99

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SUPERINDUSTRIA Y COMERCIO
Radicacion : 02112848 00000005 Folios: 2
Fecha (AMD): 2004-03-10 17:09:34
Tramite : 011 PCT-PATENT 379 FASE NACI 538 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

AS: 89.300

Señores
SUPERINTENDENCIA DE INDUSTRIA Y CO
DIVISION DE NUEVAS CREACIONES
E. S. D.

REF.: Expediente No. 02 112.848 solicitud de Patente FASE NACIONAL
Corresp. a la Solicitud Internacional PCT/US01/14955
a nombre de **COLGATE – PALMOLIVE COMPANY**
Titulada: SAQUITO DE CÁMARA DUAL DE DISPENSADO UNIFORME

RAMIRO CASTRO DUQUE, vecino de Bogotá, portador de la tarjeta profesional No. 1003 del Consejo Superior de la Judicatura, obrando como apoderado de la Sociedad **COLGATE – PALMOLIVE COMPANY,** según lo acredita el documento de poder protocolizado en la Secretaría General bajo el No. 131, de acuerdo con el Artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina, me permito solicitar que se examine si la invención contenida en la solicitud en referencia es patentable.

De acuerdo con lo anterior, me permito anexar el recibo oficial de caja No. 04-18,509 por valor de $177.000.

Señor Superintendente,

RAMIRO CASTRO DUQUE
C.C. No. 170.322 de Bogotá
Código 340
T.P. No.1003 del C.S.J.
Cra. 7 No. 16-56 Piso 9

Marzo 09, 2004
CHP/MEV/hsr.

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SUPERINDUSTRIA Y COMERCIO Folios: 2
Radicacion : 02112348 00000000
Fecha (AMD): 2004-03-10 17:09:34
Tramite : 611 PCT-PATENT 379 FASE NACI 538 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 04 - 18,509
FECHA : MARZO 9 DE 2004

***** C O N S I G N A C I O N *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
BRIGARD & CASTRO LTDA	CONSIGNACION	BANCO POPULAR	050-00110-6	21662174	08/03/2004	14,300,000.00

***** C O N C E P T O *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	114 PTC CAP-II EXAMEN DE PATENTIBILID	177,000.00
		TOTAL : $	177,000.00

SON: CIENTO SETENTA Y SIETE MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No._____

Industria y Comercio
SUPERINTENDENCIA

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No 02-112848

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCIÓN**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **536** DE

FECHA **30** DE **ENERO DE 2004** EL TÉRMINO HÁBIL SEÑALADO POR LA

LEY EXPIRA EL **28** DE **ABRIL** DEL **2004**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____ NO__ _X_ _____

US005529224A

United States Patent [19]

Chan et al.

[11] Patent Number: 5,529,224

[45] Date of Patent: Jun. 25, 1996

103
103

[54] SELF-CLOSING LIQUID DISPENSING PACKAGE

[75] Inventors: **John G. Chan**, Hyogo; **Tatsuya Taniguchi**, Honmachi, both of Japan

[73] Assignee: **The Procter & Gamble Company**, Cincinnati, Ohio

[21] Appl. No.: **250,737**

[22] Filed: **May 27, 1994**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 146,676, Nov. 3, 1993, abandoned.

