

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MPL BRANDS NV, INC.,
Petitioner

v.

BUZZBALLZ, LLC,
Patent Owner

PGR2024-00035
U.S. Patent 11,932,441

**DECLARATION OF FOLKERS EDUARDO ROJAS, PH.D.
IN SUPPORT OF PATENT OWNER'S RESPONSE**

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I, Folkers Eduardo Rojas, do hereby declare as follows:

I. INTRODUCTION

1. I am making this declaration at the request of patent owner BuzzBallz, LLC in the *Inter Partes* Review of U.S. Patent No. 11,932,441 (“the ’441 Patent”).

2. I am being compensated for my work in this matter at my standard hourly rate. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.

3. I have been asked to provide my opinions regarding whether claims 1-20 (“the Challenged Claims”) of the ’441 Patent are patentable as they would have been non-obvious to a person having ordinary skill in the art (“POSITA”) at the time of the invention, in light of the prior art. It is my opinion that the Challenged Claims would have been non-obvious to a POSITA.

4. In the preparation of this declaration, I have studied:

- a. The ’441 patent, Ex.1001;
- b. The Declaration of Nathan J. Delson, Ph.D, Ex.1002;
- c. The Prosecution History of U.S. Design Patent Application 29/824,813, Ex.1003;
- d. The Prosecution History of the ’441 patent, Ex.1004;
- e. The Declaration of Joseph T. Norris, Ex.1005;

- f. The Coca-Cola Plastic Can Marketing Material, Ex.1006;
- g. The American Heritage Dictionary of the English Language, New College Edition, Ex.1007;
- h. U.S. Patent No. 8,524,349 B2 to Protais et al. ("Protais"), Ex.1008;
- i. U.S. Patent No. 4,405,546 to Jakobsen et al. ("Jakobsen"), Ex.1009;
- j. U.S. Patent No. 8,141,741 B2 to Metzger et al. ("Metzger"), Ex.1010;
- k. U.S. Patent No. 4,465,204 to Kaminski et al. ("Kaminski"), Ex.1011;
- l. U.S. Patent No. 6,729,495 B2 to Gardiner ("Gardiner"), Ex.1012;
- m. U.S. Patent No. 6,585,123 B1 to Pedmo et al. ("Pedmo"), Ex.1013;
- n. U.S. Patent No. 4,024,981 to Brown ("Brown"), Ex.1014;
- o. The 1985 Los Angeles Times Article, Ex.1015;
- p. The 1985 New York Times Article, Ex.1016;
- q. Handbook of Engineering and Specialty Thermoplastics, Ex.1017;
- r. The Declaration of Richard D. Kirkpatrick in Support of Patent Owner Preliminary Response, Ex.2001;
- s. The Prosecution History of the '195 Patent, Ex.2002;
- t. Jack Lo et al., "How to Make Your Own Patent Drawings," Nolo (2019), Ex.2003;

u. J. W. Jack Koller, "How to Make Your Own Patent Drawings and Save Thousands," Atlantic Publishing Group (2011), Ex.2004;

v. U.S. Patent No. 5,723,202 to Mueller et al., Ex.2005;

w. U.S. Patent No. 6,559,902 to Kusuda et al., Ex.2006;

x. U.S. Patent No. 5,880,476 to Suzuki, Ex.2007;

y. U.S. Patent No. 3,597,300 to Kashiro et al., Ex.2008;

z. U.S. Patent Publication No. 2002/0179888 to Montanari et al.,
Ex.2009;

aa. U.S. Patent Publication No. 2009/0119823 to Lee, Ex.2010;

bb. U.S. Patent No. 5,463,013 to Tokuda et al., Ex.2011;

cc. U.S. Patent Publication No. 2009/0279082 to Till et al., Ex.2012;

dd. U.S. Patent Publication No. 2009/0272015 to Schnuckle, Ex.2013;

ee. The Deposition Transcript of Joseph T. Norris, February 20, 2025,
Ex.2014;

ff. The Deposition Transcript of Nathan J. Delson, Ph.D., February 26,
2025, Ex.2015;

gg. U.S. Patent No. 6,131,761 to Cheng et al., Ex.2016;

hh. U.S. Patent No. 5,154,295 to Stoner et al., Ex.2017;

ii. Huang et al., "Conformational changes and molecular motion of poly(ethylene terephthalate) annealed above glass transition temperature," Polymer 41 (2000) 1741-1748, Ex.2018;

jj. Academic Press Dictionary of Science and Technology, Ex.2020;

kk. Serope Kalpakjian et al., "Manufacturing Engineering and Technology" Fifth Edition, Pearson (2006), Ex.2022;

ll. Materials Data Book, Cambridge University Engineering Department (2003), Ex.2023;

mm. Materials Data Book, Cambridge University Engineering Department (2011), Ex.2024;

nn. MatWeb, Overview of materials for Polyethylene Terephthalate (PET), Unreinforced, Ex.2025;

oo. Han et al., "Application of structure optimization technique to aluminum beverage bottle design," Springer-Verlag (2005), Ex.2026; and

pp. Kannan et al., "Heat transfer analysis of canned food sterilization in a still retort," Journal of Food Engineering (2008), Ex.2027.

5. In forming the opinions expressed below, I have considered:
the documents listed above;

the relevant legal standards, including the standard for obviousness, and any additional authoritative documents as cited in the body of this declaration; and

my own knowledge and experience based upon my work in the areas of computer aided design (CAD) modeling, product development, engineering drawing & drafting, reading & interpreting engineering drawings for production, and machining experience, as described below, as well as the following materials and any document cited in my analysis below.

6. Unless otherwise noted, all emphasis in any quoted material has been added.

II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

7. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in the attached Ex.2019. The following is a brief summary of my relevant qualifications and professional experience.

8. My experience specifically relevant to the '441 patent includes work in enclosed vacuum systems at low temperatures for optical equipment. I also have experience evaluating seal performance in pressurized equipment at high

temperatures in the oil and gas industry. While working for Schlumberger Doll Research (“SDR”) in Cambridge, MA I worked in designing and creating numerous pressurized flow loops using components of various materials, including plastics. Part of the work I performed at SDR included patent prior art research. One project at SDR, resulted in filled IP in sand control where I am a co-inventor.

9. During my two internships at the Jet Propulsion Laboratory (JPL) I performed engineering analysis and created engineering drawings for equipment and fabricated prototypes using JPL machine shops.

10. I worked as a graduate instructor at the Edgerton Student Shop at the Massachusetts Institute of Technology (MIT). There, I was responsible for teaching principles of machine hardware and use to create machine components and parts. I assisted the members with machine hardware. As part of my work in the Edgerton Student Shop, I designed and created injection molding molds.

11. I have also designed injection molded components and worked with vendors to produce, and modify injection molds as part of my consulting work with Coagulo Medical Technologies, Inc. I led the development of a medical diagnostics device that includes microfluidic cartridges that are injection molded. I have also performed material selection processes for injection molded products and hardware components.

12. Thus, in summary I have personal experience operating injection molding machines and have participated in projects where I assisted companies incorporate precision design features in injection molded components and molds.

III. LEVEL OF ORDINARY SKILL IN THE ART

13. I understand there are multiple factors relevant to determining the level of ordinary skill in the pertinent art, including (1) the levels of education and experience of persons working in the field at the time of the invention; (2) the sophistication of the technology; (3) the types of problems encountered in the field; and (4) the prior art solutions to those problems.

