

AS: 89.125

Señores

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES**

E. S. D.

REF: Expediente No. 02-091-811 - Solicitud de Patente a favor de OWENS - ILLINOIS CLOSURE INC. - Titulada: EMPAQUES DE DISPENSADO DUAL DE LÍQUIDOS

RAMIRO CASTRO DUQUE, vecino de Bogotá, portador de la tarjeta Profesional No. 1003, obrando como apoderado de la sociedad OWENS - ILLINOIS CLOSURE INC., según lo acredita el documento de poder protocolizado en esa División, bajo el No. 11619, para dar cumplimiento al requerimiento notificado por fijación en lista el 14 de Noviembre de 2002, cuyo término fue prorrogado mediante escrito radicado el 10 de Enero de 2003 y de acuerdo con los artículos 38 y 39 de la Decisión 486 de la comisión de la Comunidad Andina, me permito informar y anexar al presente escrito lo siguiente:

1. Documento donde consta la cesión del derecho a la Patente otorgado el inventor al solicitante, debidamente apostillado.
2. Nos permitimos informar que el documento de Poder de la Sociedad OWENS - ILLINOIS CLOSURE INC. se encuentra protocolizado en la Secretaría General bajo el No. 11619, y no bajo el No. 13516, como se indicó inicialmente en el memorial petitorio.
3. Artes finales (2 de 12 cm X 12 cm y 1 de 6 cm X 6 cm).
4. Dibujos Formales.
5. Extracto para publicación, Tarjeta de Archivo Temático y Tarjeta de propietarios donde se ha corregido el título de acuerdo con el expresado en la descripción inicialmente presentada.
6. Copia certificada por la Oficina de Patentes de los Estados Unidos de la primera solicitud presentada para la misma invención, de la cual REIVINDICAMOS PRIORIDAD junto con su correspondiente traducción del inglés al castellano.

Brigard & Castro
Abogados

Apartado 3692

Cra. 7 16-56
Bogotá - Colombia S.A.

Tel. Conm. 3802200
Tel./Fax: (57.1) 2827976
(57.1) 3802700

E.Mail:bricas@brigardycastro.com.co

De la señora Jefe, atentamente,


RAMIRO CASTRO DUQUE
C.C. No. 170.322 de Bogotá
Código 340
Cra 7 No. 16-56 Piso 9

Marzo 11, 2003
CPB/hsr.

Brigard & Castro
Abogados

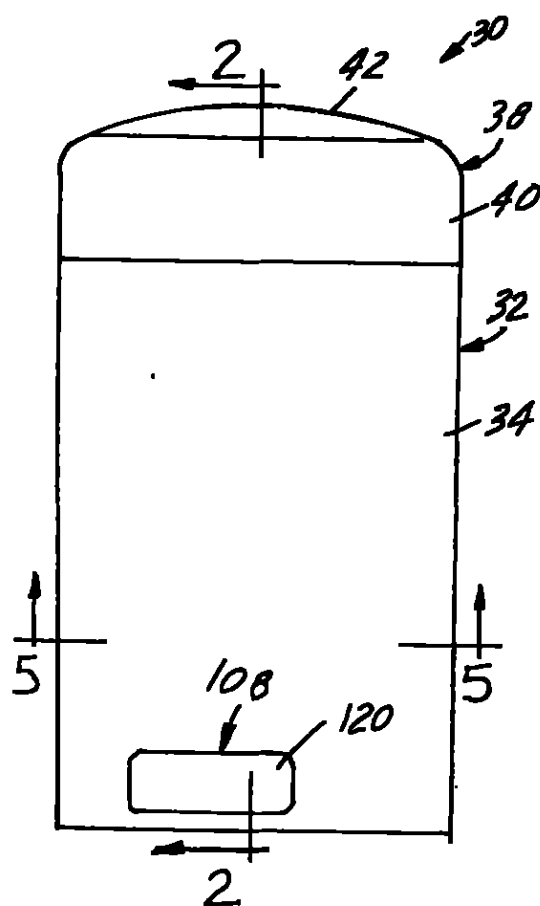
Apartado 3892

Cra. 7 16-56
Bogotá - Colombia S.A.

