

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HEINEKEN N.V.,
Petitioner,

v.

ANHEUSER-BUSCH INBEV S.A.,
Patent Owner.

Case IPR2018-01663
Patent 9,944,453 B2

Before KRISTINA M. KALAN, JON B. TORNQUIST, and
AVELYN M. ROSS, *Administrative Patent Judges*.

TORNQUIST, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Heineken N.V. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–7 of U.S. Patent No. 9,944,453 B2 (Ex. 1001, “the ’453 patent”). Anheuser-Busch InBev S.A. (“Patent Owner”) filed a Preliminary Response to the Petition (Paper 6, “Prelim. Resp.”). Upon Board authorization, Petitioner also filed a Reply (Paper 8) to the Preliminary Response and Patent Owner filed a Sur-Reply (Paper 9).

To institute an *inter partes* review, we must determine that the information presented in the Petition shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reasons discussed below, after considering the parties’ submissions and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the ’453 patent. Thus, we do not institute an *inter partes* review.

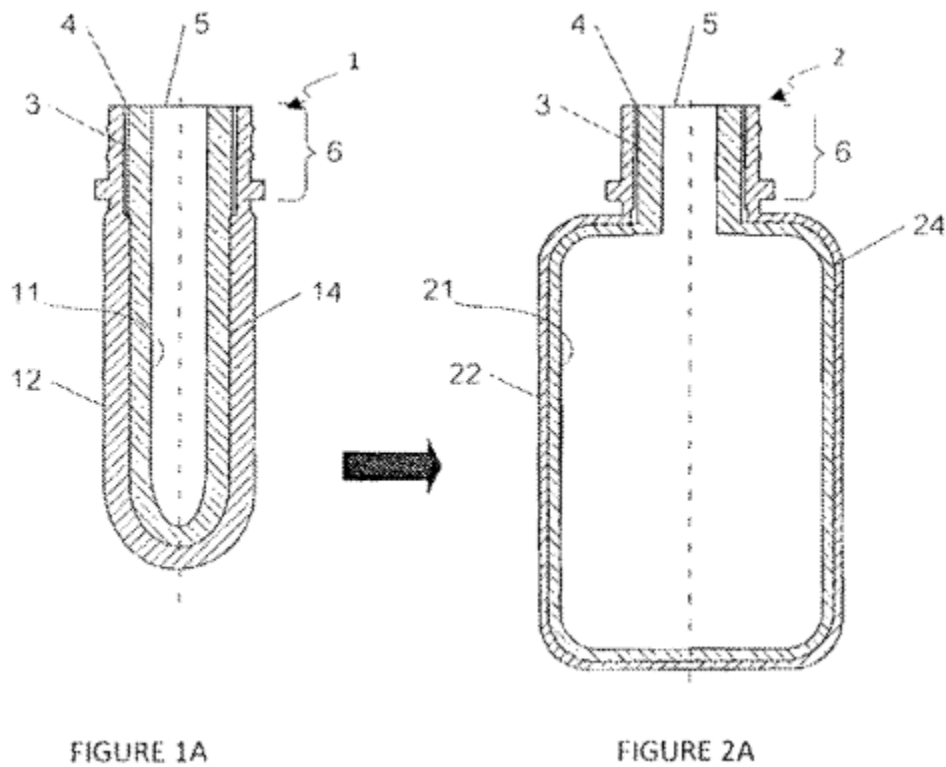
A. Related Proceedings

The parties identify *Anheuser-Busch InBev S.A. v. Heineken USA Inc.*, No. 18-cv-3856 (S.D.N.Y.) and *Certain Blow-Molded Bag-in-Container Devices, Associated Components, and End Products Containing or Using Same*, Inv. No. 337-TA-1115 (International Trade Commission) as related matters. Pet. 1; Paper 4, 2. Patent Owner also notes that a related patent is being challenged in IPR2018-01669, and that Petitioner challenges additional patents owned by Patent Owner in IPR2018-01665 and IPR2018-01667. Paper 4, 1.