14. A person of ordinary skill in the art ("POSITA") in the field of the '441 Patent, as of its earliest possible priority date of April 19, 2010, would have been someone with a bachelor's degree or higher in mechanical engineering, materials science, or physics and at least 2 years of practical experience in the field of container design and manufacturing, including experience performing engineering analysis, design, and product development in fluid containers. Additional education may supplement practical experience and additional practical experience may supplement education.

15. I determined the level of skill of a person of ordinary skill in the art by reviewing the '441 Patent and considering the type of problems encountered in

the art, such as containment of pressurized or vacuumed liquids or gases in varying temperature conditions. Solutions to these problems involve a thorough a knowledge of structural design and manufacturing. These topics are routinely covered in multiple undergraduate curriculum courses in mechanical engineering, mechanics of materials, design for manufacturing, fluid dynamics, machine design, etc. Problem solving application expertise is gained through projects and courses and industrial experience. In the particular case of the '441 Patent, a POSITA is one who would be familiar with the designing containers to meet functional requirements and design limitations such as reliably sealing a pressurized container, design for manufacturing, ensuring structural integrity of the cylindrical vessel (i.e., can), material selection process (i.e. using PET as a manufacturing material), account for logistics (packaging transportation and storage). See Ex.1001, 2:16-4:4.

16. For purposes of this Declaration, in general, and unless otherwise noted, my statements and opinions, such as those regarding my experience and the understanding of a POSITA generally (and specifically related to the references I consulted herein), reflect the knowledge that existed in the field as of the priority date of the '441 Patent. Unless otherwise stated, when I provide my understanding

and analysis below, it is consistent with the level of a POSITA prior to the earliest possible priority date of the '441 Patent of April 19, 2010.

IV. RELEVANT LEGAL STANDARDS

17. I am not an attorney. In preparing and expressing my opinions and considering the subject matter of the '441 Patent, I am relying on certain basic legal principles that counsel have explained to me. These principles are discussed below.

18. I understand that prior art to the '441 Patent includes patents and printed publications in the relevant art that predate the priority date of the invention recited in the claims of the '441 Patent. For purposes of this Declaration, I am applying April 19, 2010 as the priority date of the '441 Patent.

19. I understand that a prior art reference may disclose concepts either expressly or inherently. With respect to inherency, I understand that the fact that a certain result or characteristic may occur or be present in the prior art reference is not sufficient to establish the inherency of that result or characteristic. That is, I understand that the mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency with respect to the disclosure of a prior art reference. In other words, I understand that inherency may not be established by mere probabilities or possibilities that a certain result or

characteristic may occur or be present in the prior art reference. Instead, I understand, to establish inherency, there must be some extrinsic evidence that makes clear the missing descriptive matter is necessarily present in the thing described in the prior art reference, and that such missing descriptive matter would be so recognized by persons of ordinary skill. Thus, I understand that, for a reference to inherently disclose a concept, the reference must necessarily include that concept in the patent written description and claims.

20. I have been informed that a claimed invention is unpatentable under 35 U.S.C. § 103 if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. I have also been informed by counsel that the obviousness analysis takes into account factual inquiries including the level of ordinary skill in the art, the scope and content of the prior art, and the differences between the prior art and the claimed subject matter. I have been informed that it is impermissible within the framework of determining whether a claim is obvious to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

21. I have further been informed that obviousness concerns whether a POSITA not only could have made but would have been motivated to make the proposed combinations or modifications of prior art to arrive at the claimed invention. I have been informed by counsel that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. Some of these rationales include the following: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of a known technique to improve a similar device (method, or product) in the same way; (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (e) choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (f) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

22. I have been informed by counsel that PGR is only available for AIA patents, not pre-AIA patents like the '441 Patent. PGR proceedings only apply to patents contain or contained a claim to a claimed invention that has an effective

filing date after March 15, 2013 or claim priority to any patent or application that contains or contained at any time such a claim. As explained below, it is my opinion that the '441 Patent does not meet either of these requirements.

V. CLAIM CONSTRUCTION

23. It is my understanding that in order to properly evaluate the '441 Patent, the terms of the claims must first be interpreted. It is my understanding that for the purposes of this *inter partes* review, the claims are to be construed under the so-called *Phillips* standard, under which claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in light of the specification and prosecution history, unless the inventor and/or patent owner has set forth a special meaning for a term.

24. Additionally, claim terms are normally not interpreted in such a way that would exclude embodiments disclosed in the specification, except in cases of clear disclaimer in the specification or prosecution history. I have been further informed that claim terms only need to be construed to the extent necessary to resolve the obviousness inquiry.

25. For purposes of my analysis here, I have given the claim terms their ordinary and customary meaning in light of the specification and prosecution

history of the '441 Patent as would have been understood by a POSITA at the earliest possible priority date of the '441 Patent (April 19, 2010).

VI. OVERVIEW OF REFERENCES

A. Summary of Sprite Can

26. Petitioner's first ground relies on a Sprite Can, pictured below.

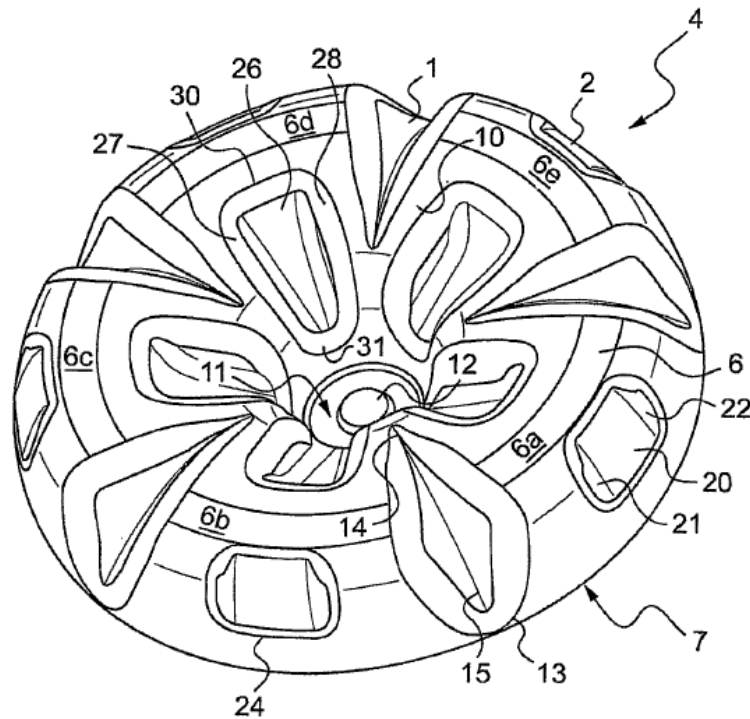


Ex.1002, ¶39

27. I have been informed that, according to the Petitioner, the Sprite Can was allegedly manufactured and publicly sold from 1985-1986 in Western Georgia and Eastern Alabama. I am aware that the public availability of the Sprite Can is in dispute, however, I take no position as to that issue. As explained below, it is my opinion that the Sprite Can does not render obvious every element of the '441 patent. In particular, the Sprite Can does not include an “*upper edge of the container side wall*” that “*is adjacent to the circular neck of the container body,*” as required by limitation [1.O].