Tel. Conm. 3802200
Tel./Fax: (57.1) 2827976
(57.1) 3802700

E.Mail:bricas@brigardycastro.com.co

AF
44



28
* 45

119

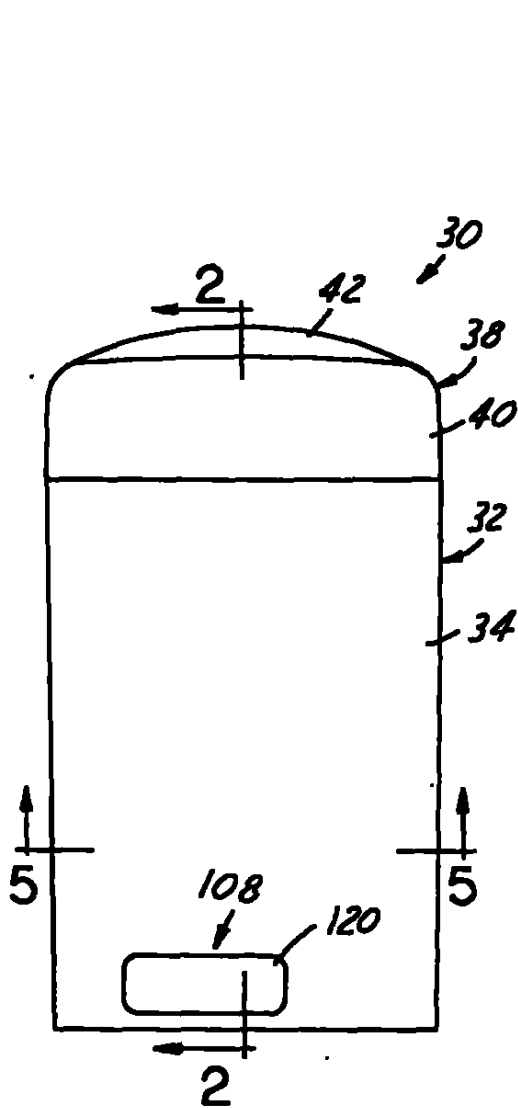


FIG. 1

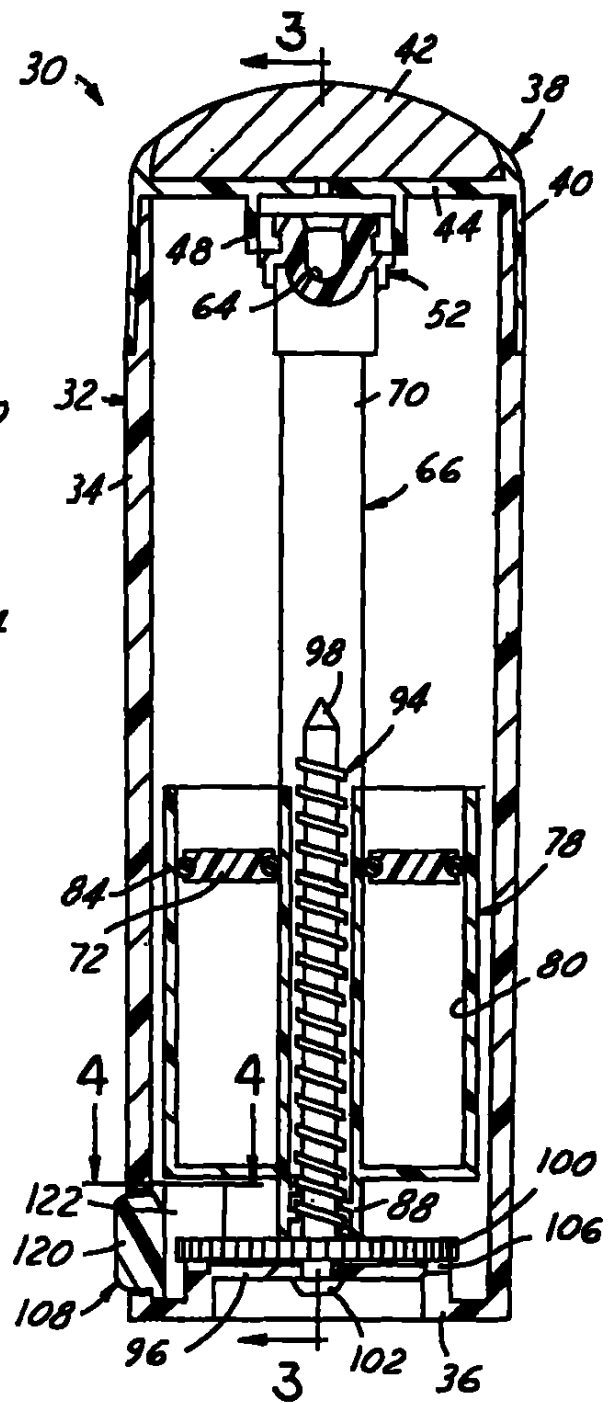


FIG. 2

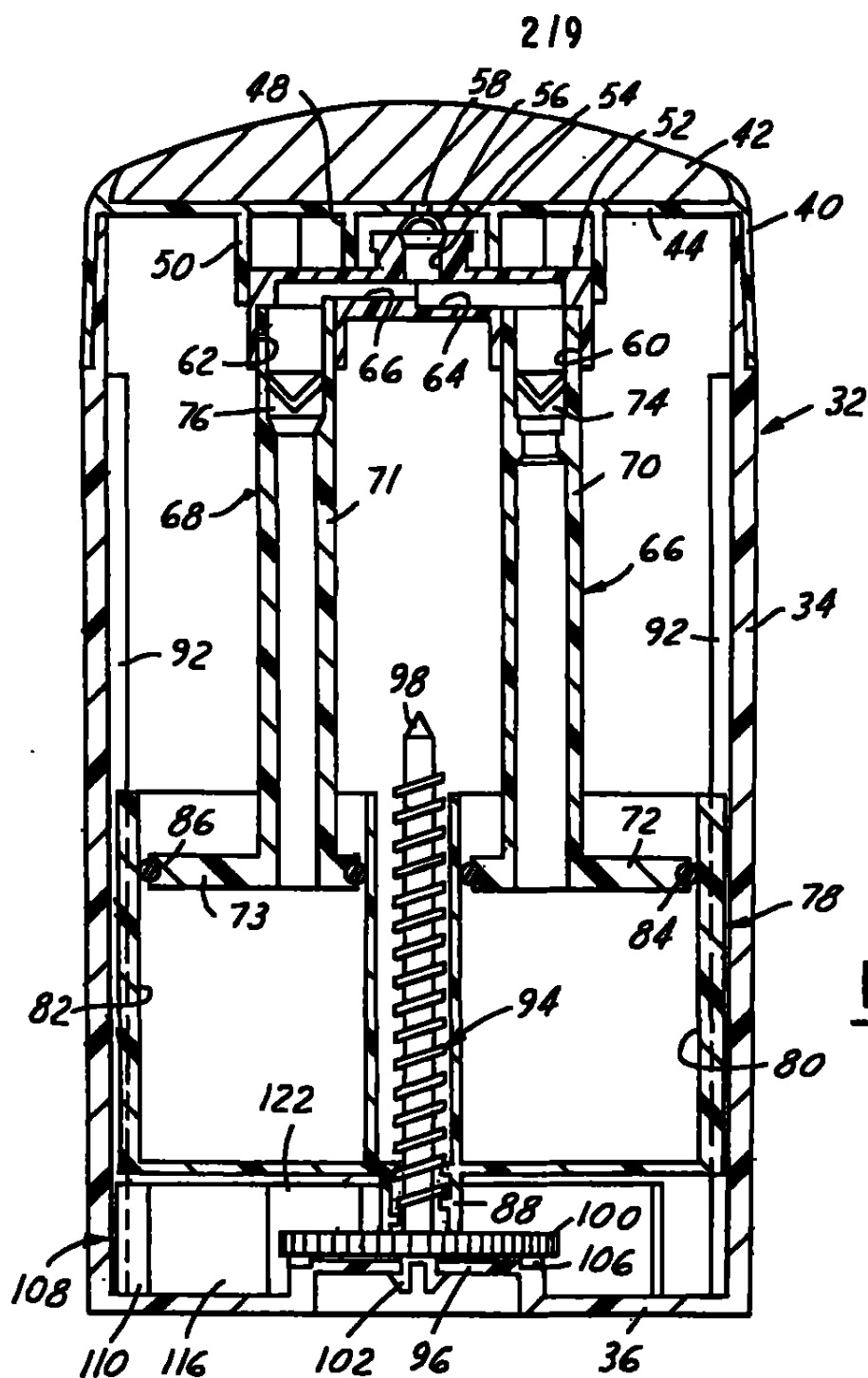


FIG. 3

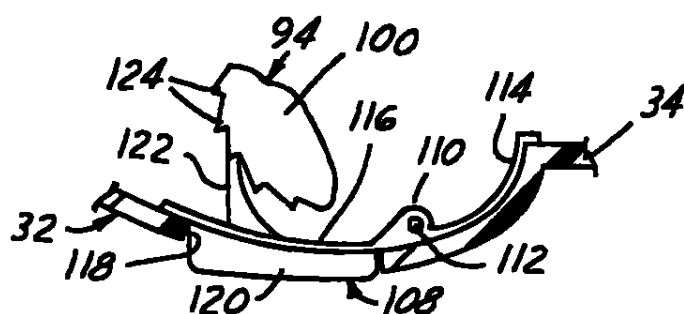


FIG. 4

50
47

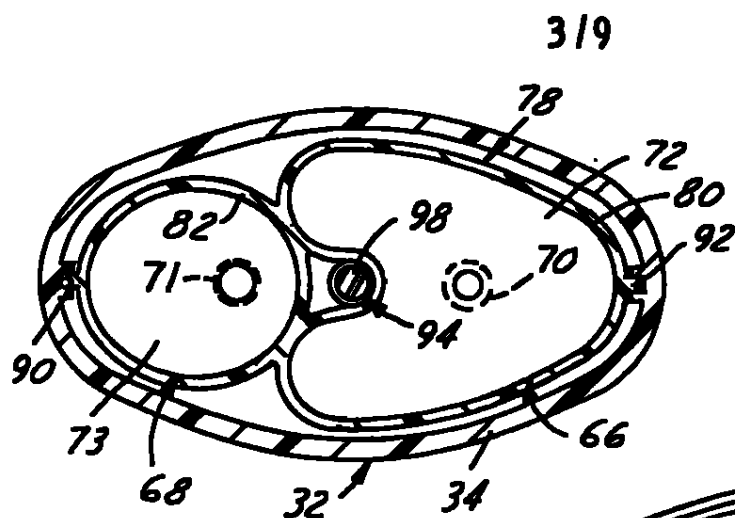


FIG. 5

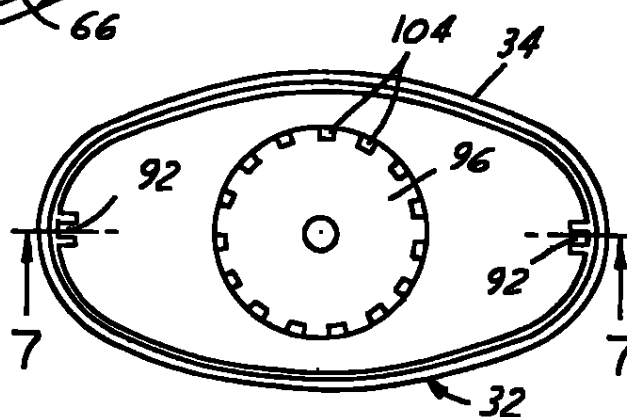


FIG. 6

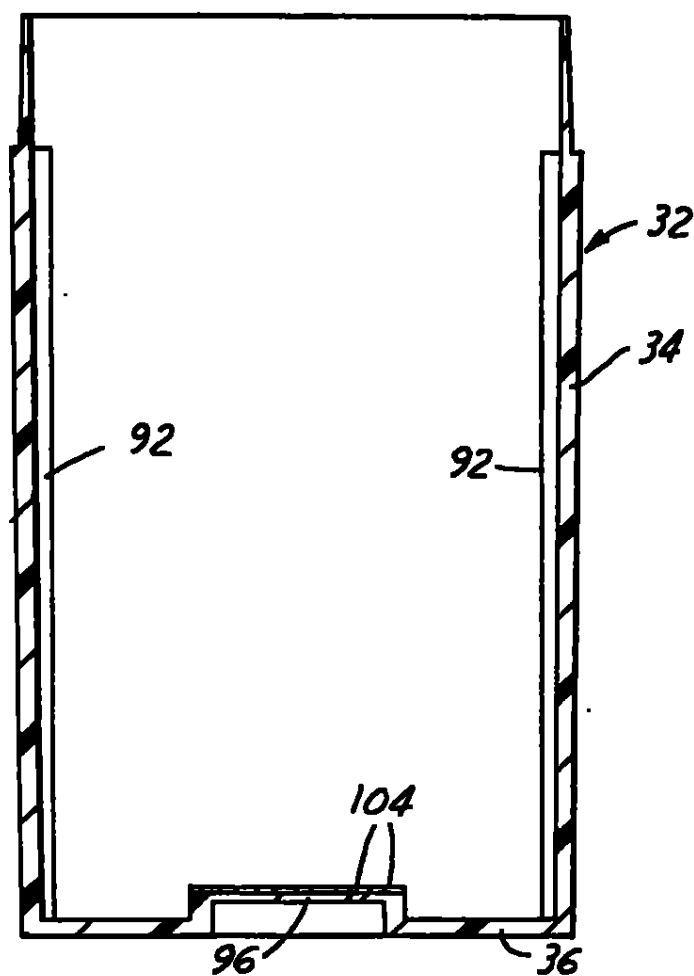


FIG. 7

48

4/9

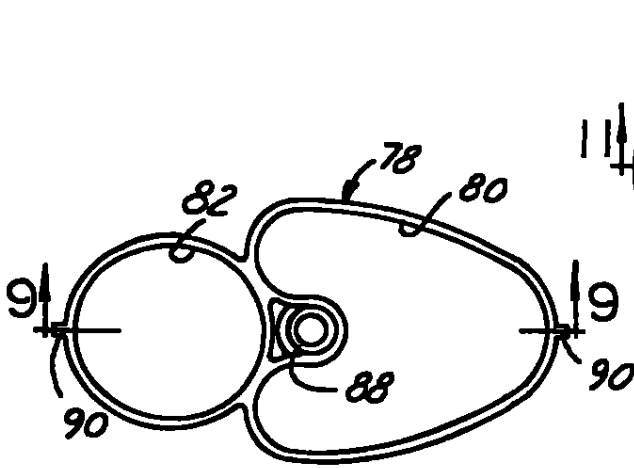


FIG. 8

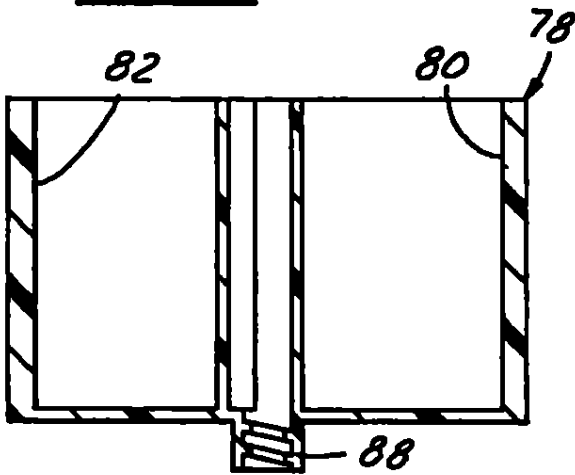


FIG. 9

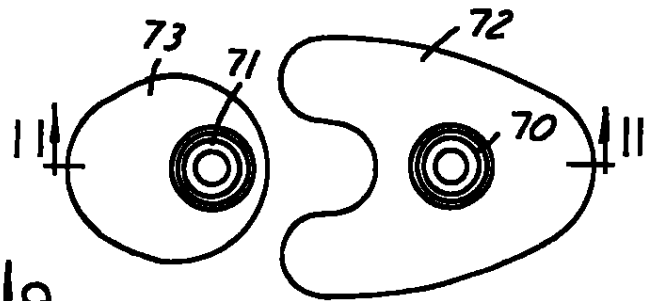


FIG. 10

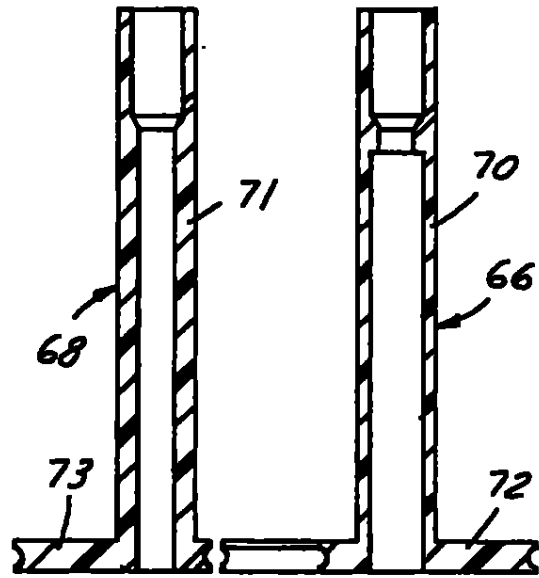


FIG. 11

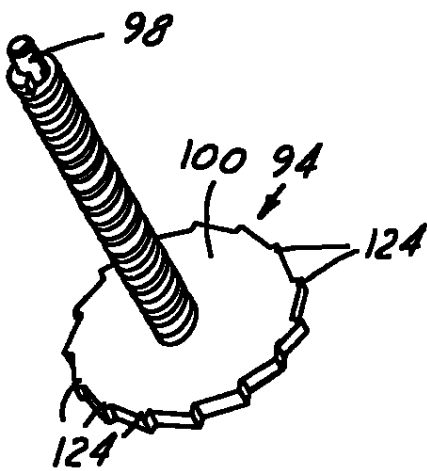


FIG. 12

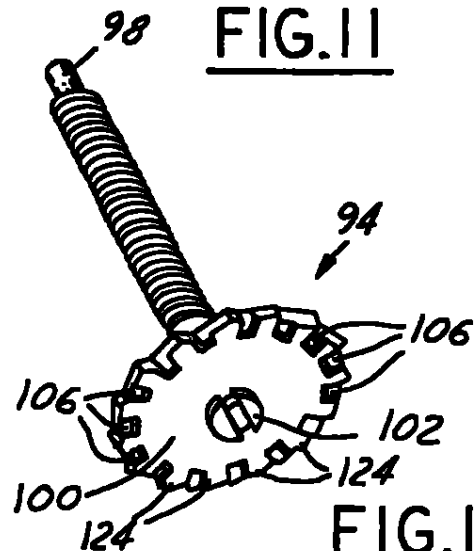


FIG. 13

519

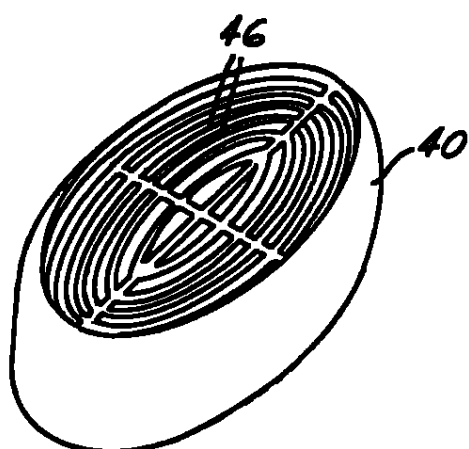


FIG. 14

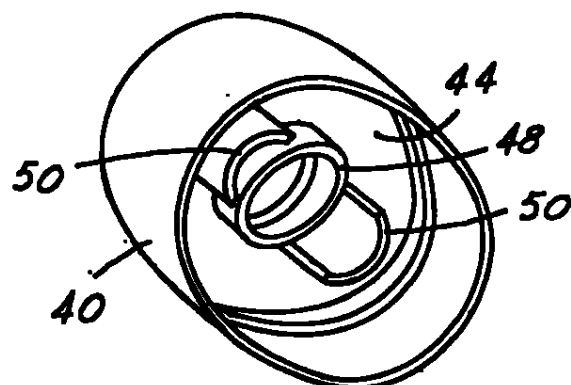


FIG. 15

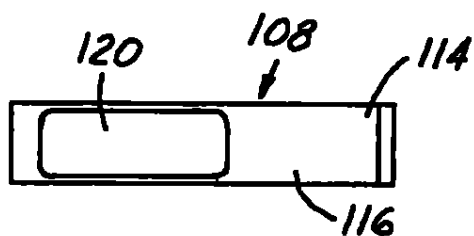


FIG. 16

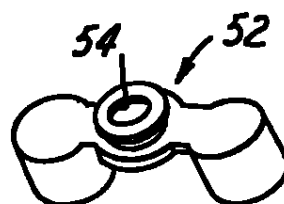
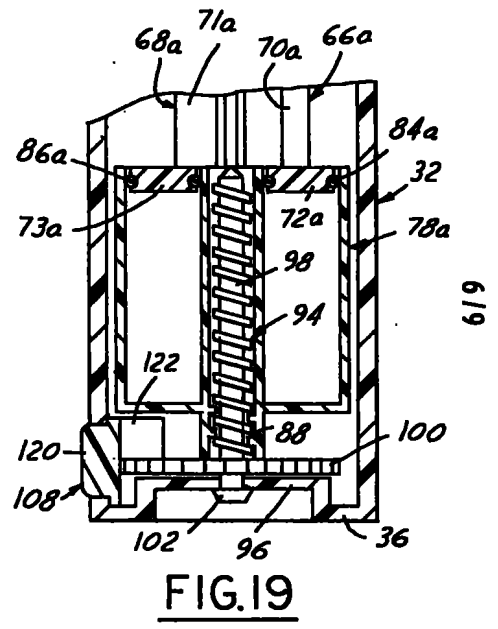
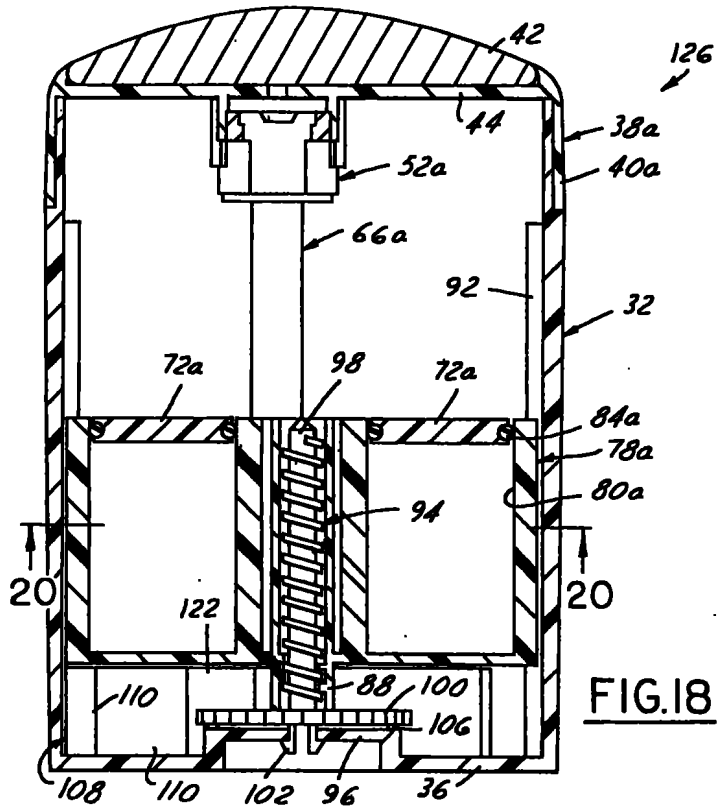


FIG. 17



2/14/83

44 51

719

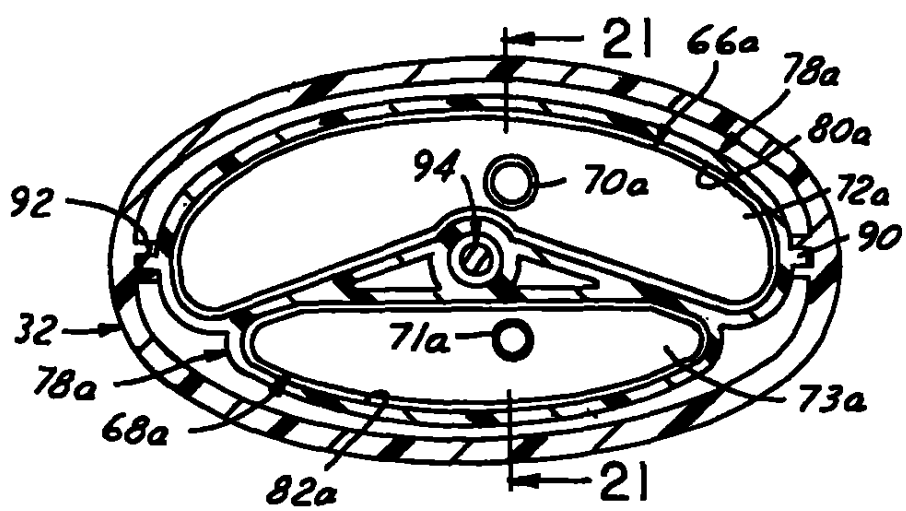


FIG. 20

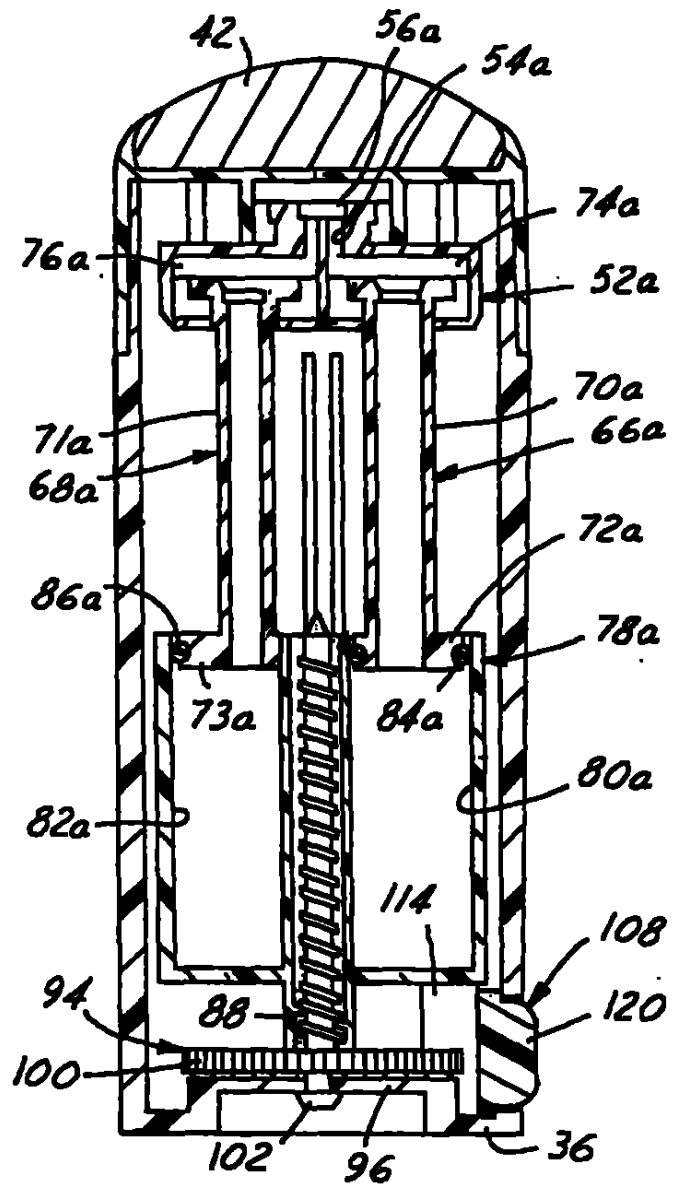
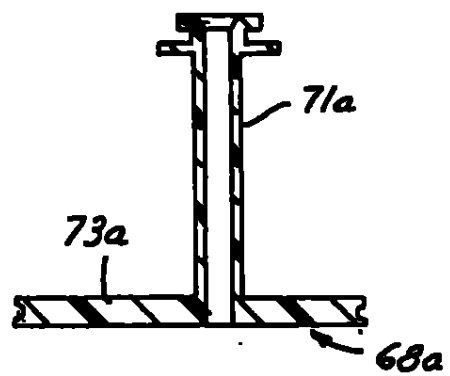
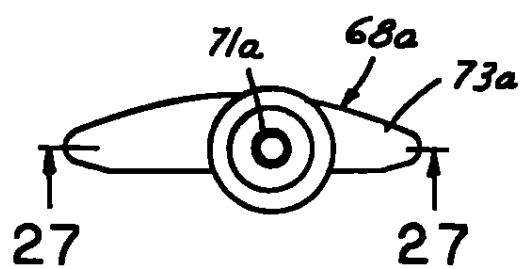
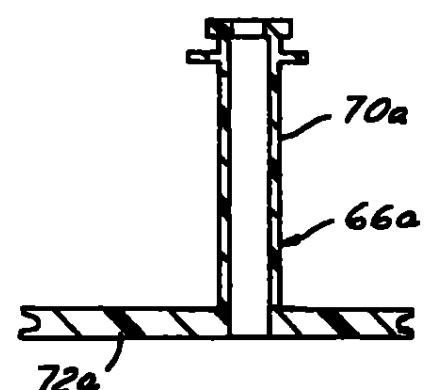
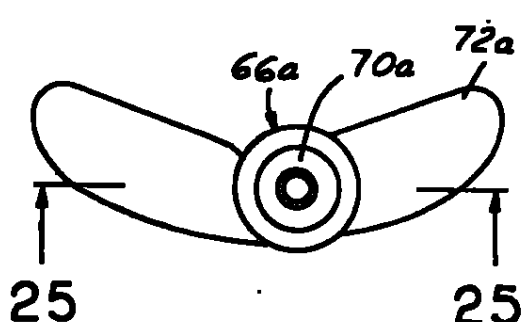
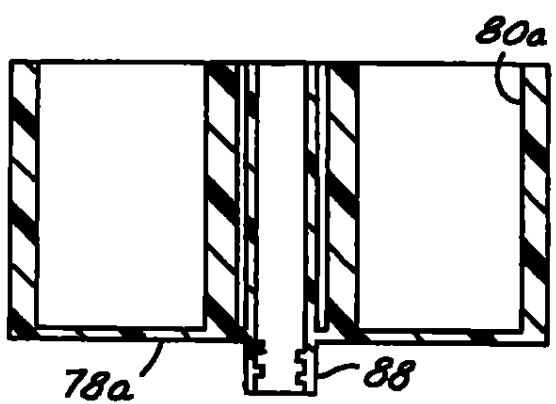
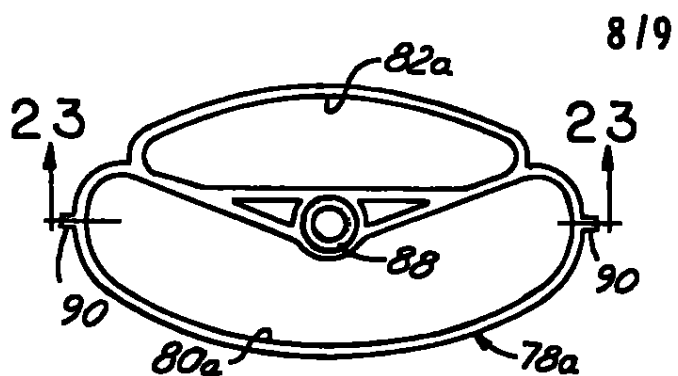