[51] **Int. Cl.**[6] **B65D 37/00**

[52] **U.S. Cl.** **222/212**; 222/107; 222/494

[58] **Field of Search** 222/107, 105, 222/212, 490, 494

[56] **References Cited**

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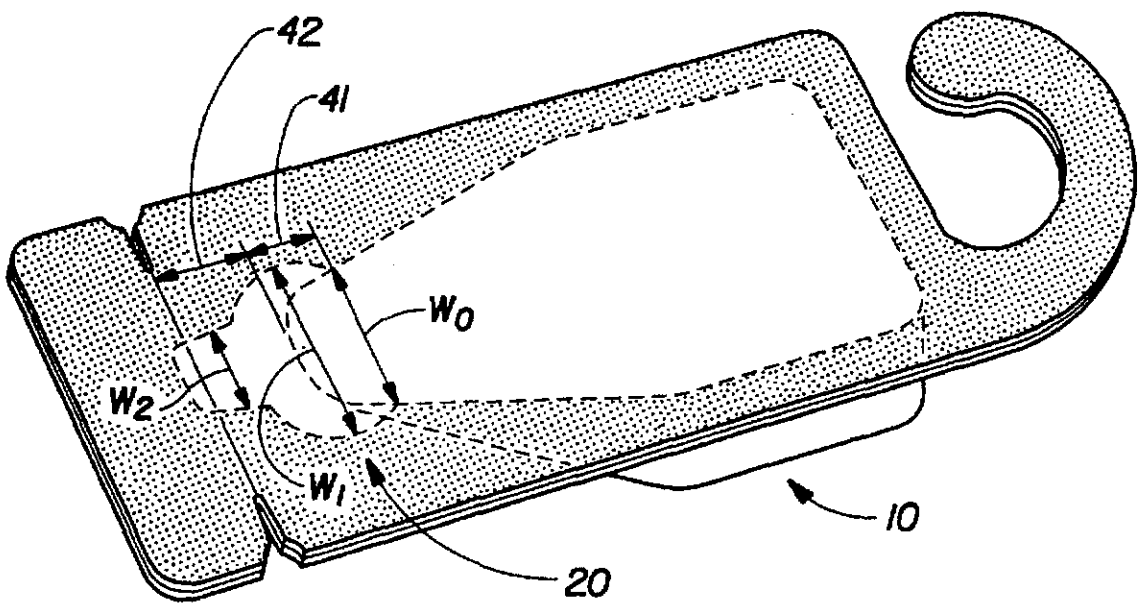
Primary Examiner—Gregory L. Huson

Attorney, Agent, or Firm—Ronald W. Kock; Michael E. Hilton

[57] **ABSTRACT**

A self-closing liquid dispensing package comprises a liquid container and a self-closing flat channel valve. The channel valve has an inlet adjacent to and in liquid communication with the liquid container. It also has a mouth, a first sheet member, and a second sheet member wherein the first and second sheet members have an original planar position and longitudinal edges, are indexed face-to-face, and are sealed together along longitudinal edges and wherein the first and second sheet members are sufficiently flexible to arch away from each other to form a flow channel therebetween to permit a flow of contained liquid in response to external pressure applied to the liquid container. At least one of the sheet members is sufficiently resilient to return the first and second sheet members to the original planar position when the external pressure is released. A lateral width of the inlet is greater than a lateral width of the mouth, and the self-closing flat channel valve has an additional portion between the inlet and the mouth which has a lateral width greater than the lateral width of the inlet and the lateral width of the mouth.

7 Claims, 16 Drawing Sheets



SELF-CLOSING LIQUID DISPENSING PACKAGE

CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation-in-part of my prior application, Ser. No. 08/146,676 entitled SELF-CLOSING LIQUID DISPENSING PACKAGE, filed on Nov. 3, 1993, which was expressly abandoned on Dec. 19, 1994.

TECHNICAL FIELD

The present invention relates to a self-closing liquid dispensing package for multiple use having improved dispensing and re-closing performance. The package is useful for containing various liquid products having a wide range of viscosity.

BACKGROUND

Disposable pouch-type packages made of two layers of flexible material for single-use of liquid products are prevalent in the present consumer product market. These packages are generally torn open or cut on an edge to form the dispensing opening. If the total amount of the contained liquid is not used, the rest of the liquid cannot be stored because the container itself cannot retain its shape and lacks closure means.

Pouch-type packages having self-closing functions are also known. Among these packages are those which comprise a dispensing valve made by face-to-face flexible material which can self-close itself to some extent when the squeezing pressure is released from the package, and thus can be used for multiple dispensing.

