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enzie.com**Asia Pacífico**Bangkok  
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\* Firma Asociada

Doctor

José Luis Salazar

Director de División de Nuevas Creaciones (C)

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

E. S. D.

Referencia: Expediente No. 14.073.145

Solicitud de Patente de Invención titulada: "Tapa de Botella de fácil extracción"

Solicitante: Frishman, Abe

**RESPUESTA AL AUTO NOTIFICADO POR FIJACIÓN EN LISTA NO. 17 DEL 29 DE ABRIL DE  
2014, OFICIO NO. 4813 (EXAMEN DE FORMA)**

ÁLVARO CORREA ORDÓÑEZ, mayor de edad y vecino de Bogotá D.C., identificado tal como aparece al pie de mi firma, en mi carácter de apoderado de la sociedad en referencia, doy respuesta al auto emanado por ese Despacho dentro del término legal:

1. Aclaro a su Despacho que la presente solicitud corresponde al Capítulo II del PCT.
2. Presento copia del IPEA junto con las modificaciones efectuadas bajo el artículo 34 del PCT, así como la traducción al español de las modificaciones efectuadas.

Atentamente,

ÁLVARO CORREA ORDÓÑEZ

C.C. No. 79.143.366 de Usaquén

T.P.20.281

Anexos: -Copia del IPEA y anexos.  
-Traducción al español de las modificaciones efectuadas en fase internacional.

PCT/US2012/053131 27.06.2013

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                           |                                                                          |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------|
| Applicant's or agent's file reference<br>19963.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>FOR FURTHER ACTION</b>                                                 |                                                                          | See Form PCT/IPEA/416 |
| International application No.<br>PCT/US12/53131                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | International filing date (day/month/year)<br>30 August 2012 (30.08.2012) | Priority date (day/month/year)<br>06 October 2011 (06.10.2011)           |                       |
| International Patent Classification (IPC) or national classification and IPC<br>IPC: B65D 41/42( 2006.01),41/34( 2006.01) B65D 41/42( 2006.01),41/34( 2006.01)<br>USPC: 215/255,256,328;220/272,273                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                           |                                                                          |                       |
| Applicant<br>ABE FRISHMAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                           |                                                                          |                       |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>20</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>14</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2).</p> <p><input type="checkbox"/> superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No.I and the Supplemental Box (see Rule 70.16(b)).</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3bis of Annex C of the Administrative Instructions).</p> |                                                                           |                                                                          |                       |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                           |                                                                          |                       |
| Date of submission of the demand<br>06 May 2013 (06.05.2013)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                           | Date of completion of this report<br>11 June 2013 (11.06.2013)           |                       |
| Name and mailing address of the IPEA/ US<br>Mail Stop PCT, Attn: IPEA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450<br>Facsimile No. (571) 273-3201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                           | Authorized officer<br>/J. Gregory Pickett/<br>Telephone No. 571-272-3700 |                       |

Form PCT/IPEA/409 (cover sheet) (July 2011)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US12/53131

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b)).
- ☐ publication of the international application (Rule 12.4(a)).
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ the international application as originally filed/furnished
- ☒ the description:  
pages 1-32 and 37 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the claims:  
pages 33-36 as originally filed/furnished  
pages\* NONE as amended (together with any statement) under Article 19  
pages\* 33-36 received by this Authority on 06 May 2013 (06.05.2013)  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the drawings:  
pages 1/28-28/28 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_

5. ☐ This report has been established:

- ☐ taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rules 66.4bis) and 70.2(e)).

6. ☐ Supplementary international search report(s) from Authority(ies) \_\_\_\_\_ has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

\* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:
- ☐ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest, and, where applicable, the protest fee.
  - ☐ paid additional fees under protest but the applicable protest fee was not paid.
  - ☐ neither restricted the claims nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
  - ☒ not complied with for the following reasons:

Please See Continuation Sheet

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-4, 6-12, 16, 17, 19, 20

|                                                                             |                                                                                                                                                                 |                                                 |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY                           |                                                                                                                                                                 | International application No.<br>PCT/US12/53131 |
| Box No. V                                                                   | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |                                                 |
| 1. Statement                                                                |                                                                                                                                                                 |                                                 |
| Novelty (N)                                                                 | Claims <u>1-4,6-12,16,17,19 and 20</u>                                                                                                                          | YES                                             |
|                                                                             | Claims <u>NONE</u>                                                                                                                                              | NO                                              |
| Inventive Step (IS)                                                         | Claims <u>NONE</u>                                                                                                                                              | YES                                             |
|                                                                             | Claims <u>1-4, 6-12, 16, 17, 19, 20</u>                                                                                                                         | NO                                              |
| Industrial Applicability (IA)                                               | Claims <u>1-4, 6-12, 16, 17, 19, 20</u>                                                                                                                         | YES                                             |
|                                                                             | Claims <u>NONE</u>                                                                                                                                              | NO                                              |
| 2. Citations and Explanations (Rule 70.7)<br>Please See Continuation Sheet. |                                                                                                                                                                 |                                                 |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US12/53131