B. Summary of Protais (Ex.1008)

28. Protais describes a bottom for a container, shown below.

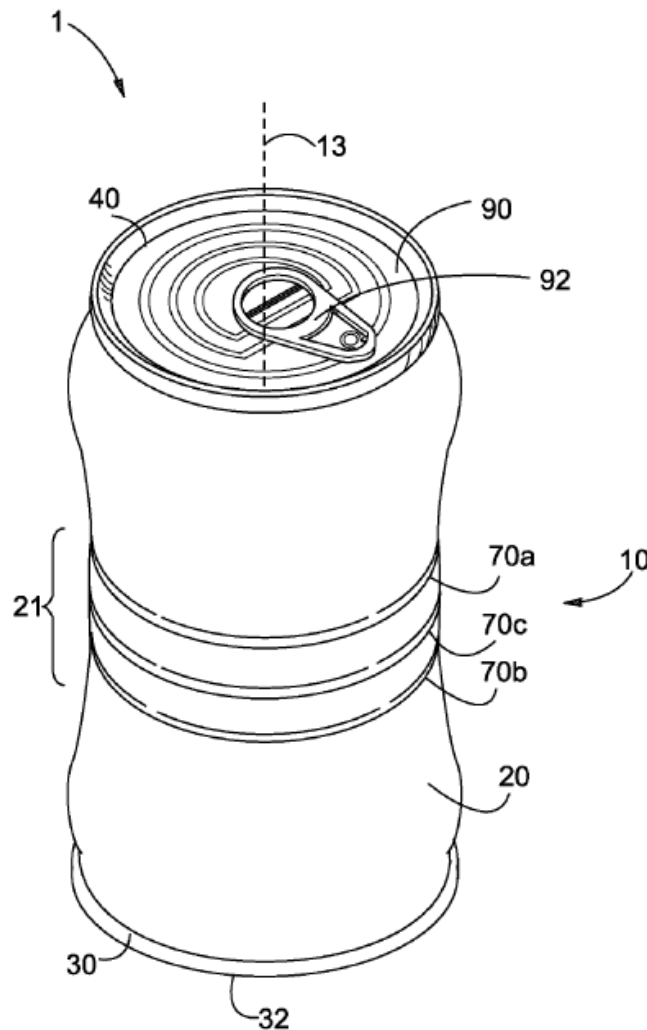
**Fig.3****Ex.1008, Fig. 3**

29. As shown above, Protais' bottom includes multiple ridges and depressions, which, according to Petitioner, provides "increased strength and resistance to deformation." Pet., 70. Protais lists PET as a potential material for manufacturing its bottom. Ex.1008, 8:25-26.

30. Petitioner's second ground combines the body and lid of the Sprite Can with the bottom described by Protais. Petitioner has not provided any illustration of their proposed combination for ground 2.

C. Summary of Metzger (Ex.1010)

31. Petitioner's third ground relies on a combination of Metzger, Protais, and Kaminski. Metzger describes a "container including a metal sidewall." Ex.1010, Abstract. The container is "capable of maintaining a vacuum." Ex.1008, 1:15-17. Metzger's container is shown below.

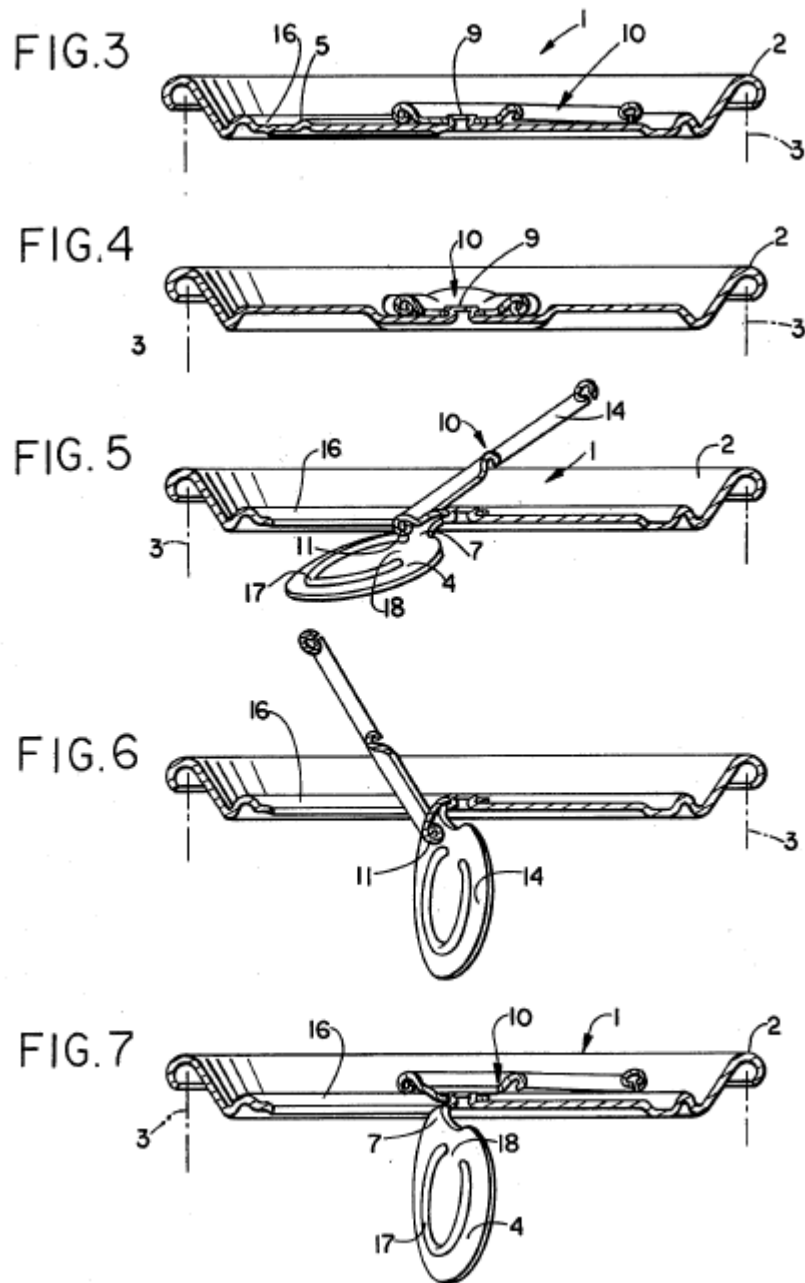
**FIG. 6****Ex.1010, Fig. 6**

32. While Metzger includes a single line that says its container's metal walls may actually be made of "various plastics," Ex.1010, 3:56-58, the scope of this disclosure is much more limited than Petitioner suggests, based on the intended purpose of Metzger's container.

33. Metzger's container was specifically designed to address "the pressure and temperature rigors of [a] thermal retort process" which often "compromise[s] the seal." Ex.1010, 2:19-22. "During a thermal retort process, the container and the food inside the container will be brought to a temperature of about at least 200 degrees Fahrenheit." Ex.1010, 11:35-37. In "exemplary embodiments," the container is brought "to a temperature of between 200 degrees Fahrenheit and 275 degrees Fahrenheit." Metzger's container, it explains, "should be able to withstand a thermal retort process of about 250 degrees Fahrenheit...for a period of about 45 minutes." Ex.1010, 11:43-49. As described below, because PET could not withstand the thermal retort process Metzger's container is designed for, the various plastics mentioned in Metzger cannot include PET.