Conventional self-closing pouch-type packages are typically made of flexible film material which take a sachet-like or pillow-like bulging shape when filled with liquid. Each flexible material consists of a liquid container portion integral with a valve portion, joined along a line of connection. Typically, the shape of the package itself is not structured. Rather, the shape of these packages results from the internal pressure from the weight of the liquid contained therein, and is deformed when force is applied to the package by manual squeezing for dispensing purposes. Such deformation is not completely satisfactory for dispensing and re-closing performance of the package. First, such pouch-type package is flabby and thus difficult to hold upon dispensing. Second, the configuration of the connection portion between the liquid container and valve can constantly change depending on the amount of liquid in the container, or the amount of pressure applied, or both, thereby changing the condition of flow of the liquid. This causes difficulty to control the flow and amount of liquid to dispense. In particular, pouch-type packages made of thin flexible material cannot direct the pressure effectively to the valve for good liquid dispensing, but rather the pressure is dispersed to the surfaces of the liquid containers. Because of the difficulty to hold the package and to control amount of liquid to dispense, these packages can require use of both hands for dispensing. Third, due to changing of the shape and angle of the connection portion between the fluid container and valve, the stream of liquid cannot be cut off sharply and quickly at the valve. Fourth, the closure of these sachet-like or pillow-like packages are not sufficiently tight such that the contained liquid gradually leaks out after the package is re-closed because of liquid pressure against the valve due to the weight of the contained fluid.

Some of these self-closing pouch-type products have elongated valves which form a narrow, curved, or bent nozzle-like spout with an elongated flow channel. However, dispensing liquid through such elongated spout requires greater squeezing force and thus it can be difficult to control the flow and amount of liquid to dispense. Once liquid is dispensed through the spout, small amount of liquid can be trapped in the flow channel along the entire length of the elongated spout. This trapped liquid contributes to a substantial surface tension along the length of the flow channel, which increases the amount of squeezing force required to re-open the valve to dispense liquid. Further, it is difficult to dispense paste-type or gel-type high viscosity liquids with these packages, because of the greater friction from the inner surface of the narrow elongated spout which significantly increases the required manual squeezing force. These spouts can only practically be used for low viscosity liquids.

Thus, there is a desire to provide a self-closing dispensing package having improved dispensing and re-closing performance over known pouch-type packages.

Squeezable rigid bottle and tube packages comprising additional closing assemblies have good dispensing and closing characters. However, these packages require various surface preparations to make the rigid structure as well as the additional closing assembly, and add to the expense of these packages. Further, when the rigidity of the package is such that the package cannot be collapsed as the contents decrease, the liquid cannot be completely dispensed and used. Particularly, when the packages are made to contain small amount of liquid, the cost of the package in proportion to the total cost of the product becomes very high, and a substantial portion of the liquid remains unused. Moreover, because of the rigidity and relatively more material used to make these rigid structures, the amount of waste made when packages are disposed are relatively larger than the pouch-type packages as mentioned above.

Thus, there is also a desire to provide a dispensing package which is made by less material than rigid structured packages and which is collapsible to allow substantially complete dispensing of the contained liquid and thereby makes less product and package material waste, but without substantially sacrificing dispensing and re-closing performance.

OBJECT OF INVENTION

It is an object of the present invention to provide a self-closing liquid dispensing package useful for multiple use of liquid having a wide range of viscosity.

It is also an object of the present invention to provide a self-closing liquid dispensing package having improved dispensing and re-closing performance such as; good holding of the package, dispensing with less manual squeezing force, better control over the amount to be dispensed, sharp re-closing, tight closure after re-closing, and easy re-opening.

It is also an object of the present invention to provide a self-closing liquid dispensing package having a liquid container and a flange which can be designed easily by thermoforming; thus enabling the addition of useful functions such as sealing means, tearing means, suspensory means, and capping means.

It is further an object of the present invention to provide a self-closing liquid dispensing package made from significantly less material than rigid bottles and tubes.

contents comprising a sealed liquid container **10** integral with and in liquid communication at a connection portion **40** with flat channel valve **20**. The package of FIG. **1** is made of a first package member **80** and a second package member **90** which are sealed with each other along the perimeter seal **60**. The first package member **80** serves as a cover **11** of the liquid container **10** and a first sheet member **21** of the flat channel valve **20**. The second package member **90** comprises a reservoir portion **13** preferably in the form of a cup **12** to contain the quantity of liquid and defines the shape of the liquid container **10**, and a second sheet member **22** at the flat channel valve **20**. The first and second sheet members (**21** and **22**) of the flat channel valve **20** are indexed face-to-face as shown in FIG. **2***a*. The width of the seal **60** along the perimeter of the liquid container **10** and along the longitudinal edges of the flat channel valve **20** define a flange **30**.