FIG. 21



9/9

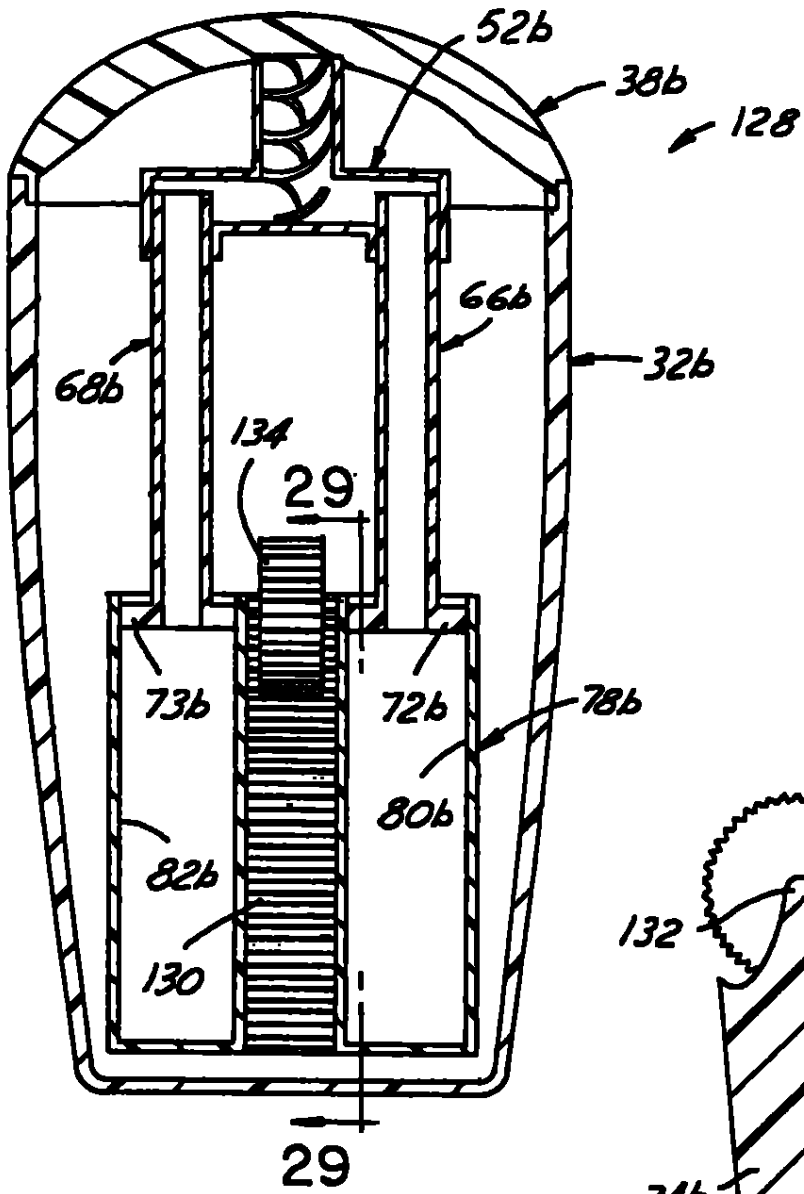


FIG. 28

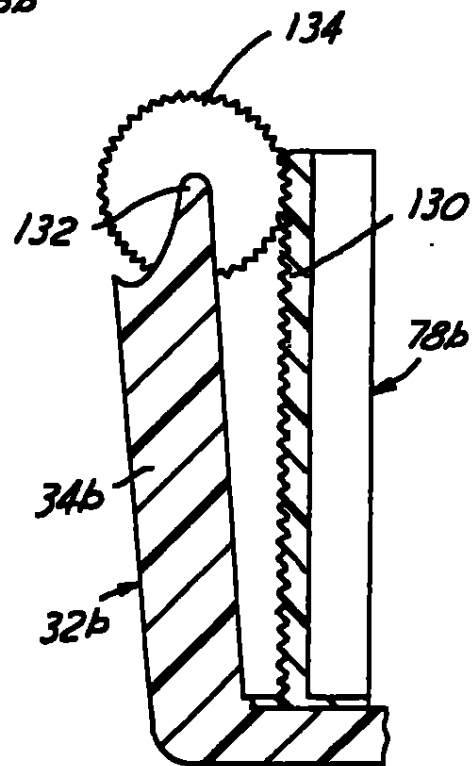


FIG. 29

89125
54

APOSTILLE

(Convention de la Haye du 5 octobre 1961)

1. Country: United States of America

This public document

2. has been signed by J. BERNIE QUILTER

3. acting in the capacity of Clerk of Court of Common Pleas

4. bears the seal/stamp of Court of Common Pleas, Lucas County

CERTIFIED

5. at Columbus, Ohio

6. December 10, 2002

7. by the Secretary of State of Ohio.

8. No. 111849

9. Seal/Stamp:

10. Signature:



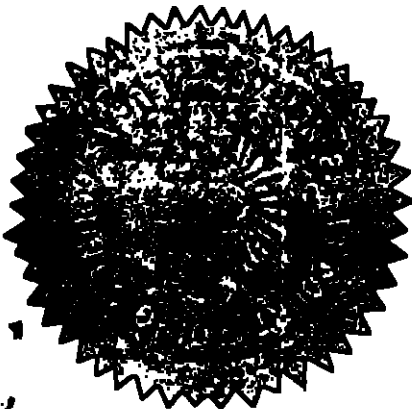
J. Kenneth Blackwell
J. Kenneth Blackwell
Secretary of State of Ohio

406

NOTARY CERTIFICATE

THE STATE OF OHIO
COUNTY OF LUCAS

ss.



55
J. Bernie Quilter, Clerk of the Common Pleas Court and Court of Appeals for the County of Lucas and State of Ohio, the same being a court of record, and having by LAW a Seal, do hereby certify that

Judith M. Schreiner

whose name is subscribed to the certificate of the proof of acknowledgment of the annexed instrument and thereon written, was, at the time of taking such proof and acknowledgment, a Notary Public, duly commissioned and sworn, and authorized by the laws of said State to take the acknowledgments and proofs of deeds or conveyances for lands, tenements or hereditaments in said State, to be recorded therein. And further, that I am well acquainted with the handwriting of such Notary Public, and verily believe that the signature to said certificate of proof or acknowledgment is genuine, that impression of seal of such officer is not required by law to be filed in my office, and the commission expires on the 2nd day of

February 2006

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the said Court and County, at Toledo, Ohio, December 5, 2002

(Date)

J. Bernie Quilter, Clerk of Courts



J. Bernie Quilter, Clerk

**CERTIFIED COPY
OF
ASSIGNMENT**

I, JUDITH M. SCHREINER, a Notary Public in and for the State of Ohio, U.S.A., hereby certify that the attached document is a true copy of the Assignment made of an Improvement invention for DUAL LIQUID DISPENSING PACKAGES by its inventor:

LEONORA M. BROZELL

to Owens-Illinois Closure Inc., as executed on October 15, 2001, and recorded in the United States Patent and Trademark Office on October 16, 2001 (as evidenced by the Notice of Recordation of Assignment Document also attached), and that the aforesaid Improvement Invention is the subject of United States Patent Application Serial No. 09/981,544 filed October 16, 2001.

Dated: November 8, 2002



JUDITH M. SCHREINER
Notary Public, State of Ohio
Commission Expires 2/2/06

Judith M. Schreiner
Notary Public



UNITED STATES
PATENT AND
TRADEMARK OFFICE

48
44 57

JANUARY 08, 2002

ASAS

Chief Financial Officer and Chief Administrative Officer
Washington, DC 20231
www.uspto.gov

OWENS-ILLINOIS
NIRAY D. PARIKH
ONE SEAGATE, 25-LDP
TOLEDO, OH 43666



101889360A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 10/16/2001

REEL/FRAME: 012283/0984
NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
BROZELL, LEONORA M.

DOC DATE: 10/15/2001

ASSIGNEE:
OWENS-ILLINOIS CLOSURE INC.
ONE SEAGATE
TOLEDO, OHIO 43666

SERIAL NUMBER: 09981544
PATENT NUMBER:

FILING DATE: 10/16/2001
ISSUE DATE:

STEVEN POST, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

ASSIGNMENT

WHEREAS, I, LEONORA M. BROZELL, of 7201 Elli Harbour Lane, Maumee, Ohio 43537, U.S.A., have invented an improvement in "Dual Liquid Dispensing Packages" and

WHEREAS, I have executed an Application for United States Patent based thereon, on the 15th day of October, 2001; and

WHEREAS, OWENS-ILLINOIS CLOSURE INC., a Delaware corporation, is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, for One Dollar (\$1.00) and other valuable considerations, receipt of all of which is hereby acknowledged, I have agreed to and do hereby sell, assign, and transfer unto said corporation my entire right, title, and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto, in and to said invention, said application and any and all patents (including extensions thereof) of any country, which have been or may be granted on said invention or any part thereof, or on said application or any divisional, continuing, renewal, reissue, or other patent application, based in whole or in part thereon, or based upon said invention.

TO BE HELD AND ENJOYED by said corporation, its successors and assigns, to the full ends of the respective terms for which said patents or any of them have been or may be granted, as fully and entirely as the same would have been held and enjoyed by me had no sale and assignment of said interest been made;

AND I hereby covenant and agree for myself, my heirs, and my legal representatives, to assist my said assignee in the prosecution of said application and in any interference which may arise involving said invention, and, upon request, to execute without further consideration all necessary and desirable divisional, continuing, renewal, reissue, or other applications for patents in any country, that might be deemed necessary by said assignee fully to secure to said assignee its interest as aforesaid in and to said invention or any part thereof, and in and to said several patents or any of them. Further, I hereby authorize the above-mentioned assignee to insert in this instrument the identifying serial number and filing date of my said application when received.

AND I do hereby authorize and request the Commissioner of Patents of the United States of America to issue any and all United States patents which may be granted upon said United States applications or any of them, or upon said invention or any part thereof, to said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this

15th day of October, 2001.

STATE OF OHIO

Leonora M. Brozell

WOOD ss:

On this 15 day of October, 2001, before me, a Notary Public, personally appeared the above named Leonora M. Brozell, personally known to me and known by me to be the one who executed the foregoing instrument and subscribed the same in my presence, and acknowledged the same to be his free act and deed.

My Commission Expires:

November 29, 2001

Joyce M. Murphy

Notary Public
JOYCE M. MURPHY
Notary Public, State of Ohio
Commission Expires 11-29-04

U. S. Serial No. _____ Filing Date _____

29/25
A #0 59

2A 895780



THE UNITED STATES OF AMERICA

~~TO ALL TO WHOM THESE PRESENTS SHALL COME:~~

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

September 16, 2002

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 09/981,544

FILING DATE: October 16, 2001



By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

N. Woodson
N. WOODSON

Certifying Officer

10-18-C1

A 36t
60

10981544-101601

1017 U.S. PTO
09/981544
10/16/01Please type a plus sign (+) inside this box → ☒

PTO/SB/09 (11-00)

Approved for use through 10/31/2003 OMB 0881-0032

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

UTILITY
PATENT APPLICATION
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	17745 USA
First Inventor	Leonora M. Brozell
Title	Dual Liquid Dispensing Packages
Express Mail Label No.	EL 507167763 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for the prior art only)
2. ☐ Applicant claims small entity status.
See 37 CFR 1.27
3. ☒ Specification [Total Pages **26**]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets **9**]
5. Oath or Declaration [Total Pages **2**]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ Copy from a prior application (37 CFR 1.63 (d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement, attached deleting inventor(s) named in the prior application, see 37 CFR 1.62(d)(2) and 1.53(b)
6. ☐ Application Data Sheet See 37 CFR 1.78

ADDRESS TO:

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Form (CRF)
 - b. Specification Sequence Listing on
 - i. ☐ CD-ROM or CD-R (2 copies), or
 - ii. ☐ paper
 - c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Claims
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☒ Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i) Applicant must attach form PTO/SB/35 or its equivalent
17. ☒ Other PTO/SB/81

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requests information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.78:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No. _____

Prior application information

Examiner

Group Art Unit

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5a, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Labelor ☒ Correspondence address below

Name	Nirav D. Parikh 25-IDP				
Address	Owens-Illinois, Inc.				
	One SeaGate				
City	Toledo	State	OH	Zip Code	43666
Country	USA	Telephone	419-247-8707	Fax	247-8555

Name (Print/Type)	Nirav D. Parikh	Registration No. (Attorney/Agent)	46,394
Signature	<i>Nirav D. Parikh</i>	Date	10/16/01

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Assistant Commissioner for Patents, Box Patent Application Washington, DC 20231

2762
61

PTO-38/17 (11-30)

Approved for use through 10/31/2002 OMB 0051-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision

TOTAL AMOUNT OF PAYMENT (\$)
1,412

Complete If Known

Application Number	
Filing Date	
First Named Inventor	Leonora M. Brozell
Examiner Name	
Group Art Unit	
Attorney Docket No.	17745 USA

METHOD OF PAYMENT

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to

Deposit Account Number: 15-0875

Deposit Account Name: Owens-Illinois, Inc.

☒ Charge Any Additional Fee Required Under 37 CFR 1.18 and 1.17

☐ Applicant claims credit entry status See 37 CFR 1.17

2. ☐ Payment Enclosed:

☐ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION (continued)

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code (S)	Fee Code (S)	Fee Code (S)	Fee Code (S)		
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
138	130	138	130	Non-English specification	
147	2,520	147	2,520	For filing a request for ex parte reexamination	
112	820*	112	820*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	118	215	58	Extension for reply within first month	
116	388	216	185	Extension for reply within second month	
117	890	217	443	Extension for reply within third month	
118	1,390	218	688	Extension for reply within fourth month	
119	1,890	219	943	Extension for reply within fifth month	
119	318	219	166	Notice of Appeal	
120	310	220	158	Filing a brief in support of an appeal	
121	278	221	135	Request for oral hearing	
138	1,810	138	1,810	Petition to institute a public use proceeding	
140	110	240	65	Petition to revive - unavoidable	
141	1,240	241	620	Petition to revive - unintentional	
142	1,240	242	620	Utility issue fee (or rehear)	
143	440	243	220	Design issue fee	
144	600	244	300	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	30	123	30	Processing fee under 37 CFR 1.17(d)	
136	180	126	180	Submission of Information Disclosure Sheet	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))	
146	710	246	355	For each additional invention to be examined (37 CFR § 1.129(b))	
178	710	278	355	Request for Continued Examination (RCE)	
188	800	188	800	Request for expedited examination of a design application	
Other fee (specify)					
SUBTOTAL (3) (\$)					0

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code (S)	Small Entity Fee Code (S)	Fee Description	Fee Paid		
101	710	201	355	Utility filing fee	740
106	320	206	160	Design filing fee	
107	480	207	240	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	180	214	75	Provisional filing fee	
SUBTOTAL (1) (\$)				740	

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from Table	Fee Paid	
48	-20** = 28	18	504	
5	-3** = 2	84	168	
Multiple Dependent				0

Large Entity Fee Code (S)	Small Entity Fee Code (S)	Fee Description	Fee Paid		
103	18	203	9	Claims in excess of 20	
103	80	203	40	Independent claims in excess of 3	
104	270	204	135	Multiple dependent claims, if not paid	
108	80	208	40	** Reissue independent claims over original patent	
110	18	210	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2) (\$)				672	

*or number previously paid, if greater, For Reissues, see above

*Reduced by Basic Filing Fee Paid

SUBMITTED BY		Complete if applicable	
Name (Print/Type)	Nirav D. Parikh	Registration No. (Attorney/Agent)	46,394
Signature	<i>Nirav D. Parikh</i>	Telephone	419-247-8707
		Date	10/16/01

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-3038.

Burden Hour Statement. This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

62

PTO:SB/35 (11-30)

Approved for use through 10/1/2002. OMB CEST-0331
U.S. Patent and Trademark Office, U. S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST AND CERTIFICATION UNDER 35 U.S.C. 122(b)(2)(B)(I)	First Named Inventor	Leonora M. Brozell
	Title	Dual Liquid Dispensing Packages
	Atty Docket Number	17745 USA

I hereby certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. I hereby request that the attached application not be published under 35 U.S.C. 122(b).

10/16/01
Date

Nirav D. Parikh
Signature

Nirav D. Parikh
Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application upon filing.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant must notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(III)).

Burden Hour Statement: This collection of information is required by 37 CFR 1.313(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 8 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS, SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

0981544-10301

26-63

DUAL LIQUID DISPENSING PACKAGES

The present invention is directed to packages for containing and dispensing multiple-component liquid solutions, such as a two-component deodorant, and to methods for making such packages.

Background and Objects of the Invention

5 A general object of the present invention is to provide a package for containing and applying a multiple-component liquid solution, such as a two-component liquid deodorant, in which the liquid components are separated within the package and not mixed until the time of application, and in which the relative quantities of the liquids dispensed at each application are controlled by design of the package.

10 A package for containing and dispensing a multiple-component liquid solution in accordance with a first aspect of the present invention includes a product chamber member movably mounted within the sidewall of a canister, and defining at least first and second separate product chambers for containing liquids to be dispensed. First and second pistons are mounted in fixed positions within the canister and respectively slidably disposed within the first and second chambers. First and second passages extend from the respective pistons for feeding liquids displaced from the chambers through a manifold to a surface applicator mounted on the canister. Cooperating structure on the canister and the chamber member is manipulated by a user to move the chamber member within the canister over the pistons, and thereby to displace liquids from the chambers through the pistons to the manifold, in which the liquids are mixed and fed to the applicator.

20 A package for containing and dispensing a two-component liquid solution in accordance with one presently preferred embodiment of the invention includes a surface

2765
64

applicator mounted over the open end of a canister. An integrally formed product chamber member is movably mounted within the sidewall of the canister, and includes an internally threaded collar and first and second product chambers for containing liquids to be dispensed. A manifold is coupled to the applicator within the canister. The manifold has an outlet coupled to the applicator and a pair of spaced parallel inlets. First and second hollow pistons are suspended from the manifold inlets and respectively slidably disposed within the first and second chambers. A screw has an externally threaded shaft received within the collar and a circular base rotatably supported within the canister. Rotation of the screw within the canister moves the chamber member over the pistons and displaces liquids from the chambers through the pistons and the manifold to the applicator. In the disclosed embodiment, the screw is rotated by a pushbutton mounted within the canister and manipulable by a user from externally of the canister. Alternatively, the periphery of the screw may be accessible to a user through a suitable opening in the canister sidewall.