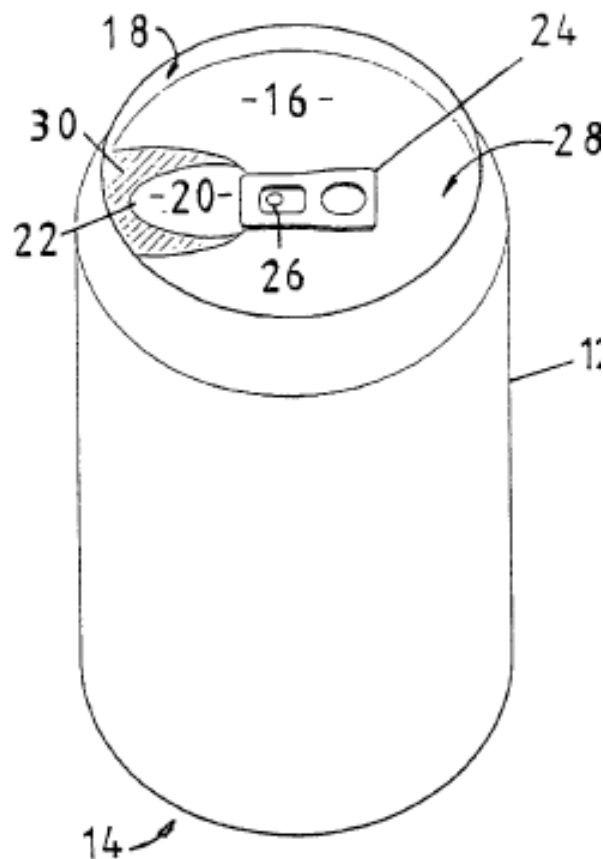
D. Summary of Kaminski (Ex.1011)

34. Kaminski describes a "pull tab" for an "easy open can end." Ex.1011, (54), Abstract. Aspects of the pull tab lid are illustrated in Figure 3-7 below.

**Ex.1011, Figs. 3-7**

E. Summary of Gardiner (Ex.1012)

35. Petitioner's fourth ground relies on a combination of Gardiner, Pedmo, and Brown. Gardiner describes a "beverage container." Ex.1012, (54). Examples of Gardiner's container is shown in Fig. 1, below.

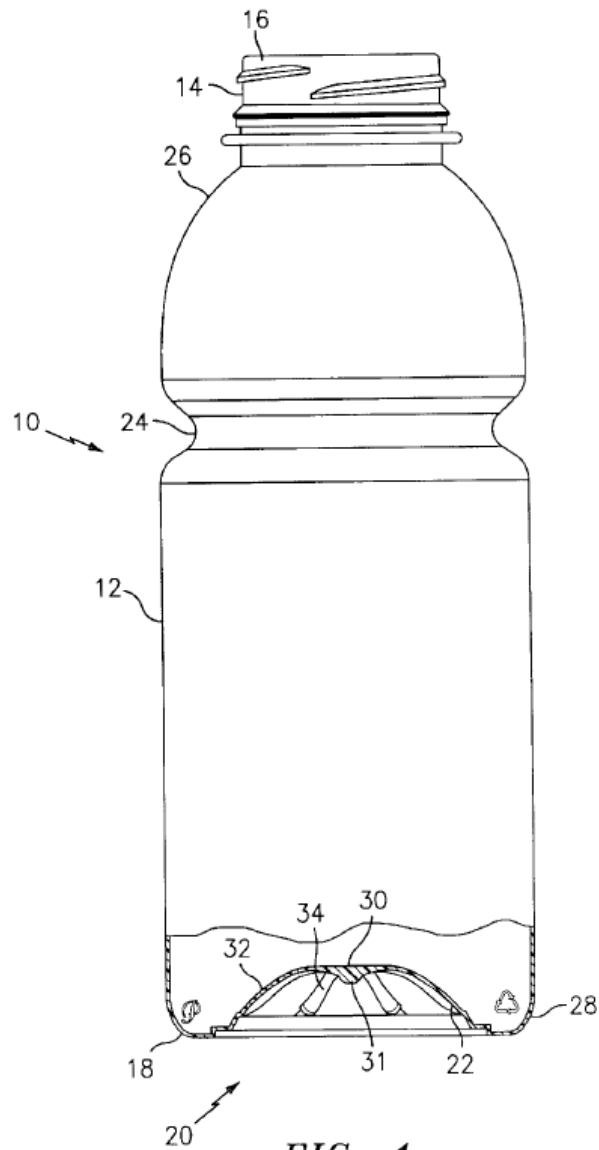
**FIG. 1****Ex.1012, Fig. 1**

36. Like Metzger, Gardiner mentions plastic as one material of many that could be used to manufacture its container. "The beverage container can be made

of any suitable material. Aluminium, aluminium alloy, steel and plastic are examples of the suitable materials.” Ex.1011, 2:22-24.

F. Summary of Pedmo (Ex.1013)

37. Pedmo describes a “bottle base.” Ex.1013, (54). Pedmo’s container is shown below in Figure 1.

**FIG. 1****Ex.1013, Fig. 1**

38. Pedmo's base is shown in Figure 2.

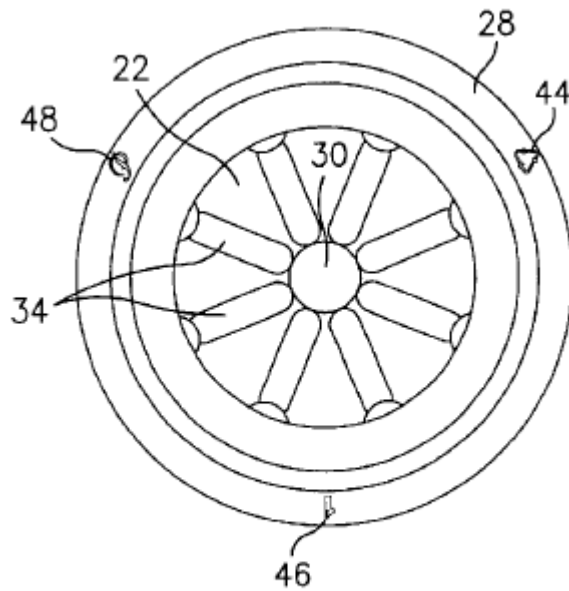
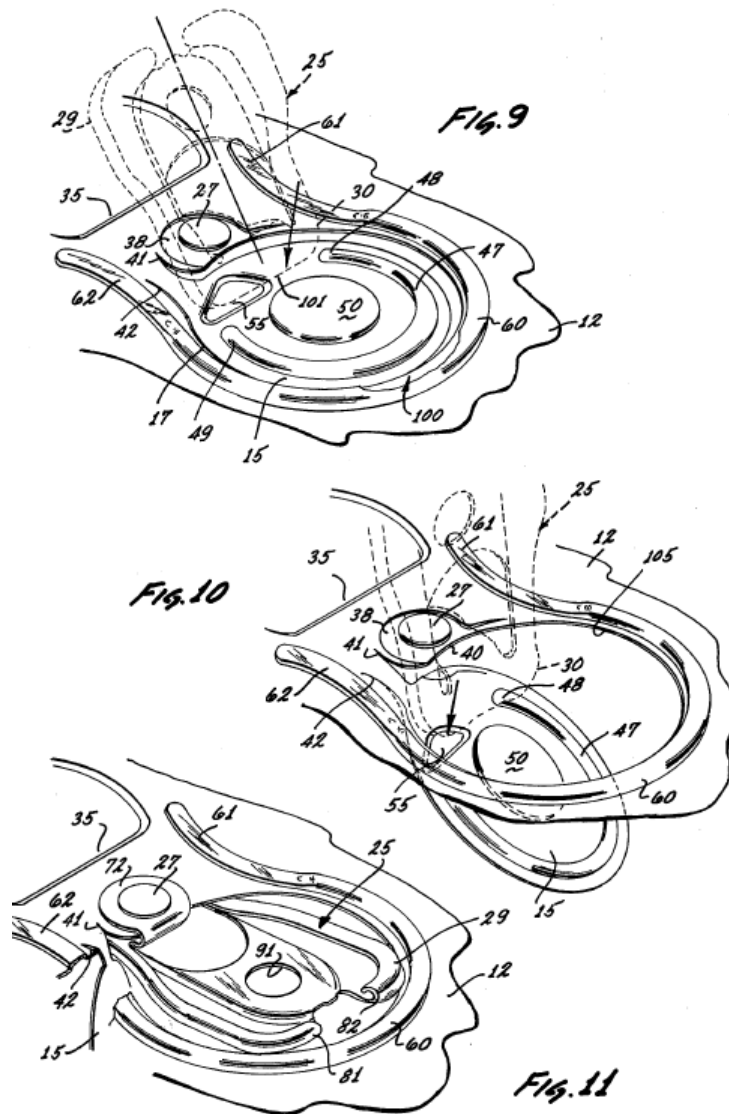


FIG. 2

Ex.1013, Fig. 2

G. Summary of Brown (Ex.1014)

39. Brown describes an “easy-open ecology end.” Ex.1014, [54]. Features of the easy open end are illustrated in Figures 9-11, below.