Box No. VII    Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The Specification contains the following defect(s) in the form or content thereof:
  - The Title of the Invention is not indicated at the top of the first sheet of the description. See Rule 5.1(a).  
    ▶ Note: This issue was previously raised in the Invitation to Correct Defects mailed 14 Sept 2012.
2. The Claims contains the following defect(s) in the form or content thereof:
  - Claim 6 contains the typographical error "where in" instead of correctly reciting "wherein" as intended. Appropriate correction is required.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US12/53131

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 1-4, 6-12, 16, 17, 19, and 20 are objected to under PCT Article 6 as lacking clarity because Claims 1 and 20 are indefinite for the following reason(s):

Claims 1 and 20 recite the limitation "the top"; there is insufficient antecedent basis for this limitation in each claim.

Claims 1 and 20 each doubly recite the limitation "the annular sidewall of the skirt"; there is insufficient antecedent basis for each occurrence of this limitation in each claim.

Claim 1 recites the limitation "a continuous radial direction," rendering the Claim indefinite in view of the same recitation of "a continuous radial direction" previously introduced in parent Claim 1. It is unclear and ambiguous as to whether the Inventor intended to introduce a discrete new element, redefine the scope or terminology of preexisting elements, or invoke antecedent basis. The Claim must be amended to provide consistent antecedent basis throughout or otherwise require proper clarification to absolve the ambiguity.

Claims 7 and 16 recite the limitation "at least one of the scoring lines"; there is insufficient and ambiguous antecedent basis for this limitation in each claim.

Claim 20 recites the limitation "a continuous radial direction," rendering the Claim indefinite in view of the same recitation of "a continuous radial direction" previously introduced in parent Claim 20. It is unclear and ambiguous as to whether the Inventor intended to introduce a discrete new element, redefine the scope or terminology of preexisting elements, or invoke antecedent basis. The Claim must be amended to provide consistent antecedent basis throughout or otherwise require proper clarification to absolve the ambiguity.

Claims 2-4, 6-12, 16, 17, and 19 are otherwise rejected for incorporating the errors *supra* from their respective parent claim by dependency.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US12/53131

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

IV.3. This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is not complied with for the following reasons:

REQUIREMENT FOR UNITY OF INVENTION

Instant PCT Application

1. This application contains claims directed to more than one species of the generic invention regarding patentably distinct species of tamper-evident member part arrangements in a first position and a second position. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The Species are as follows:

| SPECIES<br>GROUP A | SCORING LINE CROSS-SECTION DESIGN |          |                       |
|--------------------|-----------------------------------|----------|-----------------------|
|                    | FIG(S).                           | CLAIM(S) | DESCRIPTION           |
| Species A1         | 25A, 25B                          | 1, 20    | Opposing Curved Edges |
| Species A2         | 18A                               | 13       | Curved Profile Shape  |
| Species A3         | 18B                               | 14       | Square Shape          |
| Species A4         | 18C                               | 15       | V-Shape               |

| SPECIES<br>GROUP B | ATTACHMENT PORTION DESIGN |          |             |
|--------------------|---------------------------|----------|-------------|
|                    | FIG(S).                   | CLAIM(S) | DESCRIPTION |
| Species B1         | 2A-17, 19-20E             | 4        | Center      |
| Species B2         | 21-24                     | 5        | Off-Center  |

| SPECIES<br>GROUP C | SKIRT DESIGN                    |          |             |
|--------------------|---------------------------------|----------|-------------|
|                    | FIG(S).                         | CLAIM(S) | DESCRIPTION |
| Species C1         | 2B, 3B, 5-17, 19, 21-23, 26-29B | 17       | Angels      |
| Species C2         | 2A, 3A, 4, 24                   | 18       | No Angels   |

2. The groups of inventions listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:
- Species 1 and 2 lack unity of invention because even though the inventions of these groups require the technical feature of:
- a frangible reduced gauge crown comprising a crown thickness gauge 0.12-0.23mm and scoring line formed by touching moieties having opposing curved edges

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
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Supplemental Box

This technical feature is not a special technical feature as it does not make a contribution over the prior art in view of the following prior art, which separately or collectively disclose or teach this feature substantially as claimed:

- WO 2009/009429 A1;
- WO 2006/048903 A1; and/or,
- US Pub. No. 2007/0181526, which disclose this feature substantially as claimed.

3. If the examiner determines that unity of invention is lacking, the examiner may conduct an international preliminary examination covering all the claimed and previously searched inventions and indicate that unity of invention is lacking and specify the reasons therefor without extending an invitation to restrict or pay additional fees. *See PCT Rule 68.1.* The written opinion must be established on the claims directed to what appears to be the main invention under PCT Article 34(3)(c). The main invention, in case of doubt, is the first claimed invention for which an international search report has been issued by the International Searching Authority.

