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**Lonsway et al.**

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(54) **CONTAINER, CLOSURE, AND PACKAGE**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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2,398,553	A	4/1946	Nyden
2,789,719	A	4/1957	Wheaton
3,494,093	A	2/1970	Downs et al.
3,592,349	A	7/1971	Baugh
3,659,736	A	5/1972	Riggs
3,741,423	A	6/1973	Acton et al.

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(Continued)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

FOREIGN PATENT DOCUMENTS

This patent is subject to a terminal disclaimer.

EP	0427688	5/1991
EP	0661218	7/1995
FR	2906228	3/2008

OTHER PUBLICATIONS

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PCT International Search Report and Written Opinion, Int. Serial No. PCT/US2013/058939, Int. Filing Date: Sep. 10, 2013, Applicant: Owens-Brockway Glass Container Inc., Mail Date: Dec. 9, 2013.

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**Related U.S. Application Data**

(63) Continuation of application No. 13/649,171, filed on Oct. 11, 2012, now Pat. No. 9,051,074.

(57) **ABSTRACT**

(51) **Int. Cl.**

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A closure inner shell includes an annular skirt extending axially from a base wall and having an external thread segment. The base wall may have a central passage and the skirt may have circumferentially spaced petals. A closure outer shell may include a vented plug seal extending axially through the central passage of the inner shell, and an annular outer skirt to engage the petals of the inner shell and having an internal thread segment for threaded engagement with the external thread segment of the inner shell. A container may include a container neck bead for engagement with the petals, an inner annular sealing surface for engagement with the plug seal, and an inner annular relief to cooperate with the vented plug seal to establish a vent path.

(52) **U.S. Cl.**

CPC ..... **B65D 41/34** (2013.01); **B65D 1/0246** (2013.01); **B65D 41/02** (2013.01); **B65D 51/1688** (2013.01)

(58) **Field of Classification Search**

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See application file for complete search history.

**20 Claims, 5 Drawing Sheets**