B. The '453 Patent

The '453 patent relates to bag-in-containers and, in particular, “to integrally blow-moulded¹ bag-in-containers made of a single material.” Ex. 1001, 1:15–18. The '453 patent explains that bag-in-containers, also called bag-in-bottles or bag-in-boxes depending on the geometry of the outer vessel, encompass “a family of liquid dispensing packaging consisting of an outer container comprising an opening to the atmosphere—the mouth—and which contains a collapsible inner bag joined to said container and opening to the atmosphere at the region of said mouth.” *Id.* at 1:25–33.

Figures 1A and 2A of the '453 patent are reproduced below:



¹ The art uses the terms “moulded” and “molded” interchangeably. We do so as well.

Figure 1A is a schematic cross-sectional representation of a two layer preform suitable for blow moulding a container. *Id.* at 3:32–34. Figure 2A is a schematic cross-sectional representation of a container obtained by blow moulding the preform of Figure 1A. *Id.* at 3:39–41. As shown in Figure 1A, preform 1 comprises inner layer 11 and outer layer 12. *Id.* at 3:54–59. The region between inner and outer layers 11 and 12 is interface 14, where the two layers substantially contact each other. *Id.* at 3:59–62.

Bag-in-container 2 is formed by bringing the preform of Figure 1A to a blow-moulding temperature, fixing the heated preform at the level of the neck region, and blow moulding the heated preform. *Id.* at 5:7–12. As shown in Figure 2A, inner layer 21 and outer layer 22 of the blow moulded container are connected by interface 24 over substantially the whole of the inner surface of the outer layer, and interface 24 is in fluid communication with the atmosphere through vents 3. *Id.* at 5:12–17.

The '453 patent explains that “[o]ne redundant problem with integrally blow-moulded bag-in-containers is the choice of materials for the inner and outer layers, which must be selected according to strict criteria.” *Id.* at 2:26–29. Specifically, the two layers must be compatible in terms of processing, but incompatible in terms of adhesion. *Id.* at 2:29–31. Materials used in the prior art for this purpose were, for example, PET or EVOH² for the outer layer, and polyethylene for the inner layer. *Id.* at 2:38–41.

The '453 patent explains that use of these materials is advantageous for injection molding of the preforms, but “far from optimal for the blow-

² PET is polyethylene terephthalate and EVOH is ethylene vinyl alcohol. Ex. 1001, 7:17–18, 7:21.

moulding step since polyethylene and PET are characterized by different blow-moulding temperatures.” *Id.* at 2:41–45.

The ’453 patent reports that “it has surprisingly been discovered that excellent delamination results between the inner and outer layers can be obtained” when the preforms for both the inner and outer layers consist of the same material. *Id.* at 4:34–38. In one method for successfully using such layers made of the same material, gas is first blown into the space defined by the inner layer to stretch the preform. *Id.* at 5:41–42. This gas is retained within the gap separating the inner and outer layers of the preform until the pressure in said gap reaches a predetermined value, at which point a valve is opened allowing evacuation of the gas. *Id.* at 5:42–49. “By this method, the inner layer is prevented from entering into contact with the outer layer by the air cushion enclosed within the gap separating the two layers when their respective temperatures are the highest,” and the layers only come into contact “when their respective temperatures have dropped to a level where adhesion between the layers cannot build up to any substantial level.” *Id.* at 5:50–60.

C. Illustrative Claim

Petitioner challenges claims 1–7 of the ’453 patent. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. An integrally blow-moulded dispensing bag-in-container having a body and a neck region, said bag-in-container comprising:
 - a single layer inner bag which is collapsible and comprises an opening to an outer atmosphere defined by a lip;
 - a single layer outer container;

a vent disposed in the neck region; said vent between the inner bag and outer container, which opens to the atmosphere; and

a source of pressurized gas releasably attached to the vent, wherein:

the inner bag and the outer container comprise a same polymer,

said inner bag is adjacent to and in direct contact with said outer container forming an interface therebetween,

said inner bag and said outer container have said same polymer over substantially the entirety of the interface, and

said dispensing bag-in-container being suitable for dispensing a liquid contained in an inner bag by pressurizing with the source of pressurized gas the interface between said inner bag and said outer container.