When pressure is applied to the liquid container **10** by manual squeezing force, the flat channel valve **20** is forced to arch away to provide a flow channel **25** as shown in FIG. **2***b*. The flow channel **25** thus provided dispenses the liquid out of the package from the mouth **23**. When the squeezing is released, the first and second sheet members (**21** and **22**) return to their face-to-face indexed position, thereby closing the flat channel valve **20** to the original closed mode as shown in FIG. **2***a*.

The liquid container **10** of the present invention can be designed in any size and shape. Preferably, the size and shape is suitable for conveniently holding by one hand, and made of a suitably pliable material which can be manually squeezed to easily provide pressure to the liquid container **10** without tearing or ripping of the material. Preferably, the shape of the liquid container **10** enables the package to stand up on the surface **12***a* of the cup **12** which is parallel to the cover **11** as shown in FIG. **3**. Another preferable shape of the liquid container **10** is one which enables the package to stand up on the surface **12***c* of the cup **12** as shown in FIG. **11**.

In a most preferred embodiment, the flat channel valve **20** has an increased lateral width between the connection portion **40** and the mouth **23**, for example, as shown in FIGS. **24** and **25**. The increased lateral width of the flat channel valve **20** can conduct more amount of liquid from the liquid container **10** to the flow channel. The increased liquid helps to open the flow channel more largely by pushing the inner walls of the first and second sheet members **21**, **22**. This means that a user can dispense the liquid by applying a lower pressure. In the meantime, the increased lateral width structure can also promote the liquid flow back into the liquid container more easily. It should be noted that the flat channel valve **20** having an increased lateral width can be formed in any planar shapes such as trapezoid, triangle, square, irregular shape and the like.

The liquid container **10** of the present invention is preferably at least partially formed by thermoforming of thermoplastic material into the desired shape to provide a reservoir portion **13** for containing the quantity of liquid. Generally, thermoforming involves deformation of a substantially planar thermoplastic material into a three-dimensional form, such as the cup **12** shown in FIG. **3**. Thermoforming requires that the substantially planar sheet material be heated to a certain temperature (the heat distortion temperature) at which the thermoplastic material can be permanently deformed. After the thermoplastic material is formed into the desired shape, the temperature is reduced below the heat distortion temperature, thereby establishing the shape. When thermoformed, the area of the planar thermoplastic material is extended, thus rendering the material which is extended to have less thickness than the original non-extended material. This extending increases the flexibility of the reservoir portion **13** of the liquid container **10** which receives much of the pressure upon squeezing. This increased flexibility makes the liquid container **10** easier to squeeze. In the meantime, the flange portion **30** remains relatively thick and stiff. Thermoforming is also advantageous in that the shape of the liquid container **10** can be easily designed to any desired shape.

Thermoforming can be applied to both the first package member **80** and second package member **90** to make a package having two reservoir portions **13** in the liquid container **10** as shown in FIG. **4**. Such a package as shown in FIG. **4** is capable of containing a relatively large amount of liquid compared to a package comprising only one reservoir portion **13**.

In a preferred embodiment of the present invention, the flat channel valve **20** is made of first and second sheet members (**21** and **22**) wherein at least one of said sheet members is sufficiently resilient to return said sheets to their original planar position when squeezing pressure which had been applied to the container **10** is released. This resilience provides improved closing of the flat channel valve **20**. Material which is capable of rendering such resilience is selected for such sheet member. Such material is preferably a thermoplastic material, including mono-layer and laminated plastic films and sheets, such as polyethylene, polypropylene, polyvinyl chloride polystyrene, polyvinylydene chloride, fluoride resin, polycarbonates such as polymethylmethacrylate, esters such as polyethyl terephthalate, polyamides, polyphenylene oxides, and laminates with metal coating, and other liquid impervious material such as laminated carton is useful.