A package for containing and dispensing a two-component liquid solution in accordance with another preferred embodiment of the invention includes a canister and a surface applicator mounted over end open end of the canister. An integrally formed product chamber member is movably mounted within the sidewall of the canister, and includes a gear rack and first and second product chambers for containing liquids to be dispensed. A manifold is coupled to the applicator within the canister, and has a pair of spaced parallel inlets. First and second hollow pistons are suspended from the manifold inlets and respectively slidably disposed within the first and second chambers. A gear wheel is rotatably mounted on the canister sidewall in engagement with the rack for manipulation by a user to move the chamber member over the pistons and thereby displace liquids from the chambers through the pistons to the applicator.

7/6/65

A method of making a package for containing and dispensing a multiple-component liquid solution in accordance with another aspect of the invention includes providing a canister having an open end and a sidewall. An integrally formed product chamber member is mounted within the canister, and has at least first and second product chambers and a first element for moving the member with respect to the canister sidewall. A second element is mounted within the canister for engagement with the first element and manipulation by a user to move the product chamber member within the canister. First and second hollow pistons are suspended from a surface applicator. The first and second chambers are filled with first and second liquids to be dispensed, and the surface applicator is assembled over the open end of the canister such that the first and second pistons are respectively disposed in the first and second chambers.

Brief Description of the Drawings

The invention, together with additional objects, features and advantages thereof, will be best understood from the following description, the appended claims and the accompanying drawings in which:

FIG. 1 is a front elevational view of a dual liquid dispensing package in accordance with one presently preferred embodiment of the invention;

FIG. 2 is a sectional view laterally bisecting the package of FIG. 1, being taken substantially along the line 2-2 in FIG. 1;

FIG. 3 is a sectional view bisecting the package of FIG. 2, being taken substantially along the line 3-3 in FIG. 2;

FIG. 4 is a fragmentary sectional view taken substantially along the line 4-4 in FIG. 2;

FIG. 5 is a sectional view taken substantially along the line 5-5 in FIG. 1;

2/16/66

FIG. 6 is a top plan view of the canister in the package of FIGS. 1 - 5;

FIG. 7 is a sectional view bisecting the canister of FIG. 6, being taken substantially along the line 7-7 in FIG. 6;

FIG. 8 is a top plan view of the product chamber member in the package of FIGS. 1 - 5;

FIG. 9 is a sectional view laterally bisecting the chamber member of FIG. 8, being taken substantially along the line 9-9 of FIG. 8;

FIG. 10 is a top plan view of the pistons in the package of FIGS. 1 - 5;

FIG. 11 is sectional view laterally bisecting the pistons of FIG. 10, being taken substantially along the line 11-11 in FIG. 10;

FIG. 12 is a top perspective view of the screw for raising the chamber member and dispensing liquid in the package of FIGS. 1 - 5;

FIG. 13 is a bottom perspective view of the screw illustrated in FIG. 12;

FIG. 14 is a top perspective view of the surface applicator base in the package of FIGS. 1 - 5;

FIG. 15 is a bottom perspective view of the applicator base illustrated in FIG. 14;

FIG. 16 is an elevational view of the dispensing button in the package of FIGS. 1 - 5;

FIG. 17 is a top perspective view of the manifold in the package of FIGS. 1 - 5;

FIG. 18 is a sectional view similar to that of FIG. 3 but illustrating a modified embodiment of the invention;

FIG. 19 is a fragmentary sectional view similar to that of FIG. 2 but illustrating the embodiment of FIG. 18;

FIG. 20 is a sectional view taken substantially along the line 20-20 in FIG. 18;

09983544-101501

3067
107

FIG. 21 is a sectional view taken substantially along the line 21-21 in FIG. 20;

FIG. 22 is a top plan view of the chamber member in the package of FIGS. 18 - 21;

FIG. 23 is a sectional view taken substantially along the line 23-23 in FIG. 22;

FIG. 24 is a top plan view of one of the pistons in the package of FIGS. 18 - 21;

FIG. 25 is a sectional view taken substantially along the line 25-25 in FIG. 24;

FIG. 26 is a top plan view of the second piston in the package of FIGS. 18 - 21;

FIG. 27 is a sectional view taken substantially along the line 27-27 in FIG. 26;

FIG. 28 is a sectional view laterally bisecting a dual liquid dispensing package in accordance with another embodiment of the invention; and

FIG. 29 is a fragmentary sectional view taken substantially along the line 29-29 in FIG. 28.

Detailed Description of Preferred Embodiments

FIGS. 1 - 17 illustrate a package 30 in accordance with one presently preferred embodiment of the invention. A hollow cup-shaped housing or canister 32 includes a sidewall 34, a bottom wall 36 and an open upper end. (It will be appreciated that directional adjectives such as "upper" and "lower" are used by way of description and not limitation with respect to the upright orientation of the package illustrated in FIGS. 1 - 3.) A surface applicator 38 is secured over the open end of canister sidewall 34. Applicator 38 includes an applicator holder 40 and an applicator body 42. Holder 40 (FIGS. 2 - 3 and 14 - 15) is of inverted cup-shaped construction, having an upper base wall 44 and a peripheral skirt externally secured over the upper end of canister sidewall 34. The external surface of base wall 44 has a plurality of ribs 46 (FIG. 14) forming channels or grooves between the ribs to dispense liquid product throughout

5/18/68

the upper surface of the applicator holder. The underside of base wall 44 has an annular wall 48 that surrounds an outlet opening 54 that extends through wall 44, and opposed part-circular walls 50.

A manifold 52 (FIGS. 2 - 3 and 17) is internally secured to the underside of applicator holder base wall 44 between walls 50 against wall 48, and is thereby suspended in assembly from the underside of the applicator. Manifold 52 is of inverted goalpost-shaped construction, having an upper outlet 54 that communicates through a check valve 56 within opening 58 in applicator holder 40, and parallel downwardly oriented cylindrical inlet openings 60, 62. Passages 64, 66 (FIG. 3) within manifold 52 connect the inlet openings to the outlet opening, at which the liquid products mix prior to delivery to the applicator. A first piston 66 (FIGS 2 - 3 and 10 - 11) is suspended from manifold inlet 60, and a second piston 68 is suspended from manifold inlet 62. Pistons 66, 68 are hollow pistons, each having an associated hollow longitudinally extending passage 70, 71 and a transversely oriented piston head 72, 73. Pistons 66, 68 are thus suspended from inlets 60, 62 of manifold 52. A check valve 74, 76 is disposed within the passages of pistons 66, 68 respectively to prevent reverse flow of mixed fluid to the product chambers. Piston heads 72, 73 are preferably disposed in a common plane in assembly, as best seen in FIG. 3. Passages 70, 71 are parallel to each other.

A product chamber member 78 (FIGS. 2 - 3, 5 and 8 - 9) is slidably mounted within sidewall 34 of canister 32. Chamber member 78 is preferably a one-piece body of integrally molded plastic construction, including a pair of product chambers 80, 82. Each product chamber 80, 82 is cup-shaped, having open upper ends disposed adjacent to each other in a common plane transverse to the longitudinal dimension of the canister. In the illustrated embodiment of the invention, and as best seen in FIG. 8, chambers 80, 82 are non-cylindrical in geometry, chamber 80 being significantly larger than chamber 82 and generally V-shaped as

3
69

viewed from above. Piston heads 72, 73 are correspondingly shaped, as best seen by comparing FIG. 10 to FIG. 8. An O-ring 84, 86 extends around the peripheries of piston heads 72, 73 in sliding sealing engagement with the internal wall surfaces of chambers 80, 82 respectively. Chamber member 78 also includes an internally threaded collar or sleeve 88, disposed between chambers 80, 82. Sleeve 88 is so disposed on chamber member 78 as to coincide with the axial centerline of canister 32, for reasons to be described. An external rib 90 extends longitudinally along each side of chamber member 78, and is slidably captured between a pair of parallel internal ribs that form an inwardly opening axially extending slot 92 on each side of canister sidewall 34. Ribs 90 and slots 92 thus guide movement of chamber member 78 within canister 32. Ribs 90 and slots 92 are preferably disposed in a common plane that includes the axial centerline of the canister.

A screw 94 (FIGS. 2 - 5 and 12 - 13) is carried by a pedestal 96 that is upwardly recessed with respect to bottom wall 36 of canister 32. Screw 94 has an externally threaded shaft 98 that centrally and coaxially projects from a circular base 100. Externally threaded shaft 98 is threadably received within internally threaded collar 88 of chamber member 78. Base 100 is loosely secured to pedestal 96 by means of a split lug 102 that extends from base 100 through a central opening in pedestal 96 rotatably to secure the screw to the base while permitting free rotation of the screw with respect to the base. The upper surface of pedestal 96 within canister 32 is provided with a plurality of ramped lugs 104 (FIGS. 6 and 7) disposed in a spaced circumferential array around the periphery of the pedestal. Likewise, the undersurface of screw base 100 is provided with a spaced circumferential array of ramped peripheral lugs 106 (FIG. 13). Lugs 104, 106 are constructed with respect to each other to permit rotation of screw 94 in one direction to raise chamber element 78 within canister 32, but to prevent rotation of screw 94 in the other direction that would lower chamber element 78 within canister 32. An arcuate button

37 70

108 (FIGS. 1 - 4 and 16) has an apertured center 110 received over a pin 112 that extends upwardly from base 36 of canister 32 adjacent to canister sidewall 34. One leg 114 of button 108 extends along the inside surface of canister sidewall 34. A second leg 116 extends along the inside canister surface across an opening 118 in the canister sidewall. A button head 120 is integral with button 108 and projects through sidewall opening 118. A pawl arm 122 extends radially inwardly from leg 116 opposite head 120. The inner end of pawl arm 122 engages a circumferential array of ratchet teeth 124 that extends around the periphery of screw base 100 (FIGS. 4 and 12 - 13).

In assembly, button 108 is secured within canister 32 and screw 94 is secured to chamber element 78. The chamber element and screw subassembly is then inserted into canister 32 so that split lug 102 extends through pedestal 96. Chambers 80, 82 may then be filled with liquids to be dispensed. In the meantime, applicator body 42 is secured to applicator holder 40, and manifold 52 and pistons 66, 68 are suspended from the underside of the manifold. Applicator 38 is then assembled over the open upper end of canister 32 with piston heads 72, 73 disposed within chambers 80, 82. When button 108 is resiliently pivoted radially inwardly by a user, screw 94 is rotated to move chamber element 78 upwardly over pistons 66, 68. Such movement displaces liquid product from within chambers 80, 82 through piston passages 70 into manifold 52, and thence through manifold outlet 54 and valve 56 to surface applicator 38. Each depression of button 108 dispenses an incremental amount of each liquid. When the button is released, the geometry and resiliency of button leg 114 return the button to the position of FIG. 4. However, screw 94 is prevented from rotating with the movement of button by one-way cam lugs 104, 106 on pedestal 96 and screw base 100.

It will be noted in the illustrated embodiment of FIGS 1 - 17 that chamber 80 is substantially larger than chamber 82, and piston head 72 is correspondingly larger than piston

3482
31

head 73. Passage 70 through piston 66 is larger than passage 71 through piston 68, and manifold passage 64 is larger than manifold passage 66. Thus, the liquid chambers and passages are designed such that, for each depression of button 108, more liquid is displaced from chamber 80 than is displaced from chamber 82, and consequently more liquid from chamber 80 than chamber 82 is dispensed to applicator body 42. In this way, the relative dosages of the liquids are designed into the dispensing package. If it is desired that the liquids should be dispensed in equal dosages, chambers 80, 82 would be of the same size, as would the liquid passages through pistons 66, 68 and manifold 52. As noted above, chamber member 78, including chamber 80, 82, collar 88 and ribs 90, is of integrally molded plastic construction. Likewise, canister 32, applicator holder 40, screw 94, button 108, manifold 52 and pistons 66, 68 are of respective integrally molded plastic construction. Surface applicator body 42 may be of suitable foam or sintered plastic construction.

FIGS. 18 - 27 illustrate a package 126 that is a modification of that illustrated in FIGS. 1 - 17. Reference numerals in FIGS. 18 - 27 (and 28 - 29) that are identical to those employed in FIGS. 1 - 17 indicate identical components, while reference numerals followed by the suffix "a" (or "b" in FIGS. 28 - 29) indicate related but modified components. The primary difference between the embodiment of FIGS. 1 - 17 on the one hand and the embodiment of FIGS. 18 - 27 on the other is that the chamber member 78a has chambers 80a and 82a that are elongated with respect to the long dimension of the oval cross section of the package. That is, larger chamber 80a is again generally V-shaped, but this time the width of the V-shape extends in the direction of the long dimension of the oval container body rather than the short dimension as illustrated in FIG. 8. Likewise, smaller chamber 82a has a long dimension parallel to the long dimension of the container body. Pistons 66a and 68a are dimensioned and contoured in correspondence with the contours of chambers 80a, 82a respectively.

3/28/72

5

15

20

09981844-101601

FIGS. 28 and 29 illustrate a dual liquid dispensing package 128 in accordance with another embodiment of the invention. An applicator 38b is received over the open end of a cup-shaped canister 32b. A manifold 52b is suspended from the inside of applicator 38b, and a pair of hollow pistons 66b, 68b are suspended from the parallel inlet openings of manifold 52b. Pistons 66b, 68b have heads 72b, 73b slidably disposed in respective chambers 80b, 82b in a product chamber member 78b. Product chamber member 78b is again of unitary integrally molded plastic construction, and in this embodiment includes a gear rack 130 extending along one side of chamber member 78b in a direction parallel to the direction of movement of the chamber member. Gear rack 130 is disposed internally adjacent to the sidewall 34b of canister 32b. Sidewall 34b has an opening 132 in which a gear wheel 134 is rotatably mounted. Gear wheel 134 has a circumferential array of external gear teeth that, within canister 32b, are in meshed engagement with rack 130 of chamber member 78b, and externally of canister 32b are disposed for manual manipulation by a user. Upon rotation of gear wheel 134 counterclockwise in FIG. 29, product chamber member 78b is moved upwardly over pistons 66b, 68b. Such movement displaces liquid within chambers 80b, 82b through the hollow pistons and through manifold 52b to applicator 38b.

There have thus been disclosed a package for containing and applying a multiple-component liquid solution, and a method of assembling such a package, that fully satisfy all of the objects and aims previously set forth. The invention has been disclosed in conjunction with presently preferred embodiments thereof, and a number of modifications and variations have been discussed. Other modifications and variations will readily suggest themselves to persons of ordinary skill in the art. For example, the chamber sizes and cross sections laterally of the direction of chamber element movement may be sized to achieve a desired liquid dispensing ratio. The embodiments of FIGS. 1 - 27 include button-activation of the chamber element lifting

AG 73

screw; however, the screw base could be of larger diameter and extend through slots in the canister sidewall for direct manual rotation of the screw. In the embodiment of FIGS. 28 - 29, the canister sidewall can be provided with a pawl or other suitable device for permitting rotation of gear wheel 34 in only one direction (counterclockwise in FIG. 29). A liquid solution of more than two components may be dispensed by providing additional chambers and pistons mounted to the manifold. The packages may be made refillable by mounting the screw or gear and the chamber element on a removable lower section of the canister. The illustrated embodiments employ O-rings 84, 86, etc. as seals between the pistons and the chamber walls. In a production environment, seals may be integrally formed on the peripheries of the pistons to reduce part and assembly costs. It will also be recognized that the packages illustrated in the drawings would normally be marketed with a suitable cover that encloses the applicator during storage and transport, and between times of use by the user. The invention is intended to embrace all such and other modifications and variations as fall within the spirit and broad scope of the appended claims.

09982544-101501
15

27
74

Claims

1.

A package for containing and dispensing a multiple-component liquid solution,
which comprises:

a canister having a sidewall,

a product chamber member movably mounted within said sidewall and defining
at least first and second separate product chambers for containing liquids to be dispensed,

first and second pistons mounted in fixed positions within said canister and
respectively slidably disposed within said first and second chambers,

a manifold mounted within said canister,

first and second passages extending from said first and second pistons for feeding
to said manifold liquids displaced from said first and second chambers,

means for moving said chamber member over said pistons to displace liquids from
said chambers through said passages to said manifold, in which said liquids are mixed, and

an applicator mounted on said canister and coupled to said manifold for
dispensing liquids displaced from said chambers through said manifold.

2.

The package set forth in claim 1 wherein said first and second pistons are
respectively suspended from said manifold by said first and second passages.

09481548-101501

37 75

3.

1 The package set forth in claim 2 wherein said manifold has an outlet coupled to
2 said applicator and a pair of spaced parallel inlets from which said first and second pistons are
3 respectively suspended by said first and second passages.

4.

The package set forth in claim 3 wherein said manifold is suspended from said
applicator.

5.

1 The package set forth in claim 3 wherein said first and second passages are
2 respectively integrally formed with said first and second pistons and extend through said pistons
3 to said first and second chambers.

6.

1 The package set forth in claim 5 wherein said first piston and first passage are
2 molded separately from said second piston and said second passage.

7.

1 The package set forth in claim 5 wherein said first and second pistons and
2 associated passages are of integrally formed plastic construction.

09981549.101601

3477
76

8.

1 The package set forth in claim 5 wherein each of said pistons has a peripheral seal
2 in sliding sealing engagement with an inside surface of the associated chamber.

9.

1 The package set forth in claim 1 wherein each said chamber is cup-shaped, having
2 an open end through which the associated piston is received.

10.

1 The package set forth in claim 9 wherein said chamber member, including said
2 first and second chambers, is of integrally formed plastic construction.

11.

1 The package set forth in claim 10 wherein at least one of said first and second
2 chambers, and the associated first and second piston, is of non-cylindrical geometry.

12.

1 The package set forth in claim 11 wherein both of said chambers and the
2 associated pistons are of non-cylindrical geometry.

13.

1 The package set forth in claim 10 wherein said first and second chambers, and
2 said associated first and second pistons, have unequal cross sectional areas perpendicular to the
3 direction of movement of said chamber member within said canister.