Ex.1014, Figs. 9-11

VII. THE '441 PATENT IS NOT ELIGIBLE FOR PGR

A. The figures of the '813 Application are supported by the disclosure of the '195 Application.

40. It is my understanding that, to be eligible for PGR, a patent must either (1) contain a claim that has an effective filing date after March 13, 2013, or

(2) claims priority to a patent or application that contains or contained at any time such a claim.

41. I understand that the Board's Institution Decision held that the '441 patent was eligible for PGR for purposes of institution. The Board's institution reasons that a design patent application drawing, Figure 2 of U.S. Patent Application No. 29/824,813 (the '813 Application), was a patent claim that lacked written description support in the parent application (U.S. Patent Application No. 16/800,195 ("the '195 Application")) because of a difference between drawings, described in more detail below.

42. It is my opinion that the complete record shows Fig. 2 of the '813 Application is supported by the earlier-filed application and, therefore, the '441 Patent is not eligible for PGR.

1. The test for written description support is performed from the perspective of a POSITA.

43. I have been informed by counsel that the test for whether the written description sufficiently supports a patent claim is the same for a design patent claim or a utility patent claim. I have also been informed that a patent claim is supported by the written description if the disclosure of the application relied upon reasonably conveys to a POSITA that the inventor had possession of the claimed subject matter as of the filing date.

44. Having reviewed the '195 Application in detail (Ex.2002, 92-111) and compared it to Figure 2 of the '813 Application, it is my opinion that a POSITA would readily recognize that the inventor had possession of the design claimed by Figure 2 of the '813 Application at least as of the filing date of the '195 Application.

45. It is my understanding that one of the roles of an expert witness in proceedings before the Board is to provide insight regarding the perspective of a POSITA in the context of the patent at issue. Petitioner's expert, Dr. Delson, stated that he "was not asked to give an opinion on whether a POSITA would understand if there was undisclosed new matter." Ex.2015, 24:19-21. I am not aware of any other attempt by the Petitioner to specifically identify what a POSITA would have interpreted regarding the scope of the '195 Application and whether it would have suggested to a POSITA that the inventor was in possession of the design in Figure 2 of the '813 Application.

2. A POSITA would have recognized, based on the disclosure of '195 Application, that the inventor was in possession of the design claimed by Figure 2 of the '813 Application.

46. Below, I have included the figures in question. Figure 4 of the '195 Application is on the left, and Figure 2 of the '813 Application—the figure that is alleged to lack written description support—is shown on the right.

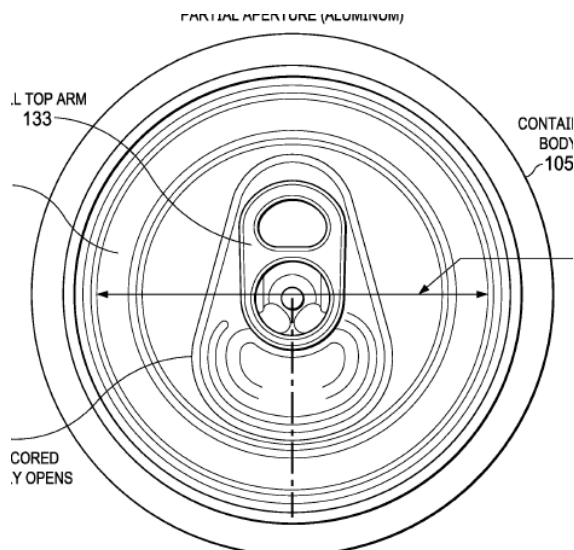


Figure 4

Ex.2002, 106
('195 Application)

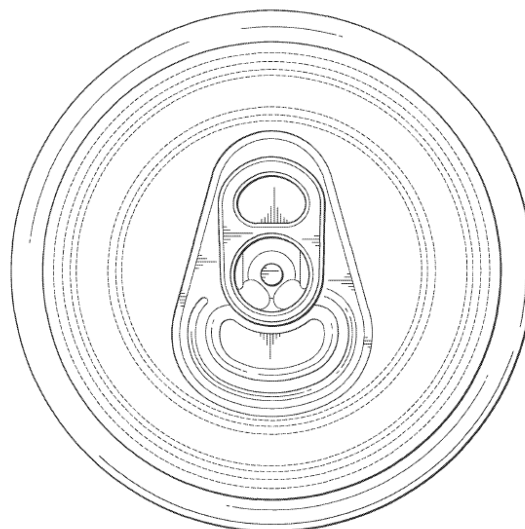


FIG. 2

Ex.1003, 187
('813 Application)

47. To show that Figure 2 of the '813 Application (on the right) lacked written description support, the Petitioner must establish that a POSITA, based on observing Figure 4 of the '195 Application (on the left), would have recognized that the inventor was not in possession of the design. It is my opinion that this is incorrect.

48. As I explain above, see § III, a POSITA would have been someone with both educational and practical experience designing various mechanical tools, products, or machines. A POSITA would be very familiar with technical drawings, including patent drawings. A POSITA would readily understand that technical drawings and patent drawings may be drafted in numerous ways. Based on her

technical experience, a POSITA would understand these drawings show the same design, that the inventor was in possession of the design as of the filing date of the '195 Application, and that there is no new matter in the figures of the '813 Application.

49. In conducting my own analysis, I have also reviewed the declaration of Mr. Kirkpatrick—a patent illustrator with over 32 years of experience. Mr. Kirkpatrick's opinion as to the meaning of the figures at issue in this case are consistent with mine.

50. A POSITA, familiar with technical drawings and drawing conventions, would immediately recognize that the design as a whole shown in Figure 2 of the '813 Application was the same design shown in Figure 4 of the '195 Application. The specific feature Petitioner identifies as allegedly new matter is well understood by a POSITA, based on the drawings and detailed description of the '195 Application, as mere shading or contour lines. The two lines forming the shape within the tear strip in Figure 4 of the '195 Application illustrate that the slope of the surface forming the ridge shown by these lines is more steeply inclined at the top and gradually flatten toward the bottom. *See* Ex.2002, 106 ('195 Application, Fig. 4). This same feature is shown by the lines being connected in the '813 Application. A POSITA would have understood that this simple change in

how the design was illustrated was not a new design or new matter included in Figure 2 of the '813 Application.

51. Mr. Kirkpatrick's declaration in support of the Patent Owner Preliminary Response is consistent with my own analysis and opinion. Mr. Kirkpatrick testified that "both figures reflect the same product design." Ex.2001, ¶19; *see also*, ¶¶10-32. Mr. Kirkpatrick attributed the minor differences to "choices in drafting strategy of the respective illustrators," noting the "striking similarity" between the figures, and that although "various contour lines" had been included in Figure 2 of the '813 Application, **"the geometry of the container lid in each figure is identical."** Ex.2001, ¶¶5,19,20. Mr. Kirkpatrick opined that "there is nothing to indicate that the drafter of Figure 2 of the '813 Application illustrated a different product or design." Ex.2001, ¶21.