Ex. 1001, 6:56–7:11.

D. The Asserted Grounds of Unpatentability

Petitioner contends claims 1–7 of the '453 patent would have been obvious in view of the following grounds of unpatentability (Pet. 4):

References	Basis	Claims Challenged
Butterworth, ³ Beyens, ⁴ and/or Schmidt ⁵	§ 103	1–7
Brady ⁶ and Takakusagi ⁷	§ 103	1–7

³ WO 91/08099, published June 13, 1992 (Ex. 1005).

⁴ EP 0389191, published September 26, 1990 (Ex. 1006).

⁵ US 5,301,838, issued April 12, 1994 (Ex. 1007).

⁶ US 6,066,287, issued May 23, 2000 (Ex. 1008).

⁷ JP App. Pub. H6-345069, published December 20, 1994 (Ex. 1010, English translation).

References	Basis	Claims Challenged
Beyens, Keisuke, ⁸ and/or Richter ⁹	§ 103	1–7
Keisuke, Beyens, and/or Schmidt	§ 103	1–7

In support of its obviousness arguments, Petitioner relies on the declaration testimony of Dr. Maureen Reitman. Ex. 1002. In opposition to the Petition, Patent Owner relies on the testimony of Dr. Paul Koch. Ex. 2001.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are construed according to their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2017).¹⁰ In determining the broadest reasonable construction, we presume that claim terms carry their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). A patentee may define a claim term in a manner that differs from its ordinary meaning; however, any special definitions must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

⁸ JP App. Pub. H06-039906 A, published February 15, 1994 (Ex. 1012, English translation).

⁹ US 5,242,085, issued September 7, 1993 (Ex. 1013).

¹⁰ A recent amendment to this rule does not apply here, because the Petition was filed before November 13, 2018. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (to be codified at 37 C.F.R. pt. 42).

Petitioner and Patent Owner do not identify any claim terms that are in need of express construction. Pet. 5; Prelim. Resp. 8. Upon review of the parties' arguments and the prior art of record, we agree with the parties that no claim terms of the '453 patent require express construction for purposes of this Decision. See *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”)).

B. Obviousness in view of Butterworth, Beyens, and/or Schmidt

Petitioner contends the subject matter of claims 1–7 would have been obvious over the combined disclosures of Butterworth, Beyens, and/or Schmidt. Pet. 26–42.

1. Butterworth

Butterworth discloses a preform for a blown container that is injection molded as two separate pieces and subsequently fitted together before the preform is blown to form the container. Ex. 1005, 3:29–32. The containers of Butterworth may have a capacity of up to three liters. *Id.* at 5:19–27.

Figure 4 of Butterworth is reproduced below:

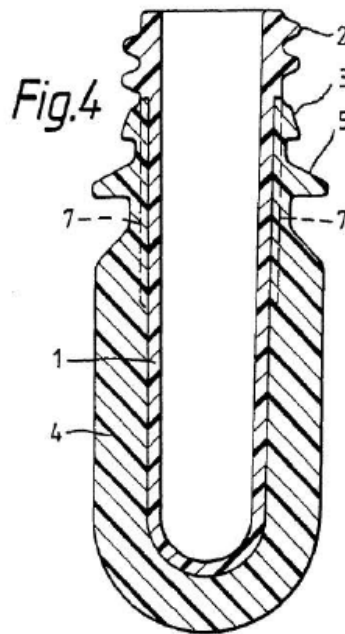


Figure 4 is a longitudinal section through a fourth example preform of Butterworth. *Id.* at 14:25–26, 15:23. The preform of Figure 4 has inner shell 1, outer shell 4, and longitudinally extending channels 7, which provide venting for the space between the two shells after the bottle has been formed. *Id.* at 15:28–36. Both the inner and outer shell are made of PET, but outer shell 4 “has a very much greater wall thickness than the inner shell 1.” *Id.* at 15:28–30.

Butterworth explains that channels 7 allow “the liner formed by the inner shell 1 to be collapsed by applying a vacuum to the neck of the bottle.” *Id.* at 15:36–16:1. The resulting liner-less bottle may then be re-lined and re-used. *Id.* at 11:24–33, 16:1–2.