14

DO NOT WRITE IN THESE SPACES

40 98 77

14.

1 The package set forth in claim 10 wherein said chamber member has external
2 guides that cooperate with internal guides on said canister sidewall for guiding movement of said
3 chamber member within said canister.

15.

1 The package set forth in claim 1 wherein said means for moving said chamber
2 member comprises a threaded collar on said chamber member, a threaded screw rotatably carried
3 by said canister, said collar and screw having mating threads, and means for rotating said screw
with respect to said canister to move said chamber member within said canister.

16.

1 The package set forth in claim 15 wherein said collar is internally threaded, and
2 said screw is externally threaded and received in said collar.

17.

1 The package set forth in claim 16 wherein said screw has a base rotatably
2 supported by said canister, and said means for rotating said screw comprises means for rotating
3 said base.

4/1/78

18.

1 The package set forth in claim 17 wherein said canister has a pedestal on which
2 said base is supported, and wherein said base and said pedestal have opposing means for
3 permitting rotation of said screw in one direction to raise said chamber member over said pistons
4 and to prevent rotation of said screw in an opposing direction.

19.

0
5
1
5
4
4
-
1
0
1
5
0
1
1
The package set forth in claim 18 wherein said pedestal has an opening, and said
screw base has a split lug received through said opening to secure said screw to said pedestal.

20.

The package set forth in claim 19 wherein said means for rotating said base
comprises a button carried by said canister adjacent to said screw base.

21.

1 The package set forth in claim 20 wherein said screw base has external ratchet
2 teeth, and said button has a pawl arm for engaging said ratchet teeth.

22.

1 The package set forth in claim 21 wherein said canister sidewall has an opening
2 adjacent to said screw base, and said button is pivotally mounted within said sidewall with a
3 portion extending through said opening for manipulation by a user.

79 80

23.

1 The package set forth in claim 22 where said button has a center pivot coupled to
2 said canister, a resilient arm extending from said pivot on which said button and said pawl arm
3 are mounted, and a support arm extending oppositely from said pivot to bias said button through
4 said opening.

24.

09981844-101601
The package set forth in claim 1 wherein said means for moving said chamber
member comprises a gear rack on said chamber member and a gear wheel rotatably carried on
said canister sidewall in engagement with said rack for manipulation by a user to move said
chamber member within said canister.

25.

2 The package set forth in claim 1 wherein said canister is cup-shaped, having an
open end over which said applicator is mounted.

43
#A
80

26.

1 A package for containing and dispensing a two-component liquid solution, which
2 comprises:

3 a canister having a sidewall and an open end,

4 a surface applicator mounted over each open end of said canister,

5 an integrally formed product chamber member movably mounted within said
6 sidewall, said product chamber member including an internally threaded collar and first and
second product chamber for containing liquids to be dispensed,

a manifold coupled to said applicator within said canister, said manifold having
an outlet coupled to said applicator and a pair of spaced parallel inlets,

first and second hollow pistons suspended from said inlets and respectively
slidably disposed within said first and second chambers, and

a screw having an externally threaded shaft received within said collar and a
circular base rotatably supported within said canister, rotation of said screw within said canister
moving said chamber member over said pistons and displacing liquids from said chambers
through said pistons and said manifold to said applicator.

27.

1 The package set forth in claim 26 wherein each of said pistons has a peripheral
2 seal in sliding sealing engagement with an inside surface of the associated chamber.

28.

1 The package set forth in claim 26 wherein each said chamber is cup-shaped,
2 having an open end through which the associated piston is received.

4/1/80
81

29.

1 The package set forth in claim 28 wherein at least one of said first and second
2 chambers, and the associated first and second piston, is of non-cylindrical geometry.

30.

1 The package set forth in claim 29 wherein both of said chambers and the
associated pistons are of non-cylindrical geometry.

31.

09981344-101601.
The package set forth in claim 28 wherein said first and second chambers, and
said associated first and second pistons, have unequal cross sectional areas perpendicular to the
direction of movement of said chamber member within said canister.

32.

1 The package set forth in claim 26 wherein said chamber member has external
2 guides that cooperate with internal guides on said canister sidewall for guiding movement of said
3 chamber member within said canisters.

33.

1 The package set forth in claim 26 wherein said canister has a pedestal on which
2 said base is supported, and wherein said base and said pedestal have opposing means for
3 permitting rotation of said screw in one direction to raise said chamber member over said pistons
4 and to prevent rotation of said screw in an opposing direction.

4582

34.

1 The package set forth in claim 33 wherein said pedestal has an opening, and said
2 screw base has a split lug received through said opening to secure said screw to said pedestal.

35.

1 The package set forth in claim 33 further comprising a button carried by said
2 canister adjacent to said screw base for rotating said screw base and displacing said chamber
3 member over said pistons.

36.

1 The package set forth in claim 35 wherein said screw base has external ratchet
2 teeth, and said button has a pawl arm for engaging said ratchet teeth.

37.

1 The package set forth in claim 36 wherein said canister sidewall has an opening
2 adjacent to said screw base, and said button is pivotally mounted within said sidewall with a
3 portion extending through said opening for manipulation by a user.

38.

1 The package set forth in claim 37 wherein said button has a center pivot coupled
2 to said canister, a resilient arm extending from said pivot on which said button and said pawl arm
3 are mounted, and a support arm extending oppositely from said pivot to bias said button through
4 said opening.

#683
JA

39.

1 A package for containing and dispensing a two-component liquid solution, which

2 comprises:

3 a canister having a sidewall and an open end,

4 a surface applicator mounted over said open end of said canister,

5 an integrally formed product chamber member movably mounted within said
6 sidewall, said product chamber member including a gear rack and first and second product
7 chambers for containing liquids to be dispensed,

8 a manifold coupled to said applicator within said canister, said manifold having
9 an outlet coupled to said applicator and a pair of spaced parallel inlets, first and second hollow
10 pistons suspended from said manifold inlets, and respectively slidably disposed within said first
11 and second chambers, and

12 a gear wheel rotatably carried by said canister sidewall in engagement with said
13 rack for manipulation by a user to move said chamber member over said pistons.

40.

1 The package set forth in claim 39 wherein each of said pistons has a peripheral

2 seal in sliding sealing engagement with an inside surface of the associated chamber.

41.

1 The package set forth in claim 39 wherein each said chamber is cup-shaped,

2 having an open end through which the associated piston is received.

B5
4780

45.

1 A method of making a package for containing and dispensing a multiple-
2 component liquid solution, which comprises the steps of:

3 (a) providing a canister having an open end and a sidewall,

4 (b) mounting within said canister an integrally molded product chamber member
5 having at least first and second product chambers and first means for moving said member with
6 respect to said sidewall,

7 (c) mounting within said canister second means for engagement with said first
8 means and manipulation by a user to move said member within said canister,

9 (d) providing a surface applicator,

10 (e) suspending from said applicator at least first and second hollow pistons,

11 (f) filling said first and second chambers with first and second liquids to be
12 dispensed, and

13 (g) assembling said surface applicator over said open end of said canister such that
14 said first and second pistons are respectively disposed in said first and second chambers.

86

09481544-7015071

1
2

3

4

5 an integrally formed product chamber member movably mounted within said
6 sidewall, said product chamber member including at least first and second cup-shaped product
7 chambers having open ends adjacent to each other, and first means for moving said member with
8 respect to said sidewall,

1540 a manifold coupled to said applicator within said canister, said manifold having
1541 at least first and second parallel inlets,

1 first and second hollow pistons respectively suspended from said first and second
2 manifold inlets and respectively slidably disposed within said first and second chambers, and

13 second means on said canister in engagement with said first means for
14 manipulation by a user to move said chamber member over said pistons and displace liquid from
15 said chambers through said pistons and said manifold to said applicator.

47.

1 The package set forth in claim 46 wherein said first means comprises an internally
2 threaded collar in said chamber member, and said second means comprises an externally threaded
3 screw.

Handwritten signature and number 87.

48.

1 The package set forth in claim 46 wherein said first means comprises a gear rack
2 on said chamber member, and said second means comprises a gear wheel on said canister
3 sidewall.

0991544-101601

Abstract of the Disclosure

A package for containing and dispensing a multiple-component liquid solution includes a product chamber member movably mounted within the sidewall of a canister, and defining at least first and second separate product chambers for containing liquids to be dispensed. First and second pistons are mounted in fixed positions within the canister and respectively slidably disposed within the first and second chambers. First and second passages extend from the respective pistons for feeding liquids displaced from the chambers through a manifold to a surface applicator mounted on the canister. Cooperating structure on the canister and the chamber member is manipulated by a user to move the chamber member within the canister over the pistons, and thereby to displace liquids from the chambers through the pistons to the manifold, in which the liquids are mixed and fed to the applicator.

04510574-0000

1
88

72
89

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (10-00)
Approved for use through 10/31/2002 OMB 0831-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)	Attorney Docket Number	17745 USA
	First Named Inventor	Leonora M. Brozell
	COMPLETE IF KNOWN	
	Application Number	/
	Filing Date	
	Group Art Unit	
Declaration Submitted with Initial Filing ☒ OR Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required) ☐	Examiner Name	

As a below named inventor, I hereby declare that:

My residence, mailing 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 the subject matter which is claimed and for which a patent is sought on the invention entitled:

DUAL LIQUID DISPENSING PACKAGES

(Title of the invention)

the specification of which

☒ is attached hereto OR ☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International Application Number and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 368(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/028 attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/028 attached hereto

7/2 90
H

Please type a plus sign (+) inside the box → ☐

17745 USA

PTO/SB/01 (10-00)

Approved for use through 10/31/2002 OMB 0831-0032

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☐ Customer Number or Bar Code Label				OR ☐ Correspondence address below	
Name Nirav D. Parikh 25-IDP					
Address Owens-Illinois, Inc.					
Address One SeaGate					
City Toledo		State OH		ZIP 43666	
Country USA		Telephone 419-247-8707		Fax 419-247-8555	
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 lies 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.					
NAME OF SOLE OR FIRST INVENTOR :			☐ A petition has been filed for this unsigned inventor		
Given Name Leonora M. (first and middle (if any))			Family Name Brozell or Surname		
Inventor's Signature <i>Leonora M Brozell</i>			Date 10-15-01		
Residence: City Maumee		State OH		Country USA Citizenship USA	
Mailing Address 7201 Elli Harbour Lane					
Mailing Address					
City Maumee		State OH		ZIP 43537 Country USA	
NAME OF SECOND INVENTOR:			☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))			Family Name or Surname		
Inventor's Signature			Date		
Residence: City		State		Country Citizenship	
Mailing Address					
Mailing Address					
City		State		ZIP Country	
☐ Additional inventors are being named on the _____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.					

109101-1151300

9/1/01

Please type a plus sign (+) inside this box → ☐

PTO/SB/61 (10-00)

Approved for use through 10/31/2002 OMB 0651-0038

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**POWER OF ATTORNEY OR
AUTHORIZATION OF AGENT**

Application Number	
Filing Date	
First Named Inventor	Leonora M. Brozell
Group Art Unit	
Examiner Name	
Attorney Docket Number	17745 USA

I hereby appoint:

☐ Practitioners at Customer Number OR

Place Customer
Number Bar Code
Label here

☒ Practitioner(s) named below:

Name	Registration Number
Principal Attorney: Nirav D. Parikh	46,394
Associate Attorney: R. C. Collins	27,430

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please change the correspondence address for the above-identified application to:

☐ The above-mentioned Customer Number.

OR

☐ Firm or Individual Name

Address

Address

City

State

Zip

Country

Telephone

Fax

I am the:

☒ Applicant/Inventor.

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/06).

SIGNATURE of Applicant or Assignee of Record

Name

Leonora M. Brozell

Signature

Leonora M. Brozell

Date

10-15-01

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 1 forms are submitted.

Burden Hour Statement. This form is estimated to take 3 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231



