

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

E. _____ S. _____ D. _____

Re: PL.- PECHINEY PLASTIC PACKAGING, INC.- Solicitud de
Patente de Invención para "RECIPIENTE MEJORADO Y
METODO Y APARATO PARA FORMAR EL RECIPIENTE".-
Clase B.65D.- Expediente número 01-075.480.

1. Me refiero a mi solicitud de 6 de Septiembre de 2001 y al requerimiento dictado por ese Despacho notificado por Estado de 29 de Noviembre del mismo año.

2. Anexos me permito presentar a usted:

(1) Copia auténtica debidamente certificada de la solicitud de patente presentada para el invento arriba nombrado **respecto de la cual reclamo prioridad**, a saber la solicitud PCT/US número 00/25192 de 15 de Septiembre de 2000, junto con su traducción correspondiente a todo el documento; y

(2) Copia debidamente autenticada por el Notario Sexto del Circulo de Bogotá, de los documentos que acreditan la calidad de Traductor Oficial del señor Gabriel Rueda Chadid, quien elaboró la traducción de la solicitud PCT/US número 00/25192 de 13 de Septiembre de 2000, respecto de la cual se reivindica prioridad en el presente caso.

3. Ruego a usted tomar atenta nota de lo anterior y proceder de conformidad.

Señor Superintendente,


JOSE ANTONIO LLOREDA

T.P. 10.784

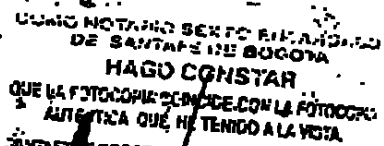
Código 231

EL SUSCRITO JEFE DEL AREA DE
LEGALIZACIONES DE MINISTERIO DE
RELACIONES EXTERIORES.



HACE CONSTAR

que el señor Gabriel Rueda, se encuentra debidamente
traducido ante este Ministerio, como traductor e
intérprete oficial para los idiomas INGLES -ESPAÑOL,
PARA - INGLES.

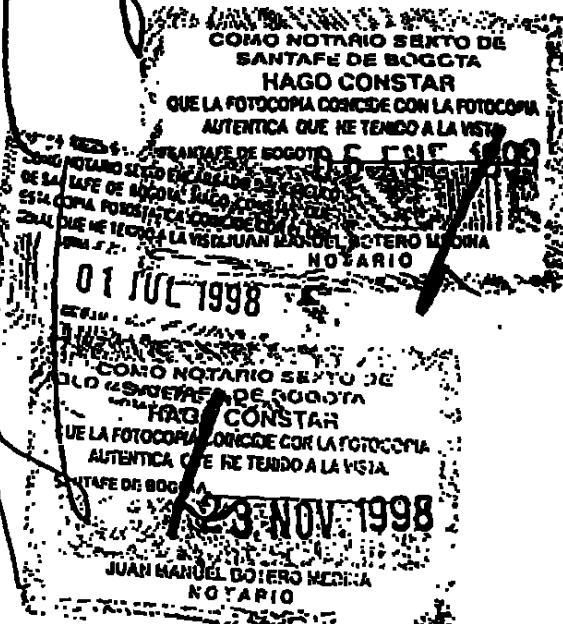
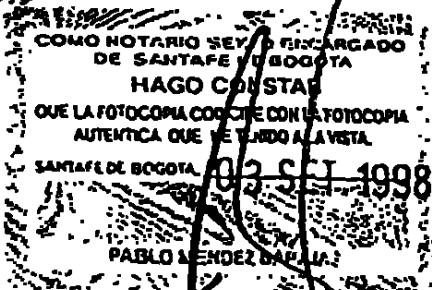


para efectos de esta certificación el interesado presentó
copia autenticada de la certificación del Ministerio de
Justicia acerca de la vigencia de la resolución
182.

21 AGO. 1998

da en Santafé de Bogotá, D.C., a los diez y nueve días
19) del mes de diciembre de 1994.

Neibon Sánchez Torres
Jefe Área de Legalizaciones

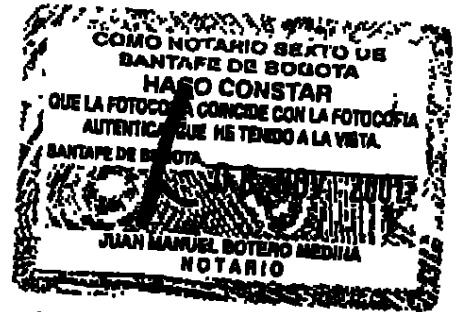


NST/gtm.



Ministerio de Justicia y del Derecho

47

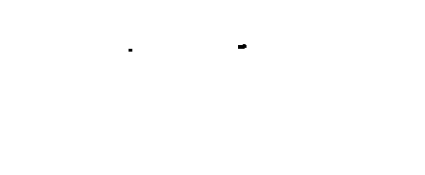
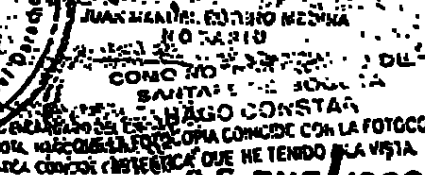
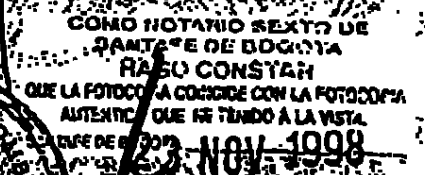
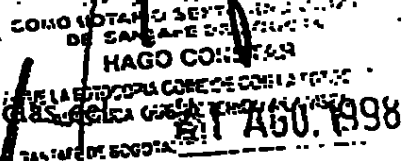
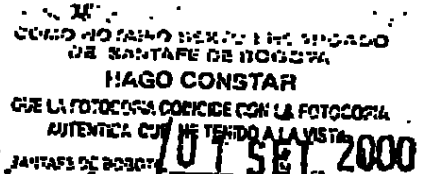


EL SECRETARIO GENERAL DEL MINISTERIO DE JUSTICIA Y DEL DERECHO

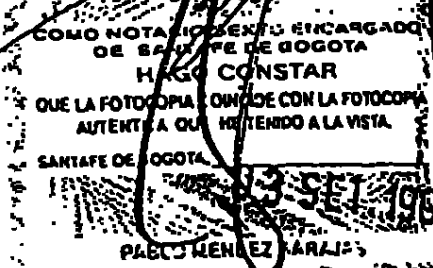
CERTIFICA:

que por Resolución 5996 del 29 de noviembre de 1982, le fue expedida licencia para ejercer funciones de Traductor e Intérprete Oficial en los idiomas INGLES-ESPAÑOL, ESPAÑOL-INGLES a GABRIEL RUEDA CHADID, identificado con la cédula de ciudadanía No. 17.124.145 expedida en Bogotá. Que dicha resolución se encuentra vigente en la fecha.

A solicitud del interesado, en Santafé de Bogotá D.C., a los 17 días del mes de noviembre de 1994.



JORGE LUIS SABBAGAL SABBAGAL



BAR/

TRIBUNAL SUPERIOR DEL DISTRITO JUDICIAL DE SANTAFE DE BOGOTA
SECRETARIA GENERAL



LA SUSCRITA SECRETARIA DEL H. TRIBUNAL SUPERIOR DEL DISTRITO JUDICIAL DE SANTAFE DE BOGOTA,

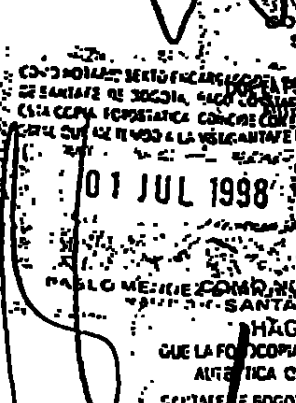
CERTIFICA:

Que el Acuerdo No. 183 de diciembre 3 de 1982 emanado de esta Corporación, por medio del cual dió posesión al señor GABRIEL RUEDA CHADIN, identificado con Cédula de Ciudadanía número 17.124.145 de Bogotá, como TRADUCTOR E INTERPRETE OFICIAL de los idiomas INGLES-ESPAÑOL-ESPAÑOL-INGLES, en virtud de la Resolución No. 5996, se encuentra vigente.

Se expide en Santafé de Bogotá D.C., a dieciseis (16) de noviembre de mil novecientos noventa y cuatro (1994).


MARIA INES RODRIGUEZ TORRES
SECRETARIA
COMO NOTARIO SEXTO ENCARGADO DE SANTAFE DE BOGOTA
HAGO CONSTAR QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA 08 SET 1998
PABLO MENDEZ

crm./


COMO NOTARIO SEXTO DE SANTAFE DE BOGOTA
HAGO CONSTAR QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA 01 JUL 1998
JUAN MANUEL BOTERO MEDINA NOTARIO
COMO NOTARIO SEXTO DE SANTAFE DE BOGOTA
HAGO CONSTAR QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA 23 NOV 1998
JUAN MANUEL BOTERO MEDINA NOTARIO

Pe hiney Plasti Packaging, Inc. 01-075.480

REF: LLC-0050-2001. La presente es Traducción Oficial de un documento presentado originalmente en inglés. Esta traducción es elaborada por Gabriel Rueda Chadid (Traductor Oficial).

ESTADOS UNIDOS DE AMERICA

A TODOS AQUELLOS QUE LLEGAREN A LEER EL CONTENIDO DEL

PRESENTE DOCUMENTO LES CERTIFICAMOS:

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

Oficina de Marcas y Patentes de los Estados Unidos

Octubre 26, 2001

Se certifica mediante el presente instrumento que adjunto se encuentra fiel copia de la Solicitud Internacional con su respectiva identificación, tal y como fue presentada originalmente y las correcciones que se le hubieren hecho. Esta información es tomada de los registros que reposan en la Oficina de Marcas y Patentes de los Estados Unidos, entidad esta que actúa como oficina receptora de acuerdo con el Tratado de Cooperación de Patentes.

Número de Solicitud: PCT/US00/25192

Fecha de presentación: Septiembre 15, 2000

Por autorización del

COMISIONADO DE MARCAS REGISTRADAS Y PATENTES

M. LEE

Funcionario Encargado de Certificaciones (Hay firma y sello)


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 1994 DE NOV. 29-88
MINISTERIO DE JUSTICIA

PCT
SOLICITUD

El suscrito solicita que se le de trámite a la presente solicitud internacional de patente de acuerdo con el Tratado de Cooperación de Patentes.

Para la oficina receptora solamente

Solicitud Internacional No.: PCT/US00/25192

Fecha Internacional de Presentación: RO/US Septiembre 15/2000

Nombre de la Oficina receptora y Solicitud Internacional PCT:
SOLICITUD INTERNACIONAL PCT RO/US

Referencia del archivo del solicitante o agente: 1700.068WOU

.....