2. Beyens

Beyens discloses containers for transport, storage, and dispensing of beverages, including beverages that are dispensed from the container under pressure. Ex. 1006, 1:2–6. Beyens explains that PET containers have been developed for use with beverages such as beer or soft drinks, but “such

containers have the disadvantages that PET is not completely impervious to oxygen.” *Id.* at 1:16–22. Thus, Beyens provides a container having an outer container made of, for example, PET, and an “inner bag of flexible air-tight or gas-tight material.” *Id.* at 1:45–48, 2:15–18.

Figure 1 of Beyens is reproduced below:

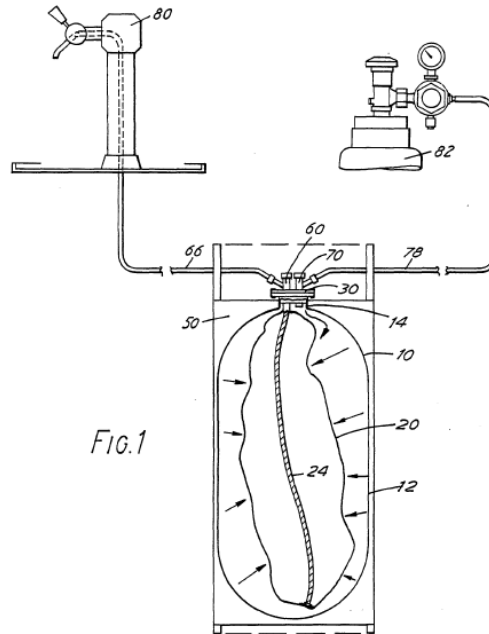


Figure 1 is a diagrammatic cross-section through a container of Beyens, showing the container connected to a dispensing tap and a source of pressurized gas. *Id.* at 2:22–25. Beyens explains that outer container 10 is formed of PET and inner bag 20 is formed of a material that is suitable for contact with the stored beverage, such as layered polyethylene. *Id.* at 2:40–41, 2:50–55. A source of pressurized gas 82 is connected through gas line 78 and provides gas to the space between outer container 10 and inner bag 20, which forces the contents of the bag to flow out through dispensing line 66 when the tap is opened. *Id.* at 4:36–50.

3. *Schmidt*

Schmidt discloses a multi-layer plastic container for use with either a positive or negative pressure dispensing system. Ex. 1007, Abstract. The multi-layer container of Schmidt is blow molded from a multi-layer polymeric preform having an inner layer made of a material that has “no tendency to form primary chemical bonds with the outer layer” and thus is “not substantially melt soluble in the polymer of the outer layer.” *Id.* at 1:50–56. “As such, the dissimilar layers may be separated through the application of force.” *Id.* at 1:58–60, 1:61–64 (using a positive pressure of 20 psi to delaminate the inner layer and dispense a product).

4. *Analysis*

Petitioner contends that Butterworth teaches applying a vacuum to the mouth of the container, and that one of ordinary skill in the art would have understood that such a vacuum creates a “pressure differential to collapse the bag and dispense the liquid.” Pet. 33. Petitioner further contends that because the vacuum of Butterworth would bring the liquid into contact with the atmosphere, one of ordinary skill in the art would have sought to use the positive pressure systems of Beyens and/or Schmidt to dispense the liquids of Butterworth. *Id.* at 33–36.

Contrary to Petitioner’s arguments, we are directed to no disclosure in Butterworth of using negative pressure to dispense liquids from a container. As noted by Patent Owner, the vacuum of Butterworth is applied only after the contents of the container have been removed. Prelim. Resp. 41 (citing Ex. 1005, 11:24–12:19); Ex. 1005, 11:29–33 (“However, *after use of such a container* the inner layer of the container, since it is not bonded to the outer layer, can be removed by, for example, applying a vacuum to the inner part

of the container and allowing air to flow through the vents into the interface between the two parts.”) (emphasis added), 15:36–16:2 (“This allows the liner formed by the inner shell 1 to be collapsed by applying a vacuum to the neck of the bottle. The resulting bottle may be re-lined before being re-used.”). Thus, it is not evident from Petitioner’s arguments why one of ordinary skill in the art would have sought to apply the positive pressure systems of Beyens and/or Schmidt, which apply positive pressure to the interior of a container in order to dispense beverages, to the system of Butterworth, which applies a vacuum to collapse the liner of a container once it is empty.