93
GA

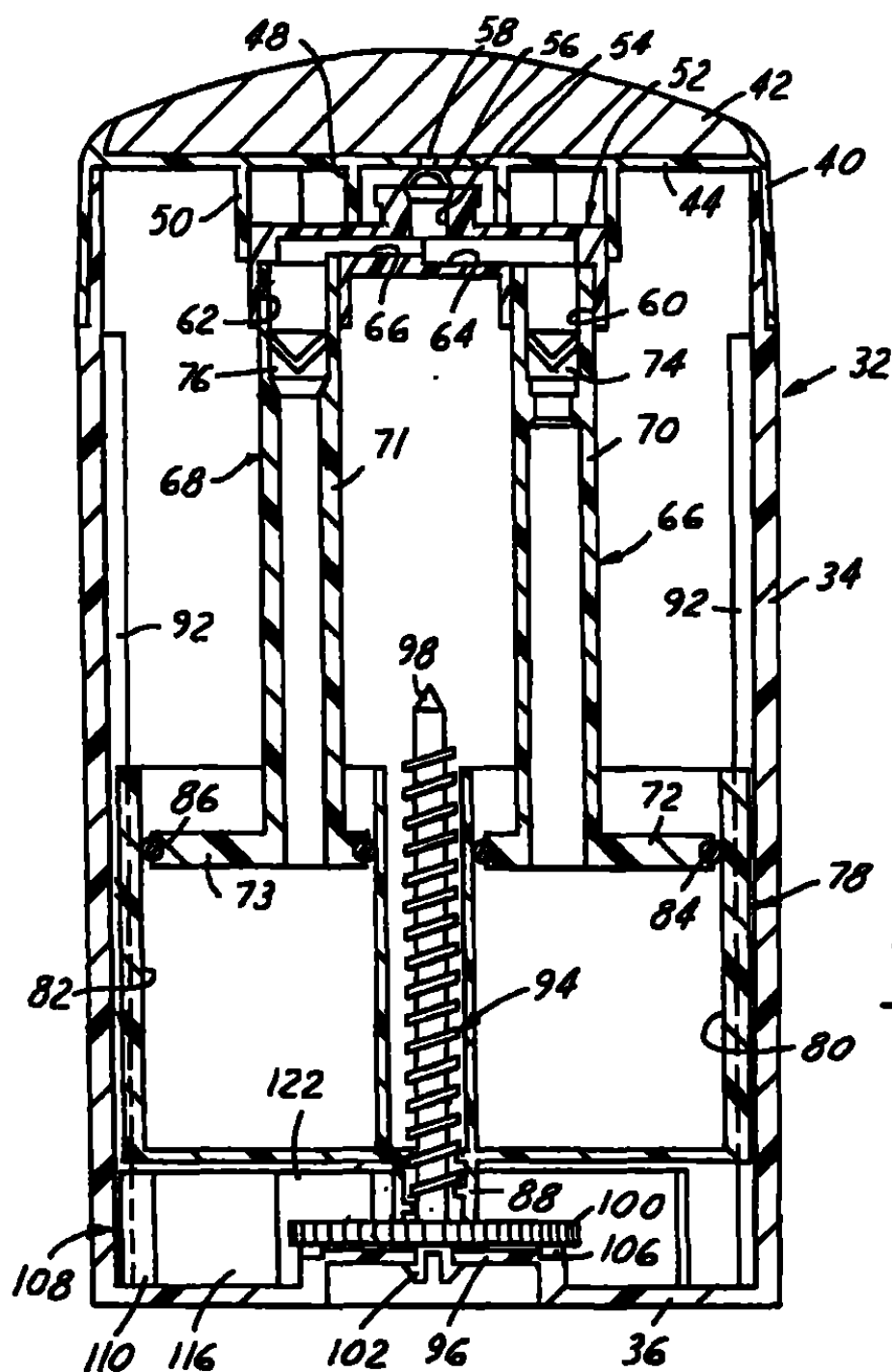


FIG. 3

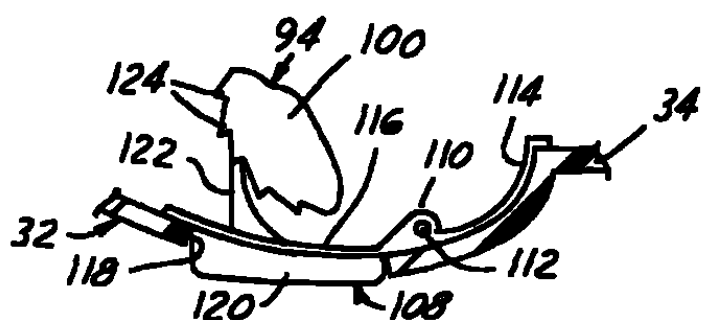


FIG. 4

ORDER CALL - 1015011



7
95
46

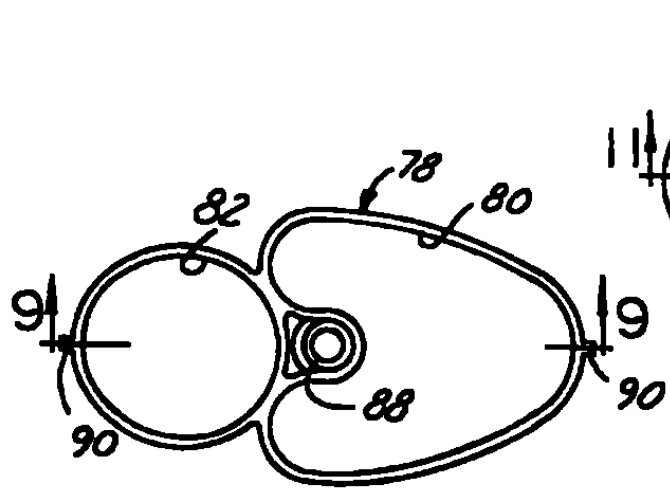


FIG. 8

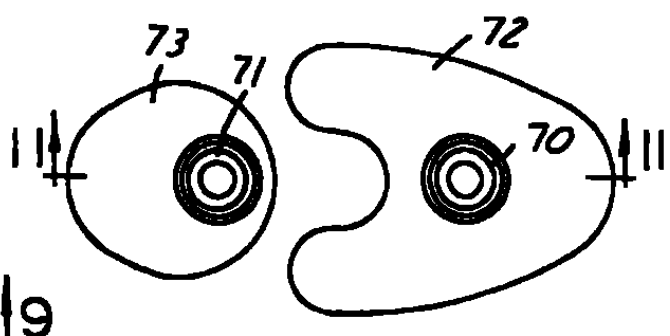


FIG. 10

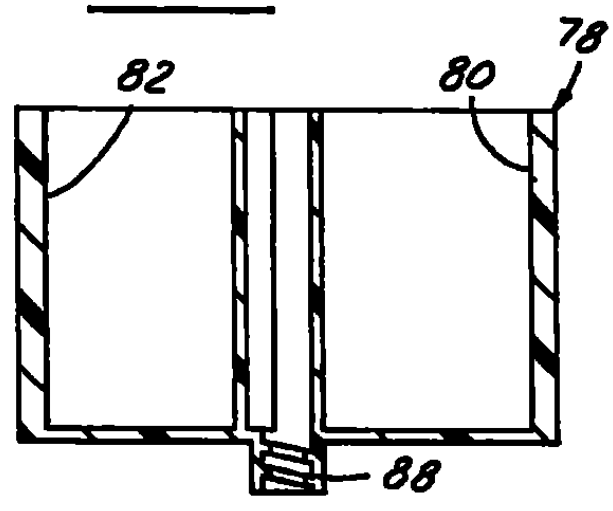


FIG. 9

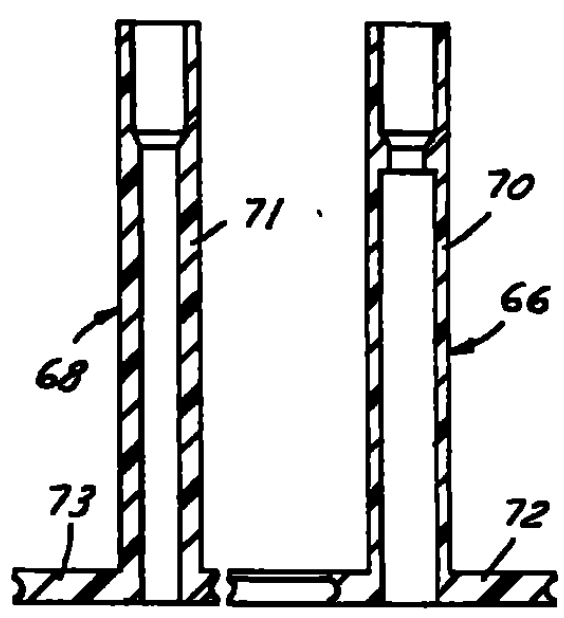


FIG. 11

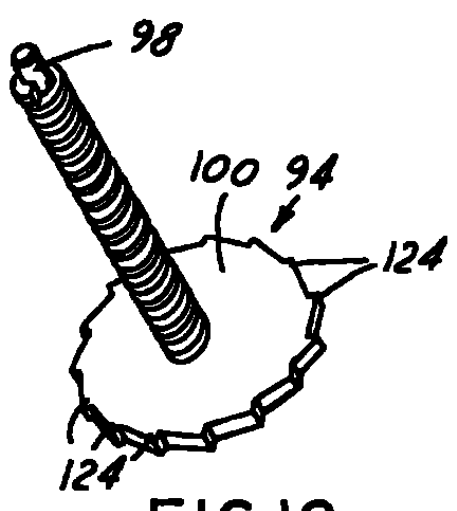


FIG. 12

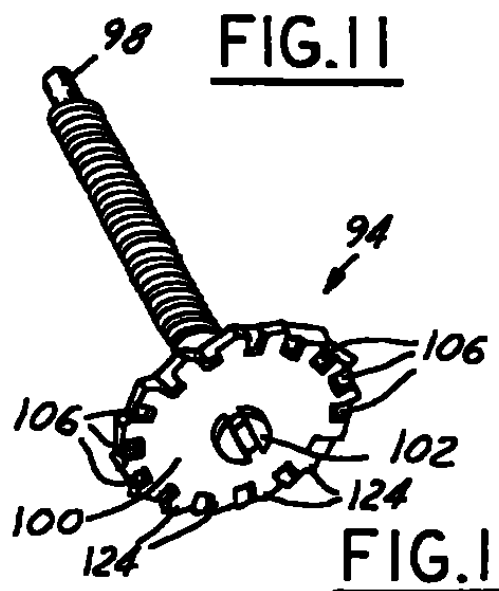


FIG. 13

1091041-101601

5/96
AA

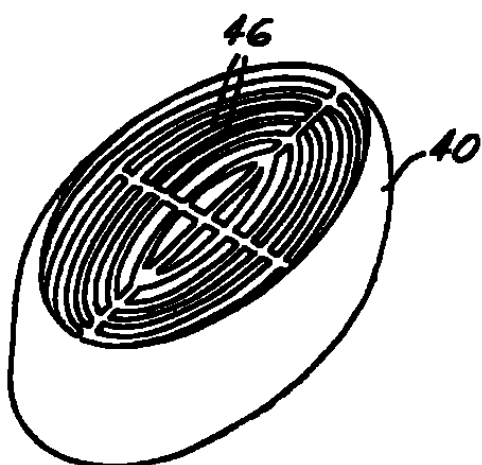


FIG. 14

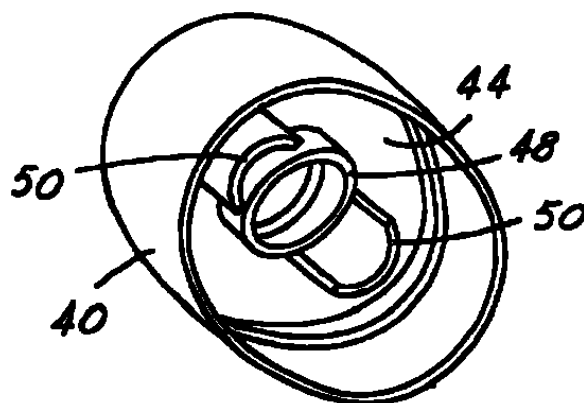


FIG. 15

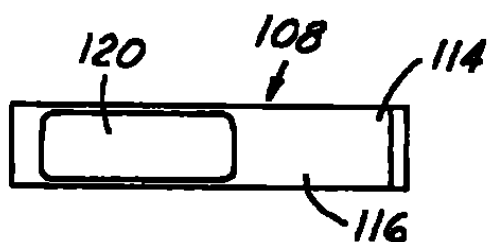


FIG. 16

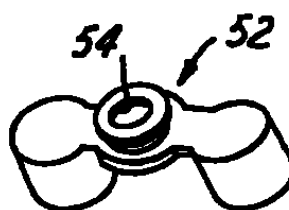
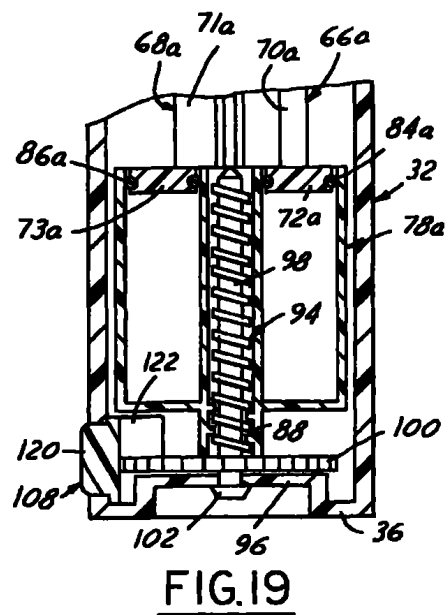
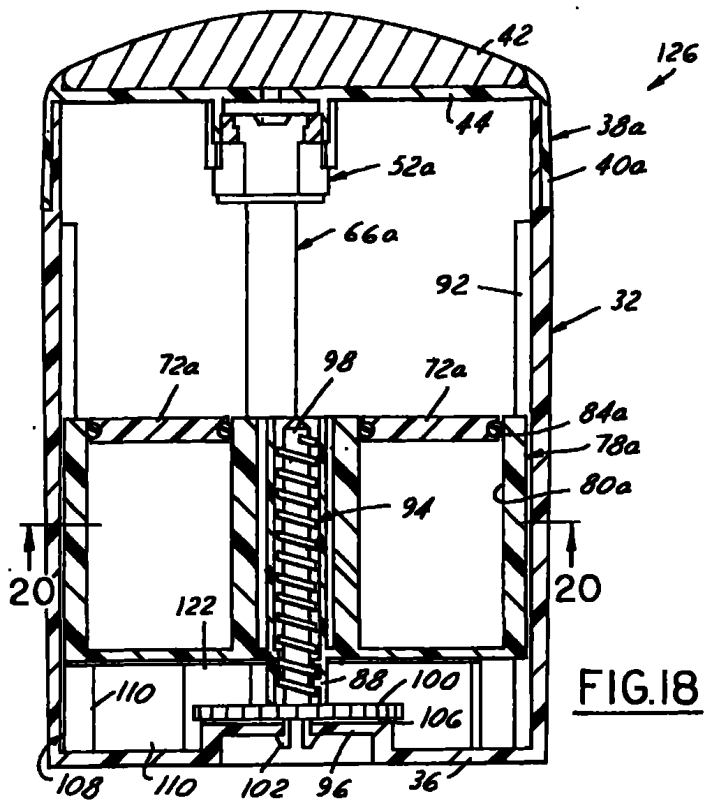