Casilla No. I TITULO DEL INVENTO

**CONTENEDOR MEJORADO Y METODO Y APARATO PARA LA FORMACION DEL
CONTENEDOR**

.....

Casilla No. II SOLICITANTE

**Nombre y dirección: (Apellido seguido del nombre: para persona
jurídica, nombre oficial completo. La dirección deberá incluir código
postal y nombre del país. El país de la dirección que se indique en esta
casilla corresponderá al estado del solicitante (o sea el país) de
residencia en caso de que no se indique adelante ningún Estado de
residencia)**

PECHINEY PLASTIC PACKAGING, INC.

8770 WEST BRYN MAWR AVENUE

CHICAGO, ILLINOIS 60631

US

Teléfono No.: (773)399 3000 Fax No.: (773)917 1707

Estado (es decir país) de nacionalidad: Estados Unidos
Estado (es decir país) de residencia: Estados Unidos
Esta persona es solicitante para los propósitos de:
☒ Todos los Estados Designados.

.....

Casilla No. III OTROS SOLICITANTES Y/O INVENTORES

Nombre y dirección: *(Apellido seguido del nombre: para persona jurídica. nombre oficial completo. La dirección deberá incluir código postal y nombre del país. El país de la dirección que se indique en esta casilla corresponderá al estado del solicitante (o sea el país) de residencia en caso de que no se indique adelante ningún Estado de residencia)*

JACKSON, DOUGLAS J.
132 CHESTNUT DRIVE
WAYNE, NEW JERSEY 07470
US

Esta persona es: ☒ Solicitante e inventor.
Estado (es decir país) de nacionalidad: Estados Unidos
Estado (es decir país) de residencia: Estados Unidos
Esta persona es solicitante para los propósitos de:
☒ Estados Unidos de América solamente.
☒ Otros solicitantes y/o inventores se indican en la hoja de continuación.

.....

Casilla No. IV AGENTE O REPRESENTANTE COMUN, O DIRECCION PARA ENVIO DE CORRESPONDENCIA

La persona que se identifica a continuación ha sido nombrada para que actúe a nombre y representación del solicitante ante las Autoridades Internacionales competentes en su calidad de:

GABRIEL RUEDA CHADID
JEFE DE SECCION OFICIAL
RESOLUCION 5996 DE NOV. 29-83
MINISTERIO DE JUSTICIA

[X] Agente

Nombre y dirección: *(Apellido seguido del nombre; para persona jurídica, nombre oficial completo. La dirección deberá incluir código postal y nombre del país)*

Audet, Paul R.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682
US

Teléfono No.: (203)327-4500 Fax No.: (203)327-6401

Continuación Casilla No. III OTROS SOLICITANTES Y/O INVENTORES

Nombre y dirección: *(Apellido seguido del nombre; para persona jurídica, nombre oficial completo. La dirección deberá incluir código postal y nombre del país. El país de la dirección que se indique en esta casilla corresponderá al estado del solicitante (o sea el país) de residencia en caso de que no se indique adelante ningún Estado de residencia)*

KING, DANIEL L.
92 SHERMAN RIDGE ROAD
SUSSEX, NEW JERSEY 07461
US

Esta persona es: [X] Solicitante e inventor.
Estado (es decir país) de nacionalidad: Estados Unidos
Estado (es decir país) de residencia: Estados Unidos
Esta persona es solicitante para los propósitos de:
[X] Estados Unidos de América solamente.

Casilla No. V DESIGNACION DE ESTADOS

Se hacen mediante el presente documento las siguientes

GABRIEL RUEDA CHADID
C/ TRADUCTOR OFICIAL
RESOLUCION 8996 DE NOV. 29-88
MINISTERIO DE JUSTICIA

designaciones en cumplimiento de lo estipulado en la Regla 4.9(a) (señalar la información pertinente):

Patente Regional:

[X] AP Patente ARIPO: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe y demás estados que sean Estados Contratantes del Protocolo de Harare y del PCT.

[X] EA Patente Euroasiática: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, y demás estados que sean Estados Contratantes de la Convención Euroasiática de Patentes y del PCT.

[X] EP Patente Europea: AT Austria, BE Bélgica, CH y LI Suiza y Liechtenstein, CY Chipre, DE Alemania, DK Dinamarca, ES España, FI Finlandia, FR Francia, GB Reino Unido, GR Grecia, IE Irlanda, IT Italia, LU Luxemburgo, MC Mónaco, NL Países Bajos, PT Portugal, SE Suecia, y demás estados que sean Estados Contratantes de la Convención Europea de Patentes y del PCT.

[X] OA Patente OAPI: BF Burkina Faso, BJ Benin, CF República Centro Africana, CG Congo, CI Costa de Marfil, CM Camerún, GA Gabón, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Nigeria, SN Senegal, TD Chad, TG Togo y demás Estados que sean Estados miembros del OAPI y de Estados Contratantes de PCT (si se desea otro tipo de protección o tratamiento, especificar en la línea punteada).....

Patente Nacional (si se desea otro tipo de protección o tratamiento, especificar en la línea punteada).....

- | | |
|-------------------------------|----------------------|
| [X] AE Emiratos Arabes Unidos | [X] LR Liberia |
| [X] AL Albania..... | [X] LS Lesotho |

GABRIEL RUBEN CHADID
TRADUCTOR OFICIAL
RESOLUCION 1996 DE NOV. 29-01
MINISTERIO DE JUSTICIA

[X] AM Armenia.....	[X] LT Lituania
[X] AT Austria.....	[X] LU Luxemburgo
[X] AU Australia.....	[X] LV Latvia
[X] AZ Azerbaijan	[X] MA Morocco
[X] BA Bosnia y Herzegovina..	[X] MD República de Moldova....
[X] BB Barbados	[X] MG Madagascar.....
[X] BG Bulgaria.....	[X] MK Antigua República
[X] BR Brasil.....	Yugoslava de Macedonia..
[X] BY Belarus.....	[X] MN Mongolia
[X] CA Canadá	[X] MW Malawi.....
[X] CH y LI Suiza y Liechtenstein	[X] MX México.....
[X] CN China.....	[X] NO Norway
[X] CR Costa Rica.....	[X] NZ Nueva Zelanda.....
[X] CU Cuba	[X] PL Polonia.....
[X] CZ República Checa.....	[X] PT Portugal.....
[X] DE Alemania.....	[X] RO Rumania
[X] DK Dinamarca.....	[X] RU Federación Rusa.....
[X] DM Dominica	[X] SD Sudan
[X] EE Estonia.....	[X] SE Suecia
[X] ES España.....	[X] SG Singapur
[X] FI Finlandia.....	[X] SI Eslovenia.....
[X] GB Reino Unido	[X] SK Slovakia.....
[X] GD Grenada	[X] SL Sierra Leona.....
[X] GE Georgia.....	[X] TJ Tajikistan.....
[X] GH Ghana.....	[X] TM Turkmenistan.....
[X] GN Gambia	[X] TR Turquía.....
[X] HR Croacia.....	[X] TT Trinidad y Tobago.....
[X] HU Hungría.....	[X] TZ República Unida de Tanzania ..
[X] ID Indonesia	[X] UK Ucrania.....
[X] IL Israel.....	[X] UG Uganda.....

- ☒ IN India.....

☒ IS Islandia.....

☒ JP Japón.....

☒ KE Kenia.....

☒ KG Kirgizstan.....

☒ KP República Popular Democrática de Corea

☒ KR República de Corea.....

☒ KZ Kazakhstan.....

☒ LC Santa Lucía.....

☒ LU Sri Lanka.....

☒ US Estados Unidos de América ..

☒ UZ Uzbekistan.....

☒ VN Vietnam.....

☒ YU Yugoslavia.....

☒ ZA Sur Africa.....

☒ ZW Zimbabwe.....

Casilla No. VI REIVINDICACION PRIORITARIA

☒ Las reivindicaciones prioritarias se indican en la Casilla Suplementaria

Fecha de presentación de la solicitud inicial (día/mes/año)	Número de la aplicación inicial	Sitio donde se hace la solicitud inicial:
		solicitud nacional: país
ítem (1) (16-03-00) Marzo 16, 2000	60/189060	Estados Unidos

☒ La Oficina receptora deberá preparar y enviarle a la Oficina Internacional copia certificada de las solicitudes iniciales (solamente si se hubiera presentado ante la Oficina que para los propósitos de la presente solicitud internacional es la Oficina receptora) que se identifica a continuación como ítem: 1

GABRIEL RUEDA CRADID
TRADUCTOR OFICIAL
RESOLUCION 1994 DE NOV. 21-00
MINISTERIO DE JUSTICIA

Casilla No. VII AUTORIDAD INTERNACIONAL DE BUSQUEDA

Escogencia de Autoridad Internacional de Búsqueda (ISA) (Si dos o más Autoridades Internacionales de Búsqueda son competentes para llevar a cabo esta labor a nivel internacional, indicar la oficina escogida, para lo cual basta emplear el código de dos letras):

ISA/US

.....

Casilla No. VIII ESTADO DE REVISION: IDIOMA DE LA PRESENTACION

La presente solicitud internacional contiene el siguiente número de hojas:

solicitud	:	4
descripción (excluyendo el listado de secuencia)	:	9
reivindicaciones	:	3
resumen	:	1
dibujos y planos	:	10
parte de listado secuencial de descripción	:	

Número total de páginas	:	23

Esta solicitud internacional está acompañada de los items que se señalan a continuación:

- 1. [X] hoja de cálculo de derechos.
- 3. [X] copia del poder general de representación, y número de referencia si lo hay.

La Figura y dibujos que deben acompañar este resumen: 5

Idioma de presentación de la solicitud internacional: Inglés

.....


GABRIEL JORDA CHADI
TRADUCTOR OFICIAL
RESOLUCION 596 DE NOV. 29-81
MINISTERIO DE JUSTICIA

Casilla No. IX FIRMA DEL SOLICITANTE O AGENTE

Al frente de cada firma. indicar el nombre de la persona que otorga y su condición (en caso de que esta no sea obvia de la lectura de la solicitud).

Firmado por: AUDET. PAUL R.


**GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 5994 DE NOV. 20-88
MINISTERIO DE JUSTICIA**

Poder General de Representación
(En Relación con Varias Solicitudes Internacionales)
TRATADO DE COOPERACION DE PATENTES
NOMBRAMIENTO DE AGENTE O REPRESENTANTE COMUN

PODER GENERAL DE REPRESENTACION

El suscrito solicitante:

PECHINEY PLASTIC PACKAGING, INC.
8770 WEST BRYN MAWR AVENUE
CHICAGO, ILLINOIS 60631
US

nombra a:

Audet, Paul R.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682
US

[X] como agente.

para que actúe por su propia cuenta ante las Autoridades competentes Internacionales en relación con todas y cada una de las solicitudes internacionales que presente ante la Oficina de Marcas y Patentes de los Estados Unidos como Oficina receptora y para que efectúe o reciba pagos a su propio nombre.

