

EXHIBIT 2



Customized PTO/SB/08a+b (09-06)

Substitute for Form 1449A/PTO REPLACEMENT INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Reexam Control #	95/000,219
	Patent No. #	7,169,219 7,169,418
	Confirmation #	8236
	1st Request Date	01/31/07
	Art Unit	3991
	Examiner	
Sheet 1 of 1	Requestor Docket #	G-1165/MP

U.S. PATENT DOCUMENTS				
Exam. Initial*	Document No. Number - Kind	Publ. Date MM-DD-YYYY	Name Patentee or Applicant	Relevance Passages/Figs.
	US-Des. 389,067	01-13-1998	Lown	
	US-3,082,904	03-26-1963	F.B. Newcomb et al.	
	US-3,944,127	03-16-1976	Bruke et al.	
	US-4,890,752	01-02-1990	Ota et al.	
	US-4,966,780	10-30-1990	Hargraves et al.	
	US-5,085,034	02-04-1992	Haas	
	US-5,285,954	02-15-1994	Goglio	
	US-5,515,994	05-14-1996	Goglio	
	US-5,690,244	11-25-1997	Darr	
	US-6,733,803	05-11-2004	Vidkjaer	
	US-6,763,969	07-20-2004	Melrose et al.	
	US-6,837,390	01-04-2005	Lane et al.	

FOREIGN PATENT DOCUMENTS					
Exam. Initial*	Country-Number-Kind	Publ. Date MM-DD-YYYY	Name Patentee or Applicant	Relevance Passages/Figs.	Translation

NON PATENT LITERATURE DOCUMENTS		
Exam. Initial*	Include NAME of the author (in CAPS), Title of Article/Item, Date, Page(s), Volume-Issue No., Publisher, City and/or Country where published	Translation
	Marks' Standard Handbook for Mechanical Engineers (10th Edition). McGraw Hill (1996) [retrieved from online Aug. 18, 2004] Table 6.12.1 URL http://www.knovel.com/knovel2/Toc.jsp?SpaceID=162&BookID=346 .	
	Encyclopedia of Polymer Science and Technology, vol. 6, John Wiley and Sons, 1967.	

Examiner Signature	<i>Devin D Johnson</i>	Date Considered	6/4/07
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* Examiner: Initial if considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.



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CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000219	03/08/07	7169418	

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EXAMINER

Jerry J. Johnson

ART UNIT	PAPER
3991	

3991

DATE MAILED:

06/07/07

**INTER PARTES REEXAMINATION
 COMMUNICATION**

BELOW/ATTACHED YOU WILL FIND A COMMUNICATION FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE OFFICIAL(S) IN CHARGE OF THE PRESENT REEXAMINATION PROCEEDING.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the Central Reexamination Unit at the mail, FAX, or hand-carry addresses given at the end of this communication.



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**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,219.

PATENT NUMBER 7,169,418.

TECHNOLOGY CENTER 3999.

ART UNIT 3991.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

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ACTION CLOSING PROSECUTION (37 CFR 1.949)	Control No.	Patent Under Reexamination	
	95/000,219	7169418	
	Examiner	Art Unit	
	Jerry D. Johnson	3991	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on _____

Third Party(ies) on _____

Patent owner may once file a submission under 37 CFR 1.951(a) within 1 month(s) from the mailing date of this Office action. Where a submission is filed, third party requester may file responsive comments under 37 CFR 1.951(b) within 30-days (not extendable- 35 U.S.C. § 314(b)(2)) from the date of service of the initial submission on the requester. **Appeal cannot be taken from this action.** Appeal can only be taken from a Right of Appeal Notice under 37 CFR 1.953.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892
2. Information Disclosure Citation, PTO/SB/08
3. _____

PART II. SUMMARY OF ACTION:

- 1a. Claims 1-55 are subject to reexamination.
- 1b. Claims _____ are not subject to reexamination.
2. Claims _____ have been canceled.
3. Claims 1-55 are confirmed. [Unamended patent claims]
4. Claims _____ are patentable. [Amended or new claims]
5. Claims _____ are rejected.
6. Claims _____ are objected to.
7. The drawings filed on _____ are acceptable are not acceptable.
8. The drawing correction request filed on _____ is: approved. disapproved.
9. Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
 - been received. not been received. been filed in Application/Control No _____
10. Other _____

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REEXAMINATION

Decision Granting Inter Parte Reexamination

A Request pursuant to 37 CFR 1.913 for inter partes reexamination of claims 1-55 of U.S. Patent 7,169,418 was filed March 8, 2007 by the Third Party. An Order granting inter partes reexamination of claims 1-55 of U.S. Patent 7,169,418 accompanies the instant Action Closing Prosecution.

Art Cited by Requestor

The request relies on the following references:

New Applied References (Not cited in the Prosecution)

Melrose	U.S. Patent No. 6,763,969
Newcomb	U.S. Patent No. 3,082,904
Lane	U.S. Patent No. 6,837,390
Goglio	U.S. Patent No. 5,515,994 (hereafter "Goglio '994").

Old Applied References (Cited in the Prosecution)

Hargraves	U.S. Patent No. 4,966,780
Vidkjaer	U.S. Patent No. 6,733,803
Goglio	U.S. Patent 5,285,954 (hereafter "Goglio '954").
Bruke	U.S. Patent 3,944,127
Haas	U.S. Patent 5,085,034
Ota	U.S. Patent 4,890,752

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The Encyclopedia of Polymer Science and Technology, Volume 6, 1967 (hereafter "Encyclopedia").

Marks' Standard Handbook for Mechanical Engineers, 10th Edition, 1996 (hereafter "Marks").

Background References

Alberghini U.S. Patent No. 5,060,453

Darr U.S. Patent No. 5,960,244

Lown U.S. Patent No. D389,067

Weaver U.S. Patent No. 5,261,544

Platte U.S. Patent No. 3,708,082

"Main coffee packaging concern: freshness", Tea & Coffee Trade Journal, Author: Fader, Liz, 8/1/1989.

"Unique venting keeps coffee fresh", Packaging World Magazine, October 1996, p. 10.

"New container lets you wake up and smell the 'fresher' coffee", Food & Drug Packaging, Stagnito Communications, 11/1/1996.

I. The request indicates that the Requestor proposes the following rejections:

Claims 1, 8-10, 14-15, 19, 22-23, 26, 31-32, 33-35, 37-43, 44-49 and 50-55 based on Melrose in view of Goglio '994.

Claims 2-7, 11-13, 20-21 and 36 based on Melrose in view of Goglio '994, and further in view of Vidkjaer.

Claims 3-4 based on Melrose in view of Goglio '994, and further in view of Bruke.

Claims 9, 11-13, 20-21 and 33-36 based on Melrose in view of Goglio '994, and further in view of Haas.

Claims 9, 20-21 and 33-36 based on Melrose in view of Goglio '994, and further in view of Encyclopedia.

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Claims 16-18 based on Melrose in view of Goglio '994, and further in view of Goglio '954.

Claim 18 based on Melrose in view of Goglio '994, and further in view of Goglio '954 and Encyclopedia.

Claims 24-25, 27 and 29-30 based on Melrose in view of Goglio '994, and further in view of Hargraves.

Claim 28 based on Melrose in view of Goglio '994, and further in view of Hargraves and Goglio '954.

Each of the above proposed rejections relies upon at least the combination of Melrose in view of Goglio '994. For the reasons as set forth below, the above proposed rejections based on Melrose in view of Goglio '994, considered together, or in view of the additionally cited art are **not adopted**.

Melrose teaches a hot-fillable, slender, blow-molded plastic bottle for use in containing hot-filled beverages comprising a blow-molded plastic container having a neck with an based on Melrose in view of Goglio '994, considered together, or in view of the additionally cited art upstanding threaded finish, a close-ended base, and a tubular sidewall located between the base and the neck. The sidewall includes, in an alternating pattern, a plurality of circumferentially-spaced, vertically-elongated columns and a plurality of circumferentially-spaced substantially smooth-surfaced panels (abstract; column 2, lines 33-40). Each of the panels flexes outwardly to expand the volume of the container during hot-filling, and each of the panels flexes inwardly in response to a reduction in internal volume when the container is capped and permitted to cool. The inward deflection of the panels interactively increases the horizontal cross-sectional convexity of each column. The vertical straightening of each column and the lateral pinching of each column combine to structurally strengthen the container (column 2, lines 51-60).

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Goglio '994 teaches a valve for aromatic products, or products that develop fragrant gases, particularly powder-like products such as coffee and the like, packaged in air-tight containers (column 1, lines 8-11).

In the request for reexamination, it is argued that it would be obvious to use the container of Melrose for coffee, and as Goglio '994 explicitly teaches the use of the described top closure of Goglio '994 to package ground coffee, it would have been obvious to use the top closure of Goglio '994 on the package of Melrose (Request, page 14). However, one having ordinary skill in the art would not have used the top closure of Goglio '994 on the container of Melrose because the container of Melrose is designed to flex inwardly in response to a reduction in internal volume which adds structural strength to the container whereas the top closure of Goglio '994 functions to relieve increased pressure within a container, i.e., the exact opposite in which the container of Melrose functions. It would not have been obvious to use the container of Melrose to package ground coffee for the same reason.

II. The request indicates that the Requestor proposes the following rejections:

Claims 1-3, 8-10, 14-15, 19-23, 26, 31-32, 33-35, 37-43, 44-49 and 50-55 based on Newcomb in view of Melrose.

Claims 2-7, 11-13, 20-21 and 36 based on Newcomb in view of Melrose, and further in view of Vidkjaer.

Claims 3-4 based on Newcomb in view of Melrose, and further in view of Bruke.

Claims 9, 11-13, 20-21 and 33-36 based on Newcomb in view of Melrose, and further in view of Haas.

Claims 9, 20-21 and 33-36 based on Newcomb in view of Melrose, and further in view of Encyclopedia.

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Claims 16-18 based on Newcomb in view of Melrose, and further in view of Goglio '954.

Claim 18 based on Newcomb in view of Melrose, and further in view of Goglio '954 and Encyclopedia.