52. I agree with these observations from Mr. Kirkpatrick. Like Mr. Kirkpatrick, based on my experience in the art relevant to the '441 patent, a POSITA would also readily recognize that both figures reflect the same design. A POSITA would have categorized the two connecting lines in Figure 2 of the '813 Application that Petitioner argues were new matter as the same contour and shading lines that were added to Figure 2 of the '813 Application. A POSITA would have recognized that these lines simply conveyed shading or contour

information ***of the same design***. Nothing in Figure 2 of the '813 Application would have suggested that the inventors were not in possession of the claimed design as of the priority date of the '195 Application.

53. In rejecting the '813 Application figures, the examiner indicated that “if the surface shape is not evidence from the disclosure as filed, the addition of surface shading or additional views after filing ***may*** constitute new matter,” citing 37 C.F.R. 1.152(II). Ex.1003, 13. However, the guidance cited by the examiner actually says “[a]ppropriate and adequate surface shading ***should be used*** to show the character or contour of the surfaces represented.” 37 C.F.R. 1.152(II). The newly submitted Figure 2 of the '813 Application did just that. It merely added appropriate surface shading that showed the same character or contour of the surfaces shown in Figure 4 of the '195 Application.

54. The differences between Figure 2 of the '813 Application and Figure 4 of the '195 Application are negligible to the point that they are difficult to identify without close inspection. Even if a POSITA did notice them, a POSITA recognize them as inconsequential differences in drawing convention, given a POSITA's understanding of engineering drawings. No POSITA would believe that the differences between the figures reflected new matter of any kind.

B. Claims 9, 10, 15, and 16 also have written description support.

55. Claims 9, 10, 15, and 16 recite, in part, a depression that is “*visible through at least a portion of the container body.*” Ex.1001, 6:32-47 (claims 9-10), 8:62-9:5 (claims 15-16). Petitioner argues that this feature does “not find written description support in any prior filed applications.” Pet., 7. Petitioner argues that “[t]he specification...fails to explain whether transparent resins are used” or “a transparent/translucent liquid.” Pet., 7. Contrary to Petitioner’s argument, a POSITA at the time of invention would have readily understood from the detailed description and drawings that the inventor had possession of the invention set forth in claims 9, 10, 15, and 16 as of the April 19, 2010 priority date, at least because of the drawings and detailed description in U.S. Patent Application No. 12/762,934, the first application in the priority chain of the ’441 Patent.

1. The specification provides written description support for transparent resins.

56. The specification lists materials that may be used for the container body, including “polyethylene terephthalate (PET) resin,” “polyamide resin, polycarbonate resin, polyacetal resin, polybutylene terephthalate resin or other synthetic resin.” Ex.1001, 2:43-49. A POSITA would have known that each of these materials are transparent.

57. PET is a “typical transparent polyester medium.” Ex.2005, 1:35-38; *see also* Ex.2006, 3:14-17 (“A polyethylene terephthalate film is used for the transparent film.”); Ex.2007, 5:52-57 (“Examples of the transparent polymer films include films of polyethylene terephthalate.”). The Petition cites to the Handbook of Engineering and Specialty Thermoplastics to argue that “PET material **can be** opaque.” Pet. 7 (citing Ex.1017, 39). While it is true that PET **can be** opaque, it is opaque when combined with other additives. This is confirmed by the same handbook Petitioner cites. The cited page of the handbook explains that PET is ordinarily not opaque. Instead, the handbook explains that PET can be **combined** “**with additives**” to create an “opaque or colored” material. Ex.1017, 39 (“opaque or colored (with additives)”).

58. The handbook goes on to say that in its “amorphous state, **PET is transparent.**” Ex.1017, 28. PET’s “[l]ight transmission can reach 85 %.” Ex.1017, 29. Due to its transparency, it can be “used as overhead projector transparency, photographic film, etc.” Ex.1017, 29. In its “semi-crystalline state,” PET is “translucent.” Ex.1017, 23. The handbook’s introduction to PET further explains that it is “one of the most important industrial polymers because of its excellent properties as tensile impact strength, chemical resistance, processability, **clarity**, thermal stability and others.” Ex.1017, 22.

59. That PET is a transparent material is also supported by the testimony of both Petitioner's own witnesses. Mr. Norris explains that the Coca-Cola PET Cans "**were clear and allowed the product to be seen through the container.**" Ex.1005, ¶11. Dr. Delson testifies that "**a POSITA would understand [PET] was a transparent material through which [structural features of the container] can be viewed.**" Ex.1002, ¶114. Dr. Delson also noted that the "see-through properties" of PET are "corroborated by the Coca-Cola Marketing Material indicating '[T]he new package is **translucent and semi-transparent, so you can see inside.**'" Ex.1002, ¶109 (quoting Ex.1006, 1). Dr. Delson further explains that "**it was well known to a POSITA that PET could be translucent or transparent.**" Ex.1002, ¶247.

60. The other materials recited in the specification are also transparent. "[P]olyamide" is "**excellent in transparency.**" Ex.2008, 5:72-6:2. "[P]olyamides have some or all of the properties listed below: **transparency.**" Ex.2009, [0001]. Similarly, "polycarbonate" is "an industrial plastic material...that has **the same transparent property.**" Ex.2010, [0030]; *see also* Ex.2011, 1:59-60 (listing "excellent properties inherent to a polycarbonate resin such as **transparency**, heat resistance and dimensional stability.")).

61. Given this evidence, it seems to be undisputed that PET is transparent or translucent and, therefore, that there is adequate written description support for a

transparent container body such that the depression is “visible through at least a portion of the container body,” as recited by claims 9, 10, 15, and 16.

2. The specification provides written description support for transparent or translucent liquids.

62. It is also clear from the detailed description and drawings that the inventor contemplated a transparent or translucent liquid within a transparent container body.

63. The '441 Patent describes beverages, including “beer and soda,” as liquids for which the claimed container would be suitable. Ex.1001, 1:25-27. A POSITA would have recognized that beer can be see-through, or translucent. Ex.2012, [0024] (inspecting bottles that “are made of a transparent material, for example glass or a transparent plastic such as PET, for example, and are filled with **a transparent liquid** (e.g. **beer**, table water, mineral water, wine etc.)”). In addition, sodas are also typically transparent or translucent. Ex.2013, [0008] (“translucent to transparent liquids such as water, **soda**, juice, or the like”). Given that the '441 Patent specifically identifies beer and soda as beverages the described and claimed container was intended to hold, the written description provides explicit support for having transparent or translucent liquids within the container.

64. In addition to the disclosure above, the '441 Patent provides multiple side views of the claimed container filled with a liquid/solid in which the

depression is visible through the side walls. For example, in both Figures 1 and 2, shown below, the bottom depression is visible through “the container side wall 107” and “the liquid/solid within the container body 105.”