Accordingly, the Examiner has determined Claims 1-4, 6-12, 16, 17, 19, and 20 to be the main invention. The Examiner notes that Applicant has effectively executed an election by original presentation by importing the non-generic Species limitations associated with Species A1 and B1 into independent Claims 1 and 20, thereby rendering them associated Species Claims instead of maintaining their former generic status. Accordingly, the Examiner has proceeded with an election by original presentation and examination of Claims 1-4, 6-12, 16, 17, 19, and 20 commensurate with the 06 May 2013 Amendment to the Claims. This has therefore considered by the Examiner to be the main invention. *PCT Rule 68.5.*

Overview of Unity of Invention Requirement

4. As provided in *PCT Rules 13.1-13.2*, a PCT Application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The determination of whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim. *See PCT Rules 13.1-13.2.*

When Claims Are Directed to Multiple Categories of Inventions

5. As provided in *PCT Rules 13.1-13.2*, a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

- (1) A product and a process specially adapted for the manufacture of said product;
- (2) A product and process of use of said product;
- (3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product;
- (4) A process and an apparatus or means specifically designed for carrying out the said process;
- (5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Otherwise, unity of invention might not be present. *See PCT Rules 13.1-13.2.*

Supplemental Box

**V.2. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.**

**Citations**

- US 2007/0181526 (FRISHMAN) 09 Aug 2007, FIGS. 11,13-17,18B; [53-63].
- WO 2009/009429 A1 (CABALLERO MERINO) 15 Jan 2009, FIGS. 1,2A; [34].
- WO 2006/048903 A1 (HE CONG HAI) 11 May 2006, FIGS. 1-6; PGS. 2-6.

**PCT Article 33(3) - Lack of Inventive Step**

1. Claims 1-4, 6-12, 16, 17, 19, and 20 lack an inventive step under PCT Article 33(3) as being obvious over US PUB. NO. 2007/0181526 (FRISHMAN) in view of WO 2009/009429 A1 (MERINO CABALLERO).

I. Scope and Content of Prior Art and Application to Instant Claims<sup>1</sup>

A) US PUBLICATION '526

'526 discloses a frangible reduced gauge crown (FIGS.11,13-17,18B; [53-69]) for a container opening ([AB,60]), the crown comprising: a crown thickness gauge in the range of less than approximately 0.28 mm ([69]; §11); an opener assembly<sup>2</sup> attached to a central attachment portion (15,15a) of a top portion (17) by a rivet (4), the opener assembly comprising: a pull tab (3) attached to a pull tab ring (2) and the rivet (FIGS.13-17), and a lever (5) under the pull tab (FIGS.13-17); an annular skirt (7) descending from the top portion (FIGS.11,13-17) and terminating at a bottom annular edge (16); a frangible scoring arrangement<sup>3</sup> comprising: a first curvilinear scoring line (6d) extending in a continuous radial direction from the attachment portion to the bottom edge of the skirt;<sup>4</sup> and a second curvilinear scoring line (6e,6f) comprising: an upper radial segment (6e) extending in a continuous radial direction from the attachment portion of the top to the annular sidewall of the skirt<sup>5</sup>, and a lower annular segment (6f) extending circumferentially along the annular side wall of the skirt from the upper radial segment to an endpoint substantially spaced from the bottom annular edge of the skirt;<sup>6</sup> at least one of the first curvilinear scoring line and the second curvilinear scoring line are formed by touching moieties having opposing curved edges when viewed in cross-section;<sup>7</sup> the top portion comprising a corrugated recessed seat/divot (18) to facilitate manual crown removal (FIGS.13-17; [56-58]); at least one of the scoring lines is tapered to have greater depth near the annular edge of the skirt than near the attachment portion ([40]); a liner (12) fastened to an interior under portion (FIG.15) opposite of and defined by the top portion and the skirt (FIGS. 14, 15); a cushion (13) on the pull tab ring ([51]; §10); at least one of the scoring lines of the frangible scoring arrangement produces a non-sharp edge upon breaking (FIG. 16); wherein the skirt comprises a plurality of angels.<sup>8</sup>

B) INTL. PUBLICATION '429

'526 discloses substantially all the limitations of the claims as applied in the rejection *supra*; however, wherein the Applicant may argue that '526 does not explicitly disclose a crown thickness gauge in the range of 0.12mm to 0.18mm, the Examiner points to '429 to demonstrate that incorporating such a crown gauge thickness range lacks an inventive step.

<sup>1</sup> Prior Art citations are applied using footnotes or parentheses according to the following notation, *infra*:

- Reference Numerals are identified using alphanumeric character(s); e.g. 1 or 1,7 or 3,8 or d',f.
- Claims are identified using integers prefixed by the section sign "\$"; e.g. \$7 or \$10,\$12 or \$§1-5.
- Paragraphs, Abstract are identified using bracketed integers, [AB], respectively; e.g. [9] or [AB,5-7,10].
- Figures are identified using alphanumeric character(s) prefixed by "FIG(S)."; e.g. FIG.7 or FIGS.1-3,5A.
- Columns and Pages are identified using bolded integer(s) prefixed by "COL(S).", and "PG(S).", respectively, each being suffixed with corresponding braced line numbers; e.g. COL.3(7) or COL.1(1-8) or COLS.1(1-5,30),2(4),3(5-20),3(60)-4(10); and, PG.4(5) or PG.9(1-15) or PGS.1(1-3,9),5(1-7,20-65).