In view of the foregoing, Petitioner has not demonstrated a reasonable likelihood that claim 1 of the ’453 patent would have been obvious over the combined disclosures of Butterworth, Beyens, and/or Schmidt. Petitioner also does not present any arguments or evidence with respect to dependent claims 2–7 that would remedy the defects noted above with respect to claim 1. Thus, Petitioner has not demonstrated a reasonable likelihood that the subject matter of claims 1–7 would have been obvious over the combined disclosures of Butterworth, Beyens, and/or Schmidt.

C. Obviousness in view of Brady and Takakusagi

Petitioner contends the subject matter of claims 1–7 would have been obvious over the combined disclosures of Brady and Takakusagi. Pet. 43–56.

1. Brady

Brady is directed to a gas assist injection molding process for forming a multi-layered plastic bottle. Ex. 1008, 1:12–14. In this process, a double-

layered plastic parison is formed, preferably from PET, and then blow molded to form a double-layered container. *Id.* at 1:53–56, 2:3–6.

Figures 1 and 2 of Brady are reproduced below:

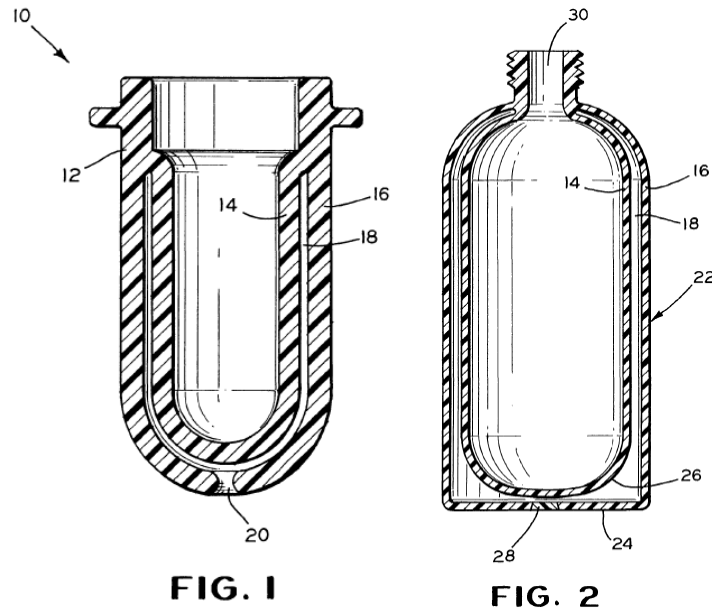


Figure 1 is an elevational, sectional view of the double-walled parison of Brady, and Figure 2 is an elevational, sectional view of the double-walled container formed from the parison of Figure 1. *Id.* at 1:38–46. As shown in Figure 1, the double-walled parison has inner container 14 and outer container 16. *Id.* at 2:9–13. The double-walled parison also contains aperture 20, which allows back pressure to be provided to space or void 18 between inner container 14 and outer container 16. *Id.* at 2:30–35.

As shown in Figure 2, use of back pressure during the blow molding process allows inner container 14 to be formed into a different shape than outer container 16, i.e., “inner container 14 need not conform to the outer container 16 during the blow molding process.” *Id.* at 2:30–37. Brady explains that after blow molding inner and outer layers 14 and 16 into their final shape, carbon dioxide may be inserted into void 18 between the inner

and outer containers. *Id.* at 2:41–43. This gas creates a barrier to the diffusion of materials through the wall of inner container 14 and is retained within void 18 “by means of, for example, a plastic plug 28.” *Id.* at 2:43–46. Brady explains that the container may also be modified by (1) injecting a water-soluble colored fluid between the layers of the container; (2) creating a vacuum between the container layers to provide a container with improved insulating properties; or (3) creating an aerosol container by pressurizing the void space between the container layers. *Id.* at 1:57–62, 3:5–55.