Sitio: Norwalk, Connecticut Fecha: Agosto 27, 1988

Firma del solicitante (cuando existan varios solicitantes, cada uno de ellos deberá firma):

Firmado por:

Nombre: Edward J. Fitzgerald

Cargo: Vicepresidente y Gerente General

OFICINA DE MARCAS Y PATENTES DE LOS ESTADOS UNIDOS

Solicitante: Jackson et al.
No. Serial: PCT/US00/25192
Radicación: Septiembre 15. 2000
Para: Contenedor Mejorado y Método y Aparato para la
Formación de los Contenedores
Examinador: Hal Saunders

Expediente No.: 1700.068WOU
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682

PODER DE REPRESENTACION ASOCIADO

Comisionado Asistente de Patentes
Washington, DC 20231

Apreciados Señores:

Favor reconocer a Paul D. Greeley, Reg. No. 31.019, Charles N. J. Ruggiero, Reg. No. 28.468 y Harry F. Smith, Reg. No. 32.439, a la firma de abogados Ohlandt, Greeley, Ruggiero & Perle, L.L.P. con oficinas en One Landmark Square, 9th Floor, Stamford, Connecticut 06901-2682, como apoderados, con poderes plenos para adelantar todos los trámites relacionados con la presente solicitud de patente y ejecutar todos los actos ante la Oficina de Marcas y Patentes en relación con dicha solicitud.

Favor enviar toda correspondencia futura a:

Paul D. Greeley, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682

Atentamente,

Fecha: Noviembre 30, 2000 **Firmado por:** Paul R. Audet

Poder General de Representación
(En Relación con Varias Solicitudes Internacionales)
TRATADO DE COOPERACION DE PATENTES
NOMBRAMIENTO DE AGENTE O REPRESENTANTE COMUN

PODER GENERAL DE REPRESENTACION

El suscrito solicitante:

Jackson. Douglas J.
132 Chestnut Drive
Wayne. New Jersey 07470
US

nombra a:

Paul R. Audet, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682
US

[X] como agente.

para que actúe por su propia cuenta ante las Autoridades competentes Internacionales en relación con todas y cada una de las solicitudes internacionales que presente ante la Oficina de Marcas y Patentes de los Estados Unidos como Oficina receptora y para que efectúe o reciba pagos a su propio nombre.

Sitio: Cabal A. Washington Fecha: Noviembre 8, 2000

Firma del solicitante (cuando existan varios solicitantes, cada uno de ellos deberá firma):

Firmado por:

Nombre: Douglas J. Jackson

Cargo: Gerente de Investigación y Desarrollo

85
61

Poder General de Representación
(En Relación con Varias Solicitudes Internacionales)

TRATADO DE COOPERACION DE PATENTES
NOMBRAMIENTO DE AGENTE O REPRESENTANTE COMUN

PODER GENERAL DE REPRESENTACION

El suscrito solicitante:

King, Daniel L.,
92 Sherman Ridge Road
Wantage, New Jersey 07461
US

nombra a:

Paul R. Audet, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, Connecticut 06901-2682
US

[X] como agente,

para que actúe por su propia cuenta ante las Autoridades competentes Internacionales en relación con todas y cada una de las solicitudes internacionales que presente ante la Oficina de Marcas y Patentes de los Estados Unidos como Oficina receptora y para que efectúe o reciba pagos a su propio nombre.

Sitio: Cabal A. Washington Fecha: Noviembre 8, 2000

Firma del solicitante (cuando existan varios solicitantes, cada uno de ellos deberá firma):

Firmado por:

Nombre: Daniel L. King

Cargo: Supervisor de Desarrollo de Productos

REIVINDICACIONES

1. Un método para el moldeo de un tubo dispensador que posee un cabezal delgado que se une con un cuerpo tubular, y que comprende:

moldeo del cabezal de un material moldeable a altas temperaturas en un equipo de herramientas que posee una cavidad de molde en forma de un cabezal y que se forma mediante herramientas hembras para darle forma a la superficie externa del cabezal, y por un troquel macho para formar la superficie interna del cabezal, de tal manera que el cabezal tenga una superficie interna, otra externa, un cuello con extremo superior y un soporte que tenga un extremo inferior para que se pueda unir a la extremo superior del cuerpo tubular.

el suministro de una serie de surcos elongados en la superficie externa del troquel macho, de manera que los surcos se extiendan axialmente desde la porción del troquel que forma el cuello hasta la porción del troquel que forma el extremo inferior del soporte, donde los surcos que proporcionan los canales para el flujo del material moldeable en estado de fundición pasen desde el cuello hasta el extremo inferior del soporte.

el suministro de un cuerpo tubular que tenga un extremo superior en las herramientas de molde de tal suerte que el extremo superior quede alineado axialmente al troquel hembra que forma el soporte.

el suministro de material moldeable a una temperatura elevada dentro de la porción de cavidad del molde que deba formarse.

haciendo que fluya el material moldeable a lo largo de los surcos hasta llegar al extremo inferior del soporte y los alrededores de éste a una temperatura y presión elevadas. donde se pueda suministrar suficiente material moldeable a temperatura y presión elevada hasta llegar al extremo inferior de la cavidad del molde para unirse luego con el extremo superior del cuerpo tubular y conectarse con el extremo inferior del soporte. y

Juego utilizar el mencionado material moldeable que se alimenta a través de los surcos para unir el extremo superior del cuerpo tubular con el soporte con el objeto de formar el tubo de dispensado. de tal suerte que la superficie interna del cabezal disponga de una serie de nervaduras elongadas que se formen dentro de los surcos. donde tales nervaduras le den rigidez al soporte del cabezal y permitan que éste se forme con una cantidad inferior del material moldeable y que sea más delgado. de tal manera que el aglutamiento entre el soporte y el cuerpo tubular sean mas fuertes de lo que sucede en ausencia de tales surcos y de tales nervaduras.

2. El método de la reivindicación 1. donde los surcos se suministran con el objeto de extenderse axialmente desde el extremo superior del troquel que forma el extremo superior del cabezal.

3. El aparato para moldear un cabezal del material, donde este cabezal es adecuado para que se una a un cuerpo tubular con el objeto de formar un tubo de dispensado, que comprenda:

un juego de herramientas que tenga una cavidad de molde en forma de cabezal, donde este juego de herramientas incluya las herramientas hembras para formar la superficie externa del cabezal y las herramientas macho que tengan una superficie externa para formar la superficie interna del cabezal, de tal suerte que el cabezal tenga una superficie interna, una externa, un cuello con extremo superior, y un soporte que tenga una porción de extremo inferior para que se pueda unir al extremo superior del cuerpo tubular, donde la superficie externa de la herramienta macho tenga una serie de surcos elongados, que se extiendan axialmente desde la porción de las herramientas machos que le dan forma al cuello hasta llegar a la porción de la herramienta macho que forma el extremo inferior del soporte, entendiéndose que los surcos suministrarán los canales para el flujo del material moldeable desde la porción de la herramienta macho que le da forma al cuello hasta llegar a la porción de la herramienta macho que le da forma al extremo inferior del soporte.

4. Un cabezal moldeado adecuado para que se una al extremo superior de un cuerpo tubular con el objeto de formar un tubo de dispensado, conformado por:

un cuello que tenga un extremo superior, y

un soporte, donde el cuello provisto de la porción del extremo inferior sea adecuado para que se una al extremo

superior del cuerpo tubular. donde el cuello y el soporte tengan una superficie interna con una serie de nervaduras espaciadas. donde dichas nervaduras están conformadas por una pieza donde el cabezal haga un solo cuerpo extendiéndose desde el cuello hasta el extremo inferior del soporte para lograr la rigidez del cabezal.

5. El cabezal moldeado de la reivindicación 4. donde las nervaduras se extienden axialmente desde el extremo superior del cuello hasta el extremo inferior del soporte.

6. El cabezal de la reivindicación 4. donde el soporte tiene porciones de red entre las nervaduras espaciadas, y donde el espesor de las porciones de la red está entre 0.018 pulgadas y 0.029 pulgadas aproximadamente.

7. El cabezal de la reivindicación 5, donde el espesor de las porciones de la red es de 0.023 pulgadas hasta 0.024 pulgadas aproximadamente.

8. El cabezal de la reivindicación 5. donde el espesor de las porciones de la red es de 0.020 pulgadas hasta 0.024 pulgadas aproximadamente.

9. El cabezal de la reivindicación 4. donde el soporte tiene una superficie externa y las nervaduras tienen una superficie interna y un espesor de nervaduras a partir de tal superficie externa hasta llegar a tal superficie interna en 0.040 pulgadas aproximadamente.

10. El cabezal de la reivindicación 4, donde el espesor de las nervaduras desde la mencionada superficie externa hasta la mencionada superficie interna es de 0.035 pulgadas aproximadamente.

11. Un contenedor tubular de dispensado, que comprende:

un cabezal moldeado conformado por un cuello que tiene un extremo superior, y

un soporte, donde éste tiene una porción de extremo inferior adecuada para que se una al extremo superior del cuerpo tubular, donde el cuello y soporte tienen una superficie interna que tiene una serie de nervaduras espaciadas, donde éstas conforman una sola pieza con el cabezal y se extienden desde el cuello hasta el extremo inferior del soporte para lograr la rigidez del cabezal, y

un cuerpo tubular que tiene un extremo superior que se une al extremo inferior de dicho soporte.

12. El contenedor tubular de dispensado descrito en la reivindicación 10, donde el diámetro del cuerpo tubular es de aproximadamente ~ pulgadas hasta 2 pulgadas.

La anterior es Traducción Oficial de un documento presentado originalmente en inglés. Esta traducción fue realizada por GABRIEL RUEDA CHADID (Traductor Oficial). Resolución 5996 del Minjusticia, por lo cual estampo mi Sello y Firmo.

Bogotá D.C.