Claims 24-25, 27 and 29-30 based on Newcomb in view of Melrose, and further in view of Hargraves.

Claim 28 based on Newcomb in view of Melrose, and further in view of Hargraves and Goglio '954.

Each of the above proposed rejections relies upon at least the combination of Newcomb in view of Melrose. For the reasons as set forth below, the above proposed rejections based on Newcomb in view of Melrose, considered together, or in view of the additionally cited art are **not adopted**.

Newcomb teaches a pressure-vented container having an easy opening lid including a vent having a normally closed position and a venting position. A tamperproof locking ring for the container cap also functions to maintain the vent in its normally closed position until pressure within the container overcomes the restrictive forces of the locking ring (column 1, lines 55-61).

Melrose teaches a hot-fillable, slender, blow-molded plastic bottle for use in containing hot-filled beverages comprising a blow-molded plastic container having a neck with an upstanding threaded finish, a close-ended base, and a tubular sidewall located between the base and the neck. The sidewall includes, in an alternating pattern, a plurality of circumferentially-spaced, vertically-elongated columns and a plurality of circumferentially-spaced substantially smooth-surfaced panels (abstract; column 2, lines 33-40). Each of the panels flexes outwardly to expand the volume of the container during hot-filling, and each of the panels flexes inwardly in response to a reduction in internal volume when the container is capped and permitted to cool.

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The inward deflection of the panels interactively increases the horizontal cross-sectional convexity of each column. The vertical straightening of each column and the lateral pinching of each column combine to structurally strengthen the container (column 2, lines 51-60).

In the request for reexamination, it is argued that it would be obvious to include in the Newcomb container a region of deflection to accommodate the pressure changes as well known to be desired in the container art to prevent buckling or the like and a handle for ease of handling particularly for a larger container both as taught by Melrose (Request, pages 21-22). However, one having ordinary skill in the art would not have included a region of deflection as taught by Melrose in a container as taught by Newcomb because Melrose teaches that the region of deflection is designed to flex inwardly in response to a reduction in internal volume which adds structural strength to the container whereas the container of Newcomb includes a valve which functions to relieve increased pressure within the container, i.e., the exact opposite in which the container of Melrose functions.

III. The request indicates that the Requestor proposes the following rejections:

Claims 1, 8-10, 14-15, 19-23, 26, 31-32, 33-35, 37-43, 44-49 and 50-55 based on Lane in view of Goglio '994.

Claims 2-7, 11-13 and 36 based on Lane in view of Goglio '994, and further in view of Vidkjaer.

Claims 3-4 based on Lane in view of Goglio '994, and further in view of Bruke.

Claims 9, 11-13, 20-21 and 33-36 based on Lane in view of Goglio '994, and further in view of Haas.

Claims 9, 20-21 and 33-36 based on Lane in view of Goglio '994, and further in view of Encyclopedia.

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Claims 16-18 based on Lane in view of Goglio '994, and further in view of Goglio '954.

Claim 18 based on Lane in view of Goglio '994, and further in view of Goglio '954 and Encyclopedia.

Claims 24-25, 27 and 29-30 based on Lane in view of Goglio '994, and further in view of Hargraves.

Claim 28 based on Lane in view of Goglio '994, and further in view of Hargraves and Goglio '954.

Each of the above proposed rejections relies upon at least the combination of Lane in view of Goglio '994. For the reasons as set forth below, the above proposed rejections based on Lane in view of Goglio '994, considered together, or in view of the additionally cited art are **not adopted**.

Lane teaches a hot-fillable, blow molded plastic container suitable for receiving a product which is initially filled in a hot state, the container subsequently being sealed so that cooling of the product creates a reduced volume of product and a reduced pressure within the container (column 2, lines 43-48). The front and rear panels of the container controllably accommodate the pressure reduction by being capable of pulling inward, under the influence of the reduced pressure (column 5, lines 55-59).

Goglio '994 teaches a valve for aromatic products, or products that develop fragrant gases, particularly powder-like products such as coffee and the like, packaged in air-tight containers (column 1, lines 8-11).

In the request for reexamination, it is argued that it would be obvious to use the container of Lane for coffee, and as Goglio '994 explicitly teaches use of the described top closure to package ground coffee, it would have been obvious to use the top closure of Goglio '994 on the

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package of Lane (Request, page 29). However, one having ordinary skill in the art would not have used the top closure of Goglio '994 on the container of Lane because the container of Lane is designed to flex inwardly in response to a reduction in pressure whereas the top closure of Goglio '994 functions to relieve increased pressure within a container, i.e., the exact opposite in which the container of Lane functions. It would not have been obvious to use the container of Lane to package ground coffee for the same reason.

IV. The request indicates that the Requestor proposes the following rejections:

Claims 1, 8-10, 14, 19, 22-27, 30, 33-35, 37-39, 41-43, 44-46, 48-49, 50-52 and 54-55 based on Hargraves in view of Goglio '994.

Claims 2-7, 11-13, 20-21, 29, 31-32 and 36 based on Hargraves in view of Goglio '994, and further in view of Vidkjaer.

Claims 33-36 based on Hargraves in view of Goglio '994, and further in view of Haas.

Claims 33-36 based on Hargraves in view of Goglio '994, and further in view of Encyclopedia.

Claims 15, 40, 47 and 53 based on Hargraves in view of Goglio '994, and further in view of Melrose.

Claim 16-18 and 28 based on Hargraves in view of Goglio '994, and further in view of Goglio '954.

Claims 1, 8, 10, 14-115, 19, 22-27, 30, 37-43, 44-49 and 50-55 based on Hargraves in view of Goglio '994, and further in view of Ota.

Claims 2, 5-7, 29 and 31-32 based on Hargraves in view of Goglio '994, and further in view of Ota and Vidkjaer.

Claims 3-4 based on Hargraves in view of Goglio '994, and further in view of Ota and Bruke.

Claims 9, 11-13 and 20-21 based on Hargraves in view of Goglio '994, and further in view of Ota and Haas.

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Claims 9 and 20-21 based on Hargraves in view of Goglio '994, and further in view of Ota and Encyclopedia.

Claims 16-17 and 28 based on Hargraves in view of Goglio '994, and further in view of Ota and Goglio '954.

Claim 18 based on Hargraves in view of Goglio '994, and further in view of Ota, Goglio '954 and Encyclopedia.

Each of the above proposed rejections relies upon at least the combination of Hargraves in view of Goglio '994. For the reasons as set forth below, the above proposed rejections based on Hargraves in view of Goglio '994, considered together, or in view of the additionally cited art **are not adopted.**

Under the heading "BACKGROUND ART", Hargraves teaches

[i]f coffee is packaged immediately after roasting and grinding without substantial off gassing, industry experience has demonstrated that the pressure of the carbon dioxide and other gases liberated from the coffee may cause serious bulging and even rupture of substantially gas-impervious bags, canisters or other containers used in the packaging (column 3, lines 14-20).

One approach to solving this problem has been to employ mechanical gas escape valves intended to relieve the build up of pressure from within the flexible container while preventing the entry of atmospheric air into the package. Representative prior art escape valves for use on flexible packages are disclosed in U.S. Pat. Nos. 3,595,467 issued to Goglio on July 27, 1971; 3,799,427 issued to Goglio on mar. 26, 1974; and 4,420,015 issued to Blaser on Dec. 13, 1983. However, these valves, typically increase the cost of the flexible package utilized to house the roast and ground coffee. In addition, they do not always function in their intended manner (Column 3, lines 45-57).

Hargraves teaches packaging for roasted and ground coffee which is to be packaged as quickly as is feasible after roasting, i.e., without undergoing substantial off gassing. The packaging preferably comprises a semi-rigid, substantially gas-impervious container capable of withstanding the pressures generated by the release of carbon dioxide and other gases from the

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fresh roasted coffee in the container. The semi-rigid container is preferably comprised of plastic and predetermined portions of the container are preferably capable of undergoing limited deformation (column 5, lines 53-64). Hargraves teaches that the improved aroma retention and product quality exhibited by packages of roasted and ground coffee of the invention is due not only to reduced oxidation of the material both prior to and after packaging, but also to the retention of many of the volatile aromatic constituents within the coffee product due to the presence of the self-generated pressure within the container after the packaging operation has been completed (column 6, lines 52-61).

Column 22, line 64 to column 23, line 1 of Hargraves teaches

[c]onversely, flexible packages employing one-way vent valves do not preserve the coffee volatiles within the package, i.e., one-way vent valves allow gas and volatiles to escape into the atmosphere to prevent ballooning of the package.

Goglio '994 teaches a valve for aromatic products, or products that develop fragrant gases, particularly powder-like products such as coffee and the like, packaged in air-tight containers (column 1, lines 8-11).

In the request for reexamination, it is argued "thus, as the container of Hargraves is used for coffee, it would be obvious to use a top closure like that of Goglio in combination with Hargraves especially if a larger container with a scoopable top opening was desired". (Request, page 37).

During the prosecution of the application which became the 7,169,418 patent, Hargraves was cited against the patent application claims. (Office Action mailed August 24, 2004). In response, applicants amend the claims to include the limitation "wherein said closure has a one-way valve disposed thereon" and argued "that because Hargraves states that such valves are

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costly and often inoperable, Hargraves teaches away from the present invention.” (Remarks filed December 28, 2004, pages 9 and 14). In response to the December 28, 2004 amendment and arguments the examiner stated

Applicant’s arguments, see Amendment filed 28 December 2004, with respect to the rejection of the claims under Hargraves, US patent number 4,966,780 have been fully considered and are persuasive since it is correct that Hargraves does not disclose and does teach away from a one way valve. (Office Action mailed June 15, 2005, page 8).

Accordingly, it would not have been obvious to one having ordinary skill in the art at the time the invention was made to use a top closure like that of Goglio in combination with Hargraves.

V. The request indicates that the Requestor proposes the following rejections:

Claims 1-15, 19-21, 26 and 31-32 based on Vidkjaer in view of Melrose.

Claims 3-4 based on Vidkjaer in view of Melrose, and further in view of Bruke.

Claims 11-13 and 20-21 based on Vidkjaer in view of Melrose, and further in view of Haas.