2. Takakusagi

Takakusagi discloses a bottle that is comprised of at least an outside layer and an inside layer that are freely separable. Ex. 1010 ¶ 8. The inside layer of Takakusagi is formed from a different synthetic resin material with a higher melting point than the outside layer. *Id.* ¶¶ 8, 10.

Figure 1 of Takakusagi is reproduced below:

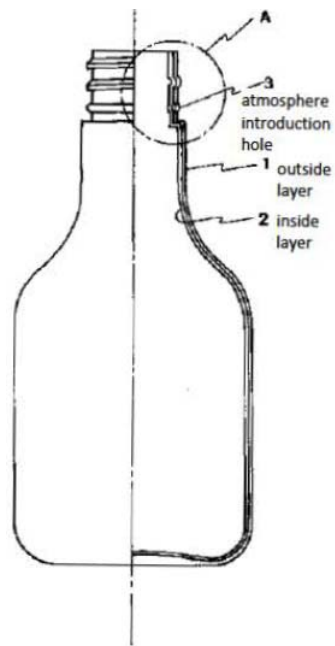


Figure 1 of Takakusagi is a side-by-side cross-section/front view of a laminated separable bottle. *Id.* at 5 (“Brief Description of the Drawings”).

As shown in Figure 1, the bottle of Takakusagi is composed of outside layer 1, inside layer 2, and atmosphere introduction holes 3, which are “formed at the bottle mouth where the cap is fitted so as to not be conspicuous.” *Id.* ¶¶ 13, 16. Takakusagi explains that atmosphere introduction holes 3 can also be formed “at the body part, the bottom part or any other place where air can flow in.” *Id.* ¶ 16.

3. Analysis

Claim 1 requires that the inner bag and outer container comprise the same polymer and that the inner bag is adjacent and in direct contact with the outer container, “forming an interface therebetween.” Ex. 1001, 7:1–7. Petitioner contends Brady discloses that its preform is composed of two layers of the same material, preferably PET, and asserts Brady’s disclosure that “inner container 14 *need not conform* to the outer container 16 during the blow molding process” inherently discloses that the two layers may conform to each other during this process. Pet. 48–49 (citing Ex. 1008, 2:4–5, 2:35–37; Ex. 1002 ¶ 110) (emphasis added). To the extent Brady does not disclose two layers that are in direct contact to form an interface, Petitioner contends one of ordinary skill in the art would have sought to use the “freely separable layers disclosed in Takakusagi with the aforementioned features of Brady.” *Id.* at 49–50.

Patent Owner contends Petitioner has not demonstrated sufficiently that the inner and outer layers of Brady are in direct contact, and contends Petitioner’s reliance on Takakusagi is misplaced. Prelim. Resp. 48. We agree.

Brady discloses introducing back pressure to void 18 between the inner and outer layers of the preform during the blow molding step

so that the inner container 14 may be formed to a different shape than the outer container 16. Thus, the inner container 14 need not conform to the outer container 16 during the blow molding process. In this way, for example, a double-walled container 22 may be formed wherein the outer container 16 has a flat circular base 24 while the inner container 14 has a convex hemispherical base 26.

Ex. 1008, 2:30–40. During this process, void 18 is maintained, and later may be filled with carbon dioxide or any other gas. *Id.* at 2:30–46.

Petitioner does not adequately explain why Brady’s discussion of successfully preventing the inner and outer layers from conforming to each other during the blow molding process would teach or suggest conforming the inner and outer layers during the blow molding process. Indeed, both Petitioner and Brady rely on void 18 being maintained during the blow molding process in order to allow carbon dioxide or a colored liquid to be injected between the inner and outer layers of the container. Pet. 48 (citing Ex. 1008, 2:30–33 (providing back pressure to space or void 18 “so that the inner container 14 may be formed to a different shape than the outer container 16”), 2:41–43 (“Carbon dioxide or any other gas may be inserted into the void 18 between the inner and outer containers 14 and 16, respectively.”), 3:5–9 (“As will be readily apparent to one ordinarily skilled in the art, the carbon dioxide inserted into the void 18 may be at atmospheric pressure, or may be at an elevated pressure.”)). Thus, we are not persuaded that Brady teaches or suggests a container having inner and outer layers that conform, as asserted by Petitioner.

