a channel with a unique formed memory valve disposed in the channel.

25 The thermoformed container in one embodiment also can have a suckback feature. By suckback is meant that after a dispensing of some of the product from the container, air is drawn in through the valve to replace the product that has been dispensed. In this way the container substantially retains its original shape. The degree of suckback will be determined by the rheology of the material being dispensed, the structure of the valve and the resiliency of the
30 material of the container.

 Various types of valves for thermoformed containers are known. Such containers with flat channel valves are disclosed in U S Patent 3,184,121, U S Patent 4,491,157 and U S Patent 5,529,224. In Figure 6 of U S

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Patent 3,184,121 there is shown two parallel flat sheets of material that are opened to dispense a product by a force on the walls of the container. A related valve mechanism is shown in U S Patent 4,917,567. Figure 5C of this patent shows the valve in a dispensing condition. U S Patent 5,529,224 is directed to various embodiments of flat channel valves in combination with a thermoformed container. Flat channel valves are well known in the art. However, they have a disadvantage in that they do not provide a positive sealing. Further, the thickness and other characteristics of the thermoformed container materials must be closely designed to provide a reasonably good seal. An improvement over such channel valves is disclosed in U S Patent 5,839,609 which discloses a ridge valve arrangement for a channel valve.

Another type of seal is a deformable seal. This is described in U S Patent 3,635,376, U S Patent 4,928,852 and to an extent in U S Patent 5,529,224, figures 26 through 30. In this type of valve one sheet, usually the upper sheet, is designed to have a sufficient integrity to be moved manually from an open position to a closed position. The top sheet is moved manually from an upper position where the valve is open to a lower position where the valve is closed. The manual opening and closing of this type of valve is more clearly shown in Figure 7 of U S Patent 4,928,852.

U S Patent 5,839,609 discloses a thermoformed container with a ridge valve. This is a type of a flat channel valve with the integrity of the seal enhanced with depressions on either side of the ridge structure so that the top wall can be drawn downward into a better contact with the ridge by the elasticity of the upper sheet of plastic and the surface tension of the substance being dispensed which is contained in the depressions on either side of the ridge.

Despite the efforts of the inventors of the valve mechanisms of these patents, there has not been achieved a simple, automatic, positive sealing valve for a container. The valves that require manual manipulation or require a person to remember to seal the container, while flat channel valves are not positive sealing. A ridge valve provides good sealing but it has a complex structure and is in part a flat channel valve with some of the same shortcomings.

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Brief Summary of the Invention

Containers for the storing and dispensing of relatively small volumes of flowable substances can be made inexpensively by thermoforming. However, a problem in the use of containers for other than single dose use is a valve or closure to positively cut off the flow of the flowable substance after a dispensing. Further, in order to avoid inadvertent dispensing the effort to dispense must be one that would not be encountered in the normal handling of the container. However, the dispensing effort cannot be such as to make it difficult for people with lower hand strength to dispense product from the container. The present container is comprised of a body portion and a valve section. The container is sealed substantially around its periphery. The body portion is comprised of a chamber of essentially any shape with an outlet channel that contains a valve for the dispensing of amounts of a flowable substance. The end of the channel can be sealed by a tear-off tab or an equivalent structure that can be removed to open the outlet channel.

The valve portion is comprised of the channel having a top wall and a bottom wall. The channel can be of essentially any shape and usually will be of a circular or elliptical shape. However it can be polygonal in shape having two, three or more sides. If the channel is circular the upper 180° section will comprise a top wall and the lower 180° section will comprise the bottom wall. This likewise will apply to an elliptical shape where the wall above the major axis will comprise a top wall and below the major axis a bottom wall. Further, in a dispensing channel at a point a set distance from the chamber which holds the substance to be dispensed, either the top or bottom wall will be shaped to be biased in a position to be in close contact with the other wall by being depressed against the other wall during or after the forming of the container. This results in a formed memory of the walls of the valve. By formed memory is meant that the wall that is placed into contact with other walls will have a memory of the shape into which it has been formed. When displaced from this shape into which it has been formed by an applied force, such as that caused by a dispensing, the displaced wall will rapidly regain its former shape upon the removal of the applied force. This is the result of the formed memory.

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The flowable substance is dispensed from the container by pressing the walls of the chamber together to decrease the volume of the chamber. This forces the flowable substance from the chamber into the channel which comprises the valve. At a given force the valve opens by one channel wall or walls being displaced out of contact with other channel wall or walls. Upon the removal of the force on the chamber, the channel walls again come into intimate contact as a result of the formed memory of one or more of the channel walls and the dispensing of the flowable substance stops.

The containers also can be designed to have a suckback feature. In this way the container will retain its shape after each dispensing. The amount of product will be replaced by air that is drawn into the container part of the container through the valve. The rheology of the product will determine the structure of the container valve and container product chamber in order to get a sufficient suckback. In addition there should be a narrowed region prior to the valve to provide a venturi through which the product and air must flow.

This container with this valve can be used to dispense liquids, gels, lotions, oils, pastes and essentially any flowable substance. The structure of the container can be modified for the needs of a particular substance or the environment in which the container is to be used.

A preferred container is a thermoformed container. The present valve with a formed memory will be at one end of the container. The valve usually will be formed at the same time as the container and will be in the form of a unitary section with the container. The valve is very useful on thermoformed containers since it is an effective way to make a thermoformed container a multi-dose container. Without an effective valve arrangement thermoformed containers can only be used as single dose containers.

Although thermoformed containers are the preferred containers, containers molded by other techniques can also effectively use the present valve. In these other embodiments the containers and the formed memory valves can be molded as one piece or molded in two or more pieces and assembled.

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Brief Description of the Drawings

Figure 1 is a top plan view of an embodiment of a thermoformed container of the present invention.