PS 481831

THE UNITED STATES OF AMERICA

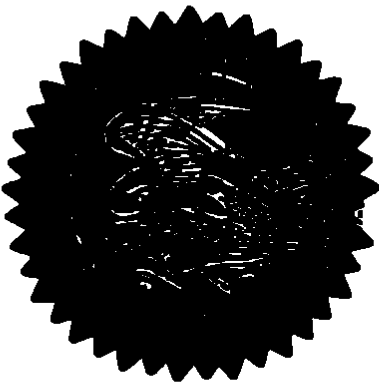
TO ALL TO WHOM THESE PRESENTS SHALL COME:
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

October 26, 2001

**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY OF
THE BELOW IDENTIFIED INTERNATIONAL APPLICATION AS
ORIGINALLY FILED AND ANY CORRECTIONS THERETO FROM THE
RECORDS OF THE UNITED STATES PATENT AND TRADEMARK
OFFICE ACTING AS A RECEIVING OFFICE UNDER THE PATENT
COOPERATION TREATY.**

APPLICATION NUMBER: PCT/US00/25192
FILING DATE: September 15, 2000

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



M. Lee

M. LEE
Certifying Officer

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only	
PCT/US 00/25192	
International Application No.	
International Filing Date	15 SEP 2000
PCT INTERNATIONAL APPLICATION ROAUS	
Name of receiving Office and "PCT International Application"	
Applicant's or agent's file reference (if desired) (12 characters maximum)	1700.088WOU

Box No. I TITLE OF INVENTION	
IMPROVED CONTAINER AND METHOD AND APPARATUS FOR FORMING THE CONTAINER	
Box No. II APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
PECHINEY PLASTIC PACKAGING, INC. 8770 WEST BRYN MAWR AVENUE CHICAGO, ILLINOIS 60631 US	
☐ This person is also inventor.	
Telephone No. (773) 389 3000	
Facsimile No. (773) 917 1707	
Teleprinter No.	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: ☒ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
JACKSON, DOUGLAS J. 132 CHESTNUT DRIVE WAYNE, NEW JERSEY 07470 US	
This person is: ☐ applicant only ☒ applicant and inventor ☐ inventor only (If this check-box is marked, do not fill in below.)	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box	
☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
Audet, Paul R. Ohlandt, Greeley, Ruggiero & Perle, L.L.P. One Landmark Square, 9th Floor Stamford, Connecticut 06901-2882 US	
Telephone No. (203) 327-4500	
Facsimile No. (203) 327-8401	
Teleprinter No.	
☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

SUBSTITUTE SHEET (RULE 26)

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) KING, DANIEL L. 82 SHERMAN RIDGE ROAD SUSSEX, NEW JERSEY 07401 US	This person is: ☐ applicant only ☒ applicant and inventor ☐ inventor only (If this check-box is marked, do not fill in below.)
--	--

State (that is, country) of nationality: US	State (that is, country) of residence: US
--	--

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	This person is: ☐ applicant only ☐ applicant and inventor ☐ inventor only (If this check-box is marked, do not fill in below.)
--	---

State (that is, country) of nationality:	State (that is, country) of residence:
--	--

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	This person is: ☐ applicant only ☐ applicant and inventor ☐ inventor only (If this check-box is marked, do not fill in below.)
--	---

State (that is, country) of nationality:	State (that is, country) of residence:
--	--

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	This person is: ☐ applicant only ☐ applicant and inventor ☐ inventor only (If this check-box is marked, do not fill in below.)
--	---

State (that is, country) of nationality:	State (that is, country) of residence:
--	--

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the (mark the applicable the one must be marked):

Regional Patent

- ☐ **AP** ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SI, Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ **EA** European Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☐ **EP** European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA** OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| ☐ AE United Arab Emirates | ☐ LR Liberia |
| ☐ AL Albania | ☐ LS Lesotho |
| ☐ AM Armenia | ☐ LT Lithuania |
| ☐ AT Austria | ☐ LU Luxembourg |
| ☐ AU Australia | ☐ LV Latvia |
| ☐ AZ Azerbaijan | ☐ MA Morocco |
| ☐ BA Bosnia and Herzegovina | ☐ MD Republic of Moldova |
| ☐ BB Barbados | ☐ MG Madagascar |
| ☐ BG Bulgaria | ☐ MK The former Yugoslav Republic of Macedonia |
| ☐ BR Brazil | |
| ☐ BY Belarus | ☐ MN Mongolia |
| ☐ CA Canada | ☐ MW Malawi |
| ☐ CH and LI Switzerland and Liechtenstein | ☐ MX Mexico |
| ☐ CN China | ☐ NO Norway |
| ☐ CR Costa Rica | ☐ NZ New Zealand |
| ☐ CU Cuba | ☐ PL Poland |
| ☐ CZ Czech Republic | ☐ PT Portugal |
| ☐ DE Germany | ☐ RO Romania |
| ☐ DK Denmark | ☐ RU Russian Federation |
| ☐ DM Dominica | ☐ SD Sudan |
| ☐ EE Estonia | ☐ SE Sweden |
| ☐ ES Spain | ☐ SG Singapore |
| ☐ FI Finland | ☐ SI Slovenia |
| ☐ GB United Kingdom | ☐ SK Slovakia |
| ☐ GD Grenada | ☐ SL Sierra Leone |
| ☐ GE Georgia | ☐ TJ Tajikistan |
| ☐ GH Ghana | ☐ TM Turkmenistan |
| ☐ GM Gambia | ☐ TR Turkey |
| ☐ HR Croatia | ☐ TT Trinidad and Tobago |
| ☐ HU Hungary | ☐ TZ United Republic of Tanzania |
| ☐ ID Indonesia | ☐ UA Ukraine |
| ☐ IL Israel | ☐ UG Uganda |
| ☐ IN India | ☐ US United States of America |
| ☐ IS Iceland | |
| ☐ JP Japan | ☐ UZ Uzbekistan |
| ☐ KE Kenya | ☐ VN Viet Nam |
| ☐ KG Kyrgyzstan | ☐ YU Yugoslavia |
| ☐ KP Democratic People's Republic of Korea | ☐ ZA South Africa |
| | ☐ ZW Zimbabwe |
| ☐ KR Republic of Korea | |
| ☐ KZ Kazakhstan | |
| ☐ LC Saint Lucia | |
| ☐ LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☐
- ☐

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time

Box No. VI PRIORITY CLAIM		☒ Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) (16-03-00) 16 March 2000	60/189868	US		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.1(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY	
Choice of International Searching Authority (ISA) <i>(If two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</i> ISA/us	Request to use results of earlier search; reference to that search <i>(If an earlier search has been carried out by or requested from the International Searching Authority):</i> Date (day/month/year) Number Country (or regional Office)

Box No. VIII CHECK LIST: LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 9 claims : 3 abstract : 1 drawings : 10 sequence listing part of description : Total number of sheets : 23	This international application is accompanied by the item(s) marked below: 1. ☒ fee calculation sheet 2. ☐ separate signed power of attorney 3. ☒ copy of general power of attorney, reference number, if any: 4. ☐ statement explaining lack of signature 5. ☐ priority document(s) identified in Box No. VI as item(s): 6. ☐ translation of international application into (language): 7. ☐ separate indications concerning deposited microorganism or other biological material 8. ☐ nucleotide and/or amino acid sequence listing in computer readable form 9. ☐ other (specify):
Figure of the drawings which should accompany the abstract: 5	Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).	
 AUDET, PAUL R.	

For receiving Office use only		For International Bureau use only	
1. Date of actual receipt of the purported international application:	2. Drawings: ☐ received: ☐ not received:	3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):		5. International Searching Authority (if two or more are competent): ISA/	
6. ☐ Transmittal of search copy delayed until search fee is paid.			

For International Bureau use only	
Date of receipt of the record copy by the International Bureau:	

26
72

**General Power of Attorney
(Concerning Several International Applications)**

**PATENT COOPERATION TREATY
APPOINTMENT OF AGENT OR COMMON REPRESENTATIVE**

GENERAL POWER OF ATTORNEY

The undersigned applicant(s):

**PECHINEY PLASTIC PACKAGING, INC.
8770 WEST BRYN MAWR AVENUE
CHICAGO, ILLINOIS 60631
US**

hereby appoints (appoint) Mr. (Ms., Miss, Mrs.) (Name, address):

**Andet, Paul R., Esq.
Ohlendt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 9th Floor
Stamford, CT 06901-2682
US**

☒ as agent

☐ as common representative

to act on his (her, their) behalf before the competent International Authorities in connection with any and all international applications filed by him (her, them) with the United States Patent and Trademark Office as receiving Office and to make or receive payments on his (her, their) behalf.

Place: Norwalk, Connecticut

Date: August 27, 1999

Signature of applicant (where there are several applicants, each of them must sign):



Name: Edward J. Fitzgerald

Title: Vice President & General Manager

[Type the name under the (each) signature and add, in the case of legal persons, an indication of the capacity in which the person signs]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jackson et al.
Serial No.: PCT/US00/25192
Filed: 15 September 2000
For: Improved Container and Method and Apparatus for Forming
The Container
Examiner: Hal Saunders
Art Unit:

Attorney Docket No.: 1700.068WOU

Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, Connecticut 06901-2682

ASSOCIATE POWER OF ATTORNEY

Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

Please recognize Paul D. Greeley, Reg. No. 31,019, Charles N.J. Ruggiero, Reg. No. 28,468 and Harry F. Smith, Reg. No. 32,439, of the law firm Ohlandt, Greeley, Ruggiero & Perle, L.L.P. with offices at One Landmark Square, 10th Floor, Stamford, Connecticut 06901-2682, as an attorney, with full and complete powers to prosecute this patent application and to transact all business in the Patent and Trademark Office connected therewith.

Please address all future correspondence to:

Paul D. Greeley, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, Connecticut 06901-2682

Respectfully submitted,

Date: Nov. 30, 2000

Paul R. Audet
Paul R. Audet

**General Power of Attorney
(Concerning Several International Applications)**

**PATENT COOPERATION TREATY
APPOINTMENT OF AGENT OR COMMON REPRESENTATIVE**

GENERAL POWER OF ATTORNEY

The undersigned applicant(s):

Jackson, Douglas J.
132 Chestnut Drive
Wayne, New Jersey 07470
US

hereby appoints (appoint) Mr. (Ms., Miss, Mrs.) [Name, address]:

Paul R. Audet, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
US

☒ as agent

☐ as common representative

to act on his (her, their) behalf before the competent International Authorities in connection with any and all international applications filed by him (her, them) with the United States Patent and Trademark Office as receiving Office and to make or receive payments on his (her, their) behalf.

Place: Capital America
Washington D.C. Date: November 8, 2000

Signature of applicant (where there are several applicants, each of them must sign):

Douglas J. Jackson
Name: Douglas J. Jackson
Title: Manager Research and Development

[Type the name under the (each) signature and add, in the case of legal persons, an indication of the capacity in which the person signs]

**General Power of Attorney
(Concerning Several International Applications)**

**PATENT COOPERATION TREATY
APPOINTMENT OF AGENT OR COMMON REPRESENTATIVE**

GENERAL POWER OF ATTORNEY

The undersigned applicant(s):

King, Daniel L.
92 Sherman Ridge Road
Wantage, New Jersey 07461
US

hereby appoints (appoint) Mr. (Ms., Miss, Mrs.) [Name, address]:

Paul R. Audet, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
US

☒ as agent

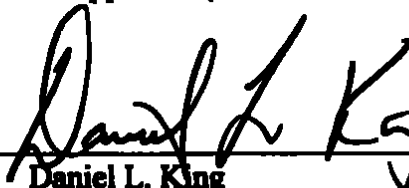
☐ as common representative

to act on his (her, their) behalf before the competent International Authorities in connection with any and all international applications filed by him (her, them) with the _____ United States Patent and Trademark Office _____ as receiving Office and to make or receive payments on his (her, their) behalf.