<sup>2</sup> FIGS. 13-17; [56, 67]; §1.

<sup>3</sup> 6; FIGS.11,13,16,18B; [53,56,60].

<sup>4</sup> See Note 3, *supra*.

<sup>5</sup> See Note 3, *supra*.

<sup>6</sup> See Note 3, *supra*.

<sup>7</sup> See cross-section of scoring line 6 in FIG. 18B and [63], illustrating touching moieties in the form of the respective semicircular halves of 6 defining opposed curved edges. See also Note 3, *supra*.

<sup>8</sup> 7; FIGS. 11,13-17; [53].

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US12/53131

Supplemental Box

As preliminary evidence of a lack of inventive step, the Examiner highlights Applicant's own prior art admission stating that "conventional crown caps are often formed of single reduced, T4, tinplate having a thickness of 0.21mm to 0.23mm."<sup>9</sup> Furthermore, '429 discloses a frangible reduced gauge crown (FIGS. 1,2A) for a container opening (52) comprising: a crown thickness gauge range of 0.12mm to 0.18mm ([6,34]), a top inner panel and an outer crimped skirt descending therefrom.<sup>10</sup>

**II. Rationale Supporting Lack of Inventive Step**

It would have been a lack of inventive step to incorporate such a specific dimensional range of crown gauge thickness, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, that such modifications would have involved a mere change in the size of a component and/or a mere change in the proportions of components, which are generally recognized as lacking inventive step.<sup>11</sup>

Furthermore, it would have been a lack of inventive step to incorporate or utilize material affording the range of crown gauge thickness as a material property for aesthetic appeal, ease of manufacture, adequate structural strength, or reduction in manufacturing cost and/or material quantities, since it has been held to be a lack of inventive step to select a known material on the basis of its suitability for the intended use. A patent which merely substitutes one material for another, and in which the substituted material performs in a readily predictable manner because of its well-known properties distinguishing it from formerly used material, is known as a "substitution of materials patent and is invalid. In this regard, the substitution of metal for other materials has been held unpatentable."<sup>12</sup>

**2. Claims 1-4, 6-12, 16, 17, 19, 20 lack an inventive step under PCT Article 33(3) as being obvious over '526 in view of '429 and WO 2006/048903 A1 (HE CONG HAI).**

**A) US & INTL. PUBLICATIONS '526 & '429**

'526 in view of '429 discloses substantially all the claim limitations as applied *supra*,<sup>13</sup> however, wherein Applicant may argue that '526 and '429 do not disclose/teach at least one of the first and second curvilinear scoring lines being formed in cross-section by touching moieties having opposing curved edges, the Examiner additionally offers '903 to demonstrate that incorporating such a cross-sectional scoring line design lacks an inventive step.

**B) INTL. PUBLICATION '903**

'903 discloses a frangible reduced gauge crown (FIGS.1-6) for a container opening (FIG.1) comprising: a frangible scoring arrangement;<sup>14</sup> wherein at least one of the first and second curvilinear scoring lines are formed by touching moieties having opposing curved edges (FIG. 6) when viewed in cross-section (*see Note 14, infra*).

It would have been a lack of inventive step to design a scoring line of the frangible scoring arrangement to be whatever form or shape was desired or expedient. A change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results.<sup>15</sup> Because this is a case where the improvement is nothing more than the predictable use of prior-art elements according to their established functions or "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement, no further analysis is required by the Examiner.

**PCT Article 33(4) - Industrial Applicability Satisfied**

**3. Claims 1-4, 6-12, 16, 17, 19, 20 meet the criteria set out in PCT Article 33(4), and thus exhibit industrial applicability because the subject matter claimed can be made or used in industry.**

<sup>9</sup> Applicant's Specification: PG. 27, [67].

<sup>10</sup> FIGS.1,2A, [22-24].

<sup>11</sup> Intellectual Property Courts of Law have held that when the only difference between the prior art and the claims is a relative dimension of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art, the claimed device was not patentably distinct from the prior art.

<sup>12</sup> Use of dissimilar materials to prevent bonding is common knowledge in the plastics industry; and, the mere selection of known plastics to make a container-dispenser of a type made of plastics prior to the invention, the plastics selection being on the basis of suitability for the intended use, has been held to be obvious.

<sup>13</sup> *See 11, supra*.

<sup>14</sup> T,Y,Z: FIGS.1,2,4,6; PGS 2(25)-3(18),3(25-30); §§1-2.

<sup>15</sup> Absent persuasive evidence that a particular container configuration of the claimed design was significant, such configurations have been held obvious.