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Figure 2 is a side elevational view of the thermoformed container of Figure 1

Figure 3 is a cross-sectional view of the valve of the thermoformed container of Figure 2 along line 3-3

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Figure 4 is a cross-sectional view of the valve of the thermoformed container of Figure 2 along line 4-4

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Figure 4B is a cross-sectional view of the valve of the thermoformed valve of Figure 4A in an open dispensing mode

Figure 5A shows a first alternate embodiment for the opening of the valve of the container of Figure 1

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Figure 5B shows a second alternate embodiment for the opening of the valve of the container of Figure 1

Figure 5C shows a third alternate embodiment for the opening of the valve of the container of Figure 1

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Figure 6 is a top plan view of the thermoformed container with an elliptical chamber and a shortened valve channel

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Figure 7 is a top plan view of the thermoformed container with a circular chamber and an elongated valve channel

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Figure 8 is a first alternate embodiment of the valve of the container of Figure 1

5 Figure 9 is a second alternate embodiment of the valve of the container of Figure 1

Figure 10 is a third alternate embodiment of the valve of the container of Figure 1

10 Figure 11 is a fourth alternate embodiment of the valve of the container of Figure 1

Figure 12 is a fifth alternate embodiment of the valve of the container of Figure 1

15 Figure 13 is the fifth alternate embodiment of the valve of the container of Figure 1 in an open condition

Figure 14 shows a sixth alternate embodiment of the valve of Figure 1

20 Figure 15 shows a seventh alternate embodiment of the valve of Figure 1

Figure 16 is an elevational view of a dual chamber container incorporating the present valve

25 Figure 17 is a cross-sectional view of the valve of the dual chamber container of Figure 16

Figure 18 discloses an alternate valve for the container of Figure 16

30 Figure 19 is a cross-sectional view of an alternate structure for a dual chamber container

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Figure 20 discloses a valve for the container of Figure 19

Figure 21 is an elevational view of a bottle incorporating the present valve

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Detailed Description of the Drawings

10 The preferred embodiment of the present invention will now be described in more detail with reference to the attached drawings and with regard to thermoformed containers. However it is to be understood that the formed memory valve is not restricted to use with thermoformed containers. The shape and size of the containers also can vary as can the shape and size of the components of the containers and yet be within the concept of the present invention

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20 The thermoformed container 10 of Figures 1 to 4 has a flowable substance chamber 12 and a formed memory valve portion 14. The periphery 20 of the container is a seal area. Score line 18 is located between seal tab 16 and the remainder of the container. The container 10 is shown in more detail in Figure 2. The substance chamber 12 has sidewalls 22 and 26 and transverse walls 24 and 28. The valve portion 14 has an upper wall 30 and a lower wall 32. Upper wall 30 tapers downwardly to a close contact with lower wall 32 to provide the formed memory valve. In this particular embodiment the channel 14 ends in a deepened area 36 into which the upper wall section 30 fits. However, it is not required that there be a deepened section 36. This may be of the same concavity as the remainder of wall 32. The lower surface of upper wall section 30 has a convex shape and intimately contacts the concave shaped upper surface of lower wall deepened area 36. This contact seals the flowable substance in chamber 12 from being unintentionally dispensed after the removal of seal tab 16. The valve area is shown in more detail in Figure 4A and 4B. However, as noted, a deepened region is not required

35 Figure 3 shows in cross-section the shape of the valve channel 14 prior to the deepened portion 36. This is shown as being elliptical but it can be circular or of a polygonal shape. When polygonal it can have two or more sides. Figures

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4A and 4B show the valve in one mode of operation. In Figure 4A the valve is at rest. The valve is closed and there is no dispensing. In Figure 4B there is a dispensing with part of the upper wall 30 of the valve being forced out of contact with part of the lower wall 32, thus permitting a substance stored in chamber 12 to be dispensed. Upon the cessation of pressure on the chamber 12 the upper wall 32 regains close contact with the lower wall and seals the chamber 12 as a result of the formed memory of the upper wall 30.

In Figure 2 the exit of the relatively wide chamber 12 is a narrow section 21 opening to a wide channel. This wide-narrow-wide flow of substance from the chamber 12 has a venturi effect that promotes the suckback of air through the valve and into the chamber 12 after the dispensing of some of the substance from the chamber 12. In this way chamber 12 will retain its shape after each quantity of the substance is dispensed. This mode of operation is useful for substances that are not affected by the presence of air.

Figures 5A, 5B and 5C show three modes of operation of the valve of the container 10 of Figure 1. In Figure 5A it is shown that the wall 30 gives and creates an opening 31(a) upon the application of a dispensing force to the body of the container which holds the substance to be dispensed. In Figure 5B it is shown that the wall 32 gives and creates an opening 31(b) upon the application of a dispensing force to the body which holds the substance to be dispensed. In Figure 5C it is shown that both the wall 30 and the wall 32 give to create an opening 31(c) to dispense the substance in the container portion. The wall or walls that have been stretched and thinned in the making of the valve usually will be the wall to yield upon the application of the dispensing force. However the wall that is not stretched and thinned may also distort to create the opening to provide for the dispensing. In Figures 5A, 5B and 5C it is assumed that the thicknesses of the upper wall 30 and the lower wall 32 is the same. However this need not be the case. The wall that has been stretched and thinned may yet not be the thinner wall and consequently it will not be the wall to yield upon the application of a dispensing force to the body of the container. It may initially have been thicker than the other wall. In general the thinner wall of the valve will be the wall to yield in a dispensing mode.

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Figure 6 shows an embodiment where the chamber of the thermoformed container is elliptical in shape. This container 40 has body chamber 42 for a flowable substance, a shortened valve portion 44, a seal tab 46 and a score line 48. The periphery 50 of the thermoformed container is a seal area. Also in this embodiment the valve 35 is at the junction of the body chamber 42 and the channel 44. Preferably at least half of the valve is in the channel. Most preferably the full valve is in the channel.

Figure 7 shows a container 60 with a chamber 62 that is circular in shape and an elongated channel portion 64. Score line 68 separates seal tab 66 from the remainder of the container. The periphery 70 is a seal area. This embodiment shows the valve 65 being located at the junction of the channel and the channel exit. Preferably at least half of the valve is in the channel. Most preferably the full valve is in the channel.