Place: Cebal American
Washington NT

Date: 11 / 8 / .2000

Signature of applicant (where there are several applicants, each of them must sign):


Name: Daniel L. King

Title: SUPERVISOR PRODUCT DEVELOPMENT

[Type the name under the (each) signature and add, in the case of legal persons, an indication of the capacity in which the person signs]

This sheet is not part of and does not count as a sheet of the international application.

PCT

FEE CALCULATION SHEET

Annex to the Request

For receiving Office use only

PCT/US 00/25192
International application No. (5, 09, 86)
Date stamp of the receiving Office 18 SEP 2000

Applicant's or agent's
file reference

1700.088WOU

Applicant

PECHNEY PLASTIC PACKAGING, INC.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE

240.00 T

2. SEARCH FEE

International search to be carried out by

ISA/US

700.00 S

(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee

The international application contains 23 sheets.

First 30 sheets

427.00 b1

0 x 810.00
remaining sheets additional amount

0.00 b2

Add amounts entered at b1 and b2 and enter total at B

427.00 B

Designation Fees

The international application contains 82 designations.

8 x 82.00
number of designation fees amount of designation fee payable (maximum 4)

736.00 D

Add amounts entered at B and D and enter total at I

1,163.00 I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT (if applicable)

15.00 P

5. TOTAL FEES PAYABLE

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

2,118.00

TOTAL



The designation fees are not paid at this time.

MODE OF PAYMENT

authorization to charge
deposit account (see below)

bank draft



coupons



cheque



cash



other (specify):



postal money order



revenue stamps

DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ US



is hereby authorized to charge the total fees indicated above to my deposit account.



(this check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.



is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

01-0487

18 September 2000

Deposit Account No.

Date (day/month/year)

Signature

Paul K. Anderson

5 FIELD OF THE INVENTION

15

30

orifice of the head to the portion, usually the lower, portion of the shoulder, the temperature of the thinned plastic material drops as it travels through the mold cavity to the area of the shoulder where the temperature of the plastic is not high enough to form a satisfactory bond to the body wall.

- 5 Although the injection gate can be towards the shoulder to shorten the travel and achieve the bond, it makes it more difficult to "back fill the head without flashing the shoulder joint.

- 10 It would be desirable to provide low cost containers, especially of the collapsible dispensing type, that employ less materials to produce and that have sufficient strength and integrity. It would also be desirable to provide improved methods and apparatus for forming such containers.

- 15 It is an object of this invention to provide improved low cost containers of the above-described type, and methods and apparatus for forming them, that overcome one or more of the above-described problems and/or meet one or more of the above mentioned desires.

SUMMARY OF THE INVENTION

20

This invention is directed to a method of molding a dispensing tube having a thin head joined to a tubular body, which comprises:

- 25 molding the head of a material that is moldable at elevated temperatures in a tool set having a mold cavity shaped in the form of a head and formed by female tooling for forming the exterior surface of the head and by a male die member for forming the interior surface of the head, such that the head will have an inner surface, an outer surface, a neck with an upper end, and a shoulder having a lower end for being joined to the upper end of the tubular body,

- 30 providing a plurality of elongated grooves in the outer surface of the male die member, the grooves extending axially from the portion of the die member that forms the neck to the portion of the die member that forms the lower end of the shoulder, the grooves providing channels for flow of the moldable material in molten state from the neck to the lower end of the

shoulder, providing a tubular body having an upper end in the mold tooling such that the upper end is axially aligned with the female die member that forms the shoulder,

5 providing the moldable material at an elevated temperature into the mold cavity portion that is to form the head,

flowing the moldable material along the grooves to and about the lower end of the shoulder at an elevated temperature and pressure, there being provided enough moldable material at the elevated temperature and pressure to the lower end of the mold cavity to join the upper end of the tubular body to the lower end of the shoulder, and

10 utilizing said moldable material provided through the grooves for joining the upper end of the tubular body to the shoulder to form the dispensing tube, such that the inner surface of the head has a plurality of elongated ribs that are formed in the grooves, said ribs rigidifying the shoulder of the head and allowing the shoulder to be formed of less moldable material and to be thinner and the bond between the shoulder and the tubular body stronger than in the absence of said grooves and said ribs. Preferably the grooves are provided to extend axially from the upper end of the die member that forms the upper end of the head to the lower end of the shoulder.

The invention is also directed to apparatus for molding a head of a moldable material, the head being suitable for being joined to a tubular body to form a dispensing tube, which comprises:

25 a tool set having a mold cavity shaped in the form of a head, the tool set including female tooling for forming the exterior surface of the head and male tooling having an outer surface for forming the interior surface of the head, such that the head will have an inner surface, an outer surface, a neck with an upper end, and a shoulder having a lower end portion for being joined to the upper end of the tubular body, the outer surface of the male tooling having a plurality of elongated grooves therein and that extend axially from the portion of the male tooling that forms the neck to the portion of the male tooling that forms the lower end of the shoulder, the grooves providing channels for flow of the moldable material from the portion of the

male tooling that forms the neck to the portion of the male tooling that forms the lower end of the shoulder.

5 The invention is further directed to a molded head suitable for being joined to the upper end of a tubular body to form a dispensing tube, comprised of:

a neck having an upper end, and

10 a shoulder, the shoulder having a lower end portion suitable for being joined to the upper end of the tubular body, the neck and shoulder having an interior surface that has a plurality of spaced ribs, the ribs being one piece with the head and extending from the neck, preferably from its upper end to the lower end of the shoulder for rigidifying the head.

15 The shoulder can have web portions between the spaced ribs, and the thickness of the web portions preferably is from about 0.018 inch to about 0.029 inch, more preferably from about 0.023 inch to about 0.024 inch, and most preferably from about 0.020 inch to about 0.024 inch. The shoulder preferably has an outer surface and the ribs have an inner surface and the thickness of the ribs from said outer surface to said inner surface is
20 about 0.040 inch, more preferably about 0.035 inch.

The invention is further directed to a tubular dispensing container, which comprises:

25 a molded head comprised of a neck having an upper end, and a shoulder, the shoulder having a lower end portion suitable for being joined to the upper end of the tubular body, the neck and shoulder having an interior surface that has a plurality of spaced ribs, the ribs being one piece with the head and extending from the neck to the lower end of the shoulder for rigidifying the head, and

30 a tubular body having an upper end that is joined to the lower end of the shoulder. In the preferred tubular dispensing container, the diameter of the tubular body is from about 1/4 inch to about 2 inches.

DETAILED DESCRIPTION OF THE DRAWINGS

The drawings and description disclose preferred embodiments of the invention. Sheet A of the drawings shows preferred dimensions of a preferred head of the invention for an approximately 1 inch diameter tube. Sheet A-1 shows reference numbers for the head shown on Sheet A. Sheet A-2 shows less preferred dimensions of a head of the invention. Sheets B-1 through B-3 show enlargements of the views of the head shown on Sheets A and A-1.

Fig. 1 is a side elevation of a head 10 for a tubular container. The head has a neck 12 with a rim 14, an orifice 16, a throat 17, and a shoulder 18 with a lower portion 20. The rim is the upper portion of the neck that defines the orifice of the neck.

Fig. 2 is a bottom view of the head of Fig. 1. The head has a plurality of circumferentially spaced ribs 22 disposed thereabout. The ribs preferably are on the interior surface of the head, although they can be on the exterior of the head or a combination of both. The ribs preferably extend continuously into neck 12 up to rim 14 thereof. The head has sufficient rigidity without the ribs to be free standing, i.e. self-supporting. Thus, the portions 24 of the shoulder that are between the ribs are of a thickness sufficient to support the head. The perimeter of the interior surface of the shoulder can have a circumferential rib 23 that is preferably continuous and preferably joined to axially extending ribs 22.

Fig. 3 is a vertical section through a thread 30 on neck 12.

Fig. 4, a vertical section taken along line A-A through the opposed ribs 22 of head 10 shown in Fig. 2. Fig. 2 shows ribs 22 extending axially along the inner surface of the head, from rim 14 to the lower end or section 20 of shoulder 18. In this embodiment of the shoulder, it has a short axially depending skirt or lower edge 32. Fig. 4 shows the preferred thickness (0.040 inch) of the shoulder, measured from its outer surface to the inner

surface of the underlying rib 22.

Fig. 5, a vertical section taken along line B-B of Fig. 2 through the shoulder portions between ribs 22. Fig. 2 shows the thickness of the shoulder portion 18 between ribs 22. The shoulder portions between ribs 22 that are sometimes referred to as 24, shall sometimes be referred to as webs or interstitial portions. Ribs 22 preferably are integral, i.e., one unitary piece with the rest of shoulder 18.

10

Fig. 6, an upper perspective view of the head of Fig. 1, shows a rib 22 in neck 12 of head 10.

Fig. 7, a lower perspective view of the head of Fig. 1, shows the circumferentially spaced ribs axially extending from rim 14 (not shown) to the lower edge 32 of shoulder 18.

Fig. 8 is a side elevation of a container 40. More particularly, Fig. 8 shows a tubular collapsible dispensing container 40 comprised of a tubular body 42, and a head 10 onto which there is threadedly secured a cap 44. A container for purposes of the invention includes an open ended container 40 as shown, or sealed at its bottom end (not shown) as well as a head attached, joined, bonded or secured to a body and open at one or both ends.

25

Fig. 9 is a top view of the container of Fig. 8.

Fig. 10, a bottom view of the container of Fig. 8, shows ribs 22 extending axially from the lower portion of shoulder 18 up into neck 12.

30

Fig. 11 is a vertical section taken along line A-A through the neck and cap of Fig. 9.

Fig. 12 is a perspective view of container 40 of Fig. 8.

5 Figs. 8 and 12 show that the shoulder 18 of head 10 is securely joined to body 44 and that a cap 44 can be threadedly secured to neck 12 of head 10.

10 Figs. 13 through 15 show a preferred conventional set of injection molding tools of the Tuboplast process that have been modified for forming the head and container of the invention.

The head of the invention is made with less material than would a head of equal size be made without the invention. An improved low cost head is therefore provided. Containers utilizing the head are low cost containers. The low cost containers with the thinned heads or shoulders of the heads joined to the body walls of the containers have the required rigidity in the neck and shoulder of the head, and they have a sufficiently strong bond at the joint between the shoulder and body. The bond at the joint provides a hermetic seal for commercial applications.