Claims 20-21 based on Vidkjaer in view of Melrose, and further in view of Encyclopedia.

Claims 16-18 based on Newcomb in view of Vidkjaer, and further in view of Goglio ‘954.

Claim 18 based on Vidkjaer in view of Melrose, and further in view of Goglio ‘954 and Encyclopedia.

Claims 22-25, 27, 29-30, 33-36, 37-43, 44-49 and 50-55 based on Vidkjaer in view of Melrose, and further in view of Hargraves.

Claim 28 based on Vidkjaer in view of Melrose, and further in view of Hargraves and Goglio ‘954.

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Each of the above proposed rejections relies upon at least the combination of Vidkjaer in view of Melrose. For the reasons as set forth below, the above proposed rejections based on Vidkjaer in view of Melrose, considered together, or in view of the additionally cited art are **not adopted**.

Vidkjaer teaches the combination of a dough product based on living yeast which generates gas over time, a closed packaging system for containing said dough product, the packaging system comprising a housing of a material which is essentially impervious to oxygen, valve means operatively associated with the housing for allowing exit of gas from the housing when the gas pressure exceeds a certain minimum value and which closes when said gas pressure drops below the minimum value to prevent the entry of oxygen into the housing and a substantially oxygen-free atmosphere surrounding the dough (column 1, lines 42-52). The presence on the packaging of the one-way valve will allow carbon dioxide to escape from said packaging, however, so that only a small over pressure will build up internally. The overall quality of the dough is improved thanks to the release of the extra gas and other excess volatile compounds (column 2, lines 5-10). The release of carbon dioxide avoids any swelling of the assembly and its explosion. The valve operates as soon as the inside pressure reaches between 3 to 7 mbar above the atmospheric pressure (column 4, line 66 to column 5, line 4).

Melrose teaches a hot-fillable, slender, blow-molded plastic bottle for use in containing hot-filled beverages comprising a blow-molded plastic container having a neck with an upstanding threaded finish, a close-ended base, and a tubular sidewall located between the base and the neck. The sidewall includes, in an alternating pattern, a plurality of circumferentially-spaced, vertically-elongated columns and a plurality of circumferentially-spaced substantially

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smooth-surfaced panels (abstract; column 2, lines 33-40). Each of the panels flexes outwardly to expand the volume of the container during hot-filling, and each of the panels flexes inwardly in response to a reduction in internal volume when the container is capped and permitted to cool. The inward deflection of the panels interactively increases the horizontal cross-sectional convexity of each column. The vertical straightening of each column and the lateral pinching of each column combine to structurally strengthen the container (column 2, lines 51-60). Preferably each column is provided with a plurality of vertically aligned protrusions providing better grip-ability (column 4, lines 64-76; column 5, lines 25-39).

In the request for reexamination, it is argued "Melrose, as noted above has a handle (column 4, lines 64-67 and column 5, lines 25-39). Thus, as it would be obvious to include a handle as taught by Melrose on the Vidkjaer container, especially if the container were made larger and more vertical to hold more coffee."

During the prosecution of the application which became the 7,169,418 patent, Vidkjaer was cited against the patent application claims. (Office Action mailed June 15, 2005). In response, applicants amended the claims to include the limitation "a handle disposed on said body" and argued "Vidkjaer fails to teach a container having a handle disposed on the body thereof." (Remarks filed October 15, 2005, pages 12 and 14). In response to the October 15, 2005 amendment and arguments the examiner cited Ota and argued

Vidkjaer does not disclose a handle disposed on the body of the container. Ota teaches a plastic container wherein said body has a handle disposed thereon (see Figures 1-5, Column 3, lines 31-38 and 13-16), the handle being integral with said body (see column 2, line 35-56 Figures 1-5) and wherein the handle is substantially parallel to said longitudinal axis of said container (see Ota Figures 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to put a handle as taught by Ota on the container as disclosed by Vidkjaer, since both are directed to rigid containers for food and the handle of Ota

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provides aid in holding the container without deforming the container (see Ota, Column 1, lines 36-68 and Column 2, lines 1-2). (Final Rejection mailed November 29, 2005, page 3).

Applicants responded by filing a request for continued examination and amending the claims to include the limitation "wherein said body comprises at least one region of deflection disposed thereon" and argued

Applicants respectfully assert that the Vidkjaer reference fails to teach all of the claims limitations. Vidkjaer, alone or in combination with the other cited references, fails to teach the present containers having regions of deflection, as amended herein. On page 3 of the Office Action the Examiner relies on reference number (3) of Vidkjaer to teach regions of deflection. The Examiner states that "the ribs on the container are for reinforcement and it is interpreted that they would be responsive to an internal or external force on the container." Page 3, paper No. 2. Thus, the Examiner has concluded that the reinforcement ribs in Vidkjaer can serve as both a reinforcement means and a region of deflection.

It is respectfully assert that this is an improper conclusion. The present invention can comprise both ribs and regions of deflection, however, as described herein below, each serves a clearly distinct function. As taught presently, regions of deflection function "to isolate deflection of the container due to either pressures internal to the container or pressures due to forces exerted upon the container." Specification, page 10, lines 15-17. Incorporation of the regions of deflection is believed to allow flexion within the body portion of the container such that the body portion can deform uniformly without catastrophic failure or other defects, such as denting. Specification, page 11, lines 1-4. Moreover, the regions of deflection are designed to have *less resistance to deflection* than the regions of the container proximate to the regions of deflection (emphasis added). Specification, page 11, lines 18-20. In this way, any movements of the container due to changes in pressure preferentially impact the regions of deflection rather than the remainder of the container. *Id.* Lines 20-21. Moreover, the ribs of the present invention are designed to provide structural stability and further restrict movement of the container to the regions of deflection. Specification, page 11, line 27 through page 12, line 14.

In view of the above, it is respectfully asserted that the assumption that the reinforcement ribs of Vidkjaer can both reinforce the container (like the present ribs) and allow flexibility (like the present regions of deflection) is incorrect. The ribs of Vidkjaer cannot provide reinforcement *and* concurrently be less resistant to deflection. Thus, Applicants respectfully assert that it is improper to assume that the ribs of Vidkjaer can serve both functions simultaneously. Therefore,

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Vidkjaer fails to teach the present regions of deflection. The additional cited references do nothing to remedy this deficiency of Vidkjaer. Thus, it is respectfully asserted that Vidkjaer, either alone or in combination, fails to teach all of the claim limitations and, therefore, the Office Action fails to establish a prima facie case of obviousness. (Request for continued examination filed February 28, 2006; pages 9 and 11-12).

In response, the examiner issued a non-final Office Action which maintained the rejection of Vidkjaer in view of Ota for the reasons set forth in the previous Office Action and argued "the claim language only requires a 'region of deflection' and has no flexibility requirement". (Office Action mailed April 4, 2006; page 3).

Applicants responded by amending the claims to include the limitation "said region of deflection having less resistance to flexing than the body of said container proximate to said region of deflection" and argued

Applicants' position is that none of the cited documents suggests the "regions of deflection" employed in the present containers. In response, the Examiner (Office Action, page 3) surmises that the "region of deflection" could encompass reinforcing "ribs", since no flexibility requirement is given.

In response to that position, the claims have now been amended to recite that the region of deflection has less resistance to flexing that [sic] does the proximate region of the container, i.e., is more flexible. This, of course, is the exact opposite of a reinforcing rib. (Remarks filed June 28, 2006; page 14).

A Notice of Allowance was mailed by the Office on September 19, 2006. The Notice of Allowance included an Examiner's Amendment which amended the independent claims to include the limitation "allows flexion and thereby has". Accordingly, each of the 7,169,418 patent claims include the limitation

wherein said body comprises at least one region of deflection disposed thereon, and wherein said region of deflection allows flexion and thereby has less resistance to flexing than the body of said container proximate to said region of deflection.

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The 7,169,418 patent claims were thus distinguished over the teachings of Vidkjaer which does not teach a region of deflection which allows flexion.

In the request for reexamination, it is argued

[w]ith respect to regions of deflection, the panels located between the support ribs of the Old Vidkjaer container are regions of deflection that allow flexion and have less resistance to flexing than the ribs, which are part of the body of the container proximate to the panels. Old Vidkjaer describes the ribs (3) as "reinforcement ribs (3), permitting therefore to reduce further the thickness of the used materials." (column 4, lines 58-60). One of ordinary skill in the art would understand that these ribs reinforce the structure by having more resistance to flexing than the proximate panels, and that the panels are therefore regions of deflection. (Request, page 46).

Requester's arguments to the contrary notwithstanding, Vidkjaer does not "teach regions of deflection that allow flexion." Vidkjaer teaches that the valved package includes "a one-way valve (8) authorizing the carbon dioxide which can be formed during the storage to escape for avoiding any swelling of the assembly and its explosion. This valve operates as soon as the inside pressure reaches between 3 to 7 mbar above the atmospheric pressure." (column 4, line 66 to column 5, line 4; emphasis added). Accordingly, the package of Vidkjaer does not include regions of deflection that allow flexion. The mere fact that the package of Vidkjaer includes reinforcing ribs is not a teaching of, or for that matter, transform the regions adjacent to those ribs into "regions of deflection that allow flexion."

Conclusion

This is an ACTION CLOSING PROSECUTION (ACP).

1) Patent Owner may once file written comments limited to the issues raised in the reexamination proceeding and/or present a proposed amendment to the claims which amendment will be subject to the criteria of 37 CFR 1.116 as to whether it shall be entered and considered. Such comments and/or proposed amendments must be filed within a time period of 30 days or one month (whichever is longer) from the mailing date of this action. Where patent owner files

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comments and/or proposed amendment, the third party requester may once file comments responding to patent owner's submission within 30 days from the date of service of patent owner's submission on third party requester.