Figures 8 to 14 disclose several shapes for the valve area of the elongated channel. These can be of a large radius semi-circular channel shape 32(a) as shown in Figure 8, a smaller radius semi-circular shape 32(b) of Figure 9, a hyperbolic shape 32(c) in Figure 10, or a shape 32(d) in Figure 11 that is parabolic. In each of these shapes the upper wall 30(a), 30(b), 30(c), and 30(d) of the valve will conform respectively to the shape of the lower surface 32(a), 32(b), 32(c) and 32(d) when the valve is closed. However, when a product is to be dispensed, the upper wall 30(a), 30(b), 30(c), and 30(d) usually will move out contact with the lower wall by the dispensing force being applied to the container body. Upon a relaxation of the dispensing force the wall 30(a), 30(b), 30(c) and 30(d) will ultimately contact the wall 32(a), 32(b), 32(c) and 32(d) of the valve and flow of substance from the container body will cease. The upper wall will move since it is the wall with the formed memory.

Figure 12 shows a valve that is polygonal in shape. The upper wall 30(e) and the lower wall 32(e) each have three sides. The valve is shown at rest in Figure 12 and opened in Figure 13. Although shown as three sided the valve can have essentially number of sides. As the number of sides increases the shape of the valve approaches a circular shape.

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Figure 14 is a cross-sectional view of a valve having a sinusoidal shape. Upper wall 30(f) is stretched to contact lower wall 32(f). This is an optional structure for the valve.

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Figure 15 discloses a valve with a plurality of formed memory portions. This is shown in an enlarged view with the formed memory portions being from less than 25% to about the width as shown. The formed memory portions also may be of a modified shape such as sinusoidal. The upper wall 30(h) is formed into a plurality of downwardly extending sections and the lower wall a plurality of upwardly extending sections. Each of the extended sections has formed memory. That is, each extended section has been stretched and thinned. On a dispensing, one or more of the extended sections will be dislocated from its formed position. This valve will be useful for dispensing larger volumes of liquids.

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Figure 16 shows a dual chamber container 70 with the present valve. The container is sealed along peripheral edge 78. There are two chambers 72 and 74. These chambers are created by sealing the front and rear walls together at a mid-point 76. There are formed two channels 71 and 73. Each channel has a valve which is shown in more detail in Figure 17. At the end of the channels is seal tab 77 with perforations 75 to facilitate the removal of the seal tab. Each of the valves has upper wall 30 and lower wall 32. The upper wall and the lower wall are sealed together at 79 to maintain the channels separate until the exits of the channels. Since the wall 30 and the wall 32 are of the same thickness the valves will open at substantially the same dispensing pressures. The valve in Figure 14 also can be used. This is a sinusoidal type valve which can be adapted for the dual chamber container.

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Figure 18 discloses an alternate embodiment to the valve of Figure 17. In this valve the valve is formed where the valves are inverted from channel to channel. In channel 73 the lower wall is stretched and thinned while in channel 71 the upper wall is stretched and thinned. This is a useful valve for a dual chamber container.

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Figure 19 shows in cross-section a dual chamber container that differs from that of Figure 16 in that the divider wall extends from one sidewall to another sidewall rather than from front wall to rear wall. The divider wall 76(a) divides the container into chambers 72(a) and 74(a). The divider wall extends into the peripheral edge 78(a) which also is a seal area. Figure 20 shows a valve for this container. This valve will have three walls comprised of outer walls 80 and 82 and the divider wall 76(a). The divider wall usually will be of a reduced thickness in comparison to wall 80 and wall 82. The valve will function in the same manner as the other described formed memory valves. That is, one portion which usually is the most thinned portion will yield and provide for a dispensing.

Figure 21 shows the present formed memory valve incorporated into a bottle-like container. This container 50 has a product chamber 52 and a sealed edge 54 around the product chamber. At an upper end is a channel 53 with a formed memory valve 55. Above the valve is breakaway tab 56 separated from the remainder of the container by serrations 58. Breakaway tab 58 is removed for the dispensing of the product from the product chamber 52 and through channel 53. Formed memory valve 55 will regulate the flow of product.

The thermoformed container of Figure 1 is made by separately thermoforming an upper sheet of film and a lower sheet of film. Each sheet will have a part of the chamber, a part of the elongated channel and formed memory valve portion, the seal tab and the periphery seal area. One sheet in a registered form is overlayed on the other to form the container by heat or adhesively sealing the periphery of the sheets of film. The containers can be filled at the time of forming the containers or in a subsequent operation. The valve is constructed at the same time that the container is made. As the thermoformed upper sheet is being bonded to the thermoformed lower sheet, and while the sheet materials are in a heated condition, one wall of the channel is depressed into a close contact with the other wall. This can be a depressing of the top wall or bottom wall into contact with the other wall. Upon the sheet material of the container cooling it decreases in flexibility and retains an enhanced bias for the shape into which it has been formed, i.e., walls of the channel to remain in a close, intimate contact. This forms the valve of the channel. The upper and lower sheets of plastic that comprise the container can be of the same or

different thickness This thickness can be from about 0.01 mm to about 3 mm, and preferably about 0.2 mm to about 1 mm

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5 The walls of the channel will have a formed memory to the shape into which they have been formed. They will remain in that shape and regain that shape upon any displacement. As noted, the valve wall that has been stretched and thinned usually will be the wall to flex and be displaced during a dispensing.

10 The valves that have been described can be used on essentially any container. The containers can be made by essentially any molding technique and can be of essentially any shape and contain essentially any number of chambers. The valves can be integral to the container or can be a separate assembly as to the container. There is no limitation in this regard. The concept is to create a
15 formed memory so that one surface of the valve will return to rest in close contact with the other surface after the cessation of a dispensing force.