20 The heads and collapsible dispensing containers of the invention can be made by slight modification and use of any suitable method and apparatus. Referring to Figs 13-15, a preferred method is to inject the plastic material that is to form the head into a mold cavity 50 that is shaped in the form of the head. The molten plastic material is injected from above into the cavity portion that forms the rim of the neck of the head. According to the invention, male tooling, here shown, for example, as the male die member 52 that forms the interior surface of the head, has axial grooves 54 therein that are designed to form the ribs on the interior surface of the head, as the head is being molded. In the preferred process, a tubular body, often referred to as a sleeve (not shown), is positioned on a male mandrel 56 that is axially aligned with the female die member that forms the head. This method and apparatus, without the modification of the invention, is well known in the art. When the head is formed, the molten plastic material flows into and along the grooves to the lower end portion or

edge of the shoulder of the head. The grooves provide channels for the flow of the molten material to the lower portion of the shoulder of the head. Enough of the molten material reaches the lower portion of the shoulder at a temperature and pressure that is high enough to form a good bond with the upper end portion or rim of the tubular body. The head and body are left in the mold long enough to bond them together and cool sufficiently that they are securely bonded or joined together. Conventional molding temperatures and materials can be employed. Conventional head forming methods and apparatus modified in accordance with the invention can be employed. This includes pre-molding a head and assembling it to a tubular body in a second operation. The pre-molds can be formed by injection, compression, and thermoforming. Assembly can be effected by induction welding, spin welding and various known processes using heat and pressure. The tubular containers of the invention can be formed by compression molding or thermoforming the head, in each case with simultaneous bonding to the tubular body or sleeve. The heads can also be formed by injection blow molding and perform blow molding. The preferred process and apparatus to be modified according to the invention is well known to those skilled in the art as the Tuboplast process and apparatus. This involves injection of the head and simultaneous bonding of the head to the tubular body or sleeve. This process is disclosed in one or more expired U.S. Patents and will be described more fully herein. Thus, other than mainly for providing and utilizing grooves in the male tooling or male die member, or of course in the female tooling to form ribs on the outer surface of the head, the tooling and the process can be conventional.

As stated above, the head of the invention and container bodies of the invention can be formed by conventional compression molding processes and apparatus. In compression molding, the mold cavity is open and the heated plastic material, usually a metered dose thereof, is deposited into the open mold. The mold is closed under pressure. This moves the plastic around the cavity to form the head and simultaneously join it to the sleeve on the mandrel. The male die member in this process is adapted according to the invention to have grooves to flow material to

the joint area and to form the rigidifying ribs.

5 The plastic material that flows through the grooves preferably leaves the ends of the grooves and flows circumferentially around the mandrel forms the lower end of the shoulder and forms a good bond about the entire periphery of the joint between the head, usually the lower end of the shoulder, and the tubular body.

10 The use of a reduced amount of plastic material in the head reduces cycle time in producing the heads. The grooves for the ribs and the flow of molten material through the grooves assures that there is enough plastic material to form a good bond and that the plastic is hot enough that it flows to the joint area and is hot enough and has enough pressure when it reaches the area and to form a good bond, e.g., with the upper portion of
 15 the body wall. The invention is not to be limited by the words used to describe the bond at the joint between the shoulder and the head. Any suitable joint, fusion of materials or connection can be employed. A bond does not require but could have an adhesive.

20 Traditional injection and compression molded tube heads for a 1 inch diameter tube, measured through the frustoconical portion web of the shoulder of the conventional head, are designed with a typical 1mm/0.040" thick cross section. For such a sized tube, the preferred cross section according to the invention, measured through the web portion of the
 25 shoulder between the ribs, is about 0.51mm/0.024." thick. The thickness of a cross section through the shoulder and an underlying rib is the same or about the same as the conventional shoulder thickness of 0.040". The preferred thickness of the web area between the ribs is about 0.023" to about 0.024", plus or minus 0.005". The interstitial web thickness is
 30 sufficient to render the head self-supporting or freestanding. Above 0.030" there is less need for ribs. If the shoulder of the tube is less than 0.015" thick, the chances increase that there may not be an adequate bond. The invention is especially advantageous for tubes whose diameters are from about 3/4" to about 1 1/2" or about 2".

The container bodies of the invention can be made by yet other injection molding processes and apparatus. One such method allows the head and shoulder of the invention to be molded according to the invention as a single entity separately from a body or sleeve. Later, the head is joined to the body or sleeve in a conventional secondary assembly process with suitable materials, temperatures and pressures. The head would be loaded onto a mandrel and heated enough to form a satisfactory bond to the body or sleeve. Any of several of such processes, e.g., induction welding, spin welding, etc. can be employed.

The heads and bodies of the invention can be formed with any suitable materials. Preferably, the head comprised polyethylene, preferably high or low-density polyethylene. The preferred materials for the head have a melt index of from about 1 to 2, although by no means is this range to be considered a limitation. For example, the melt index for the injected perform head could be up to 12 or more.

The drawings show the preferred rib dimensions for the tube described. Those persons of skill in the art will know how to adjust rib widths etc. to suit the application. If the flow path is too thin, it will be difficult for the plastic to have enough heat at the shoulder to provide a good bond.

The ribs can be in any suitable design or configuration. For example, they can branch to distribute material at more points or areas about the circumference of the tube. The ribs can be formed in any suitable pattern.

The heads of the invention provide about a 25% reduction in materials for the tube shown on Sheet A of the drawings. As the size of the tube increases, more savings are provided. The ribs of the invention can be of any suitable thickness, number and arrangement, so long as the grooves to form them allow a sufficient amount of the particular moldable

material being employed to flow at the desired temperatures to the desired location, and to preferably provide sufficient rigidity to rigidify the head as needed for the process employed and the handling and uses intended.

WHAT IS CLAIMED IS:

1. A method of molding a dispensing tube having a thin head joined to a tubular body, which comprises:

5

molding the head of a material that is moldable at elevated temperatures in a tool set having a mold cavity shaped in the form of a head and formed by female tooling for forming the exterior surface of the head and by a male die member for forming the interior surface of the head, such that the head will have an inner surface, an outer surface, a neck with an upper end, and a shoulder having a lower end for being joined to the upper end of the tubular body,

10

providing a plurality of elongated grooves in the outer surface of the male die member, the grooves extending axially from the portion of the die member that forms the neck to the portion of the die member that forms the lower end of the shoulder, the grooves providing channels for flow of the moldable material in molten state from the neck to the lower end of the shoulder,

20

providing a tubular body having an upper end in the mold tooling such that the upper end is axially aligned with the female die member that forms the shoulder,

25

providing the moldable material at an elevated temperature into the mold cavity portion that is to form

30

flowing the moldable material along the grooves to and about the lower end of the shoulder at an elevated temperature and pressure, there being provided enough moldable material at the elevated temperature and pressure to the lower end of the mold cavity to join the upper end of the tubular body to the lower end of the shoulder, and

utilizing said moldable material provided through the grooves for

joining the upper end of the tubular body to the shoulder to form the dispensing tube, such that the inner surface of the head has a plurality of elongated ribs that are formed in the grooves, said ribs rigidifying the shoulder of the head and allowing the shoulder to be formed of less moldable material and to be thinner and the bond between the shoulder and the tubular body stronger than in the absence of said grooves and said ribs.

2. The method of claim 1, wherein the grooves are provided to extend axially from the upper end of the die member that forms the upper end of the head.

3. Apparatus for molding a head of a moldable material, the head being suitable for being joined to a tubular body to form a dispensing tube, which comprises:

a tool set having a mold cavity shaped in the form of a head, the tool set including female tooling for forming the exterior surface of the head and male tooling having an outer surface for forming the interior surface of the head, such that the head will have an inner surface, an outer surface, a neck with an upper end, and a shoulder having a lower end portion for being joined to the upper end of the tubular body, the outer surface of the male tooling having a plurality of elongated grooves therein and that extend axially from the portion of the male tooling that forms the neck to the portion of the male tooling that forms the lower end of the shoulder, the grooves providing channels for flow of the moldable material from the portion of the male tooling that forms the neck to the portion of the male tooling that forms the lower end of the shoulder.

4. A molded head suitable for being joined to the upper end of a tubular body to form a dispensing tube, comprised of:

a neck having an upper end, and

a shoulder, the shoulder having a lower end portion suitable for being joined to the upper end of the tubular body, the neck and shoulder having an interior surface that has a plurality of spaced ribs, the ribs being one piece with the head and extending from the neck to the lower end of the shoulder for rigidifying the head.

5 5. The molded head of claim 4, wherein the ribs extend axially from the upper end of the neck to the lower end of the shoulder.

10 6. The head of claim 4, wherein the shoulder has web portions between the spaced ribs, and the thickness of the web portions is from about 0.018 inch to about 0.029 inch.

15 7. The head of claim 5, wherein the thickness of the web portions is from about 0.023 inch to about 0.024 inch.

8. The head of claim 5, wherein the thickness of the web portions is about 0.020 inch to about 0.024 inch.

20 9. The head of claim 4, wherein the shoulder has an outer surface and the ribs have an inner surface and the thickness of the ribs from said outer surface to said inner surface is about 0.040 inch.

25 10. The head of claim 4, wherein the thickness of the ribs from said outer surface to said inner surface is about 0.035 inch.

11. A tubular dispensing container, which comprises

a molded head comprised of

30 a neck having an upper end, and

a shoulder, the shoulder having a lower end portion suitable for being joined to the upper end of the tubular body, the neck and shoulder

having an interior surface that has a plurality of spaced ribs, the ribs being one piece with the head and extending from the neck to the lower end of the shoulder for rigidifying the head, and

- 5 a tubular body having an upper end that is joined to the lower end of the shoulder.

12. The tubular dispensing container of claim 10, wherein the
10 diameter of the tubular body is from about ~ inch to about 2 inches.

15

20

25

ABSTRACT

A tubular dispensing container has a head whose shoulder is joined to a tubular body. The head and shoulder can be thin because they are provided with a plurality of ribs that extend axially from the neck to the lower end of the shoulder and rigidify the head. A head for a tubular dispensing container is provided having the above-mentioned ribs.

Apparatus for forming the head has male or female tooling with axially grooves formed therein to form the ribs on the inside or outside surface of the head.

Methods involve flowing moldable material along the grooves to provide the lower end of the shoulder of the head with enough moldable material at elevated temperature and pressure to form a good bond of the shoulder with the tubular body.