2) Appeal cannot be taken from this action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Signed:



Jerry Johnson
Primary Examiner
Central Reexamination Unit
Art Unit 3991



ALAN DIAMOND
PRIMARY EXAMINER



DEBORAH D. JONES
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CENTRAL REEXAMINATION UNIT

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Litigation Search Report CRU 3999

Reexam Control No. 95/000,219

TO: Jerry Johnson
Location: CRU
Art Unit : 3991
Date: 05/23/07

From: James R. Matthews
Location: CRU 3999
MDW 7C71
Phone: (571) 272-4233

Case Serial Number: 95/000,219

JamesR.Matthews@uspto.gov

Search Notes

U.S. Patent No-7,169,418

- 1) I performed a KeyCite Search in Westlaw, which retrieves all history on the patent including any litigation.
- 2) I performed a search on the patent in Lexis CourtLink for any open dockets or closed cases.
- 3) I performed a search in Lexis in the Federal Courts and Administrative Materials databases for any cases found.
- 4) I performed a search in Lexis in the IP Journal and Periodicals database for any articles on the patent.
- 5) I performed a search in Lexis in the news databases for any articles about the patent or any articles about litigation on this patent.

Litigation was not found.

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Westlaw.

Date of Printing: MAY 23,2007

KEYCITE

US PAT 7169418 PACKAGING SYSTEM TO PROVIDE FRESH PACKED COFFEE, Assignee: The Procter and Gamble Company (Jan 30, 2007)

History

- => 1 **PACKAGING SYSTEM TO PROVIDE FRESH PACKED COFFEE, US PAT 7169418, 2007 WL 228295 (U.S. PTO Utility Jan 30, 2007) (NO. 10/155338)**

Patent Family

- 2 **FRESH PACKAGING SYSTEM FOR ROAST AND GROUND COFFEE HAS CONTAINER WITH PROTUBERANCE FORMING RIDGE EXTERNAL TO CONTAINER BODY AND FLEXIBLE CLOSURE REMOVABLY ATTACHED AND SEALED TO PROTUBERANCE, DWPL 2003-041563**

Assignments

- 3 **Action: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). Number of Pages: 007, DATE RECORDED: Aug 21, 2002**

Patent Status Files

- . **Request for Re-Examination, (OG date: Apr 17, 2007)**

Prior Art

- C 5 US PAT 5692630 ADJUSTABLE HANDLE OF FEEDING BOTTLE FOR INFANTS AND CHILDREN, (U.S. PTO Utility 1997)**
- C 6 US PAT 4996826 APPARATUS AND METHOD FOR SEALING A LID ONTO A CONTAINER, Assignee: Continental Can Company, Inc., (U.S. PTO Utility 1991)**
- C 7 US PAT 4941306 APPARATUS AND METHOD FOR SEALING A LID ONTO A CONTAINER, Assignee: Continental Can Company, Inc., (U.S. PTO Utility 1990)**
- C 8 US PAT 4984414 APPARATUS AND METHOD FOR SEALING A LID ONTO A CONTAINER, Assignee: Continental Can Company, Inc., (U.S. PTO Utility 1991)**
- C 9 US PAT 5025123 APPARATUS AND METHOD FOR SEALING A LID ONTO A CONTAINER, Assignee: Continental Can Company, Inc., (U.S. PTO Utility 1991)**
- C 10 US PAT 3908334 APPARATUS FOR HERMETIC CLOSURE OF FILLED CONTAINERS, Assignee: Alupak Ag, (U.S. PTO Utility 1975)**
- C 11 US PAT 4154044 APPARATUS FOR SEALING CANS WITH LIDS UNDER VACUUM, Assignee: Ludwig Schwerdtel GmbH, (U.S. PTO Utility 1979)**
- C 12 US PAT 4896787 ARTICLE WITH RESILIENT HINGES BECOMING RIGID UNDER TENSION, Assignee: Genus International, (U.S. PTO Utility 1990)**
- C 13 US PAT 4047473 ASSEMBLY SYSTEM FOR CONTAINER FLEXIBLE END CLOSURES, Assignee: Sonoco Products Company, (U.S. PTO Utility 1977)**
- C 14 US PAT 4890752 BIAXIAL-ORIENTATION BLOW-MOLDED BOTTLE- SHAPED CONTAINER WITH LATERALLY EXTENDING GRIP RIBS, Assignee: Yoshino Kogyosho Co. Ltd., (U.S. PTO Utility 1990)**
- C 15 US PAT 5199587 BIAXIAL-ORIENTATION BLOW-MOLDED BOTTLE- SHAPED CONTAINER WITH AXIAL RIBS, Assignee: Yoshino Kogyosho Co., Ltd., (U.S. PTO Utility 1993)**

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- C 16 US PAT 5199588 BIAXIALLY BLOW-MOLDED BOTTLE-SHAPED CONTAINER HAVING PRESSURE RESPONSIVE WALLS, Assignee: Yoshino Kogyosho Co., Ltd., (U.S. PTO Utility 1993)
- C 17 US PAT 5690244 BLOW MOLDED CONTAINER HAVING paneled SIDE WALL, Assignee: Plastipak Packaging, Inc., (U.S. PTO Utility 1997)
- C 18 US PAT D343794 BOTTLE, Assignee: The Procter & Gamble Company, (U.S. PTO Design 1994)
- C 19 US PAT 5217133 CAN CONSTRUCTION WITH WALL INDENTATION, Assignee: Wellesley Research Associates, Inc., (U.S. PTO Utility 1993)
- C 20 US PAT 4506600 CANNING APPARATUS, Assignee: Nestec, S.A., (U.S. PTO Utility 1985)
- C 21 US PAT 5152419 CAP FOR RESERVE TANKS, Assignee: Jidosha Kiki Co., Ltd., (U.S. PTO Utility 1992)
- C 22 US PAT 4836376 CASE OF MOLDED SYNTHETIC MATERIAL FOR FLAT, THIN OBJECTS, Assignee: Gefitec S.A., (U.S. PTO Utility 1989)
- C 23 US PAT 5785196 CLOSURE FOR A PRESSURIZED CONTAINER, Assignee: Rexam Closures Inc., (U.S. PTO Utility 1998)
- C 24 US PAT 4896782 CLOSURE WITH INSERT FOR ENHANCED SEALING, Assignee: Sunbeam Plastics Corporation, (U.S. PTO Utility 1990)
- C 25 US PAT 3077409 COFFEE PACKAGE, (U.S. PTO Utility 1963)
- C 26 US PAT 3821427 COFFEE PACKAGE, Assignee: General Foods Corporation, (U.S. PTO Utility 1974)
- C 27 US PAT 5224613 COLLAPSIBLE CONTAINER, (U.S. PTO Utility 1993)
- C 28 US PAT 5174458 : COLLAPSIBLE CONTAINER, Assignee: Colgate-Palmolive Company, (U.S. PTO Utility 1992)
- C 29 US PAT 5201438 COLLAPSIBLE FACETED CONTAINER, (U.S. PTO Utility 1993)
- C 30 US PAT 5833115 CONTAINER, Assignee: Dean Foods Company, (U.S. PTO Utility 1998)
- C 31 US PAT 5667094 CONTAINER AND CLOSURE ASSEMBLY, Assignee: West Penn Plastics, (U.S. PTO Utility 1997)
- C 32 US PAT 5788112 CONTAINER AND END CLOSURE ADAPTED FOR EVACUATING AND BACK-FLUSHING OF GASES DURING CLOSING, Assignee: Sonoco Products Company, (U.S. PTO Utility 1998)
- C 33 US PAT 5251770 CONTAINER AND PRESSURE SEALING CLOSURE COMBINATION, Assignee: Broadway Companies, Inc., (U.S. PTO Utility 1993)
- C 34 US PAT 4632266 CONTAINER CAP, (U.S. PTO Utility 1986)
- C 35 US PAT 5921425 : CONTAINER CAP WITH SPRING LOADED COVER, (U.S. PTO Utility 1999)
- C 36 US PAT 3151757 CONTAINER CLOSURE, (U.S. PTO Utility 1964)
- C 37 US PAT 5139165 CONTAINER FOR PHOTOGRAPHIC FILM CARTRIDGE, Assignee: Fuji Photo Film Co., Ltd., (U.S. PTO Utility 1992)
- C 38 US PAT 4489537 CONTAINER FOR STORING FOOD AND PROCESS AND APPARATUS FOR MAKING THAT CONTAINER, Assignee: International Paper Company, (U.S. PTO Utility 1984)
- C 39 US PAT 5178290 CONTAINER HAVING COLLAPSE PANELS WITH INDENTATIONS AND REINFORCING RIBS, Assignee: Yoshino-Kogyosho Co., Ltd., (U.S. PTO Utility 1993)
- C 40 US PAT 5244113 CONTAINER LID ASSEMBLY, Assignee: Northwestern Bottle Company, (U.S. PTO Utility 1993)
- C 41 US PAT 5944211 : CONTAINER SYSTEM INCLUDING AN AIR EVACUATION VALVE, Assignee: Anchor Hocking Plastics/Plastics Inc., (U.S. PTO Utility 1999)
- C 42 US PAT 5002197 CONTAINER WITH SLIDING SEAL, Assignee: Sage Products, Inc., (U.S. PTO Utility 1991)
- C 43 US PAT 5740934 CONTAINER WITH VERTICAL STIFFENING IN CENTRAL PANEL, Assignee: Plastic Technologies, Inc., (U.S. PTO Utility 1998)
- C 44 US PAT 4892220 CONTAINER/DISPENSER FOR WET WIPES AND THE LIKE, Assignee: Plastofilm Industries, Inc., (U.S. PTO Utility 1990)
- C 45 US PAT 5040698 CONTAINERS, Assignee: CMB Foodcan plc, (U.S. PTO Utility 1991)