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Claims

What is claimed is

- 1 A container comprising a substance containing portion and a valve
5 portion, said container being sealed substantially around the periphery
thereof, said substance containing portion in communication with said
valve portion at one end, said valve portion comprising at least one
channel having at least a portion of one wall being formed to be in a close
10 contact with at least a portion of another wall, said at least a portion of
one wall having a formed memory whereby a given depressing force is
required for said first wall to move from contact with said portion of
another wall and upon the removal of said given dispensing force said
valve closes and seals the substance containing portion of said container
15 by said at least a portion of one wall returning to contact with said at least
a portion of said another wall
- 2 A container as in claim 1 wherein at an end of said valve portion distant
from said substance containing portion there is a breakaway tab that forms
a protective seal prior to an initial use
- 3 A container as in claim 1 wherein said valve portion is comprised of a
20 portion of the channel, the channel being of a circular cross-section
- 4 A container as in claim 1 wherein said valve portion is comprised of a
portion of the channel, the channel being of an elliptical cross-section
- 5 A container as in claim 1 wherein said valve portion is comprised of a
portion of the channel, the channel being of a polygonal cross-section
- 25 6 A container as in claim 1 wherein said valve portion is comprised of a
portion of the channel and is located adjacent to said substance containing
portion
- 7 A container as in claim 1 wherein said valve portion is comprised of a
portion of the channel and is located spaced from said substance
30 containing portion
- 8 A container as in claim 1 wherein said valve portion is comprised of a
portion of the channel and is located at the junction of said substance
containing portion and said valve portion

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- 9 A container as in claim 1 wherein said valve portion is comprised of a portion of the channel and is located at the junction of the channel and an exit from said channel
- 5 10 A container as in claim 1 wherein the at least a portion of one wall and at least a portion of another wall of said valve portion are the same thickness except for the formed memory portion of the one wall, the formed memory portion of said at least a portion of one wall being of a reduced thickness in relation to the at least a portion of another wall in which it is in a close contact.
- 10 11 A container as in claim 1 wherein the at least a portion of one wall and the at least a portion of another wall of said valve portion differ in thickness, the formed memory portion of said at least a portion of one wall being of a thickness substantially that of the at least a portion of another wall in which it is in a close contact.
- 15 12 A container as in claim 1 wherein the at least a portion of one wall and the at least a portion of another wall of said valve portion differ in thickness, the portion of the at least a portion of one wall having the formed memory being of a thickness greater than that of the at least a portion of another wall in which it is in a close contact.
- 20 13 A container as in claim 1 wherein a wall of said substance containing chamber at an end opposite said valve portion is substantially planar
- 14 A container as in claim 1 wherein the container is a thermoformed container so that said container can be supported upright on said end opposite said valve portion
- 25 15 A container as in claim 1 wherein there is a narrowed cross-sectional region at the junction of said substance containing portion and said channel to thereby form a venturi whereby there is created a suckback of air into the substance containing portion after a dispensing of some of the substance from the substance containing portion
- 30 16 A container as in claim 1 wherein said at least a portion of one wall has a concave shape and said at least a portion of another wall has a convex shape
- 17 A container as in claim 1 wherein said container has at least two chambers, each chamber having a valve portion at said one end

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- 18 A container as in claim 17 wherein the valve portion at said one end of one chamber having an inverted structure with relation to the valve portion at said one end of a second chamber
- 5 19 A container as in claim 1 wherein a plurality of portions of one wall are formed to be in a close mating contact with a plurality of portions of another wall
- 20 A container as in claim 19 wherein said first wall has a plurality of shaped portions
- 10 21 A container as in claim 20 wherein said plurality of shaped portions are concave shaped portions.
- 15 22 A thermoformed container comprising a substance containing portion and a valve portion, said container being sealed substantially around the periphery thereof, said substance containing portion in communication with said valve portion at one end, said valve portion comprising a channel having at least a portion of one wall being formed to be in a close contact with at least a portion of another wall, said at least a portion of one wall having a formed memory whereby a given depressing force is required for said at least a portion of one wall to move from contact with said at least a portion of another wall and upon the removal of said given dispensing force said valve closes and seals the substance containing portion of said container by said at least a portion of one wall returning to contact with said at least a portion of another wall, said at least a portion of one wall having a convex shape and said another wall having a concave shape
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Abstract

The container has a varied sized substance body chamber with a channel at an exit end. This channel is sealed by a breakaway tab at an end distant from the chamber. Within the channel is a positive seal valve that can reseal the container after it has initially been opened. This valve is comprised of an upper wall of the channel being in a close contact with the lower wall. The lower wall usually will have a concave shape, with the upper wall contacting the lower wall with a mating convex shape. However this is not required with the channel having many differing shapes and dimensions. This valve can be separated from the substance holding body chamber by a portion of the channel, can be at the junction of the storing chamber and the channel or can be at the junction of the exit of the channel. When a compressive pressure is applied to the substance holding chamber, the substance flows down the channel to the valve. When the liquid pressure reaches a given level, the concave upper wall of the valve moves out of contact with the convex lower wall and some of the substance is dispensed. Upon the cessation of pressure the convex and concave portions come back into contact to cut off the flow of the substance. This valve produces a positive seal which provides a positive seal for the thermoformed container.

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As a below named inventor I hereby declare that

My residence, past office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original first and joint inventor (if plural names are listed below) of subject matter which is claimed and for which a patent is sought on the invention entitled

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CONTAINER WITH FORMED MEMORY VALVE

(A) the specification of which is attached hereto and is being deposited for filing under Attorney Docket No. 6422

(B) described and claimed of therein, that I understand the content of the attached specification, that this application in part discloses and claims subject matter disclosed in my earlier filed pending application Serial No. <number> filed <filing date> that, as to the subject matter of this application which is common to said earlier application I do not know and I do not believe that printed publication in any country before my invention thereof or more than one year prior to said earlier application, or in public use or on sale in the United States of America for more than one year prior to said earlier application, that said common subject matter has not been patented or made the subject of an inventor's certificate issued before the date of said earlier application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to said application and that no application for patent or inventor's certificate on said common subject matter has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows

FOREIGN COUNTRY FILINGS

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that, as to the subject matter of the foregoing specification, which is not common to said application Serial No. , I do not know and I do not believe that the same was ever known or used before my invention thereof or patented or described in any printed publication in any country before my invention or discovery thereof or more than one year prior to this application or in public use or on sale in the United States of America for more than one year prior to this application, that said non-common subject matter has not been patented or made the subject of an inventor's certificate issued in this application, and that no application for patent or inventor's certificate on said non-common subject matter has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, excepts as follows