I claim:

1. A frangible reduced gauge crown for a container opening, the crown comprising:
  - a crown thickness gauge in the range of 0.12mm to 0.23mm;
  - a top portion having an attachment portion;
  - an annular skirt descending from the top portion and terminating at a bottom annular edge;
  - an opener assembly attached to the top at the attachment portion;
  - a frangible scoring arrangement comprising:
    - a first scoring line extending in a continuous radial direction from the attachment portion to the bottom edge of the skirt; and
    - a second curvilinear scoring line comprising:
      - an upper radial segment extending in a continuous radial direction from the attachment portion of the top to the annular sidewall of the skirt, and
      - a lower annular segment extending circumferentially along the annular side wall of the skirt from the upper radial segment to an endpoint substantially spaced from the bottom annular edge of the skirt;
- wherein at least one of the first scoring line and the second curvilinear scoring line are formed by touching moieties having opposing curved edges when viewed in cross-section.

2. The crown of claim 1, wherein the opener assembly further comprises
  - a pull tab ring;
  - a pull tab attached to the pull tab ring; and
  - a rivet attached to the pull tab and to the attachment portion of the top.
3. The crown of claim 2, the opener assembly further comprising a lever under the pull tab.
4. The crown of claim 1, wherein the top further comprises a center portion and wherein the attachment portion is at the center portion of the top.
5. The crown of claim 1, wherein the top further comprises a center portion and wherein the attachment portion is off-center from the center portion of the top.
6. The crown of claim 2, where in the top portion further comprises a recessed seat.
7. The crown of claim 1, wherein at least one of the scoring lines is tapered to have greater depth near the annular edge of the skirt than near the attachment portion.
8. The crown of claim 1, comprising a divot on the top portion to facilitate manual crown removal.
9. The crown of claim 1, further comprising an interior under portion opposite of and defined by the top portion and the skirt; a liner fastened to the under portion.
10. The crown of claim 1, further comprising a cushion on the pull tab ring.
11. The crown of claim 1, wherein the top is corrugated.
12. The crown of claim 1, further comprising a crown thickness gauge in the range of 0.12mm to 0.18mm.

13. The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a curved profile shape in cross-section.
14. The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a square shape in cross-section.
15. The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a V shape in cross-section.
16. The crown of claim 1, wherein at least one of the scoring lines of the frangible scoring arrangement produces a non-sharp edge upon breaking.
17. The crown of claim 1, wherein the skirt comprises a plurality of angels.
18. The crown of claim 1, wherein the skirt comprises no angels.
19. The crown of claim 1, wherein the first scoring line is curvilinear.

20. A frangible reduced gauge crown for a container opening, the crown comprising:
  - a crown thickness gauge in the range of 0.12mm to 0.23mm;
  - a top portion having an attachment portion;
  - an annular skirt descending from the top portion and terminating at a bottom annular edge;
  - an opener assembly attached to the top at the attachment portion;
  - a frangible scoring arrangement comprising:
    - a first curvilinear scoring line extending in a continuous radial direction from the attachment portion to the bottom edge of the skirt; and
    - a second curvilinear scoring line comprising:
      - an upper radial segment extending in a continuous radial direction from the attachment portion of the top to the annular sidewall of the skirt, and
      - a lower annular segment extending circumferentially along the annular side wall of the skirt from the upper radial segment to an endpoint substantially spaced from the bottom annular edge of the skirt;
- wherein at least one of the first curvilinear scoring line and the second curvilinear scoring line are formed by touching moieties having opposing curved edges when viewed in cross-section.

IN THE UNITED STATES RECEIVING OFFICE  
FOR THE PATENT COOPERATION TREATY

|                                    |   |
|------------------------------------|---|
| In re application of: Abe Frishman | § |
|                                    | § |
| Serial Number: PCT/US2012/053131   | § |
|                                    | § |
| Filed: 30 August 2012              | § |
|                                    | § |
| Priority Date: 06 October 2011     | § |
|                                    | § |
| For: BOTTLE CROWN WITH OPENER      | § |
| ASSEMBLY                           | § |

**REPLY TO THE WRITTEN OPINION AND AMENDMENTS**  
**UNDER ARTICLE 34 OF THE PATENT COOPERATION TREATY**

An International Search Report and Written Opinion with a mailing date of 18 December 2012 were issued regarding the above-entitled international patent application. Applicant responds to the Written Opinion as set forth below, and files herewith a Demand for examination of the present application by the International Preliminary Examination Authority in view of the following amendments and remarks submitted under Article 34 of the PCT. The 19 month deadline for filing a Demand and Amendment under Article 34, as calculated from the priority date of the present application, expires 06 May 2013; thus, the Demand and Amendment are timely.

**COMMENTS**

Please remove original sheets 33-36 from the pending application. Please substitute enclosed replacement sheets 33-36 into the pending application. The enclosed replacement sheets 33-36 consist of 4 sheets and contain amendments to the Claims.