As noted by Petitioner, Takakusagi discloses inner and outer layers that are “freely separable” and in direct contact. Pet. 49–50; Ex. 1010 ¶ 8, Fig. 1. These layers, however, are formed of *different materials*.

Ex. 1010 ¶ 10 (“The method for manufacturing a laminated separable bottle of the present invention is characterized in that” the bottle is formed using “at least two separable layers” that are “formed from different synthetic materials”). Thus, to the extent Petitioner contends one of ordinary skill in the art would have sought to use the “freely separable” layers of Takakusagi in Brady, it does not explain adequately why the proposed combination would provide an inner bag and outer container that comprise the same polymer. See Pet. 51 (relying on the composition of Brady’s inner and outer layers to satisfy the limitation: “said inner bag and said outer container have said same polymer over substantially the entirety of the interface”). Moreover, to the extent Petitioner proposes to form Brady’s PET layers in contact, the orientation disclosed in Takakusagi, it does not adequately explain how the inner and outer layers of Brady could be formed of the same polymer, blow molded in a conforming manner, and successfully delaminated using gas pressure. *Id.* at 49–50.

In view of the foregoing, Petitioner has not demonstrated a reasonable likelihood that claim 1 of the ’453 patent would have been obvious over the combined disclosures of Brady and Takakusagi. Petitioner also does not present any arguments or evidence with respect to dependent claims 2–7 that would remedy the defects noted above with respect to claim 1. Thus, Petitioner has not demonstrated a reasonable likelihood that the subject matter of claims 1–7 would have been obvious over the combined disclosures of Brady and Takakusagi.

D. Obviousness in view of Beyens, Keisuke, and/or Richter

Petitioner contends the subject matter of claims 1–7 would have been obvious over the combined disclosures of Beyens, Keisuke, and/or Richter. Pet. 56–71.

1. Keisuke

Keisuke is directed to “a multi-layer molded container having easy interlayer separability.” Ex. 1012 ¶ 1. Figure 1 of Keisuke is reproduced below.

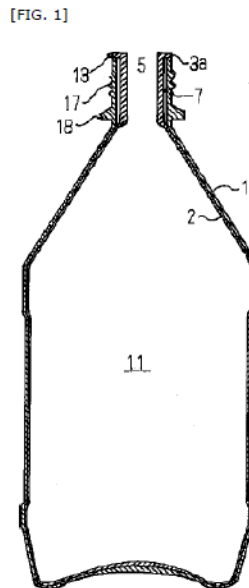


Figure 1 of Keisuke depicts a multi-layer molded container having outer layer 1 and inner layer 2. *Id.* ¶ 28. Keisuke explains that outer layer 1 and inner layer 2 are both made of PET, but the PET of inner layer 2 is “combined with an aliphatic polyamide with aromatic rings,” or a “multilayer of an ethylene/vinyl alcohol copolymer and polyolefin such as polypropylene” is added to act “as a functional film to improve gas barrier properties.” *Id.*

2. *Richter*

Richter discloses a syrup dispensing system that includes a blow molded, multi-layer PET container. Ex. 1013, Abstract. The PET container of Richter “includes a release agent such as a layer of EVOH located outside of the inner PET layer . . . so that the inner PET layer can separate from the remainder of the wall and collapse around the remaining syrup as it is withdrawn.” *Id.*

3. *Analysis*

Petitioner contends that Beyens discloses an outer container made of PET and an inner bag “made from any suitable material which is approved for use with beverages,” and asserts that Keisuke and Richter teach that PET is suitable for use as the inner bag of Beyens. Pet. 61 (citing Ex. 1006, 2:15–18; Ex. 1012 ¶¶ 1, 28; Ex. 1013, 4:29–31). Specifically, Petitioner contends Richter discloses that using PET for both inner and outer layers makes the whole container recyclable, and Keisuke discloses that PET has “good pressure resistance, rigidity, clarity, moisture absorption, water resistance, and gas barrier properties.” *Id.* (citing Ex. 1013, 2:6–7; Ex. 1012 ¶ 28). We do not find Petitioner’s arguments persuasive for the reasons discussed below.