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I hereby state that I have reviewed and understand the contents of the above-identified specification including the claims as amended by any amendment referred to above. I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37 Code of Federal Regulations § 1.56

I hereby claim FOREIGN PRIORITY benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed

FOREIGN PRIORITY APPLICATION(s)			
NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	PRIORITY CLAIMED

I hereby claim the benefit under Title 35 United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112 I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37 Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application

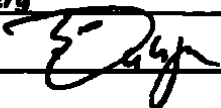
U.S. PRIORITY		
APPLICATION SERIAL NO	FILING DATE	STATUS-PATENTED, PENDING, ABANDONED

I hereby claim the benefit under Title 35 United States Code 119(e) of any United States provisional applications listed below

PROVISIONAL PRIORITY		
APPLICATION SERIAL NO.	FILING DATE	STATUS-PATENTED, PENDING, ABANDONED

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. I hereby appoint the following attorneys or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, James M. Serafino, Reg. No. 29,346, Richard J. Ancel, Reg. No. 26,438, Martin B. Barancik, Reg. No. 25,189, Bernard Lieberman, Reg. No. 26,194, Michael J. McGreal, Reg. No. 25,356, Richard E. Nanfeldt, Reg. No. 27,050, Paul Shapiro, Reg. No. 22,322, Henry S. Goldfine, Reg. No. 38,468 and Rosemary Milano, Reg. No. 29,674 of Colgate-Palmolive Company, 909 River Road, P.O. Box 1343, Piscataway, New Jersey 08855-1343

Address all telephone calls to Michael McGreal at telephone no. (732) 878-7152. Address all correspondence to James M. Serafino, Esq., Colgate-Palmolive Company 909 River Road P.O. Box 1343, Piscataway New Jersey 08855-1343

Full Legal Name of Sole or First Inventor Issac Zaksenberg	Date of Birth March 17, 1957
Inventor's Signature 	Occupation Designer
Date 4-6-00	Citizenship Israel
Residence 950 Raritan Road, Scotch Plains, New Jersey 07076	
Post Office Address Same As Residence Above	

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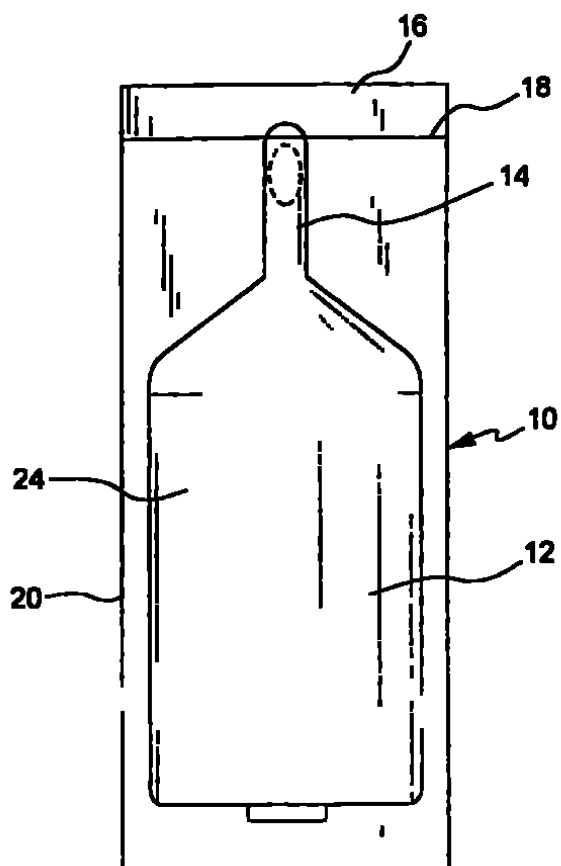