FIG. 17



1/4

6098
AM

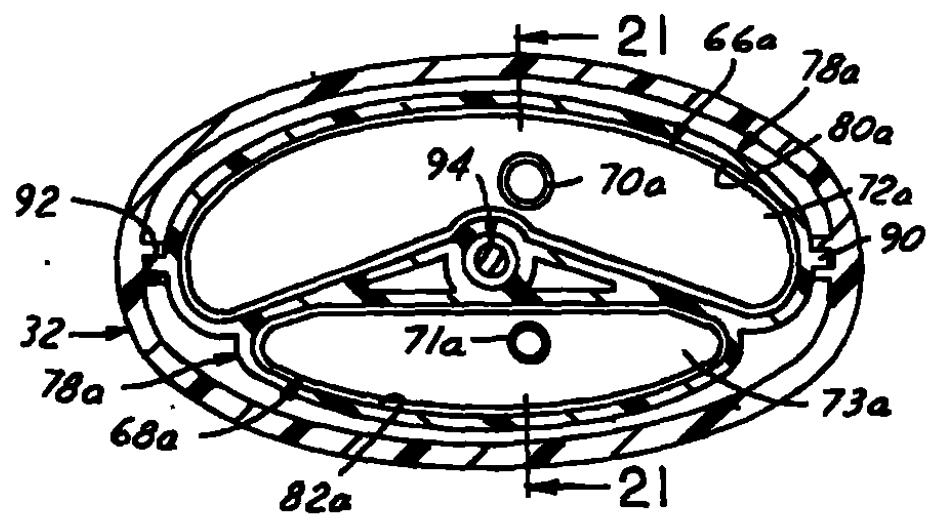


FIG. 20

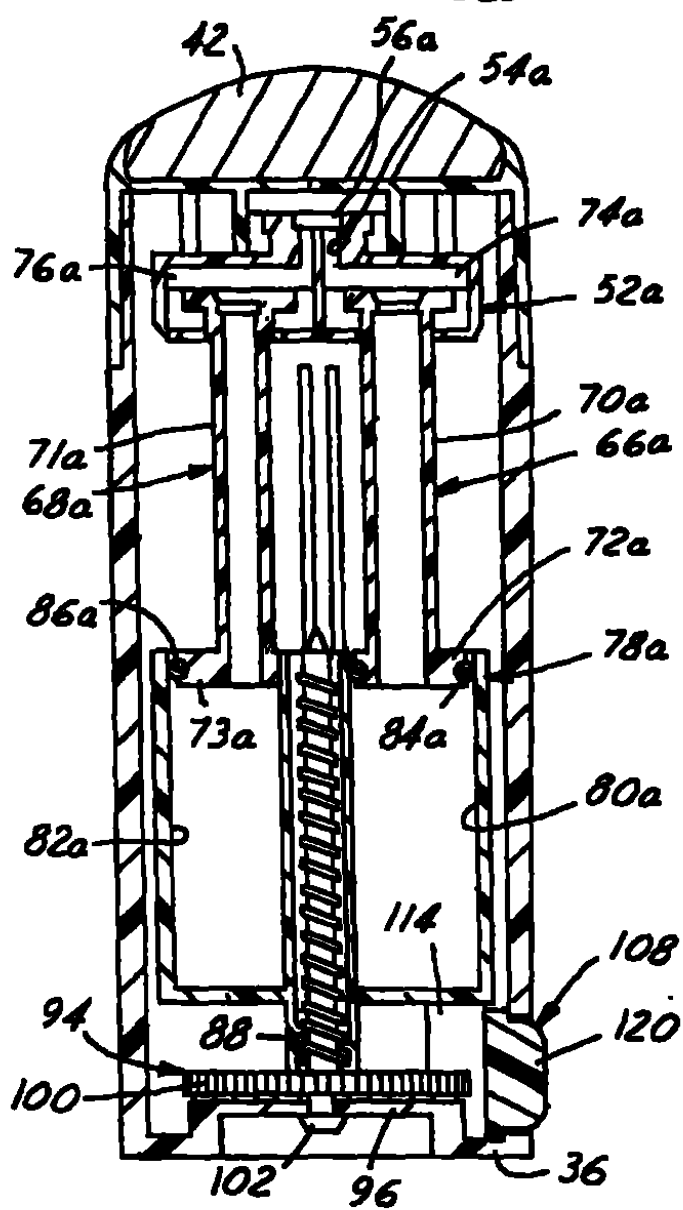


FIG. 21

1001501-12221001

6/99
~~10/99~~

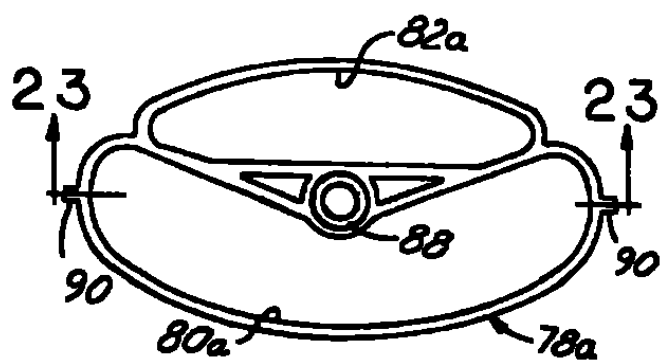


FIG. 22

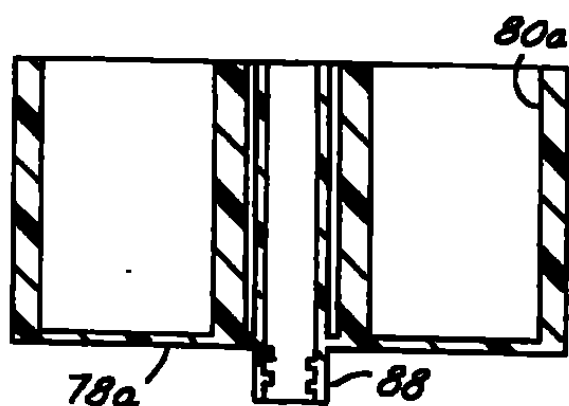


FIG. 23

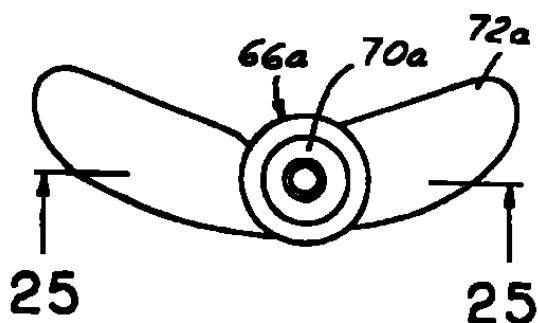


FIG. 24

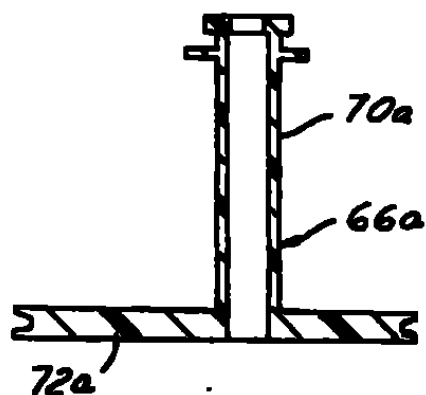


FIG. 25

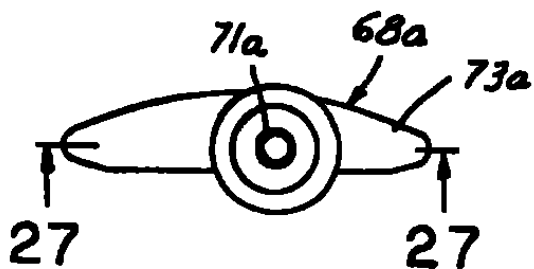


FIG. 26

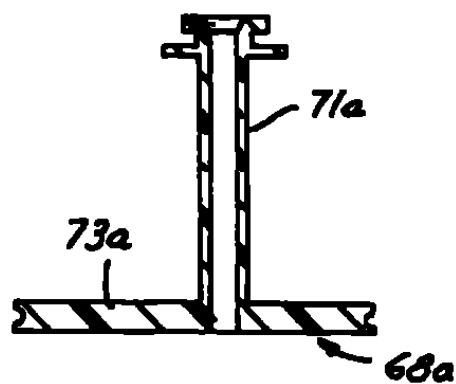


FIG. 27

Fig 100

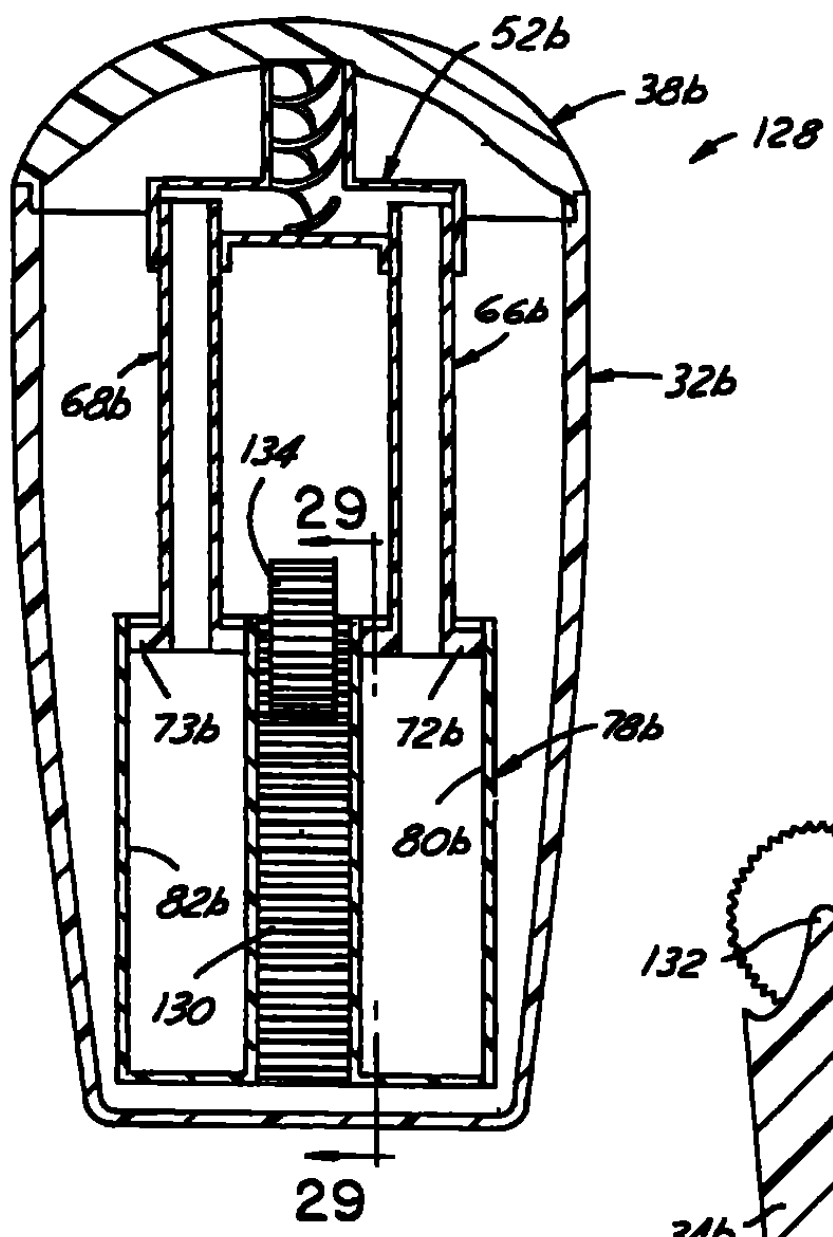


FIG. 28

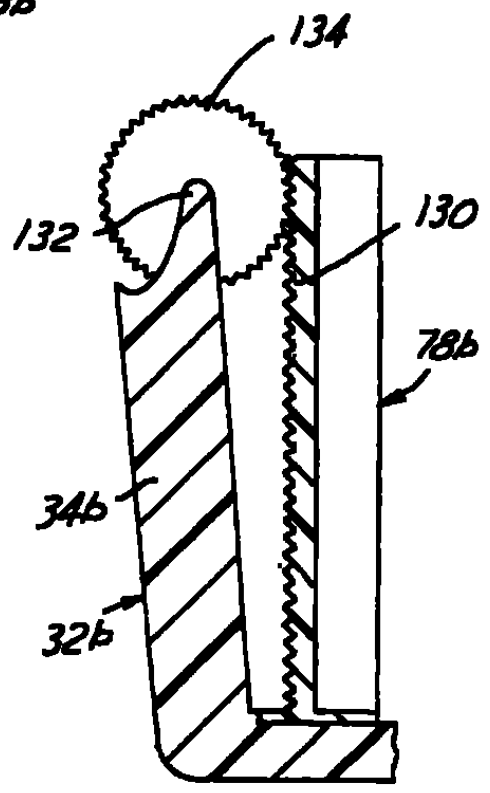


FIG. 29

103
b4
101

**TRADUCCIÓN DEL INGLÉS AL ESPAÑOL de la Solicitud de Patente
de los Estados Unidos No.09/981,544 relacionada con:**

EMPAQUES DE DISPENSADO DUAL DE LÍQUIDOS

**ANEXOS. La Solicitud de Patente de los Estados Unidos Serie No.09/
981,544 arriba mencionada, Declaración y Poder, Solicitud de Patente,
Certificación del Comisionado de Patentes y Marcas de los Estados
Unidos de América; Certificación Notarial del Estado de Wisconsin,
Estados Unidos de América.**

LOS ESTADOS UNIDOS DE AMÉRICA

**DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS DE
AMÉRICA**

Oficina de Patentes y Marcas de los Estados Unidos

Septiembre 16, 2002

**ESTE PARA CERTIFICAR QUE ANEXO AL PRESENTE SE
ENCUENTRA UNA FIEL COPIA TOMADA DE LOS REGISTROS
DE LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS
UNIDOS DE AQUELLOS DOCUMENTOS DE LA SOLICITUD DE
PATENTE IDENTIFICADA ABAJO LA CUAL CUMPLE LOS
REQUISITOS PARA CONCEDERLE UNA FECHA DE
PRESENTACIÓN BAJO LA NORMA 35USC 111.**

**NUMERO DE SOLICITUD: 09/981,544
FECHA DE PRESENTACIÓN: Octubre 16, 2001**

**Por autorización del
COMISIONADO DE PATENTES Y MARCAS**

**N. Woodson (Firmado)
N. WOODSON
Funcionario de Certificaciones**

SELLO ADHERIDO

RCC:mtc

17745

EMPAQUES DE DISPENSADO DUAL DE LÍQUIDOS

La presente invención está dirigida a empaques para contener y dispensar soluciones líquidas de múltiples componentes tales como desodorantes de dos componentes, y a métodos para elaborar dichos empaques.

Antecedentes y Objetivos de la Invención

Un objetivo general de la presente invención es proporcionar un empaque para contener una solución líquida de múltiples componentes, tal como un desodorante líquido de dos componentes, donde los componentes líquidos están separados dentro del empaque, y no se mezclan hasta el momento de la aplicación, y donde las cantidades relativas de los líquidos dispersados en cada aplicación son controlados mediante el diseño del empaque.

Un empaque para contener y dispensar una solución líquida de múltiples componentes de acuerdo con un primer aspecto de la presente invención incluye un miembro de cámaras de producto montado en forma móvil dentro de la pared lateral de un cartucho, y que define por lo menos primera y segunda cámaras de producto para contener líquidos a ser dispensados. Primer y segundo pistones están montados en posiciones fijas dentro del cartucho y colocados respectivamente en forma deslizante dentro de la primera y segunda cámaras. Primer y segundo pasajes se extienden desde los respectivos pistones para alimentar líquidos desplazados de las cámaras a través de un múltiple hacia un aplicador de superficie montado sobre el cartucho. Una estructura de cooperación en el cartucho y el miembro de cámara es manipulada por un usuario para mover el miembro de cámara dentro del cartucho sobre los pistones, y consecuentemente para desplazar los líquidos desde las cámaras a través de los pistones hacia el múltiple, en el cual los líquidos se mezclan y alimentan hacia el aplicador.

Un empaque para contener y dispensar una solución líquida de dos componentes de acuerdo con la actualmente modalidad preferida de la invención incluye un aplicador de superficie montado sobre el extremo abierto de un cartucho. Un miembro de cámara de producto formado integralmente está montado en forma móvil dentro de la pared lateral del cartucho, e incluye un collarín roscado internamente y primera y segunda cámaras de producto para contener líquidos a ser dispensados. Un múltiple está acoplado al aplicador dentro del cartucho. El múltiple tiene un puerto de salida acoplado al aplicador y un par de puertos de entrada paralelos espaciados. Pistones huecos primero y segundo están suspendidos desde los puertos de entrada del múltiple y colocados en forma deslizante respectivamente dentro de las primera y segunda cámaras. Un tornillo tiene un árbol roscado externamente recibido dentro

del collarín y una base circular soportada rotativamente dentro del cartucho. La rotación del tornillo dentro del cartucho mueve el miembro de cámara sobre los pistones y desplaza líquidos desde las cámaras, a través de los pistones y el múltiple hacia el aplicador. En la modalidad divulgada, el tornillo rota mediante un botón de empuje montado dentro del cartucho y manipulable por un usuario externamente al cartucho. Alternativamente, la periferia del tornillo puede ser accesible a un usuario a través de una abertura adecuada en la pared lateral del cartucho.

Un empaque para contener y dispensar una solución líquida de dos componentes de acuerdo con otra modalidad preferida de la invención incluye un cartucho y un aplicador de superficie montado sobre el extremo abierto del cartucho. Un miembro de cámara de producto formado integralmente está montado en forma móvil dentro de la pared lateral del cartucho, e incluye un bastidor de engranajes y primera y segunda cámaras de producto para contener líquidos a ser dispensados. Un múltiple está acoplado al aplicador dentro del cartucho, y tiene un par de puertos de entrada paralelos espaciados. Primer y segundo pistones huecos están suspendidos desde los puertos de entrada del múltiple y colocados respectivamente en forma deslizante dentro de las primera y segunda cámaras. Una rueda de engranajes está montada en forma rotativa en la pared lateral del cartucho en acople con el bastidor para manipulación por un usuario para mover el miembro de cámara sobre los pistones y así desplazar líquidos desde las cámaras a través de los pistones al aplicador.

Un método de elaborar un empaque para contener y dispensar una solución líquida de múltiples componentes de acuerdo con otro aspecto de la invención incluye proporcionar un cartucho que tiene un extremo abierto y una pared lateral. Un miembro de cámara de producto formado integralmente está montado dentro del cartucho, y tiene por lo menos primera y segunda cámaras de producto y un primer elemento para mover el miembro con respecto a la pared lateral del cartucho. Un segundo elemento está montado dentro del cartucho para acople con el primer elemento y manipulación por un usuario para mover el miembro de cámara de producto dentro del cartucho. Primer y segundo pistones huecos están suspendidos desde un aplicador de superficie. Las primera y segunda cámaras están llenas con primer y segundo líquidos a ser dispensados, y los aplicadores de superficie ensamblados sobre el extremo abierto del cartucho en forma tal que los primer y segundo pistones están colocados respectivamente en las primera y segunda cámaras.

Breve Descripción de los Dibujos

La invención, conjuntamente con sus adicionales objetivos, características y ventajas, se entenderá en mejor forma a partir de la siguiente descripción, las reivindicaciones del apéndice y los dibujos que se acompañan en los cuales:

la Figura 1 es una vista en elevación frontal de un empaque dual para dispensado de líquidos de acuerdo con una modalidad actualmente preferida de la invención;

la Figura 2 es una vista en sección que biseca lateralmente el empaque de la Figura 1, tomada sustancialmente a lo largo de la línea 2-2 en la Figura 1;

la Figura 3 es una vista en sección que biseca lateralmente el empaque de la Figura 2, tomada sustancialmente a lo largo de la línea 3-3 en la Figura 2;

la Figura 4 es una vista en sección fragmentada tomada sustancialmente a lo largo de la línea 4-4 en la Figura 2;

la Figura 5 es una vista en sección tomada sustancialmente a lo largo de la línea 5-5 en la Figura 1;

la Figura 6 es una vista en planta superior del cartucho en el empaque de las Figuras 1 a 5;

la Figura 7 es una vista en sección que biseca el cartucho de la Figura 6, tomada sustancialmente a lo largo de la línea 7-7 en la Figura 6;

la Figura 8 es una vista en planta superior del miembro de cámara de producto en el empaque de las Figuras 1 a 5;

la Figura 9 es una vista en sección que biseca lateralmente el miembro de cámara de la Figura 8, tomada sustancialmente, a lo largo de la línea 9-9 de la Figura 8;

la Figura 10 es una vista en planta superior de los pistones en el empaque de las Figuras 1 a 5;

la Figura 11 es una vista en sección que biseca lateralmente los pistones de la Figura 10, tomada sustancialmente a lo largo de la línea 11-11 en la Figura 10;

la Figura 12 es una vista en perspectiva superior del tornillo para levantar el miembro de cámara y dispensar líquido en el empaque de las

~~107~~ 5 105

Figuras 1 a 5;

la Figura 13 es una vista en perspectiva inferior del tornillo ilustrado en la Figura 12;

la Figura 14 es una vista en perspectiva superior de la base del aplicador de superficie en el empaque de las Figuras 1 a 5;

la Figura 15 es una vista en perspectiva inferior de la base del aplicador ilustrada en la Figura 14;

la Figura 16 es una vista en elevación del botón de dispensado en el pasaje de las Figuras 1 a 5;

la Figura 17 es una vista en perspectiva superior del múltiple en el empaque de las Figuras 1 a 5;

la Figura 18 es una vista en sección similar a la de la Figura 3 pero que ilustra una modalidad modificada de la invención,

la Figura 19 es una vista en sección fragmentada similar a la de la Figura 2 pero que ilustra la modalidad de la Figura 18;

la Figura 20 es una vista en sección tomada sustancialmente a lo largo de la línea 20-20 en la Figura 18;

la Figura 21 es una vista en sección tomada sustancialmente a lo largo de la línea 21-21 en la Figura 20;

la Figura 22 es una vista en planta superior del miembro de cámara en el empaque de las Figuras 18 a 21;

la Figura 23 es una vista en sección tomada a lo largo de la línea 23-23 en la Figura 22;

la Figura 24 es una vista en planta superior de uno de los pistones en el empaque de las Figuras 18 a 21;

la Figura 25 es una vista en sección tomada sustancialmente a lo largo de la línea 25-25 en la Figura 24;

la Figura 26 es una vista en planta superior del segundo pistón en el empaque de las Figuras 18 a 21;

la Figura 27 es una vista en sección tomada sustancialmente a lo

107
6 64 106

largo de la línea 27-27 en la Figura 26;

la Figura 28 es una vista en sección que biseca lateralmente un empaque de dispensado dual de líquidos de acuerdo con otra modalidad de la invención; y

la Figura 29 es una vista en sección fragmentada tomada sustancialmente a lo largo de la línea 29-29 en la Figura 28.

Descripción Detallada de las Modalidades Preferidas

Las Figuras 1 a 17 ilustran un empaque 30 de acuerdo con una modalidad actualmente preferida de la invención. Una carcasa hueca en forma de copa o cartucho 32 incluye una pared lateral 34, una pared inferior 36 y un extremo superior abierto. (Se apreciará que los adjetivos direccionales tales como "superior" e "inferior" se usan a modo de descripción y no de limitación con respecto a la orientación erecta del empaque ilustrado en las Figuras 1 a 3.) Un aplicador de superficie 38 está asegurado sobre el extremo abierto de la pared lateral 34 del cartucho. El aplicador 38 incluye un soporte 40 de aplicador y un cuerpo 42 de aplicador. El soporte 40 (Figuras 2 y 3 y 14 y 15) es de construcción de copa invertida, que tiene una pared de base superior 44 y un reborde periférico asegurado externamente sobre el extremo superior de la pared lateral 34 del cartucho. La superficie exterior de la pared de base 44 tiene una pluralidad de costillas 46 (Figura 14) que forman canales o ranuras entre las costillas para dispensar productos líquidos a todo el través de la superficie superior del soporte del aplicador. El lado inferior de la pared de base 44 tiene una pared anular 48 que rodea una abertura 54 del puerto de salida que se extiende a través de la pared 44, y paredes circulares opuestas 50.

Un múltiple 52 (Figuras 2 y 3 y 17) está asegurado internamente al lado inferior de la pared de base 44 del soporte del aplicador entre las paredes 50 contra la pared 48, y es así suspendido en conjunto desde el lado inferior del aplicador. El múltiple 52 es de construcción en forma de copa invertida, que tiene un puerto de salida superior 54 que se comunica a través de una válvula de cheque 56 dentro de la abertura 58 en el soporte 40 del aplicador, y aberturas 60, 62 del puerto de entrada cilíndricas paralelas orientadas descendentemente. Los pasajes 64, 66 (Figura 3) dentro del múltiple 52 conectan las aberturas del puerto de entrada a la abertura del puerto de salida, donde se mezclan los productos antes del suministro al aplicador. Un primer pistón 66 (Figuras 2 y 3 y 10 y 11) está suspendido desde el puerto de entrada 60 del múltiple, y un segundo pistón 68 está suspendido desde el puerto de entrada 62 del múltiple. Los pistones 66, 68 son pistones huecos, cada uno que tiene un

pasaje 70, 71 hueco asociado que se extiende longitudinalmente, y una cabeza 72, 73 de pistón orientada transversalmente. Los pistones 66, 68 son así suspendidos desde los puertos de entrada 60, 62 del múltiple 52. Una válvula de choque 74, 76 está colocada dentro de los pasajes de los pistones 66, 68 respectivamente para prevenir el flujo en reversa del fluido mezclado hacia las cámaras del producto. Las cabezas 72, 73 de los pistones están colocadas preferiblemente en un plano común en conjunto, como se observa en mejor forma en la Figura 3. Los pasajes 70, 71 son paralelos el uno con respecto al otro

Un miembro de cámara de producto 78 (Figuras 2 a 3, 5 y 8 y 9) está montado en forma deslizante dentro de la pared lateral 34 del cartucho 32. El miembro de cámara 78 es preferiblemente un cuerpo de una pieza de construcción de plástico moldeado integralmente, que incluye un par de cámaras de producto 80, 82. Cada cámara de producto 80, 82 es en forma de copa, que tiene extremos superiores abiertos colocados adyacentes el uno al otro en un plano común transversal a la dimensión longitudinal del cartucho. En la modalidad ilustrada de la invención, y como se observa en mejor forma en la Figura 8, las cámaras 80, 82 son de geometría no cilíndrica, siendo la cámara 80 significativamente más larga que la cámara 82 y generalmente en forma de V como se observa desde arriba. Las cabezas de pistón 72, 73 están conformadas correspondientemente, como se observa en mejor forma comparando la Figura 10 a la Figura 8. Un anillo en O 84, 86 se extiende alrededor de las periferias de las cabezas de pistón 72, 73 en acople de sello deslizante con las superficies de la pared interna de las cámaras 80, 82 respectivamente. El miembro de cámara 78 también incluye un collarín o manguito 88 roscado internamente, colocado entre las cámaras 80, 82. El manguito 88 está así colocado sobre el miembro de cámara 78 en forma tal de coincidir con la línea central axial del cartucho 32, por las razones que se describirán. Una costilla externa 90 se extiende longitudinalmente a lo largo de cada lado del miembro de cámara 78, y es capturado en forma deslizante entre un par de costillas internas paralelas que forman una ranura 92 que se extiende axialmente a la abertura hacia adentro a cada lado de la pared lateral 34 del cartucho. Las costillas 90 y las ranuras 92 guían así el movimiento del miembro de cámara 78 dentro del cartucho 32. Las costillas 90 y las ranuras 92 están colocadas preferiblemente en un plano común, que incluye la línea central axial del cartucho.