- C 46 US PAT 4856674 COVER FOR PLASTIC CONTAINER, Assignee: Reliance Products, Division of Larson, (U.S. PTO Utility 1989)
- C 47 US PAT 5692638 CREASED END TO ENHANCE COMPOSITE CAN VENTING, Assignee: The Pillsbury Company, (U.S. PTO Utility 1997)
- C 48 US PAT 5515994 DEGASSING VALVE FOR AROMATIC PRODUCTS, SUCH AS COFFEE AND SIMILAR PRODUCTS, (U.S. PTO Utility 1996)
- C 49 US PAT 3944127 DISPENSING CARTON HAVING A BAG-LIKE LINER, Assignee: Aktiebolaget Platmanufaktur, (U.S. PTO Utility 1976)
- C 50 US PAT 4821899 DISPENSING CLOSURE, Assignee: Owens-Illinois Closure Inc., (U.S. PTO Utility 1989)
- C 51 US PAT 4742928 DISPENSING CLOSURE WITH ARTICULATED FLIP- TOP CAP, Assignee: W. Braun Company, (U.S. PTO Utility 1988)
- C 52 US PAT 4402435 DISPENSING TYPE CAP CLOSURE, (U.S. PTO Utility 1983)
- C 53 US PAT 4754896 DISPOSABLE LEAK PROOF FILTER CONTAINER, Assignee: Brunswick Corporation, (U.S. PTO Utility 1988)
- C 54 US PAT 6733803 DOUGH CONTAINING, VALVED PACKAGE, Assignee: Nestec S.A., (U.S. PTO Utility 2004)
- C 55 US PAT 5779082 EASILY-CLEANED REUSABLE LID INCLUDING AN EVACUATING PUMP, Assignee: Inventa Laboratory, Inc., (U.S. PTO Utility 1998)
- C 56 US PAT 3756448 EASY OPENING STRUCTURE, Assignee: Continental Group, Inc., (U.S. PTO Utility 1973)
- C 57 US PAT 5688544 EASY OPENING VENTABLE CLOSURE FOR SEALED PARTICULATE PRODUCT PACKAGE, Assignee: Kraft Foods, Inc., (U.S. PTO Utility 1997)
- C 58 US PAT 4557398 END CLOSURE STRUCTURE FOR A CONTAINER, Assignee: International Paper Company, (U.S. PTO Utility 1985)
- C 59 US PAT 5285954 FLEXIBLE MATERIAL CONTAINER, (U.S. PTO Utility 1994)
- C 60 US PAT 4912048 FLUTED CULTURE VESSEL, Assignee: Difco Laboratories, (U.S. PTO Utility 1990)
- C 61 US PAT 5242696 FOOD PACKAGE WITH RESILIENTLY BIASED LID, Assignee: Kraft General Foods, Inc., (U.S. PTO Utility 1993)
- C 62 US PAT 5562230 GREASED END TO ENHANCE COMPOSITE CAN VENTING, Assignee: The Pillsbury Company, (U.S. PTO Utility 1996)
- C 63 US PAT 5598941 GRIP PANEL STRUCTURE FOR HIGH-SPEED HOT- FILLABLE BLOW-MOLDED CONTAINER, Assignee: Graham Packaging Corporation, (U.S. PTO Utility 1997)
- C 64 US PAT 4623071 HINGE FOR BLOW-MOLDED CASES, Assignee: W. R. Grace & Co., (U.S. PTO Utility 1986)
- C 65 US PAT 5515993 HINGED SEMI-RIGID CONTAINER HAVING WALL STIFFENING MEANS, Assignee: Tenneco Plastics Company, (U.S. PTO Utility 1996)
- C 66 US PAT 5341946 HOT FILL PLASTIC CONTAINER HAVING REINFORCED PRESSURE ABSORPTION PANELS; Assignee: Hoover Universal, Inc., (U.S. PTO Utility 1994)
- C 67 US PAT 4779756 INJECTION-MOULDED MICROFILM CONTAINER, Assignee: Agfa-Gevaert N.V., (U.S. PTO Utility 1988)
- C 68 US PAT 4013811 LAMINATED ANODE, Assignee: Oscar Mayer & Co. Inc., (U.S. PTO Utility 1977)
- C 69 US PAT 5582314 LATCH DEVICE FOR CONTAINER CAP ASSEMBLY, Assignee: FloTool International, Inc., (U.S. PTO Utility 1996)
- C 70 US PAT 5730310 LID OPENING MECHANISM SYSTEM, (U.S. PTO Utility 1998)
- C 71 US PAT 5259522 LINERLESS CLOSURE, Assignee: H-C Industries, Inc., (U.S. PTO Utility 1993)
- C 72 US PAT 5908127 : LOAD BEARING POLYMERIC CONTAINER, Assignee: Tropicana Products, Inc., (U.S. PTO Utility 1999)
- C 73 US PAT 3127064 LOCKABLE CONTAINER CLOSURE, (U.S. PTO Utility 1964)
- C 74 US PAT 4723681 : METALLIC CONTAINER, Assignee: Thomassen & Drijver-Verblifa, (U.S. PTO Utility 1988)

- C 75 US PAT 4494363 METHOD AND APPARATUS FOR ASEPTICALLY FILLING CONTAINERS, Assignee: FranRica Mfg. Inc., (U.S. PTO Utility 1985)
- C 76 US PAT 4833864 METHOD AND APPARATUS FOR CLOSING CONTAINERS, (U.S. PTO Utility 1989)
- C 77 US PAT 6861086 METHOD OF PROCESSING ROASTED COFFEE, Assignee: 1361215 Ontario, Inc., (U.S. PTO Utility 2005)
- C 78 US PAT 4909022 NEST FOR CONTAINER CLOSING MACHINE, Assignee: Continental Can Company, Inc., (U.S. PTO Utility 1990)
- C 79 US PAT 5584409 ONE DIRECTION VENTILATION VALVES, (U.S. PTO Utility 1996)
- C 80 US PAT 5727881 OVERPRESSURE VALVE FOR A PACKAGING CONTAINER, Assignee: Robert Bosch, GmbH, (U.S. PTO Utility 1998)
- C 81 US PAT 3173571 PACKAGE, (U.S. PTO Utility 1965)
- C 82 US PAT 5356025 PACKAGING DEVICE FOR COSMETIC PRODUCTS, Assignee: L'Oreal, (U.S. PTO Utility 1994)
- C 83 US PAT 4966780 PACKAGING OF FRESH ROASTED COFFEE EXHIBITING IMPROVED AROMA RETENTION, Assignee: The Procter & Gamble Company, (U.S. PTO Utility 1990)
- C 84 US PAT 5100017 PACKING CAN, Assignee: Toyo Seikan Kaisha Ltd., (U.S. PTO Utility 1992)
- C 85 US PAT 5213230 PAINT CAN SEALER, (U.S. PTO Utility 1993)
- C 86 US PAT 5279433 PANEL DESIGN FOR A HOT-FILLABLE CONTAINER, Assignee: Continental Pet Technologies, Inc., (U.S. PTO Utility 1994)
- C 87 US PAT 2567218 PARTITIONED CIGARETTE CASE WITH SPRING OPERATED CLOSURES, (U.S. PTO Utility 1951)
- C 88 US PAT 5067622 PET CONTAINER FOR HOT FILLED APPLICATIONS, Assignee: Van Dorn Company, (U.S. PTO Utility 1991)
- C 89 US PAT 4413748 PINCH CAP, Assignee: Kessler Products Co., Inc., (U.S. PTO Utility 1983)
- C 90 US PAT 5261543 PLASTIC BOTTLE FOR CONTAINING BOTH UNDER- PRESSURE AND NON UNDER-PRESSURE LIQUIDS, Assignee: Sipa S.p.A., (U.S. PTO Utility 1993)
- C 91 US PAT 5704504 PLASTIC BOTTLE FOR HOT FILLING, Assignee: Rhodia-Ster Fipack S.A., (U.S. PTO Utility 1998)
- C 92 US PAT 3393818 PLASTIC CAP HAVING PRESSURE VENTING FEATURES, (U.S. PTO Utility 1968)
- C 93 US PAT 5803286 PLASTIC CLOSURE CAP WITH EARLY VENTING INNER SEAL, Assignee: Crown Cork AG, (U.S. PTO Utility 1998)
- C 94 US PAT 5988417 PLASTIC CONTAINER HAVING IMPROVED RIGIDITY, Assignee: Crown Cork & Seal Technologies, (U.S. PTO Utility 1999)
- C 95 US PAT 5499730 PLASTIC CONTAINER HAVING REINFORCING DEPRESSIONS, Assignee: Lever Brothers Company, (U.S. PTO Utility 1996)
- C 96 US PAT 3269588 PLASTIC OVERCAP, (U.S. PTO Utility 1966)
- C 97 US PAT 5320232 POSITIVE-SEALING BOTTLE CAP, (U.S. PTO Utility 1994)
- C 98 US PAT 5582315 POUR SPOUT CLOSURE WITH HANDLE, Assignee: Innovative Molding, Inc., (U.S. PTO Utility 1996)
- C 99 US PAT 4883193 POWDER PROOF RECLOSABLE LID FOR CONTAINERS, Assignee: Akerlund & Rausing Licens AB, (U.S. PTO Utility 1989)
- C 100 US PAT 3250426 PRE-PUNCTURING TAB, (U.S. PTO Utility 1966)
- C 101 US PAT 4756443 PRESSURE-PACKING CONTAINER WITH EASY-TO- OPEN CLOSURE, Assignee: Vilamonte Research & Development Co., (U.S. PTO Utility 1988)
- C 102 US PAT 4993602 PRESSURE RELIEF DEVICE FOR A PRESSURIZED CONTAINER, Assignee: PRD, Inc., (U.S. PTO Utility 1991)
- C 103 US PAT 6663284 PRESSURE SENSITIVE ONE-WAY VALVE, Assignee: 1361215 Ontario Inc., (U.S. PTO Utility 2003)
- C 104 US PAT 4993572 PRESSURE VENTING CLOSURE, Assignee: Anchor Hocking Corporation, (U.S. PTO Utility 1991)
- C 105 US PAT 5445291 PRESSURIZED PACKAGE FOR A PARTICULATE MATERIAL EMPLOYING A VENTING MEMBER, Assignee: The Procter & Gamble Company, (U.S. PTO Utility 1995)