FIG 1

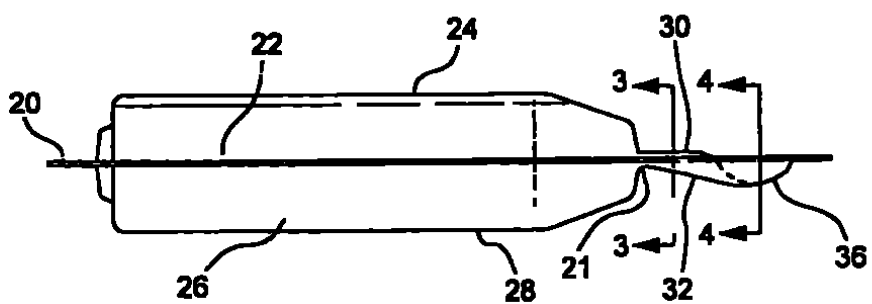
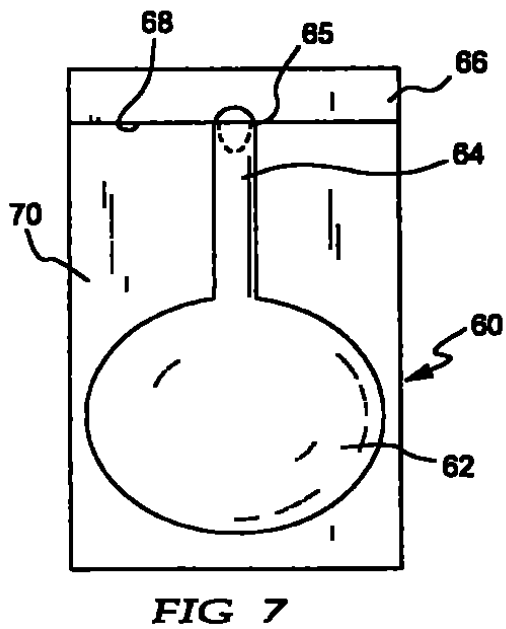
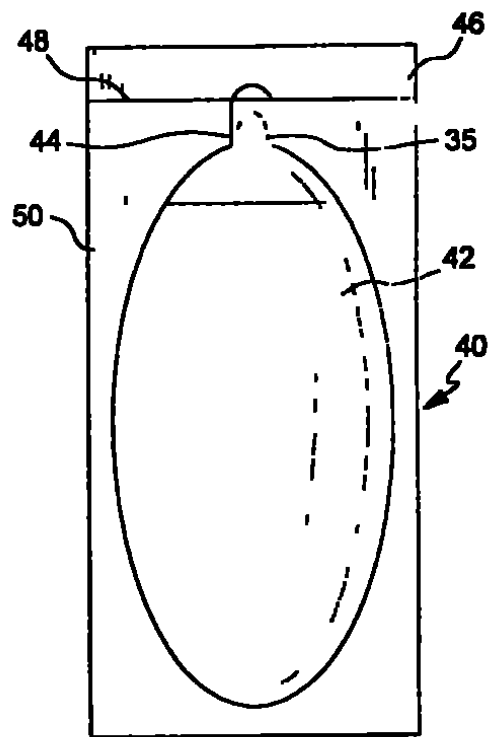
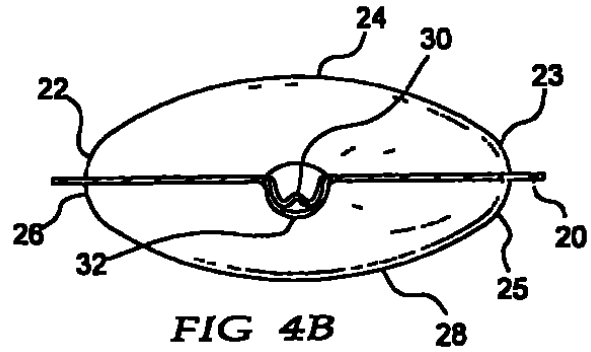
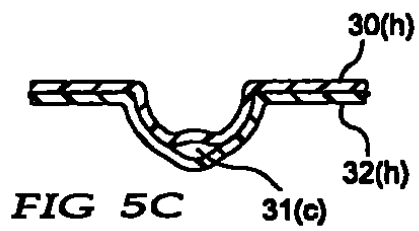
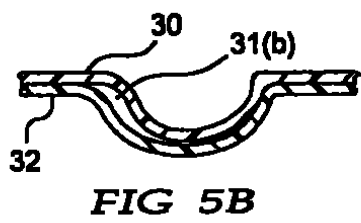
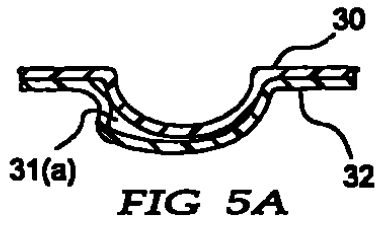
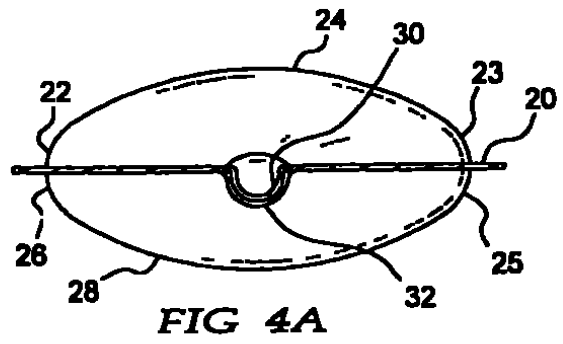
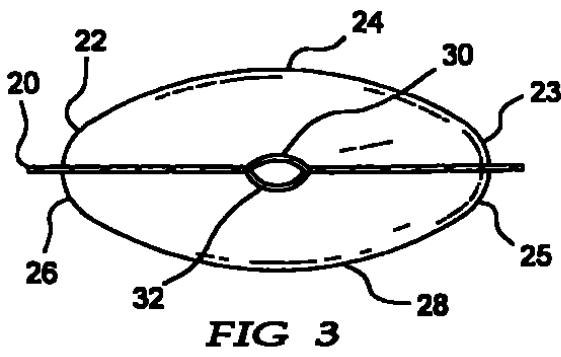


FIG 2

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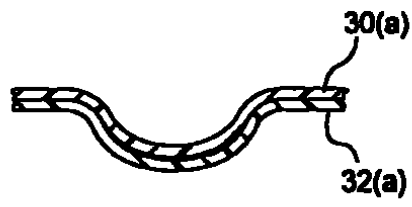


FIG 8

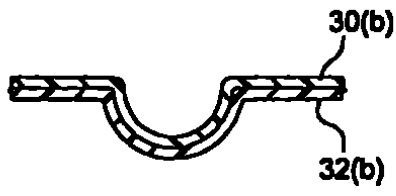


FIG 9

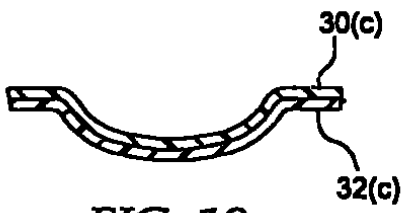


FIG 10

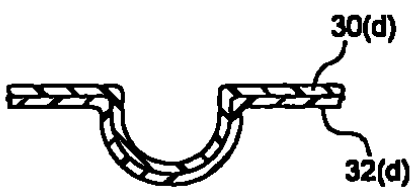


FIG 11

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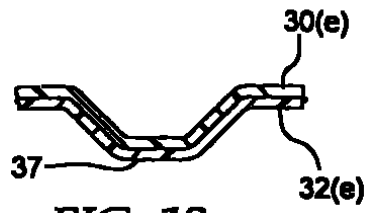