Beyens discloses that PET containers have the disadvantage “that PET is not completely impervious to oxygen, so that beverages such as beer which deteriorate rapidly on exposure to oxygen, can only be stored for short periods.” Ex. 1006, 1:16–24. Beyens therefore expressly avoids the use of PET for its inner container, requiring instead an inner bag that is made from a flexible air-tight or gas-tight material. *Compare id.* at 2:45–48 (“This invention consists in a container . . . comprising an outer container [and] an

inner bag of flexible air-tight or gas-tight material.”), 2:50–53 (“The inner bag 20 is formed of a material which is impervious to air or carbon dioxide and which is suitable for contact with the beverage to be contained.”) *with id.* at 1:21–22 (“PET is not completely impervious to oxygen . . .”). Given that Beyens expressly avoids using PET for its inner container, Petitioner has not explained why a person of ordinary skill in the art would have nevertheless considered the PET layers of Richter or Keisuke “suitable” for use as the inner layer of Beyens.

Petitioner also has not demonstrated that use of either Keisuke’s or Richter’s PET layers would satisfy the requirements of claim 1. First, Richter uses a release layer disposed between the inner and outer layers of its PET container, and Petitioner does not explain sufficiently how direct contact between the PET layers would be achieved if this intervening layer were applied in Beyens. Ex. 1013, Abstract (“The PET container includes a release agent such as a layer of EVOH located outside of the inner PET layer.”); Pet. 62 (relying on the freely separable layers of Richter); Prelim. Resp. 56.

Further, as discussed above, Keisuke discloses using an outer layer of PET and either an inner layer of PET that has been combined with an aliphatic polyamide with aromatic rings or an inner layer of PET that has an additional multilayer film disposed thereon to improve the overall gas barrier properties of the container. Ex. 1012 ¶ 28; Pet. 61 (relying on paragraph 28 of Keisuke for the disclosure of inner and outer layers made of the same material). Petitioner provides no persuasive explanation as to why either the modified PET layer of Keisuke or its intervening gas barrier film would provide direct contact between the “same polymer” over

“substantially the entirety of the interface,” as required by claim 1. See Ex. 1001, 4:48–62 (providing the circumstances in which the “same polymer is considered in contact on either side of the interface between the inner and outer layers”), 7:1–7.

In view of the foregoing, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that the subject matter of claim 1 would have been obvious over the combined disclosures of Beyens, Keisuke, and/or Richter. And because challenged claims 2–7 all depend, directly or indirectly, from claim 1, and because Petitioner’s arguments with respect to these claims do not resolve the deficiencies noted above, Petitioner has not demonstrated a reasonable likelihood that claims 1–7 would have been obvious over the combined disclosures of Beyens, Keisuke, and/or Richter.

E. Obviousness in view of Keisuke, Beyens, and/or Schmidt

Petitioner contends the subject matter of claims 1–7 would have been obvious over the combined disclosures of Keisuke, Beyens, and/or Schmidt. Pet. 71–86.

In this ground, Petitioner contends Keisuke discloses an inner bag and an outer container that are in direct contact and comprise the same polymer. *Id.* at 79–80 (citing Ex. 1012 ¶¶ 11, 28, Fig. 1). As discussed above, however, Petitioner has not explained why the modified PET layer of Keisuke would allow the “same polymer” to be in direct contact over substantially the entire interface, or why the intervening gas barrier film of Keisuke would allow direct contact between the two PET layers. See *supra* Section II.D.3. Accordingly, we are not persuaded that the subject matter of

claims 1–7 would have been obvious in view of the combined disclosures of Keisuke, Beyens, and/or Schmidt.

III. CONCLUSION

For the reasons set forth above, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '453 patent. Thus, we do not institute an *inter partes* review.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* as to all challenged claims of the '453 patent.

IPR2018-01663
Patent 9,944,453 B2

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