Container Shape

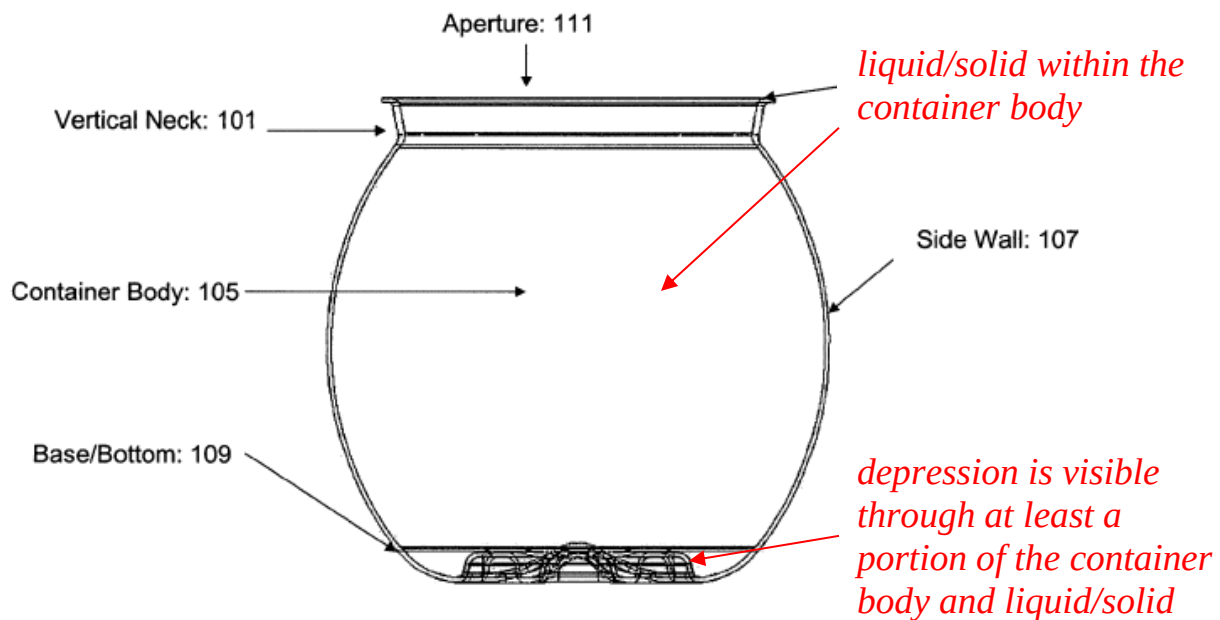


Figure 1

Ex.1001, Fig. 1 (annotated)

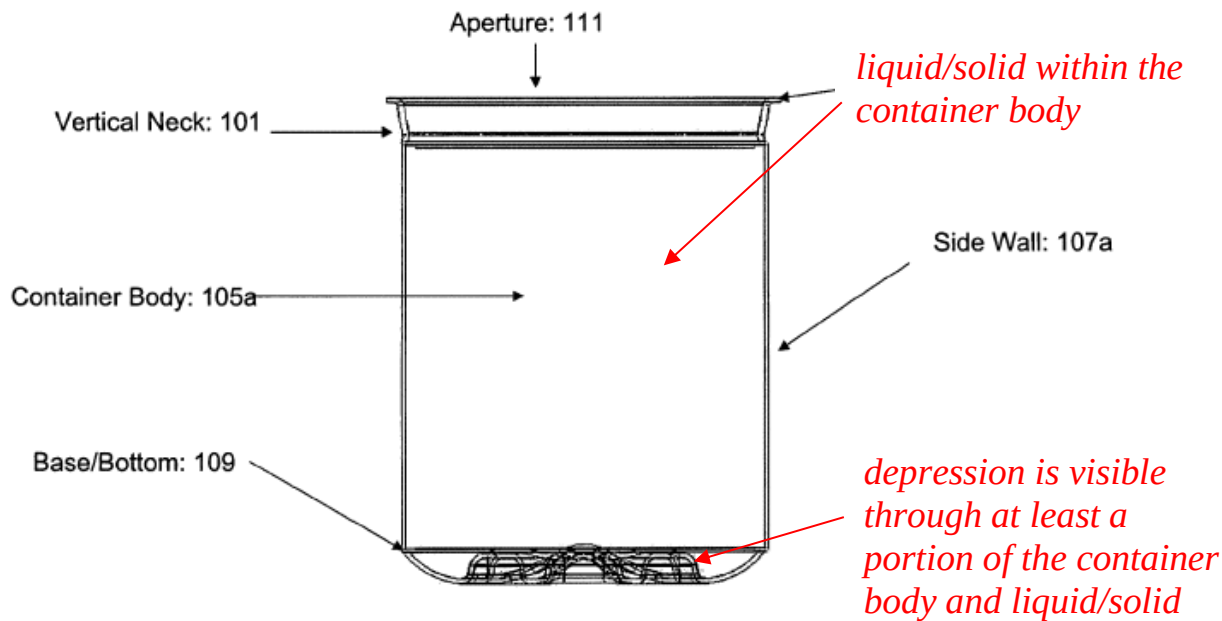


Figure 2

Ex.1001, Fig. 2 (annotated)

65. These figures are not described as cross-sectional views of the container. Both are referred to simply as “side view[s].” Ex.1001, 1:62-65. In addition, a POSITA would have recognized that these figures were not cross-sectional views because the details of the base features including various depressions are all seen through the walls of the container. These views and associated descriptions show that the inventor was in possession of both a transparent container body and transparent contents (liquids/solids) within the container body.

66. For at least these reasons, it is my opinion that a POSITA would have recognized that the inventor had full possession of the invention set forth in claims

9, 10, 15, and 16 as of the claimed priority date. Therefore, the '441 Patent does not contain, nor has it ever contained, a claim to an invention that has an effective filing date after March 15, 2013.

VIII. PETITIONER'S SECOND GROUND RELYING ON THE COMBINATION OF THE SPRITE CAN WITH PROTAIS FAILS TO RENDER OBVIOUS CLAIMS 9-20.

67. Petitioner's second ground combines the Sprite can with the base of Protais and is used to challenge claims 9-20 of the '441 patent. See Pet, 3-4. In addition, Petitioner's proposed combination of the Sprite Can with Protais's base does not render obvious claims 9-20 for the additional reasons presented below.

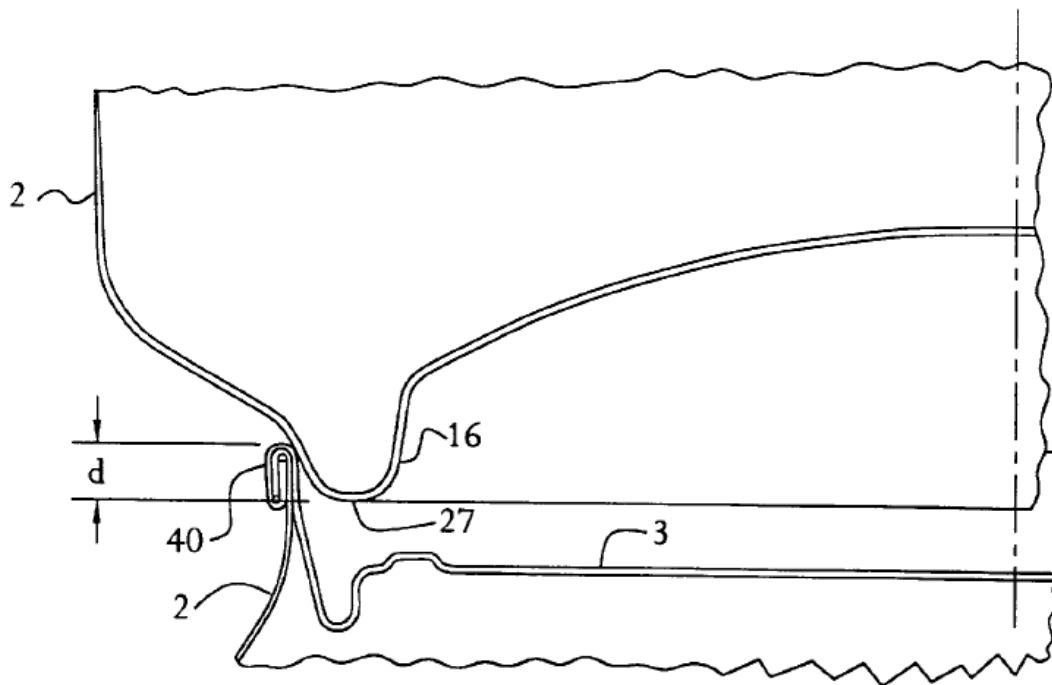
A. Petitioner has not identified an adequate motivation to combine the Sprite Can with Protais's base.