Generally, preferred thermoplastic material for the present invention have a thickness of at least 0.05 mm. One particularly preferred material is polypropylene. When polypropylene is used for making the package, it is preferred that at least one of the two sheet members have an average thickness of at least 0.1 mm, more preferably 0.15–0.3 mm. In one particularly preferred embodiment using polypropylene for dispensing liquid having about several thousand centipoises, one of the sheet member is 0.15 mm thick, while the other is 0.2–0.3 mm thick.

Although the flat channel valve **20** of the present invention can re-close itself, re-closing can also be assisted by the surface tension of liquid trapped between the first and second sheet members (**21** and **22**), particularly when liquid of low viscosity is contained. The flow channel of the flat channel valve **20** of the present invention preferably extends straight away from the liquid container **10**, without any corners or bendings. In case the liquid to be contained has a high viscosity, the flat channel valve **20** preferably does not have corners or bendings.

The width, length, and ratio of width/length of the flat channel valve **20** of the present invention can be suitably changed according to the liquid to be contained in the package. The width of the flat channel valve **20** of the present invention is usually 5–30 mm. The flat channel valve **20** of the present invention can provide improved re-closing with a relatively short length with any kind of liquid, such as 3–10 mm, compared to pouch-type packages in the art. In case high viscosity liquids are contained, it is preferable that the width is relatively wider and length is relatively shorter.

The plan view shape of the flat channel valve **20** can be square, rectangular, trapezoid, or rounded. In a highly preferred embodiment of the present invention, the lateral width