Un tornillo 94 (Figuras 2 a 5 y 12 y 13) es llevado mediante un pedestal 96 que tiene un receso hacia arriba, con respecto a la pared inferior 36 del cartucho 32. El tornillo 94 tiene un árbol 98 roscado externamente que se proyecta central y coaxialmente desde una base circular 100. El árbol 98 roscado externamente es recibido en forma

7/108
8
112

roscada dentro de un collarín 88 roscado internamente del miembro de cámara 78. La base 100 está asegurada en forma desprendible al pedestal 96 mediante una lengüeta 102 dividida que se extiende desde la base 100 a través de una abertura central en el pedestal 96 rotativo para asegurar el tornillo a la base mientras que permite la rotación libre del tornillo con respecto a la base. La superficie superior del pedestal 96 dentro del cartucho 32 se proporciona con una pluralidad de lengüetas de rampa 104 (Figuras 6 y 7) colocadas en un arreglo circunferencial espaciado alrededor de la periferia del pedestal. Similarmente, la superficie inferior de la base 100 del tornillo se proporciona con un arreglo circunferencial espaciado de lengüetas 106 de rampa, periféricas (Figura 13). Las lengüetas 104, 106 están construidas la una con respecto a la otra para permitir la rotación del tornillo 94 en una dirección para levantar el elemento de la cámara 78 dentro del cartucho 32, pero para prevenir la rotación del tornillo 94 en la otra dirección lo cual podría descender el elemento de la cámara 78 dentro del cartucho 32. Un botón arqueado 108 (Figuras 1 a 4 y 16) tiene un centro abierto 110 recibido sobre un pasador 112 que se extiende hacia arriba desde la base 36 de la pared lateral 34 del cartucho. Una pierna 114 del botón 108 se extiende a lo largo de la superficie interna de la pared lateral 34 del cartucho. Una segunda pierna 116 se extiende a lo largo de la superficie interna del cartucho a través de la abertura 118 en la pared lateral del cartucho. Una cabeza 120 de botón es integral con el botón 108 y se proyecta a través de la abertura 118 de la pared lateral. Un brazo de retén 122 se extiende radialmente hacia adentro desde la pierna 116 opuesta a la cabeza 120. El extremo interno del brazo de retén 122 acopla un arreglo circunferencial de dientes 124 de racor que se extiende alrededor de la periferia de la base 100 del tornillo (Figuras 4 y 12 y 13).

En conjunto, el botón 108 es asegurado dentro del cartucho 32 y el tornillo 94 es asegurado al elemento 78 de la cámara. El subconjunto del elemento de la cámara y el tornillo se inserta entonces dentro del cartucho en forma tal que la lengüeta dividida 102 se extiende a través del pedestal 96. Las cámaras 80, 82 pueden llenarse entonces con líquidos a ser dispensados. Entretanto, el cuerpo 42 del aplicador es asegurado al soporte 40 del aplicador, y el múltiple 52 y los pistones 66, 68 son suspendidos desde el lado inferior del múltiple. El aplicador 38 se ensambla entonces sobre el extremo superior abierto del cartucho 32 con las cabezas de pistón 72, 73 colocadas dentro de las cámaras 80, 82. Cuando el botón 108 pivota en forma resiliente radialmente hacia adentro por parte del usuario, el tornillo 94 rota para mover el elemento 78 de la cámara hacia arriba sobre los 66, 68. Dicho movimiento desplaza producto líquido desde dentro de las cámaras 80, 82 a través de los pasajes 70 del pistón dentro del múltiple 52, y posteriormente a través del puerto de salida 54 del múltiple y la válvula 56 hacia el aplicador de

AK
9 109 HX

superficie 38. Cada depresión del botón 108 dispersa una cantidad incremental de cada líquido. Cuando el botón se libera la geometría y resiliencia de la pierna 114 del botón retorna a la posición de la Figura 4. Sin embargo, el tornillo 94 se previene de rotar con el movimiento del botón mediante las lengüetas 104, 106 de leva de una vía sobre el pedestal 96 y la base 100 del tornillo.

Se notará en la modalidad ilustrada de las Figuras 1 a 17 que la cámara 80 es sustancialmente más larga que la cámara 82, y la cabeza 72 del pistón es correspondientemente más larga que la cabeza 73 del pistón. El pasaje 70 a través del pistón 66 es más larga que el pasaje 71 a través del pistón 68 y el pasaje 64 del múltiple es más largo que el pasaje 66 del múltiple. Consecuentemente, las cámaras y pasajes de líquidos están diseñados en forma tal que, para cada depresión del botón 108, más líquido es desplazado desde la cámara 80 de lo que es desplazado desde la cámara 82, y consecuentemente más líquido desde la cámara 80 que desde la cámara 82 es dispensado al cuerpo 42 del aplicador. En esta forma, las dosificaciones relativas de los líquidos se diseñan dentro del empaque de dispensado. Si se desea que los líquidos puedan dispensarse en dosificaciones iguales, las cámaras 80, 82 deben ser del mismo tamaño, como lo deben ser los pasajes de líquido a través de los pistones 66, 68 y el múltiple 52. Como se anotó arriba, el miembro de cámara 78, incluyendo la cámara 80, 82, el collarín 88 y las costillas 90, es de construcción integral de plástico moldeado. Similarmente, el cartucho 32, el soporte 40 del aplicador, el tornillo 94, el botón 108, el múltiple 52 y los pistones 66, 68 son de respectiva construcción de plástico moldeado integralmente. El cuerpo 42 del aplicador de superficie puede ser de construcción de espuma adecuada o plástico sinterizado.

Las Figuras 18 a 27 ilustran un empaque 126 que es una modificación del ilustrado en las Figuras 1 a 17. Los numerales de referencia en las Figuras 18 a 27 (y 28 y 29) que son idénticos a aquellos empleados en las Figuras 1 a 17 indican componentes idénticos, mientras que los numerales de referencia seguidos por el sufijo "a" (o "b" en las Figuras 28 y 29) indican componentes relacionados pero modificados. La diferencia principal entre la modalidad de las Figuras 1 a 17 por un lado y la modalidad de las figuras 18 a 27 por el otro es que el miembro de cámara 78a tiene cámaras 80a y 82a que son alargadas con respecto a la dimensión larga de la sección transversal oval del empaque. Es decir, la cámara 80a más larga es de Nuevo en forma de V generalmente, pero esta vez el ancho de la forma de V se extiende en la dirección de la dimensión larga del cuerpo del recipiente oval más que la dimensión corta como se ilustra en la Figura 8. Similarmente, la más pequeña cámara 82a tiene una dimensión larga paralela a la dimensión larga del cuerpo del recipiente. Los pistones 66a y 68a están dimensionados y

7
112
110

contorneados en correspondencia con los contornos de las cámaras 80a, 82a respectivamente.

Las Figuras 28 y 29 ilustran empaques 128 de dispensado dual de líquidos de acuerdo con otra modalidad de la invención. Un aplicador 38b es recibido sobre el extremo abierto de un cartucho 32b en forma de copa. Un múltiple 52b está suspendido desde el interior del aplicador 38b, y un par de pistones huecos 66b, 68b están suspendidos desde las aberturas paralelas del puerto de entrada del múltiple 52b. Los pistones 66b, 68b tienen cabezas 72b, 73b colocadas en forma deslizante en respectivas cámaras 80b, 82b en un miembro de cámara 78b de producto. El miembro de cámara 78b de producto es de nuevo de construcción unitaria de plástico moldeado integralmente, y en esta modalidad incluye un bastidor de engranajes 130 que se extiende a lo largo de un lado del miembro de cámara 78b en una dirección paralela a la dirección del movimiento del miembro de cámara. El bastidor de engranajes 130 está colocado internamente adyacente a la pared lateral 34b del 34b del cartucho 32b. La pared lateral 34b tiene una abertura 132 donde la rueda de engranaje 134 está montada rotativamente. La rueda de engranajes 134 tiene un arreglo circunferencial de dientes externos de engranajes que, dentro del cartucho 32b, están acoplados en malla con la pista 130 del miembro de cámara 78b, y externamente al cartucho 32b están colocados para manipulación manual por el usuario. Ante la rotación de la rueda de engranajes 134 en sentido contrario a las manecillas del reloj en la Figura 29, el miembro de cámara 78b de producto se mueve ascendentemente sobre los pistones 66b, 68b. Dicho desplaza el líquido dentro de las cámaras 80b, 82b a través de los pistones huecos y a través del múltiple 52b hacia el aplicador 38b.

Se ha divulgado así un empaque para contener y aplicar una solución líquida de múltiples componentes, y un método de ensamblar un empaque tal, que satisface completamente los objetivos y demandas previamente establecidos. La invención se ha divulgado en conjunción con sus actualmente preferidas modalidades, y un número de modificaciones y variaciones se han discutido. Otras modificaciones y variaciones serán sugeridas por sí mismas a personas de experiencia ordinaria en el arte. Por ejemplo, los tamaños de las cámaras y las secciones transversales lateralmente a la dirección del movimiento del elemento de las cámaras pueden dimensionarse para lograr la relación deseada de dispensado de líquidos. Las modalidades de las Figuras I a 27 incluyen la activación por botón del tornillo de elevación del elemento de cámara, sin embargo, la base del tornillo puede ser de mayor diámetro y extenderse a través de las ranuras en la pared lateral del cartucho para directa rotación manual del tornillo. En la modalidad de las Figuras 28 y 29, la pared lateral del cartucho puede proporcionarse con un retén u otro

43. El empaque establecido en la reivindicación 39 donde ambas de dichas cámaras y los pistones asociados son de geometría no cilíndrica.

44. El empaque establecido en la reivindicación 39 donde dichas primera y segunda cámaras y los primer y segundos pistones asociados, tienen áreas desiguales en sección transversal perpendiculares a la dirección del movimiento de dicho miembro de cámara dentro del dicho cartucho.

45. Un método de elaborar un empaque para contener y dispensar una solución líquida de múltiples componentes, el cual comprende los pasos de:

(a) proporcionar un cartucho que tiene un extremo abierto y una pared lateral,

(b) montar dentro de dicho cartucho un miembro de cámara de producto moldeado integralmente que tiene por lo menos primera y segunda cámaras de producto y primer medio para mover dicho miembro con respecto a dicha pared lateral,

(c) montar sobre dicho cartucho un segundo medio para acople con dicho primer medio y manipulación por un usuario para mover dicho miembro dentro de dicho cartucho,

(d) proporcionar un aplicador de superficie,

(e) suspender desde dicho aplicador por lo menos primer y segundos pistones huecos,

(f) llenar dichas primera y segunda cámaras con primer y segundo líquidos a ser dispensados, y

(g) ensamblar dicho aplicador de superficie sobre dicho extremo abierto de dicho cartucho en forma tal que dichos primer y segundo pistones están colocados respectivamente en dichas primera y segunda cámaras.

46. Un empaque para contener y dispensar una solución líquida de dos componentes, el cual comprende:

un cartucho que tiene una pared lateral y un extremo abierto,
un aplicador de superficie montado sobre dicho extremo abierto,

un miembro de cámara de producto formado integralmente montado en forma móvil dentro de dicha pared lateral, dicho miembro de cámara de producto que incluye por lo menos primera y segunda cámaras de producto en forma de copa que tienen extremos abiertos adyacentes el uno al otro, y primer miembro para mover dicho miembro con respecto a dicha pared lateral,

un múltiple acoplado a dicho aplicador dentro de dicho cartucho, dicho múltiple que tiene por lo menos primer y segundo

puertos de entrada paralelos,

primer y segundo pistones huecos respectivamente suspendidos desde dichos puertos de entrada del múltiple y colocados respectivamente en forma deslizante dentro de dichas primera y segunda cámaras, y

un segundo medio sobre dicho múltiple en acople con dicho primer medio para manipulación por un usuario para mover dicho miembro de cámara sobre dichos pistones y desplazar líquido desde dichas cámaras a través de dichos pistones y dicho múltiple hacia dicho aplicador.

47. El empaque establecido en la Reivindicación 46 donde dicho primer medio comprende un collarín roscado internamente en dicho miembro de cámara, y dicho segundo medio comprende un tornillo roscado externamente.

48. El empaque establecido en la reivindicación 46 donde dicho primer miembro comprende una pista de engranajes sobre dicho miembro de cámara, y dicho segundo miembro comprende una rueda de engranaje sobre dicha pared lateral del cartucho.

Extracto de la Divulgación

Un empaque para contener y dispensar una solución líquida de múltiples componentes incluye un miembro de cámara de producto montado en forma móvil dentro de la pared lateral de un cartucho, y que define por lo menos primera y segunda cámaras de producto separadas para contener líquidos a ser dispensados. Primer y segundo pistones están montados en posiciones fijas dentro del cartucho y respectivamente deslizantes, colocados dentro de las primera y segunda cámaras. Primer y segundo pasajes se extienden desde respectivos pistones para alimentar líquidos desplazados desde las cámaras a través de un múltiple hacia un aplicador de superficie montado sobre el cartucho. Una estructura de cooperación sobre el cartucho y el miembro de cámara es manipulada por un usuario para mover el miembro de cámara dentro del cartucho sobre los pistones, y consecuentemente, para desplazar líquidos desde las cámaras a través de los pistones hacia el múltiple, en el cual los líquidos se mezclan y alimentan hacia el aplicador.

ES TRADUCCIÓN FIEL Y COMPLETA DEL DOCUMENTO ANEXO
TERMINADA ESTE 18 DE ENERO DE 2003.



2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio ~~145~~

Radicación no 02-91811

Concepto Técnico no 207

Clasificación Internacional de Patentes: **A45D 40/24; B65D 83/00**

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de **Patente de Invención**:

- SI ☒ NO ☐ Contiene un resumen de la invención (Art.26-e).
- SI ☒ NO ☐ Contiene el título o nombre de la invención (Art.27-d).
- SI ☒ NO ☐ Contiene la descripción de la invención (Art.26-b).
- SI ☒ NO ☐ NO ES APLICABLE ☐ Contiene los dibujos necesarios para comprender la invención (Art.26-d)
- SI ☒ NO ☐ Contiene una o más reivindicaciones. (Art.26-c).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afro americanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-l).
- SI ☐ NO ☒ La invención se refiere a un producto relativo a un material biológico. (Art.26-j).
- SI ☒ NO ☐ NO ES APLICABLE ☐ La prioridad coincide con la materia reivindicada.
- SI ☒ NO ☐ **CUMPLE LOS REQUISITOS TÉCNICOS**

OBSERVACIONES Y OTROS: SI ☐ NO ☒ ver hoja(s) anexa(s)

EXAMINADOR TÉCNICO
202056

Bogotá D. C., febrero 10 de 2004.



2020
Bogotá DC

Folio 116

Doctor
RAMIRO CASTRO DUQUE
Apoderado
OWENS-ILLINOIS CLOSURE INC

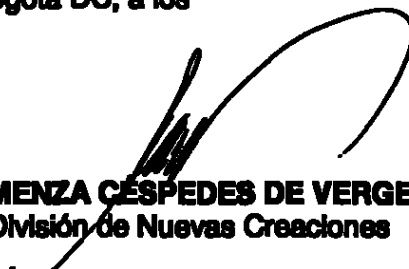
REFERENCIA:	Radicación No.	02-01811
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	214
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión, a partir del 11 de abril de 2004, de acuerdo con lo indicado por la norma.

No obstante lo anterior, no se tendrá en cuenta la prioridad invocada ya que *la copia certificada fué presentada en forma extemporánea.*

Cúmplase
Dado en Bogotá DC, a los

11 FEB. 2004


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

202058

DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No 02-091811

EL EXTRACTO DE LA PRESENTE SOLICITUD DE PATENTE DE INVENCION

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No 539 DE

FECHA 30 DE ABRIL DEL 2004 EL TERMINO HABIL SEÑALADO POR LA LEY

EXPIRA EL 02 DE AGOSTO 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 calga 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 _ _ _ _ _

Bogotá D.C, AGOSTO DE 2006

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

116

RADICACIÓN: 2-81811

EDICTO No. 13718

**LA SECRETARÍA GENERAL AD-HOC
HACE SABER:**

Que esta Superintendencia profirió Resolución No. 23227 de 31-AGO-2006. Que el contenido de la parte resolutive es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

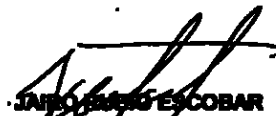
ARTICULO PRIMERO: Declarar abandonada la solicitud de privilegio de patente de invención contenida en el expediente de la referencia.

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución al doctor Ramiro Castro Duque, o a quien haga sus veces, en su calidad de apoderado de Owens-Illinois Closure Inc., entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE

Dada en Bogotá, D.C., a los 31 AGO. 2006

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,


JAIME CASTRO ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc 15-SEP-2006
Secretaría General Ad-Hoc
EDICTO No. 13718

Este edicto se desfiga hoy 28-SEP-2006 a las cinco (5:00 p.m.)