- C 106 US PAT 4691821 RECEPACLE WITH AT LEAST TWO CHAMBERS FOR ACCOMMODATING LIQUIDS AND PULVERIZED SUBSTANCE, ESPECIALLY COFFEE POWDER, MILK AND/OR SUGAR, Assignee: Folkmar; Jan, (U.S. PTO Utility 1987)
- C 107 US PAT 5443175 RESEALABLE CLOSURE DEVICE, Assignee: Crown Cork & Seal Company, Inc., (U.S. PTO Utility 1995)
- C 108 US PAT 5123554 RETORTABLE PLASTIC CONTAINERS, Assignee: Abbott Laboratories, (U.S. PTO Utility 1992)
- C 109 US PAT 4890757 RIBBED CONTAINER WITH CLOSURE, (U.S. PTO Utility 1990)
- C 110 US PAT 4315578 SAFETY CLOSURE CAP WITH VENT, Assignee: The Drackett Company, (U.S. PTO Utility 1982)
- C 111 US PAT 5806703 SAFETY VALVE DEVICE FOR PACKAGINGS CONTAINING PRODUCTS TO BE COOKED, COOLED, REHEATED OR DEGASSED, (U.S. PTO Utility 1998)
- C 112 US PAT 3381872 SANITARY PACKAGES, (U.S. PTO Utility 1968)
- C 113 US PAT 4997097 SCREW CLOSURE FOR BOTTLES WITH VENTING MEANS, Assignee: Jacob Berg GmbH & Co., (U.S. PTO Utility 1991)
- C 114 US PAT 5363978 SEAL WITH VENT, Assignee: Dart Industries Inc., (U.S. PTO Utility 1994).
- C 115 US PAT 5242079 SEALABLE COVER FOR AN OPEN BEVERAGE CONTAINER, Assignee: Three Co., (U.S. PTO Utility 1993)
- C 116 US PAT 5972292 : SEALING AND VENTING SYSTEM FOR OXIDATIVE DISINFECTION OF CONTACT LENSES, Assignee: Bausch & Lomb Incorporated, (U.S. PTO Utility 1999)
- C 117 US PAT 5031675 SELF-RESEALABLE DISPENSING STOPPER FOR CONTAINER FOR FLOWABLE MATERIAL, Assignee: Rixinell AB, (U.S. PTO Utility 1991)
- C 118 US PAT 4210255 SELF-VENTING END UNIT FOR PRESSURE PACKAGING, Assignee: The Continental Group, Inc., (U.S. PTO Utility 1980)
- C 119 US PAT 5464969 SELF-VENTING MICROWAVEABLE PACKAGE AND METHOD OF MANUFACTURE, Assignee: Curwood, Inc., (U.S. PTO Utility 1995)
- C 120 US PAT 3067900 SELF-VENTING PRESSURE-RELEASE SEALING CAP, (U.S. PTO Utility 1962)
- C 121 US PAT 5085331 SPOONING CLOSURE, Assignee: Magenta Corporation, (U.S. PTO Utility 1992)
- C 122 US PAT 5303834 SQUEEZABLE CONTAINER RESISTANT TO DENTING, Assignee: Continental PET Technologies, Inc., (U.S. PTO Utility 1994)
- C 123 US PAT 5002199 STACKABLE BOTTLE, Assignee: Reid Valve Company, Inc., (U.S. PTO Utility 1991)
- C 124 US PAT 5029723 STORAGE CONTAINER WITH PIVOTABLE COVER, (U.S. PTO Utility 1991)
- C 125 US PAT 5381910 SYNTHETIC RESIN BOTTLE-SHAPED CONTAINER, Assignee: Yoshino Kogysho Co., Ltd., (U.S. PTO Utility 1995)
- C 126 US PAT 4463869 TAMPER-EVIDENT SPICE CAN LID, Assignee: Continental Plastics, Inc., (U.S. PTO Utility 1984)
- C 127 US PAT 5217128 THERMOPLASTIC BOTTLE WITH REINFORCING RIBS, Assignee: Johnson Enterprises, Inc., (U.S. PTO Utility 1993)
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- C 129 US PAT 4303176 UNITARY CONTAINER WITH IMPROVED LID ORIENTATION AND LOCKING MEANS, Assignee: Owens-Illinois, Inc., (U.S. PTO Utility 1981)
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UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

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January 30, 2007

Packaging system to provide fresh packed coffee

REEXAM-LITIGATE: March 8, 2007 - Reexamination requested March 8, 2007 by Marvin Petry, Esq., Stites & Harbison, PLLC, Alexandria, VA;; Reexamination No. 95/000,219 (O.G. April 17, 2007) Ex. Gp.: 3993

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ASSIGNEE-PRE-ISSUE: August 21, 2002 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., PROCTER & GAMBLE COMPANY, THE 6090 CENTER HILL ROAD CINCINNATI OHIO 45224, Reel and Frame Number: 013217/0256

ASSIGNEE-AT-ISSUE: The Procter and Gamble Company, Cincinnati, Ohio, United States (US), United States company or corporation (02)

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Photographs of a 48 oz. (1.36kg) bottle for Chi--Chi's Fiesta Salsa, sold by Chi--Chi's, Inc.,
and Hormel Foods, LLC. Photographs labeled and attached.

CORE TERMS: container, coffee, overcap, protuberance, closure, seal, aroma, layer, roast, grams, rib, deflection, packaging, dome, annular, handle, user, oxygen, non-limiting, pounds, peelable, panel, polyethylene, outward, sealing, volume, compound, fresh, region, skill

ENGLISH-ABST:

A fresh packaging system for roast and ground coffee having a top load capacity of at least about 16 pounds (7.3 Kg) comprising a container with a closed bottom, an open top, and a body enclosing a perimeter between the bottom and the top. A protuberance is continuously disposed around the perimeter of the body proximate to the top and forms a ridge external to the body. A flexible closure is removeably attached and sealed to the protuberance so that the closure seals the interior volume of the container. The container bottom and container body are constructed from a material having a tensile modulus number ranging from at least about 35,000 to at least about 650,000 pounds per square inch (at least about 2,381 to at least about 44,230 atm).

NO-OF-CLAIMS: 55

EXMPL-CLAIM: 1

NO-OF-FIGURES: 13

NO-DRWNG-PP: 7

PARENT-PAT-INFO:

PRIORITY

[0001]This application claims priority to Provisional Application No. 60/295,666 filed on Jun. 4, 2001, the entirety of which is hereby incorporated by reference.

SUMMARY:

FIELD OF THE INVENTION

[0002]The present invention relates to a fresh packaging system useful for packing fresh roast and ground coffee. The present invention still further relates to a more convenient, lightweight, and handled container that provides increased strength per mass unit of plastic for the transport of freshly roast and ground coffee. More particularly, the present invention relates to a method for providing a consumer with a fresher packed roast and ground coffee that provides a more pleasant aroma upon opening of the package and a perceived longer-lasting aroma after repeated and sustained openings.

BACKGROUND OF THE INVENTION

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[0003] Packages such as cylindrical cans for containing a particulate product under pressure, such as roast and ground coffee, are representative of various articles to which the present invention is applicable. It is well known in the art that freshly roasted and ground coffee evolves substantial amounts of oils and gases, such as carbon dioxide, particularly after the roasting and grinding process. Therefore, roast and ground coffee is usually held in storage bins prior to final packing to allow for maximum off gassing of these volatile, natural products. The final coffee product is then placed into a package and subjected to a vacuum packing operation.

[0004] Vacuum packing the final coffee product results in reduced levels of oxygen in the headspace of the package. This is beneficial, as oxygen reactions are a major factor in the staling of coffee. A common package used in the industry is a cylindrical, tin-plated, and steel stock can. The coffee is first roasted, and then ground, and then vacuum packed within a can, which must be opened with a can opener, common to most households.

[0005] Packing coffee immediately after roasting and grinding provides substantial process savings, as the coffee does not require storage to complete the off-gas process. Also, the off-gas product usually contains high quantities of desirable volatile and semi-volatile aromatic compounds that easily volatilize and prevent the consumer from receiving the full benefit of the coffee drinking process. Furthermore, the loss of these aromatic compounds makes them unavailable for release in a standard container; thereby preventing the consumer from the full reception of the pleasurable burst of aroma of fresh roast and ground coffee. This aroma burst of volatile compounds is much more perceptible in a pressurized package than in a vacuum packed package.

[0006] It is therefore an object of the present invention to provide a handled package for roast and ground coffee that provides a lighter weight, fresher packing, easier-opening, peelable seal, and "burpable" closure alternative to a standard heavy can.

SUMMARY OF THE INVENTION

[0007] The present invention relates to a fresh packaging system for roast and ground coffee. The packaging system comprises a container with a closed bottom, an open top, and a body enclosing a perimeter between the bottom and the top. The top, bottom, and body together define an interior volume. A protuberance is continuously disposed around the perimeter of the body proximate to the top and forms a ridge external to the body. A flexible closure is removably attached and sealed to the protuberance. The container bottom and container body are constructed from a material having a tensile modulus number ranging from at least about 35,000 pounds per square inch (2,381 atm) to at least about 650,000 pounds per square inch (44,230 atm). The container has a top load capacity of at least about 16 pounds (7.3 Kg).

[0008] The present invention also relates to a method for packing coffee using the fresh packaging system for roast and ground coffee. The method steps include filling the container with roast and ground coffee, flushing the container with an inert gas, and, sealing the container with the flexible closure.

[0009] The present invention also relates to an article of manufacture that provides the end user with beneficial coffee aroma characteristics. The article comprises a closed bottom, an open top, and a body forming an enclosed perimeter between said bottom and top. The bottom, top, and body together define an interior volume. The body includes a protuberance continuously disposed around the perimeter of the body proximate to the top. The bottom and body are constructed from a polyolefin. A flexible closure is removably attached to the protuberance so that the closure forms a seal with the protuberance. Roast and ground

coffee is contained within the interior volume, and, the article of manufacture exhibits an overall coffee aroma value of at least about 5.5.