106
106

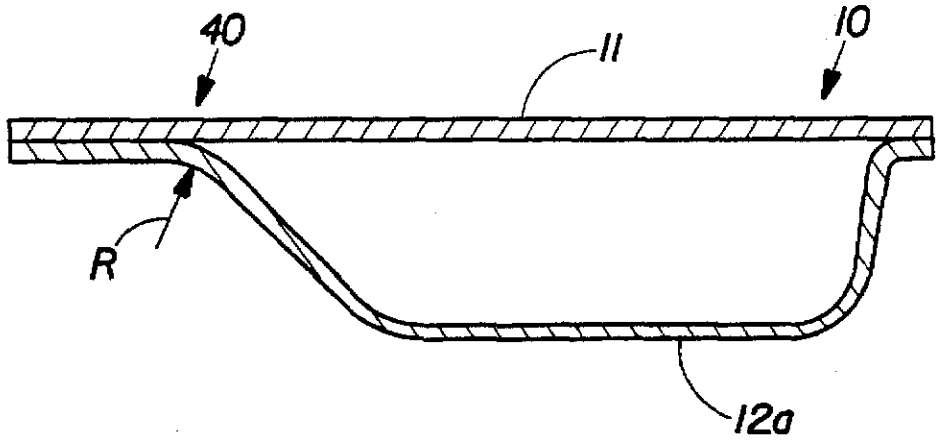


Fig. 3

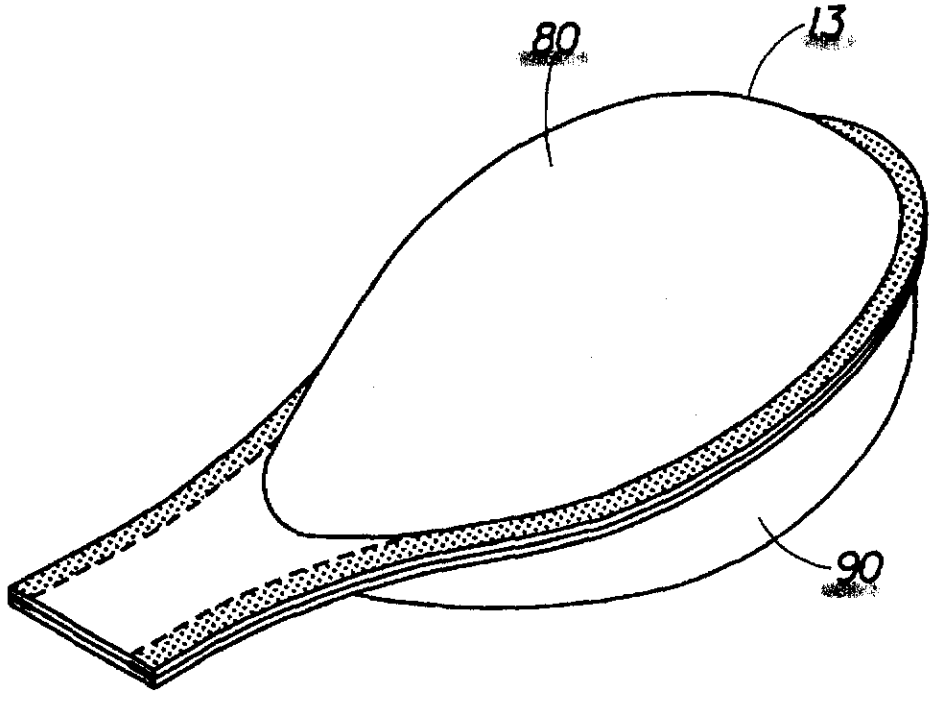


Fig. 4

108

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C., 28, 03, 2008

Abogado
RAMIRO CASTRO DUQUE

ASUNTO	Radicación	02112848
	Trámite	011
	Evento	001
	Actuación	430
	Oficio	5490
	Folios	010

Patente de Invención	[x]	Patente de Modelo de Utilidad	[ ]		
Vía Nacional	[ ]				
Vía PCT (fase nacional)	[x]	Cap.I	[ ]	Cap. II	[x]

No. Sol. Internacional PCT / US01/ 14955
Fecha de Presentación Internal. 09-05-2001

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

1.1. Descripción:	Folios: 5 a 12	como se radicó inicialmente.
1.2. Reivindicaciones:	Folios: 13 a 15	como se radicó inicialmente.
1.3 Dibujos:	Folios: 32	como se radicó inicialmente.
1.4. Prioridad:	12-05-2000, US 09/569,664	

2. Objeto de la invención

Título de la solicitud: "Saquito de cámara dual de dispensado uniforme".

El objeto de la presente solicitud de patente de invención se relaciona con un saquito de cámara dual que dispensa en forma sustancialmente uniforme las sustancias desde cada cámara cuando las paredes laterales del saquito se descomprimen.

El problema planteado en esta solicitud se debe a que en la mayoría de instancias los saquitos se usarán para suministrar una sola dosis de una sustancia. Sin embargo, en algunas instancias se usarán para dispensar dosis de dos diferentes sustancias, estas sustancias deben suministrarse sustancialmente en forma

uniforme. Es decir cada una de estas sustancias debe ser dispensada alrededor de cantidades iguales. Estos tipos de sustancias necesitan saquitos que dispensen fácilmente las sustancias desde cada cámara en cantidades sustanciadamente uniforme.

Para solucionar este problema técnico, la solicitud en estudio proporciona un saquito de cámara dual que tiene una construcción para facilitar el dispensado uniforme de sustancias. El saquito está compuesto de una pared frontal, una pared posterior y una pared divisora intermedia.

El objeto de la invención definido anteriormente se clasificó de acuerdo con el IPC así: B65D 81/32.

3. De la solicitud de Patente

3.1. Descripción *(artículo 28 D. 486)*

Se advierte que se tomaron para el estudio de patentabilidad los dibujos de la solicitud original PCT que obran en el folio 32, como quiera que no fueron allegados con la traducción de la solicitud que entro en fase nacional, como han debido ser allegados. Se sugiere presentar un nuevo juego de dibujos, con los títulos en idioma castellano.

4. Determinación del Estado de la Técnica

La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es:

Fecha de presentación de la solicitud prioritaria, 12-05-2000.