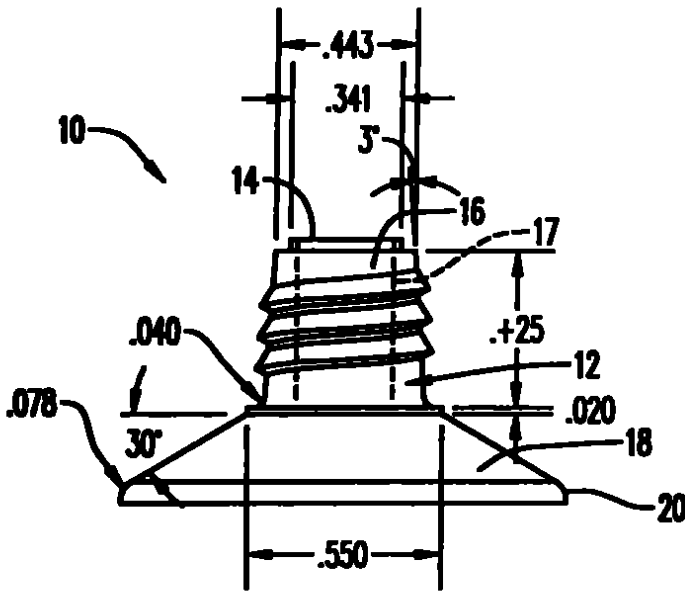


FIG. 1

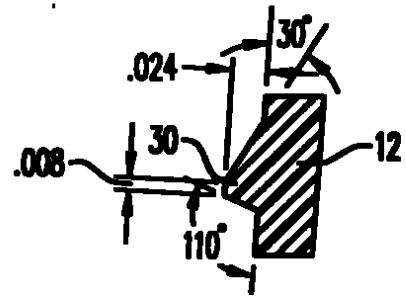


FIG. 3

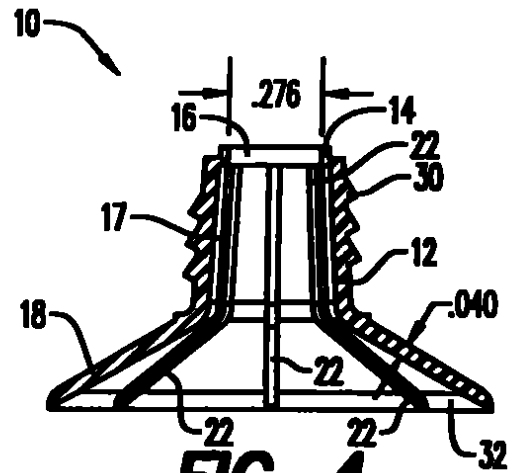


FIG. 4

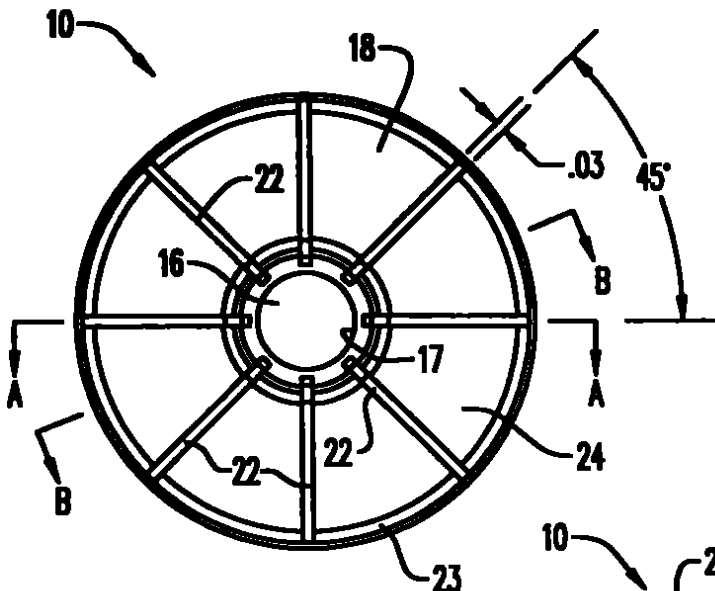


FIG. 2

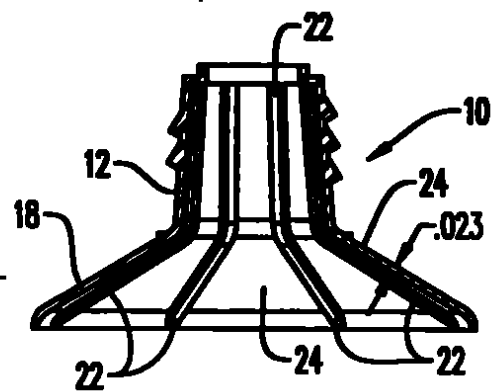


FIG. 5

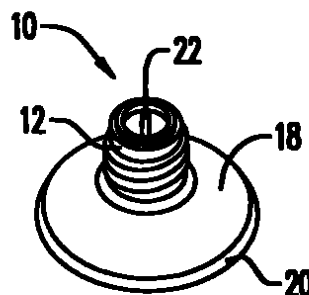


FIG. 6

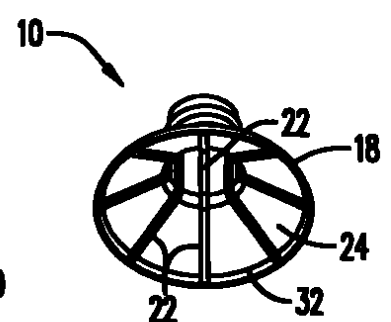


FIG. 7

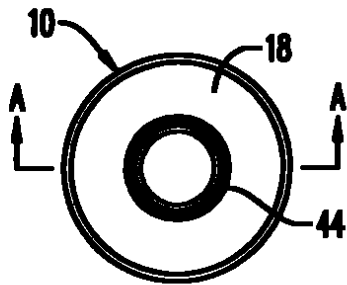


FIG. 9

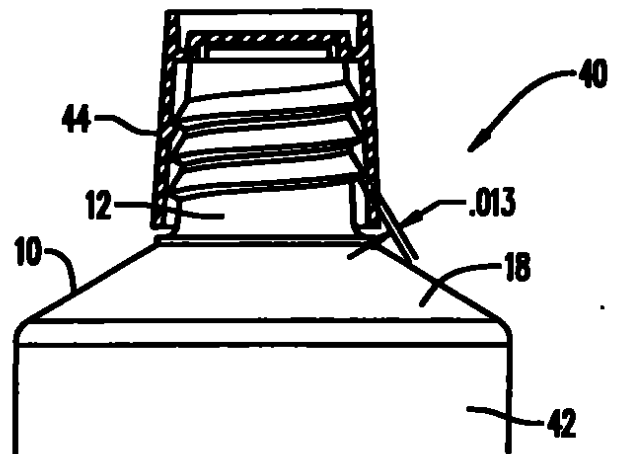


FIG. 11

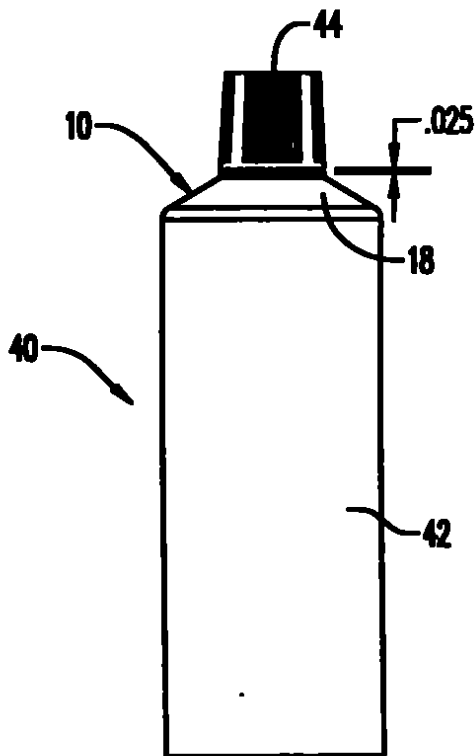


FIG. 8

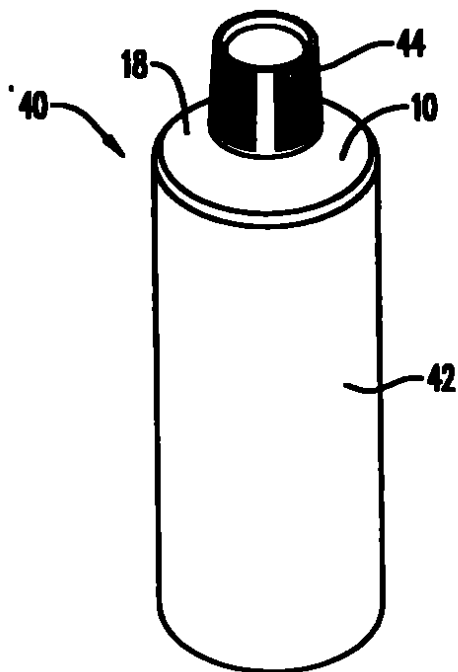


FIG. 12

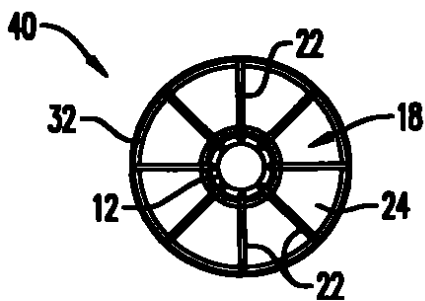


FIG. 10

3/5

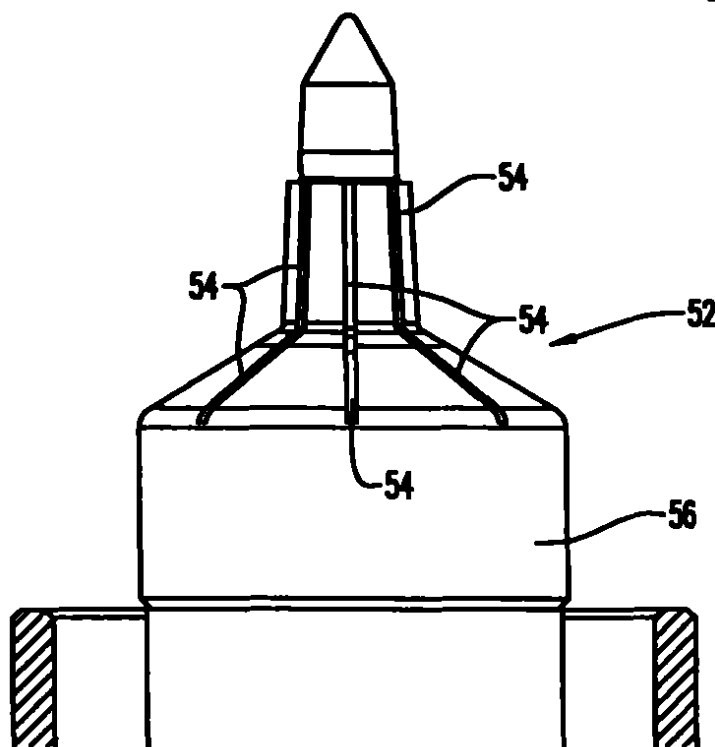
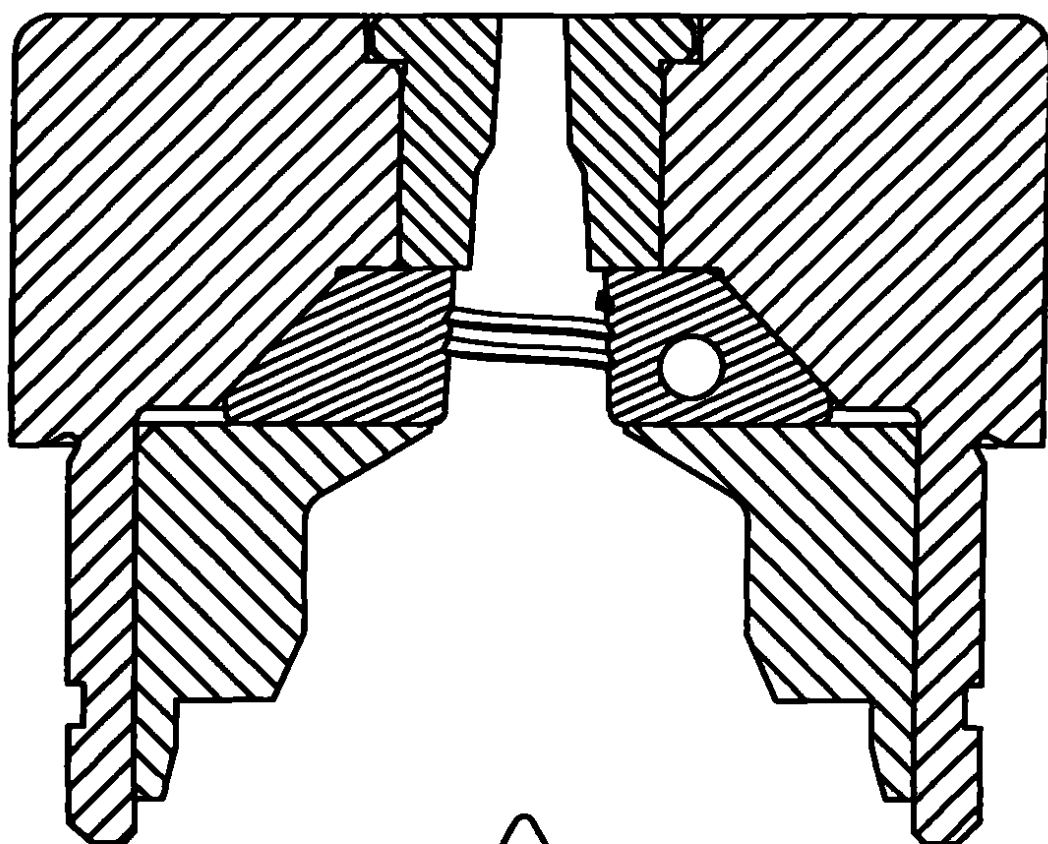


FIG. 13

SUBSTITUTE SHEET (RULE 26)

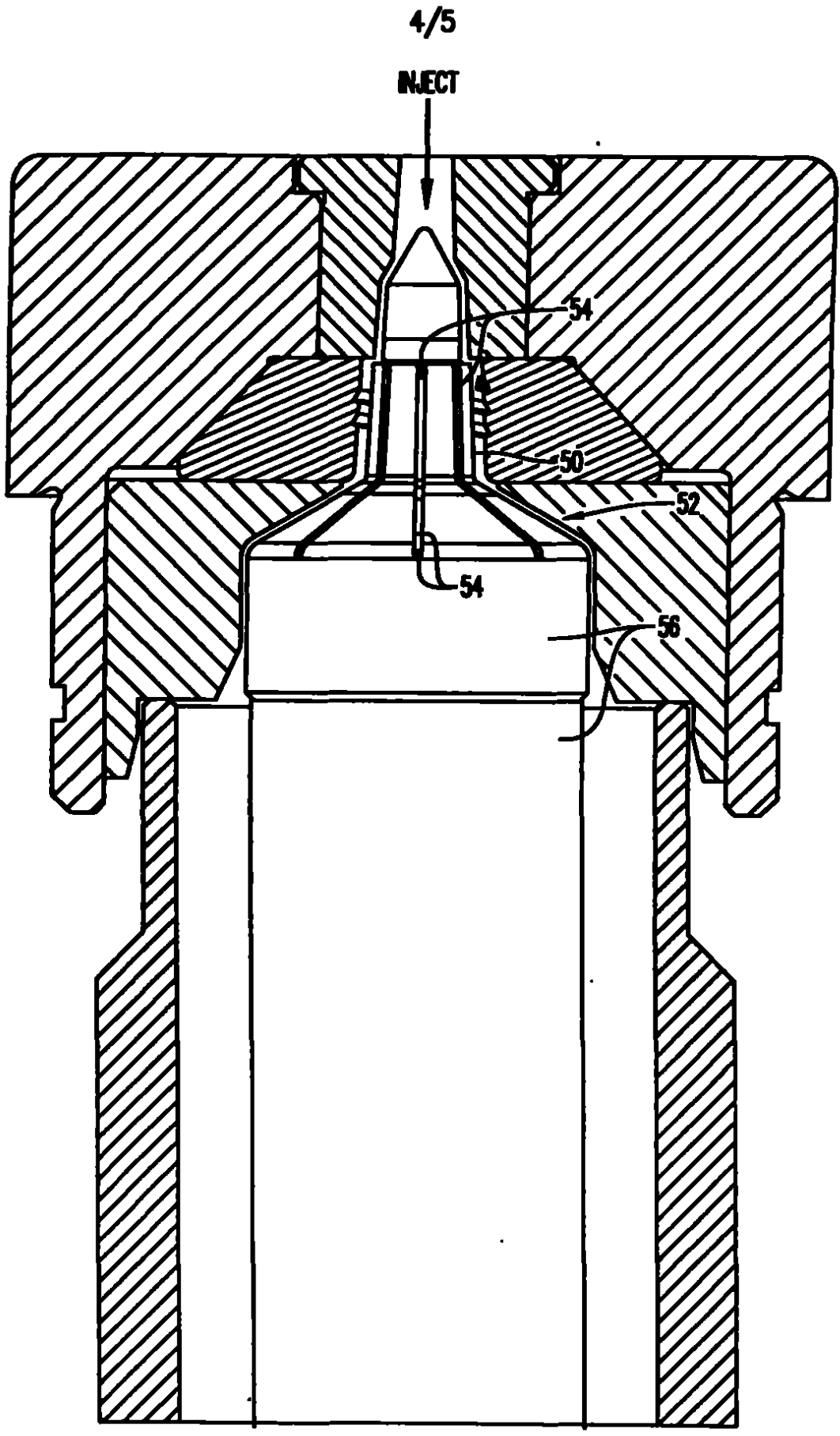


FIG. 14
SUBSTITUTE SHEET (RULE 26)

5/5

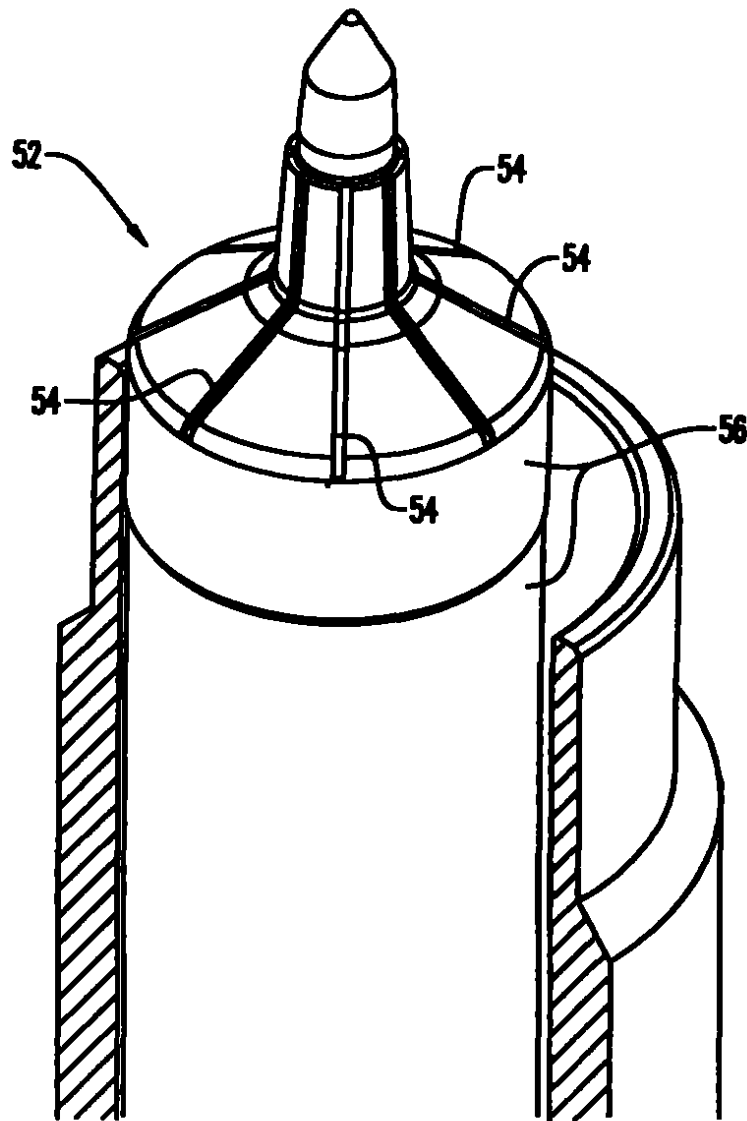


FIG. 15

SUBSTITUTE SHEET (RULE 26)

PATENT COOPERATION TREATY

98

From the RECEIVING OFFICE

PCT

**NOTIFICATION REGARDING CERTAIN
CORRECTIONS MADE *EX OFFICIO***

(PCT Administrative Instructions, Section 327)

To:

PAUL R. AUDET
OHLANDT, GREELEY, RUGGIERO &
PERLE, L.L.P.
ONE LANDMARK SQUARE, 9TH FLOOR
STAMFORD CT 06901-2682

Date of mailing (day/month/year)

Applicant's or agent's file reference 1700.068WOU
--

REPLY DUE NONE However, see paragraph 3 below

International application No. PCT/US00/25192

International filing date (day/month/year) 15 SEP 00

Applicant PECHINEY PLASTIC PACKAGING, INC.

1. The applicant is hereby notified that this receiving Office has corrected formal defects in the international application *ex officio*, as shown on the attached copy of:

- ☐ the request, sheet No.: _____
- ☐ the description, sheet No.: _____
- ☐ the claims, sheet No.: _____
- ☐ the drawings, sheet No.: _____
- ☐ other (specify): _____

2. If the applicant agrees with these corrections, no further action is required in this regard.

3. In case of disagreement with these corrections, the applicant should promptly inform this receiving Office accordingly.

Name and mailing address of the receiving Office Assistant Commissioner for Patents Box PCT Washington, D.C. 20231 Facsimile No.	Authorized officer Telephone No.
--	---