FIG 12

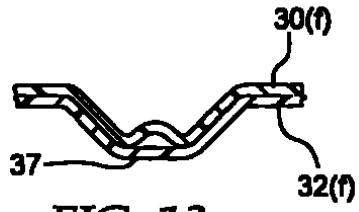


FIG 13



FIG 14

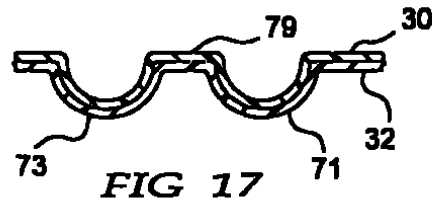


FIG 17

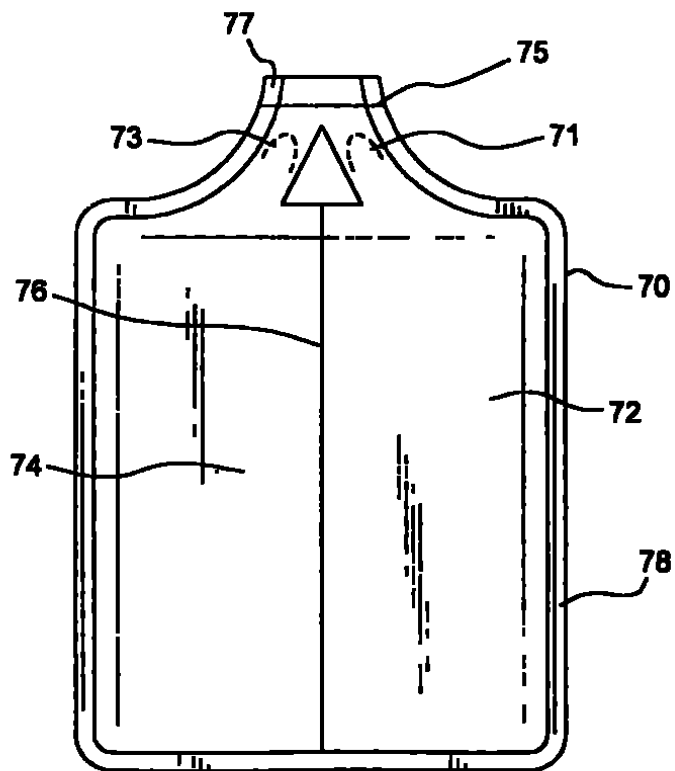


FIG 16

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FIG 15

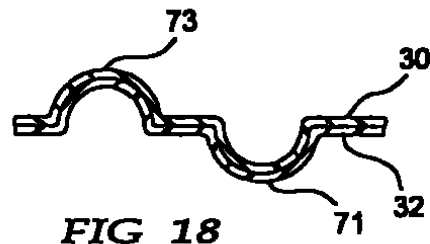


FIG 18

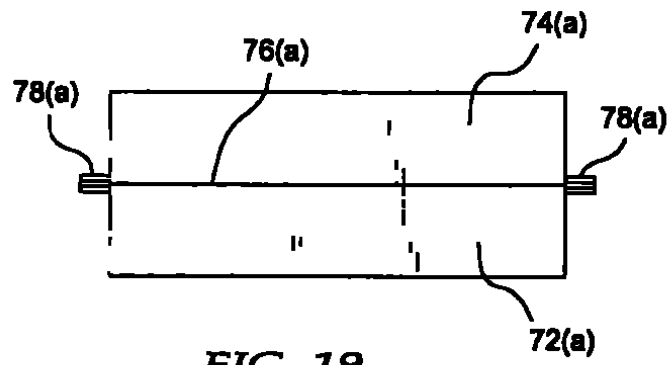


FIG 19

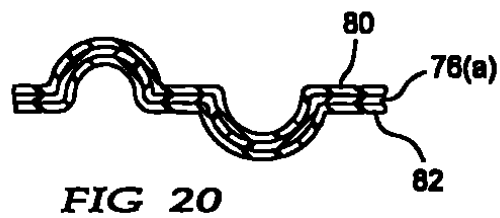


FIG 20

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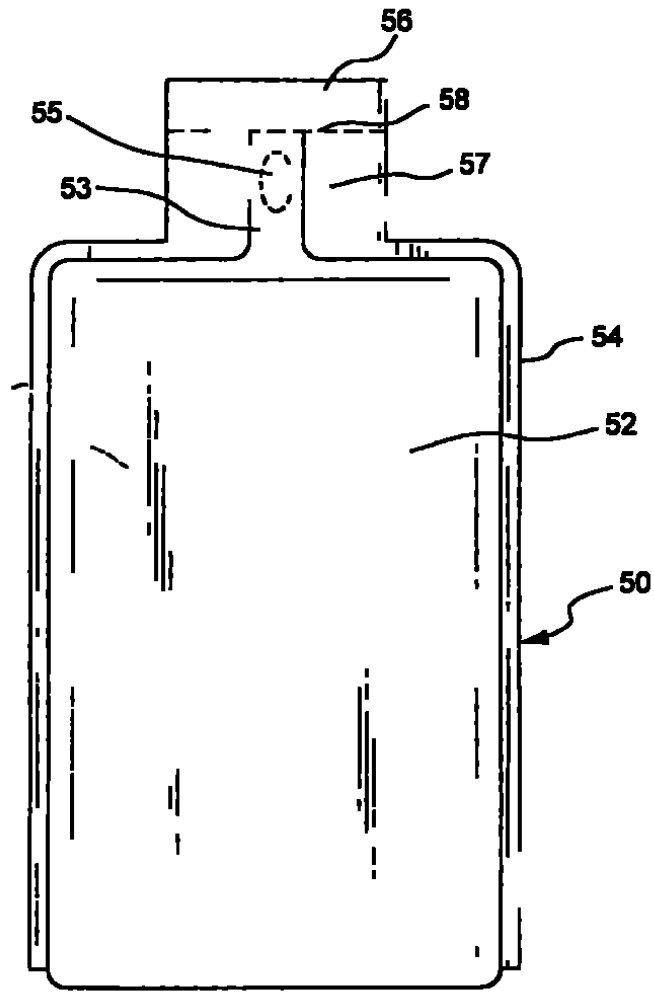