**Amendments to the Specification** begin on page 2.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 3.

**Remarks/Arguments** begin on page 7 of this paper.

**Conclusion** begins on page 10 of this paper.

**AMENDMENTS TO THE SPECIFICATION**

Paragraph [0076] on page 16 of the specification as originally filed is amended as follows:

**[0076] Figure 18B** is a diagrammatic illustration of a side cross section view of an alternative embodiment of a cut line of Fig. 18A. Here, a curved cross section profile for cut line 6[[16]] is illustrated.

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### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A frangible reduced gauge crown for a container opening, the crown comprising:
    - a crown thickness gauge in the range of 0.12mm to 0.23mm;
    - a top portion having an attachment portion;
    - an annular skirt descending from the top portion and terminating at a bottom annular edge;
    - an opener assembly attached to the top at the attachment portion;
    - a frangible scoring arrangement comprising:
      - a first scoring line extending in a continuous radial direction from the attachment portion to the bottom edge of the skirt; and
      - a second curvilinear scoring line comprising:
        - an upper radial segment extending in a continuous radial direction from the attachment portion of the top to the annular sidewall of the skirt, and
        - a lower annular segment extending circumferentially along the annular side wall of the skirt from the upper radial segment to an endpoint substantially spaced from the bottom annular edge of the skirt;
- wherein at least one of the first scoring line and the second curvilinear scoring line are formed by touching moieties having opposing curved edges when viewed in cross-section.

2. (Original) The crown of claim 1, wherein the opener assembly further comprises  
a pull tab ring;  
a pull tab attached to the pull tab ring; and  
a rivet attached to the pull tab and to the attachment portion of the top.
3. (Original) The crown of claim 2, the opener assembly further comprising a lever under the pull tab.
4. (Original) The crown of claim 1, wherein the top further comprises a center portion and wherein the attachment portion is at the center portion of the top.
5. (Original) The crown of claim 1, wherein the top further comprises a center portion and wherein the attachment portion is off-center from the center portion of the top.
6. (Original) The crown of claim 2, where in the top portion further comprises a recessed seat.
7. (Original) The crown of claim 1, wherein at least one of the scoring lines is tapered to have greater depth near the annular edge of the skirt than near the attachment portion.
8. (Original) The crown of claim 1, comprising a divot on the top portion to facilitate manual crown removal.
9. (Original) The crown of claim 1, further comprising an interior under portion opposite of and defined by the top portion and the skirt; a liner fastened to the under portion.
10. (Original) The crown of claim 1, further comprising a cushion on the pull tab ring.
11. (Original) The crown of claim 1, wherein the top is corrugated.
12. (Currently Amended) The crown of claim 1, further comprising a crown thickness gauge in the range of 0.12mm to 0.1828mm.

13. (Original) The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a curved profile shape in cross-section.
14. (Original) The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a square shape in cross-section.
15. (Original) The crown of claim 1, wherein the frangible scoring arrangement defines a frangible portion of the frangible crown, the frangible portion extending outward from the attachment portion to the bottom edge of the skirt, the frangible portion having a V shape in cross-section.
16. (Original) The crown of claim 1, wherein at least one of the scoring lines of the frangible scoring arrangement produces a non-sharp edge upon breaking.
17. (Original) The crown of claim 1, wherein the skirt comprises a plurality of angels.
18. (Original) The crown of claim 1, wherein the skirt comprises no angels.
19. (Original) The crown of claim 1, wherein the first scoring line is curvilinear.

20. (Currently Amended) A frangible reduced gauge crown for a container opening, the crown comprising:

a crown thickness gauge in the range of 0.12mm to 0.23mm;

a top portion having an attachment portion;

an annular skirt descending from the top portion and terminating at a bottom annular edge;

an opener assembly attached to the top at the attachment portion;

a frangible scoring arrangement comprising:

a first curvilinear scoring line extending in a continuous radial direction from the attachment portion to the bottom edge of the skirt; and

a second curvilinear scoring line comprising:

an upper radial segment extending in a continuous radial direction from the attachment portion of the top to the annular sidewall of the skirt, and

a lower annular segment extending circumferentially along the annular side wall of the skirt from the upper radial segment to an endpoint substantially spaced from the bottom annular edge of the skirt;

wherein at least one of the first curvilinear scoring line and the second curvilinear scoring line are formed by touching moieties having opposing curved edges when viewed in cross-section.

**REMARKS**

The Written Opinion has cited U.S. Published Patent Application No. 2011/0024381 to Frishman (herein referred to as "Frishman I") as anticipating claims 1-6, 8-9, 11-15, 17 and 19-20, which includes independent claims 1 and 20, and thus that these claims do not recite novelty over this reference. Also, the Written Opinion has cited both Frishman I and U.S. Published Patent Application No. 2002/0195414 to Kim et al. as rendering obvious dependent claim 18, and thus that claim 18 does not recited an inventive step over these references. Furthermore, the Written Opinion has cited U.S. Published Patent Application No. 2010/0200534 to Frishman (herein referred to as "Frishman II") and U.S. Published Patent Application No. 2007/0181526 to Frishman (herein referred to as "Frishman III") as rendering obvious all of pending claims 1-20, and thus that claims 1-20 do not recite an inventive step over these references.