Teniendo en cuenta la fecha indicada se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud, encontrándose los siguientes documentos más relevantes:

Nº	Documento	Título	Fecha de publicación*
D1	US 5529224	"Self-closing liquid dispensing package "	25-06-1996

5. Análisis de patentabilidad (artículo 14 D486)

5.1. Nivel inventivo (artículo18 D486)

De acuerdo con la definición de nivel inventivo del Artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina y basándonos en el objeto de la invención se realizó el siguiente análisis:

5.1.1. La reivindicación independiente número 1 enseña:

"*Un saquito de cámara dual para el dispensado uniforme de sustancias que comprende*

una pared frontal,

una pared posterior

y una pared divisoria intermedia,

los bordes periféricos de la pared frontal y la pared posterior de un primer y segundo borde lateral,

un borde inferior y un borde superior unidos conjuntamente para formar un recipiente con dos cámaras con esquinas inferiores,

las esquinas inferiores de dichas cámaras son redondas,

una porción superior de dichas cámaras que tiene bordes que se ahusan hacia un canal de salida por lo cual ante la descompresión de la pared frontal y la pared posterior del saquito las sustancias en las cámaras son dispensadas sustancialmente en forma uniforme".

Figura 2 de la solicitud en estudio

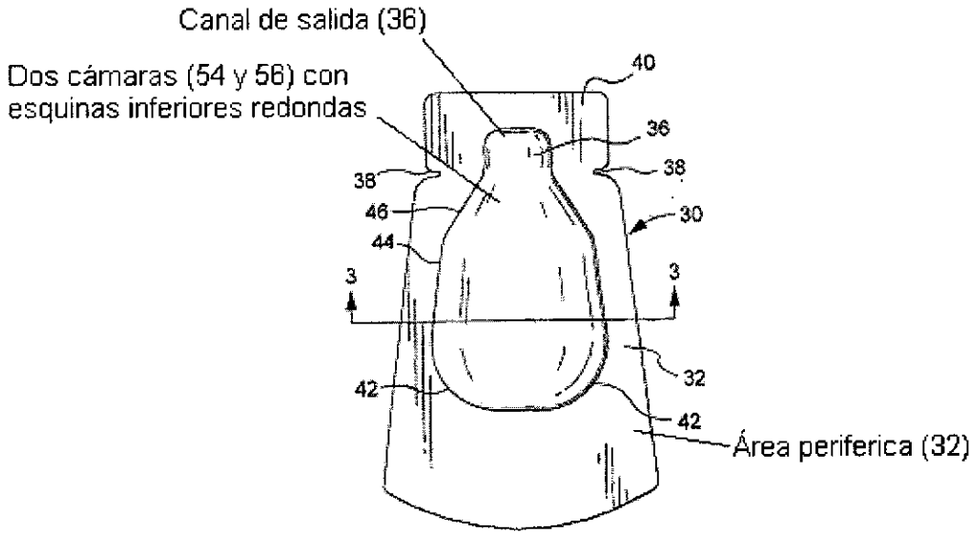
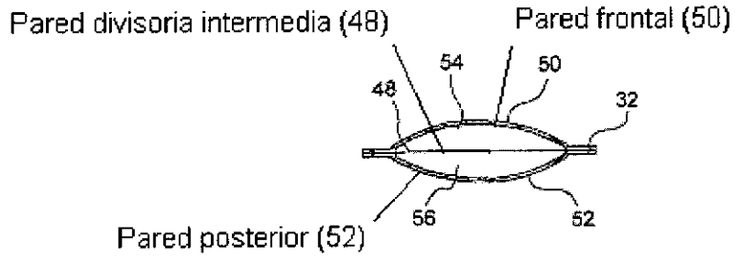


Figura 2 de la solicitud en estudio



El documento **US 5529224** (mencionado de ahora en adelante como **D1**) se refiere a un empaque dispensador de líquidos con cierre, que comprende:

Una pared frontal (80).

Una pared posterior (90).

Bordes periféricos de la pared frontal (80) y la pared posterior (90) de un primer y segundo borde lateral.