FIG 21

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ACCION Consultar Siguiente Anterior Ir al detalle Primero
|Seleccionar un(os) Registros

|-----
|SUPERINDUSTRIA Y COMERCIO SISTEMA DE REGISTRO
Fecha 02/09/2003

| MANTENIMIENTO DE PROTOCOLOS
|Numero 131
|Fecha 02/08/1972
|Conferido: COLGATE PALMOLIVE COMPANY
|
|País US ESTADOS UNIDOS DE AMERICA
|Ciudad 2 NEW YORK, NEW YORK
|Represent. S Sustituir S Desistir S
No. Radicacion Clase. Secv Seac

|scncia Codigo Ctr Nombre
| 1 340 A CASTRO DUQUE RAMIRO
| 2 340 B BERNAL SALAMANCA RAFAEL
|
| Encontrados (1/1) registro(s)

06/11/2002

TORIO

02 100840 00

Industria y Comercio
SUPERINTENDENCIA

RAD 02-100840

SUPERINDUSTRIA Y COMERCIO
Radicación: 02100840 00000000 Folios 5
Fecha (AMB): 2002-11-06 16.23.34
Trámite 011 PCT-PATENT 379 FASE NACI 411 PRESENTAC
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

FORMULARIO ÚNICO DE SOLICITUD DE PATENTE

PCT

Fecha ENTRADA EN FASE NACIONAL 06/11/2002

1

SOLICITUD DE



Patente de Invención



Patente de Modelo de Utilidad



Capítulo I



Capítulo II

2

SOLICITANTE
(71)

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Dirección 300 Park Avenue, New York, NY 10022

Nacionalidad o Domicilio Estados Unidos

Lugar de Constitución Estados Unidos

Teléfono

Fax

E-mail

IDENTIFICACION

C.C



NIT



C.E



Otro



Cual

Número

3

REPRESENTANTE
O APODERADO

Nombre: RAMIRO CASTRO DUQUE

Dirección Cra. 7 No. 16-56 Piso 9

Teléfono: 380-2200

Fax: 380-2700

E-mail

IDENTIFICACION

C.C



NIT



C.E



Otro



Cual

Número 170.322 TP 1003

4

INVENTOR (ES)
(72)

Nombre Isaac Zaksenberg

Dirección 950 Raritan Road, Scotch Plains, NJ 07076, Estados Unidos de América

Nacionalidad o Domicilio Estados Unidos de América

5 PCT (88)

Solicitud Internacional No PCT/US 01/11174

Fecha 05-04-2001

Publicación Internacional No WO 01/76973 A2

Fecha 18-10-2001

6 Título (54): RECIPIENTE CON VALVULA DE MEMORIA DE FORMA

7 Clasificación Internacional (51) B 65 D 75/58

8 Prioridad

(33) País de Origen

(32) Fecha

(31) Número de Solicitud

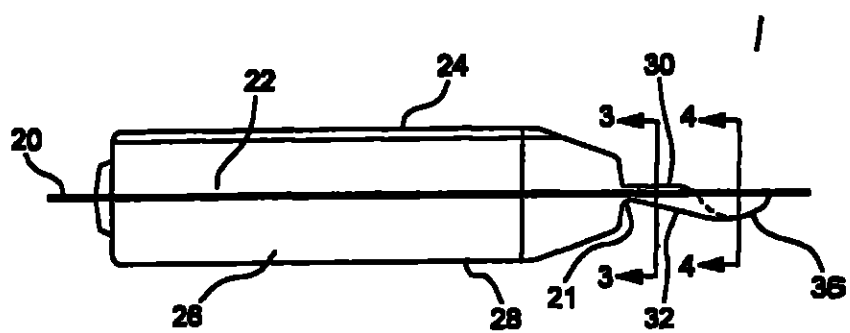
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Instrucciones para el diligenciamiento del presente formulario, ver reverso de esta página



17
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T24

Reivindicaciones

Lo que se reivindica es

1 Un recipiente que comprende una porción que contiene una sustancia y una porción de válvula, dicho recipiente que está sellado sustancialmente alrededor de su periferia, dicha porción que contiene una sustancia en comunicación con dicha porción de válvula en un extremo, dicha porción de válvula que comprende por lo menos un canal que tiene por lo menos una porción de una pared que está formada para estar en cercano contacto con por lo menos una porción de otra pared, dicha por lo menos una porción de una pared que tiene una memoria de forma donde una dada fuerza de depresión se requiere para que dicha primera pared se mueva del contacto con dicha porción de otra pared y ante el retiro de dicha fuerza dada de dispensado dicha válvula se cierre y selle la porción que contiene la sustancia de dicho recipiente mediante dicha por lo menos una porción de una pared que retorna al contacto con dicha por lo menos una porción de dicha otra pared

2 Un recipiente como en la reivindicación 1 donde en el extremo de dicha porción de válvula distante de dicha porción que contiene una sustancia hay una proyección de rotura que forma un sello protector antes de un uso inicial

3 Un recipiente como en la reivindicación 1 donde dicha porción de válvula está compuesta de una porción del canal, el canal que es de una sección transversal circular



2020
Bogotá, D C ,

Doctor
Ramiro Castro Duque
Apoderado
Colgate Palmolive Company

Oficio N° 07481

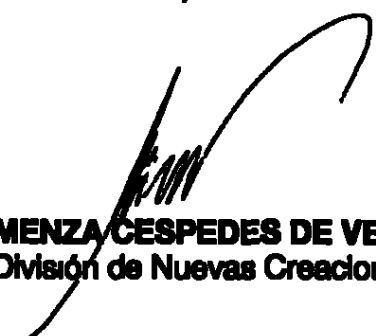
ASUNTO:	Radicación N°	02-100840
	Solicitud internacional	PCT/US2001/11174
	Fecha inicio fase nacional	08/11/2002
	Trámite	011
	Evento	379
	Actuación	430
	Folios	001

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, artículo 27 del Tratado de Cooperación en Materia de Patentes (PCT), regla 51 bis del Reglamento y Circular Unica de la Superintendencia de Industria y Comercio, se le comunica que

☐ La solicitud no contiene la copia del documento en que consta la cesión del derecho a la patente del inventor al solicitante o a su causante (Art 26-k) Decisión 486)

En cumplimiento de lo dispuesto por el artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica N° 10 de 2001.


ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de fecha, 12 SET 2003