DRWDESC:

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]FIG. 1 is an exploded perspective view of a preferred embodiment of the fresh packing system in accordance with the present invention;

[0011]FIG. 2 is an exploded perspective view of an alternative embodiment of the fresh packing system;

[0012]FIG. 3 is a cross-sectional view of an exemplary closure and one-way valve assembly for the fresh packing system;

[0013]FIG. 4 is a cross-sectional view of an exemplary overcap assembly for a fresh packing system;

[0014]FIG. 5 is an expanded, cross-sectional view of the region labeled 5 in FIG. 4 of the overcap in an applied position;

[0015]FIG. 6 is an expanded, cross-sectional view of the region labeled 5 in FIG. 4 of the overcap in an expanded position;

[0016]FIG. 7 is an elevational view of an alternative embodiment of the fresh packing system;

[0017]FIG. 7A is a bottom planar view of the embodiment of FIG. 7;

[0018]FIG. 8 is a perspective view of an alternative embodiment of the fresh packing system;

[0019]FIG. 8a is a perspective view of an alternative embodiment of the fresh packing system;

[0020]FIG. 9 is an isometric view of an alternative exemplary overcap for use with a fresh packing system;

[0021]FIG. 9a is a bottom planar view of the alternative exemplary overcap of FIG. 9; and,

[0022]FIG. 10 is a cross-sectional view of the region labeled 10 in FIG. 9 in contact with a fresh packaging system

DETDESC:

DETAILED DESCRIPTION OF THE INVENTION

[0023]The present invention is related to a fresh packaging system for roast and ground coffee. The packaging system comprises a container comprising a closed bottom, and open top and a body having an enclosed perimeter between the bottom and the top where the top, bottom, and body together define an interior volume. A flexible closure is removably attached

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and sealed to a protuberance disposed around the perimeter of the body proximate to the top. The container bottom and body are constructed from a material having a tensile modulus number ranging from at least about 35,000 (2,381 atm) pounds per square inch to at least about 650,000 pounds per square inch (44,230 atm), which provides a top load capacity of at least about 16 pounds (7.3 Kg).

[0024]The invention is more generally related to a method for the packing of coffee using the container of the present invention. The method steps include filling the container system described above with roast and ground coffee, flushing the container with an inert gas, and, sealing the container with a flexible closure.

[0025]The invention is also related to an article of manufacture that provides the end user with beneficial coffee aroma characteristics. The article comprises a closed bottom, an open top, and a polyolefin body forming an enclosed perimeter between said bottom and top together defining an interior volume. The body includes a protuberance continuously disposed around the perimeter of the body proximate to the top. A flexible closure is removably attached to the protuberance so that the closure forms a seal with the protuberance. Roast and ground coffee is contained within the interior volume and, the article of manufacture has an overall coffee aroma value of at least about 5.5. (A method for measuring the overall coffee aroma value is described in the Test Methods section, infra.)

[0026]The purpose of the present invention, inventive method, and article of manufacture is to provide a useful benefit to the user that includes, but is not limited to, providing a roast and ground coffee with a perceived more fresh and aromatic flavor. Such a container system of the present invention also provides an easy to use and low cost means of delivery of a roast and ground coffee to an end user.

[0027]Preferably, but optionally, the container has a handle element disposed thereon. More preferably the handle element is integral with the body of the container. This handle element facilitates gripping of the container system by the end user. This gripping is particularly useful for users with small hands or hands in a weakened condition due to illness, disease, or other medical malady.

[0028]Optionally, but preferably, the present invention features a one-way valve located within the closure to release excess pressure built up within the container due to the natural off gas process of roast and ground coffee. It is also believed that changes in external temperature and altitude can also cause the development of pressure internal to the container. The one-way valve is selected to release coffee off gas in excess of a predetermined amount however, remains sealed after such a release, thereby retaining an aromatically pleasing amount of off gassed product within the container.

[0029]Another optional, but preferred, feature of the present invention is an overcap placed over the closure. The overcap can comprise a dome, or cavity, that allows positive, outward deformation of the closure due to the pressure build-up within the container. The overcap is also air tight and flexible to allow for easy application in manufacture, either with, or without, a closure, and by the end user, after end user removal, of a closure. The flexible overcap also allows the end user to remove excess air by compressing the dome, thereby releasing excess ambient air from the previously open container (burping). The overcap also provides for a tight seal against the rim of the container after opening by the end user. This tight seal prevents pollution of the rim, resulting in an undesirable expectoration of the overcap after application. The overcap can also optionally allow for stacking several container embodiments when the closure and the dome portion of the overcap are at a point of maximum deflection. The overcap also optionally has a vent to allow for easy removal of vented off gas product trapped between the closure and overcap assemblies, but still allows for "burping."

[0030]Also, the overcap can have a rib disposed proximate to and along the perimeter of the

overcap defining an inner dome portion and an outer skirt portion. The rib forms a hinge-like structure so that outward deflection of the inner dome portion caused by deflection of the closure due to coffee off gassing causes the rib to act as a cantilever for the skirt portion. Thus, outward deflection of the dome portion causes the skirt portion to deflect inwardly on an outer portion of the container wall, resulting in an improved seal characteristic and improves retaining forces of the overcap with respect to the container.

The Container

[0031]Referring to FIG. 1, fresh packaging system 10, generally comprises a container 11 made from a compound, for example, a polyolefin. Exemplary and non-limiting compounds and polyolefins that can be used for producing the present invention include polycarbonate, low-density polyethylene, high-density polyethylene, polyethylene terephthalate, polypropylene, polystyrene, polyvinyl chloride, co-polymers thereof, and combinations thereof. It should be realized by one skilled in the art that container 11 of the present invention can take any number of shapes and be made of any number of suitable materials. Container 11 generally comprises an open top 12, a closed bottom 13, and a body portion 14. Open top 12, closed bottom 13, and body portion 14 define an inner volume in which a product is contained. Also, closed bottom 13 and body portion 14 are formed from a material having a tensile modulus ranging from at least about 35,000 pounds per square inch (2,381 atm) to at least about 650,000 pounds per square inch (44,230 atm), more preferably from at least about 40,000 pounds per square inch (2,721 atm) to at least about 260,000 pounds per square inch (17,692 atm), and most preferably ranging from at least about 95,000 pounds per square inch (6,464 atm) to at least about 150,000 pounds per square inch (10,207 atm). Tensile modulus is defined as the ratio of stress to strain during the period of elastic deformation (i.e., up to the yield point). It is a measure of the force required to deform the material by a given amount and is thus, a measure of the intrinsic stiffness of the material.

[0032]It is preferred that bottom portion 13 be disposed concave inwardly, or recessed, towards the inner volume so that undesirable deflections caused by pressure increases within the inner volume are minimized. If the bottom 13 expands outwardly sufficiently, causing the bottom 13 to concave outwardly, then the container 11 will develop what is generally referred to in the art as "rocker bottom." That is, if the bottom 13 deflects outwardly so that the container system 10 will not be stable while resting on a flat surface, fresh packaging system 10 will tend to rock back and forth.

[0033]As shown in FIG. 7A, a plurality of protrusions 40 can be disposed on the closed bottom 13 of container 11 about the longitudinal axis of container 11. In a preferred embodiment, protrusions 40 form an oblique angle with the closed bottom 13 of container 11. If the container 11 assumes a cylindrical shape, it is believed that protrusions 40 can be rectilinearly disposed about the diameter of the closed bottom 13 of container 11. However, one of skill in the art would realize that protrusions 40 could be disposed on the closed bottom 13 of container 11 in any geometrical arrangement. Without wishing to be bound by theory, it is believed that protrusions 40 can protrude past the geometry of the closed bottom 13 of container 11 upon an outward deflection of the closed bottom 13 of container 11. In this way container 11 can maintain a stable relationship with other surfaces should "rocker bottom" be realized upon the development of an outward pressure from within container 11. While the preferred embodiment utilizes four protrusions 40 disposed on closed bottom 13, it should be realized by one of skill in the art that virtually any number of protrusions 40 could be disposed on closed bottom 13 to yield a stable structure upon outward deflection of closed bottom 13. Additionally, protrusions 40 could be a square, triangular, elliptical, quad-lobe, pentaloid, trapezoidal, arranged in multiply nested configurations, provided in an annular ring about closed bottom 13, and combinations thereof.

[0034]Again referring to FIG. 7A, an annular ring 42, or any other raised geometry, including interrupted geometrical configurations, can be disposed on closed bottom 13 of container 11. Annular ring 42 could be dimensioned to facilitate nesting, or stacking, of multiple embodiments of containers 11. In other words, annular ring 42 could be designed to provide serial stacking of a container 11 onto the overcap 30 of the preceding, or lower, container 11. Without wishing to be bound by theory, it is believed that the facilitation of nesting by the use of annular ring 42 disposed on closed bottom 13 of container 11 provides enhanced structural stability.

[0035]It is also believed that the closed bottom 13 of container 11 could be designed, in what is known to those of skill in the art, as a quad lobe, or pentaloid. Again, without desiring to be bound by theory, it is believed that such a quad lobe, or pentaloid, design could provide enhanced ability to resist the deformation of closed bottom 13 of container 11 due to internal pressures developed within container 11.

[0036]Referring again to FIG. 1, container 11 can be cylindrically shaped with substantially smooth sides. Handle portions 15 are respectively formed in container body portion 14 at arcuate positions. A plurality of anti-slip strips 16 can be formed at a predetermined interval within handle portions 15. Handle portions 15 are formed as would be known to one skilled in the art to provide a gripping surface at a most efficacious position to enable users with small hands or debilitating injuries or maladies to grip container portion 11 with a minimum of effort. Further, container 11 can be readily grasped by hand due to the configuration described above. Additionally, container 11 can have a protuberance 17 in the form of a rim like structure disposed at the open end of container 11. Protuberance 17 can provide a surface with which to removeably attach closure 18 and provide a locking surface for skirt portion 32 of overcap 30.

[0037]In an alternative embodiment as shown in FIG. 2, container 11a is parallelepiped shaped with substantially smooth sides. Handle portions 15a are respectively formed in container body portion 14a at arcuate positions. A plurality of gripping projections 16a are formed at a predetermined interval within handle portions 15a. Corresponding closure 18a and overcap 30a are fitted on container 11a as would be known to one skilled in the art.

[0038]In an alternative embodiment, as shown in FIG. 7, handle portions 15b can preferably be symmetrical. Without desiring to be bound by theory, it is believed that symmetrical handle portions 15b could prevent inversion of the handle portions 15b upon an increase in pressure from within container 11b. It is believed that symmetrically incorporated handle portions 15b provides for the uniform distribution of the internal pressure, developed within container 11, throughout handle portion 15b.