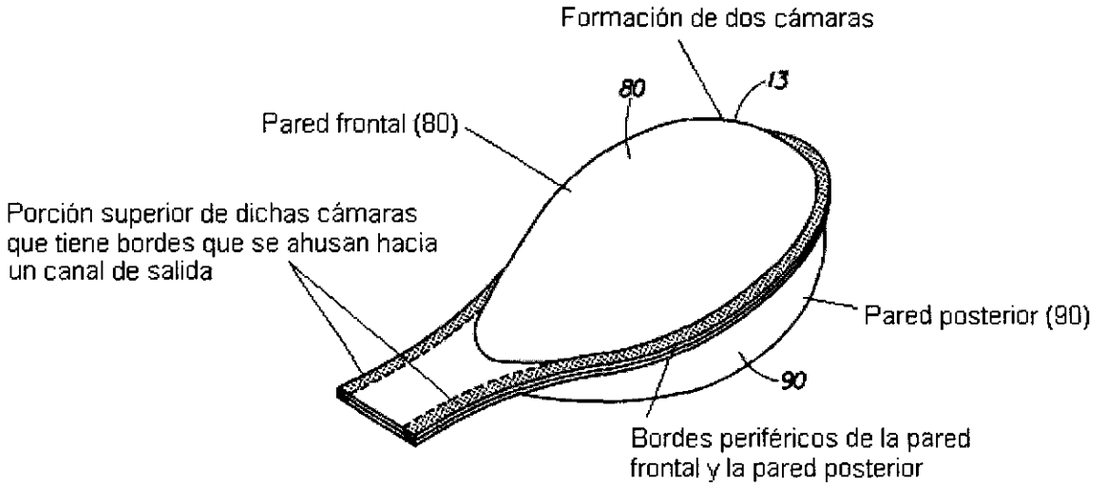
Un borde inferior y un borde superior unidos conjuntamente para formar un recipiente con dos cámaras.

La periferia de dichas cámaras es redondeada.

Una porción superior de dichas cámaras que tiene bordes que se ahúsan hacia un canal de salida.

Ver columna 2, renglones 48 a 51; columna 5, renglones 3 a 5; columna 6, renglones 10 a 1; figuras 4, 1, del documento D1 en folios 104 a 107.

Figura 4 del documento D1 US 5529224

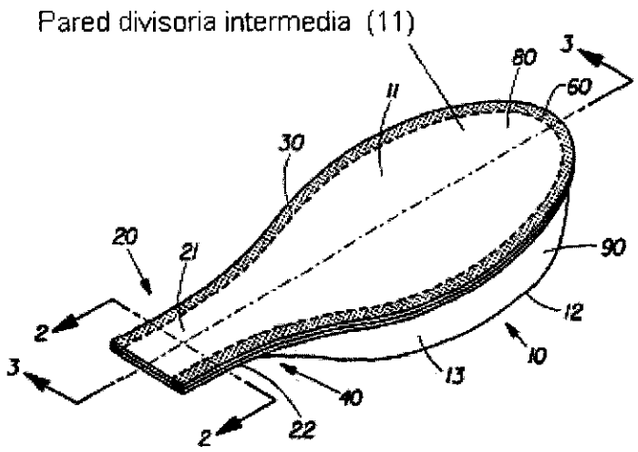


La única diferencia de la presente solicitud con **D1**, es que la solicitud en estudio hace mención a: Una pared divisoria intermedia.

El documento **D1** en la figura 1 sugiere una pared (11) con la cual se conforma la cámara (13). Se observa que al requerirse de otra cámara adyacente a ésta, esto se logra de la forma como lo enseña la figura 4 del mismo documento.

Al usar la configuración enseñada en la figura 4 del documento **D1** y conservando la pared (11) enseñada en la figura 1 de este mismo documento, se obtiene una empaquetadura con dos cámaras y una pared divisoria intermedia entre ellas.

Figura 1 del documento D1 US 5529224



5.2. Se concluye, que tomando las soluciones reveladas por el documento **D1**, una persona del oficio versada en la materia técnica correspondiente, motivado por el problema a solucionar, lograría la obtención de una empaquetadura de cámara dual con una construcción para facilitar el dispensado uniforme de sustancias, compuesto

de una pared frontal, una pared posterior y una pared divisora intermedia, de las características expuestas en la reivindicación 1 de la presente solicitud.

La reivindicación independiente 1 de la solicitud en estudio se puede ver afectada por nivel inventivo.

6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US 5529224	1	Nivel inventivo

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

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

ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha 25 ABR. 2008

CONCEPTO TÉCNICO No. 930	**EXAMINADOR TÉCNICO** Código No. 202065

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