In response, independent claims 1 and 20 have been amended to recite that the crown is a reduced gauge crown having a crown thickness gauge in the range of 0.12mm to 0.23 mm. Additionally, dependent claim 12 has been amended to recite a more specific gauge range of 0.12 to 0.18mm. Support for these amendments to the claims may be found at least in paragraphs [0055-0057] on page 23 and Table I of the specification for the present application. Moreover, independent claims 1 and 20 have also been amended to recite that at least one of the first and second scoring lines of the frangible scoring arrangement recited therein is formed by touching moieties having opposing curved edges when viewed in cross-section, wherein the curved edges of the opposing moieties touch to form the first and/or second scoring line. Support for this amendment may be found in paragraph [0042-0043] on page 19 the specification, as well as Figures 25A and 25B, of the present application. Furthermore, paragraph [0076] on page 16 of the specification is also amended to correct a typographical error.

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The applicant respectfully submits that the references cited in the Written Opinion fail to disclose a crown having a reduced gauge in the range of 0.12mm to 0.23mm as recited in independent claims 1 and 20, as herein amended. As discussed in detail in the present application, both the resource and monetary savings resulting from such a significant reduction in crown gauge are substantial, particularly in light of the great number of crowns produced annually around the world. Additionally, the references cited in the Written Opinion also do not teach or suggest the scoring line(s) formed in the crown (which allow for the tearing of the crown off of its container) to be formed by touching moieties having opposing curved edges when viewed in cross-section, wherein the curved edges of the opposing moieties touch to form the first and/or second scoring line, as now is recited in independent claims 1 and 20.

As a result, the present claims not only provide for a significantly reduced crown gauge that provides substantial savings in terms of material resources and production costs, but also a new overall frangible scoring arrangement formed by touching curved edges, such that when a crown is torn along the scoring line(s) comprising the arrangement, the separated edges do not have sharp features. Furthermore, with regard to dependent claim 16, the Written Opinion states that simply because providing non-sharp edges for the frangible scoring arrangement is a safety feature, then it would be obvious to modify the teachings in the cited references to provide such a safety feature. However, the applicant respectfully disagrees with this assertion. While increasing the safety of a device may, at times, be a motivator for one skilled in the art, surely it cannot be said that all means for achieving safety in a device are obvious simply because improving safety was the motivator. Therefore, with respect to the present claims, the applicant asserts that there is no teaching or suggestion in the prior art for specifically creating the first and/or second scoring lines by forming

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moieties having touching opposing curved edges, regardless if the result of such a design for the scoring line(s) provides a safety feature for the claimed crowns.

For at least the above reasons, the applicant respectfully asserts that the claims of the present application, as herein amended, recite both novelty and an inventive step, in addition to industrial applicability, over all of the cited prior art of record.

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### CONCLUSION

The applicant respectfully believes that the application as amended meets the criteria of novelty, inventive step, and industrial applicability on the grounds that the references of the prior art cited and asserted in the Written Opinion do not teach or suggest all of the elements of independent claims 1 and 20, as herein amended, or the claims dependent thereon. Accordingly, the applicant respectfully requests an International Preliminary Examination Report be issued by the International Preliminary Examination Authority indicating a favorable view of patentability of the present claims over the prior art.

Should the Office deem that any further amendment is desirable to place this application in condition for patentability, the Office is invited to telephone the undersigned at the number listed below.

Date: 06 May 2013

Respectfully submitted,

Carstens & Cahoon, LLP

/James H. Ortega/

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### CORRECCIONES A LA DESCRIPCIÓN

Párrafo [0076] en la página 16 de la descripción como originalmente se presentó se modificó como sigue:

**[0047]** La figura 18B es una ilustración esquemática de una vista en sección transversal lateral de una modalidad alternativa de una línea de corte de la figura 18A. Aquí, un perfil de sección transversal curva de la línea de corte 6 [[16]] se ilustra.

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REIVINDICACIONES MODIFICADAS EN FASE INTERNACIONAL ARTICULO

34 PCT

- 5 1. Una reducción de la corona de calibre frágil para una  
abertura del contenedor, la corona comprende:  
un medidor de espesor de la corona en el intervalo de  
0.12 mm a 0.23 mm;  
una porción superior que tiene una porción de fijación;  
10 un faldón anular descendente desde la porción superior y  
que termina en un borde anular inferior;  
un ensamble de abertura unido a la porción superior en la  
porción de fijación;  
una configuración de muescas frágil que comprende:  
15 una primera línea de muescas que se extiende en una  
dirección radial continua a partir de la porción de  
fijación hasta el borde inferior del faldón; y  
una segunda línea curvilínea de muescas comprende:  
un segmento radial superior que se extiende en una  
20 dirección radial continua a partir de la porción  
de fijación de la porción superior de la pared  
lateral anular del faldón, y  
un segmento anular inferior que se extiende  
circunferencialmente a lo largo de la pared

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lateral anular del faldón del segmento radial superior a un punto final sustancialmente separado del borde anular inferior del faldón;

en donde al menos una de la primera línea de muescas y la  
5 segunda línea de muescas curvilínea están formadas por  
tocar restos que tienen bordes opuestos curvos cuando  
se ven en sección transversal.