[0039]As is also shown in the alternative embodiment of FIG. 7, all portions of handle portions 15b are presented as either parallel to the longitudinal axis of container 11b or perpendicular to the longitudinal axis of container 11b. Without desiring to be bound by theory, it is believed that handle portions 15b, arranged to provide all component portions of handle portions 15b to be either parallel or perpendicular to the longitudinal axis of container 11b, could be less susceptible to bending forces due to internal pressures developed within container 11b. This could aid in the prevention of catastrophic failure of the container due to the pressures generated internally to container 11b.

[0040]Further, providing container 11b with handle portions 15b in a recessed configuration with respect to the body portion 14b of container 11b could require less force from the end user to maintain a firm grip on handle portions 15b of container 11b. Additionally, recessed handle portions 15b could aid in the prevention of an end user supplying extraneous force to the external portions of container 11b thereby causing catastrophic failure or deformation of container 11b.

[0041]Referring again to FIG. 1, container 11 exhibits superior top load strength per mass unit of plastic. With the present invention, filled and capped containers can be safely stacked one upon another without concern that the bottom containers will collapse or be deformed. Often, containers are palletized, by which several containers are stacked in arrays that take on a cubic configuration. In the order of 60 cases, each weighing about 30 pounds (13.6 Kg) can be loaded onto a pallet. In certain instances, these pallets can be stacked one upon another. It will be appreciated that the bottommost containers will be subjected to extraordinary columnar forces. Traditionally, polymeric containers are not capable of withstanding such high column forces. Thus, to avoid collapsing or buckling of these stacking situations, the top load resistance of each container should be at least about 16 pounds (7.3 Kg) when the containers are in an ambient temperature and pressure environment. More preferably, each container should exhibit a top load resistance of at least about 48 pounds (21.8 Kg) in accordance with the present invention.

[0042]As shown in FIG. 7, the body portion 14b of container 11b can have at least one region of deflection 43 placed therein to isolate deflection of the container 11b due to either pressures internal to container 11b or pressures due to forces exerted upon container 11b. As shown, at least one region of deflection 43 could generally define rectilinear regions of container 11b defined by a cylindrical wall. However, one of skill in the art would realize that at least one region of deflection 43 incorporated into body portion 14b could assume any geometry, such as any polygon, round, or non-uniform shape. Without wishing to be bound by theory, it is believed that a purely cylindrical container 11b, having a uniform wall thickness throughout, will resist compression due to pressure exerted from within container 11b or external to container 11b. However, without desiring to be bound by theory, it is believed that when applied forces exceed the strength of the container wall of purely cylindrical container 11b, deflection could be exhibited in an undesirable denting or buckling. Any non-uniformities present in a purely cylindrical container 11b, such as variations in wall thickness, or in the form of features present, such as handle portions 15b, can cause catastrophic failure upon a differential pressure existing between regions external to container 11b and regions internal to container 11b.

[0043]However, the incorporation of at least one region of deflection 43 is believed to allow flexion within the body portion 14b of container 11b. Thus, it is believed that body portion 14b can deform uniformly without catastrophic failure and can resist undesirable physical and/or visual effects, such as denting. In other words, the volume change incurred by container 11b due to internal, or external, pressures works to change the ultimate volume of the container 11b to reduce the differential pressure and thus, forces acting on the container wall. It is also believed, without desiring to be bound by theory, that the incorporation of a solid or liquid, or any other substantially incompressible material, can provide substantial resistance to the inward deflection of at least one region of deflection 43. For example, the inclusion of a powder, such as roast and ground coffee, could provide resistance to the inward deflection of at least one region of deflection 43, thus enabling at least one region of deflection 43 to remain substantially parallel to the longitudinal axis of container 11b and thereby providing an effective increase in the top load capability of container 11b. The peelable laminate seal also deflects with external pressure changes further reducing the pressure load on the container.

[0044]In a non-limiting, but preferred embodiment, container 11b has at least one region of deflection 43 that can be presented in the form of rectangular panels. The panels have a radius that is greater than the radius of container 11b. The panels are designed to have less resistance to deflection than that of the region of container 11b proximate to the rectangular panels. Thus, any movement exhibited by the panels is isolated to the panels and not to any other portion of container 11b.

[0045]As shown in FIG. 1, without desiring to be bound by theory, it is believed that the chime should be sufficient to allow container 11 to compress under vacuum by adapting to

base volume changes and will improve the top loading capability of container 11. However, it is further believed that the chime should be as small as is practicable as would be known to one of skill in the art.

[0046]As shown in FIG. 7, the body portion 14b of container 11b can also have at least one rib 45 incorporated therein. It is believed that at least one rib 45 can assist in the effective management of isolating the movement of at least one panel 43 by positioning at least one rib 45 parallel to the longitudinal axis of container 11b and proximate to at least one panel 43 in order to facilitate the rotational movement of at least one panel 43 upon an inward, or outward, deflection of at least one panel 43. Further, it is believed that at least one rib 45 can also provide added structural stability to container 11b in at least the addition of top load strength. In other words, at least one rib 45 could increase the ability of container 11b to withstand added pressure caused by the placement of additional containers or other objects on top of container 11b. One of skill in the art would be able to determine the positioning, height, width, depth, and geometry of at least one rib 45 necessary in order to properly effectuate such added structural stability for container 11b. Further, it would be known to one of skill in the art that at least one rib 45 could be placed on container 11b to be parallel to the longitudinal axis of container 11b, annular about the horizontal axis of container 11b, or be of an interrupted design, either linear or annular to provide the appearance of multiple panels throughout the surface of container 11b.

[0047]Additionally, container 11b can generally have a finish 46 incorporated thereon. In a preferred embodiment, the finish 46 is of an annular design that is believed can provide additional hoop strength to container 11b and surprisingly, can provide a finger well 44 to assist the user in removal of overcap 30. Further, it is possible for one of skill in the art to add ribs 47 to finish 46 in order to provide further strength to container 11b in the form of the added ability to withstand further top loading. In a preferred embodiment, ribs 47 are disposed parallel to the horizontal axis of container 11b and perpendicular to finish 46.

[0048]Container 11, as shown in FIG. 1 is preferably produced by blow molding a polyolefinic compound. Polyethylene and polypropylene, for example, are relatively low cost resins suitable for food contact and provide an excellent water vapor barrier. However, it is known in the art that these materials are not well suited for packaging oxygen-sensitive foods requiring a long shelf life. As a non-limiting example, ethylene vinyl alcohol (EVOH) can provide such an excellent barrier. Thus, a thin layer of EVOH sandwiched between two or more polyolefinic layers can solve this problem. Therefore, the blow-molding process can be used with multi-layered structures by incorporating additional extruders for each resin used. Additionally, the container of the present invention can be manufactured using other exemplary methods including injection molding and stretch blow molding.

[0049]In a preferred embodiment in accordance with the present invention, container 11 of FIG. 1, container 11a of FIG. 2, and container 11b of FIG. 7, can be blow molded from a multi-layered structure to protect an oxygen barrier layer from the effects of moisture. In a preferred embodiment, this multi-layered structure can be used to produce an economical structure by utilizing relatively inexpensive materials as the bulk of the structure.

[0050]Another exemplary and non-limiting example of a multi-layered structure used to manufacture the container of the present invention would include an inner layer comprising virgin polyolefinic material. The next outward layer would comprise recycled container material, known to those skilled in the art as a 'regrind' layer. The next layers would comprise a thin layer of adhesive, the barrier layer, and another adhesive layer to bind the barrier layer to the container. The final outer layer can comprise another layer of virgin polyolefinic material.

[0051]A further exemplary and non-limiting example of a multi-layered structure used to manufacture the container of the present invention would include an inner layer comprising

virgin polyolefinic material. The next layers would comprise a thin layer of adhesive, the barrier layer, and another adhesive layer to bind the barrier layer to the container. The next outward layer would comprise recycled container material, known to those skilled in the art as a 'regrind' layer. The final outer layer can comprise another layer of virgin polyolefinic material. In any regard, it should be known to those skilled in the art that other potential compounds or combinations of compounds, such as polyolefins, adhesives and barriers could be used. Further, an oxygen scavenger can be incorporated into, or on, any layer of a multi-layered structure to remove any complexed or free oxygen existing within a formed container. Such oxygen scavengers can include oxygen scavenging polymers, complexed or non-complexed metal ions, inorganic powders and/or salts, and combinations thereof, and/or any compound capable of entering into polycondensation, transesterification, transamidization, and similar transfer reactions where free oxygen is consumed in the process.

[0052] Other such materials and processes for container formation are detailed in The Wiley Encyclopedia of Packaging Technology, Wiley & Sons (1986), herein incorporated by reference. Preferably, the inner layer of containers 11, 11a, and 11b are constructed from high-density polyethylene (HDPE).

[0053] A preferred polyolefinic, blow molded container in accordance with the present invention can have an ideal minimum package weight for the round containers of FIGS. 1 and 7, or the parallelepiped container of FIG. 2, and yet still provide the top load characteristics necessary to achieve the goals of the present invention. Exemplary materials (low-density polyethylene (LDPE), high density polyethylene (HDPE) and polyethylene terephthalate (PET)) and starting masses of these compounds that provide sufficient structural rigidity in accordance with the present invention are detailed in Table 1 below.

[0054]

Search terms may have been found within the contents of this table. Please see the table in the original document.

[0055] It was surprisingly found that a container in accordance with the present invention that is filled with product and sealed to contain the final product has enhanced properties for the same starting compound weight. This provides a benefit in that it is now possible to use less starting material to provide the top load values in accordance with the present invention. Exemplary materials and starting masses of compounds (LDPE, HDPE, and PET) providing the necessary structural rigidity of a filled and sealed container in accordance with the present invention are detailed in Table 2.

[0056]

Search terms may have been found within the contents of this table. Please see the table in the original document.

[0057] Again referring to FIG. 1, protuberance 17, in the form of a rim like structure, disposed at the open end of container 11 may have textured surfaces disposed thereon. Textured surfaces disposed on protuberance 17 can comprise raised surfaces in the form of protuberances, annular features, and/or cross-hatching to facilitate better sealing of removable closure 19. Exemplary, but non-limiting, annular features may include a single