2. La corona de conformidad con la reivindicación 1,  
10 caracterizada porque el ensamble de abertura comprende  
además:

un anillo de lengüeta;

una lengüeta unida al anillo de la lengüeta; y

un remache fijado a la lengüeta y a la porción de  
15 fijación de la porción superior.

3. La corona de conformidad con la reivindicación 2, que  
comprende el abridor de montaje además una palanca debajo de  
la lengüeta.

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4. La corona de conformidad con la reivindicación 1,  
caracterizada porque la porción superior comprende, además,  
una porción central y en el que la porción de fijación está  
en la parte central de la porción superior.

5. La corona de conformidad con la reivindicación 1, caracterizada porque la porción superior comprende, además, una porción central y en el que la porción de fijación está fuera de centro desde la parte central de la porción superior.

6. La corona de conformidad con la reivindicación 2, caracterizada porque en la porción superior comprende además un asiento rebajado.

7. La corona de conformidad con la reivindicación 1, caracterizada porque al menos una de las líneas de muescas es cónico para tener una mayor profundidad cerca del borde anular del faldón de cerca de la porción de fijación.

8. La corona de conformidad con la reivindicación 1, que comprende una chuleta en la porción superior para facilitar la extracción manual de la corona.

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9. La corona de conformidad con la reivindicación 1, que comprende además una porción opuesta interior baja de y definida por la porción superior y la falda; un forro fijado a la porción baja.

10. La corona de conformidad con la reivindicación 1, que comprende además un cojín en el anillo de la lengüeta.

5 11. La corona de conformidad con la reivindicación 1, caracterizada porque la porción superior es ondulada.

12. La corona de conformidad con la reivindicación 1, que comprende además un medidor de espesor de corona en el rango  
10 de 0.12 mm a 0.18 mm.

13. La corona de conformidad con la reivindicación 1, caracterizada porque la configuración de muescas frágil define una porción frágil de la corona frágil, la porción  
15 frágil que se extiende hacia fuera desde la porción de fijación hasta el borde inferior del faldón, la porción frágil que tiene una forma de perfil curvado en sección transversal.

20 14. La corona de conformidad con la reivindicación 1, caracterizada porque la configuración de muescas frágil define una porción frágil de la corona frágil, la porción frágil que se extiende hacia fuera desde la porción de fijación hasta el borde inferior del faldón, la porción

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frágil que tiene una forma cuadrada en sección transversal.

15. La corona de conformidad con la reivindicación 1, caracterizada porque la configuración de muescas frágil define una porción frágil de la corona frágil, la porción frágil que se extiende hacia fuera desde la porción de fijación hasta el borde inferior del faldón, la porción frágil que tiene una forma en V en sección transversal.
- 10 16. La corona de conformidad con la reivindicación 1, caracterizada porque al menos una de las líneas de muescas de la configuración de muescas frágil produce un borde no cortante al romperse.
- 15 17. La corona de conformidad con la reivindicación 1, caracterizada porque el faldón comprende una pluralidad de ángeles.
- 20 18. La corona de conformidad con la reivindicación 1, caracterizada porque la falda no comprende ángeles.
19. La corona de conformidad con la reivindicación 1, caracterizada porque la primera línea de muescas es curvilínea.

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20. Una reducción de la corona de calibre frágil para una abertura del contenedor, comprendiendo la corona:

un medidor de espesor de la corona en el intervalo de

5        0.12 mm a 0.23 mm;

una porción superior que tiene una porción de fijación;

un faldón anular descendente desde la porción superior y

que termina en un borde anular inferior;

un ensamble de abertura unido a la porción superior en

10        la porción de fijación;

una configuración de muescas frágil que comprende:

una primera línea de muescas curvilínea que se extiende

en una dirección radial continua a partir de la

porción de fijación hasta el borde inferior del

15        faldón; y

una segunda línea curvilínea de muescas comprende:

un segmento radial superior que se extiende en una

dirección radial continua a partir de la porción

de fijación de la porción superior de la pared

20        lateral anular del faldón, y

un segmento anular inferior que se extiende

circunferencialmente a lo largo de la pared

lateral anular del faldón del segmento radial

superior a un punto final sustancialmente

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separado del borde anular inferior del faldón;  
en donde al menos una de la primera línea de muescas  
curvilínea y la segunda línea de muescas curvilínea  
están formadas por tocar restos que tienen bordes  
opuestos curvos cuando se ve en sección cruzada.

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