68. I have been informed that petitioners must provide a motivation to combine references when they are combined to challenge a claim. Petitioner reasons that a POSITA would have been motivated to combine the Sprite Can with Protais's base because both are "plastic" and "circular." Pet., 70. Petitioner also argues that a POSITA would implement Protais's base with the Sprite Can because "Protais's ribs, notches, and/or grooves" provide "increased strength and resistance to deformation" to make the Sprite Can shorter. Pet., 70.

69. In my opinion, Petitioner's reasons that would allegedly motivate a POSITA to replace the Sprite Can base with Protais's base overlook several intended functions provided by the specific design features of the Sprite Can base that would be lost if replaced with the Protais base, as describe below. Petitioner's proposed combination is improperly based on the claims of the '441 patent and not the teachings of the references themselves.

70. As Mr. Norris testified, the Sprite Can was designed to mimic a standard aluminum soda can as closely as possible. *See* Ex.1005, ¶21 ("The PET can is very close in shape and size to the existing 12oz aluminum can and mimicked its profile."). Mr. Norris further explained that the "changes in the shape of the PET can body" were "minor" and "did not materially affect the filling and assembly process." Ex.1005, ¶22. After filling, the PET cans were stacked like normal when they "were palletized like aluminum cans." Ex.1005, ¶22.

71. The bottom of a standard 12oz aluminum can is shaped specifically to be nested within the can top so that the cans are stable when stacked. This feature is illustrated by Cheng, below, which describes standard "12 ounce cans having 202 ends, and bottoms." Ex.2016, 8:24-28.

**FIG. 3****Ex.2016, Fig. 3**

72. As shown above, “an annular nose 16 extends downwardly from the frustoconical portion 8.” Ex.2016, 4:41-42. The diameter between the annular nose 16 is selected so that “when two similarly constructed cans are stacked one atop the other, the bottom 6 of the upper can will penetrate into the end 3 of the lower can so that the base 27 of the nose 16 of the upper can extends a distance d below the lip formed on the seaming panel 40 of the lower can.” Ex.2016, 5:22-27. These geometries of typical beverage cans are described elsewhere as “interlocking

means” that enable “stable, interlocking stacking in packaging to create packaging alternatives.” Ex.2017, 1:41-42, 3:39-42, Figs. 2-3.

73. The bottom of the Sprite Can, like the bottom of conventional 12 oz cans, includes these same interlocking features.



Pet., 16 (annotated)

74. As shown above, the Sprite Can includes an annular nose that, like the annular nose of a standard 12oz can, is shaped to nest between the outer rim of another Sprite Can's lid. Accordingly, the outer diameter of the annular nose of the

base is slightly smaller than the inner diameter of the lid. After filling, the PET cans “were palletized like aluminum cans.” Ex.1005, ¶22.

75. In addition, the domed shape of the Sprite Can bottom, in addition to being strong against internal pressure, creates the necessary space to accommodate the pull-tab of another can when the cans are stacked, as shown by Cheng, below.

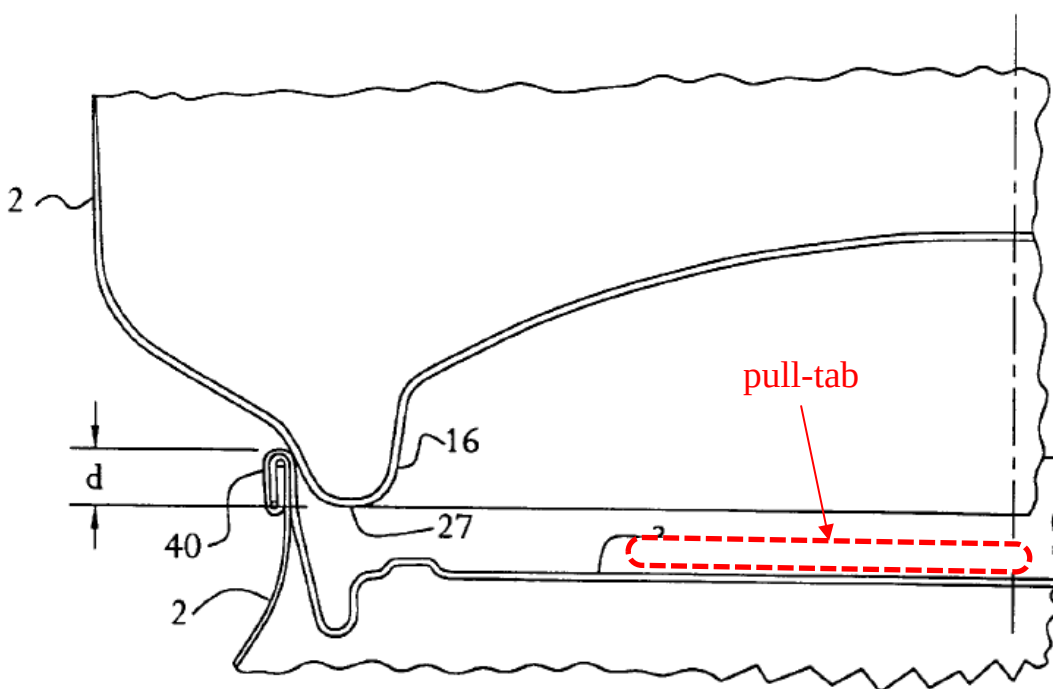


FIG. 3

Ex.2016, Fig. 3 (annotated)

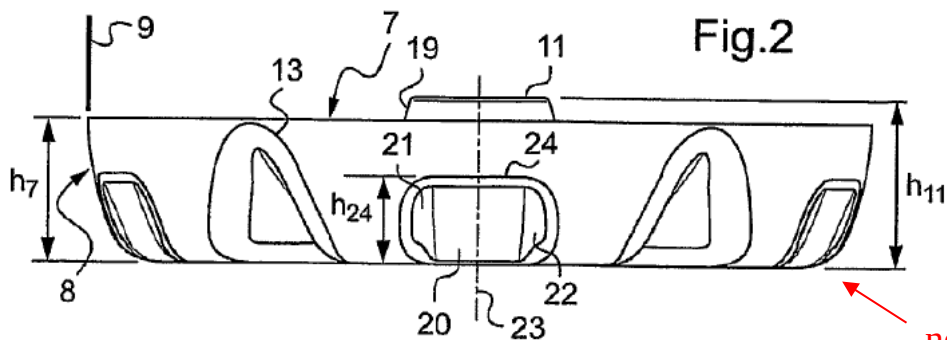
76. Simply replacing the bottom of the PCAN with the bottom described by Protais, as Petitioner suggests, would take away all these features ensuring the stackability of the Sprite Can. A POSITA would certainly evaluate these features

in selecting suitable alternative designs for the bottom of the Sprite Can. As shown below, Protais's bottom does not include the desired features. For example, Protais's base does not include any annular nose that would extend into the lid of another PCAN when stacked.



annular nose shaped
to interlock with
outer rim of lid

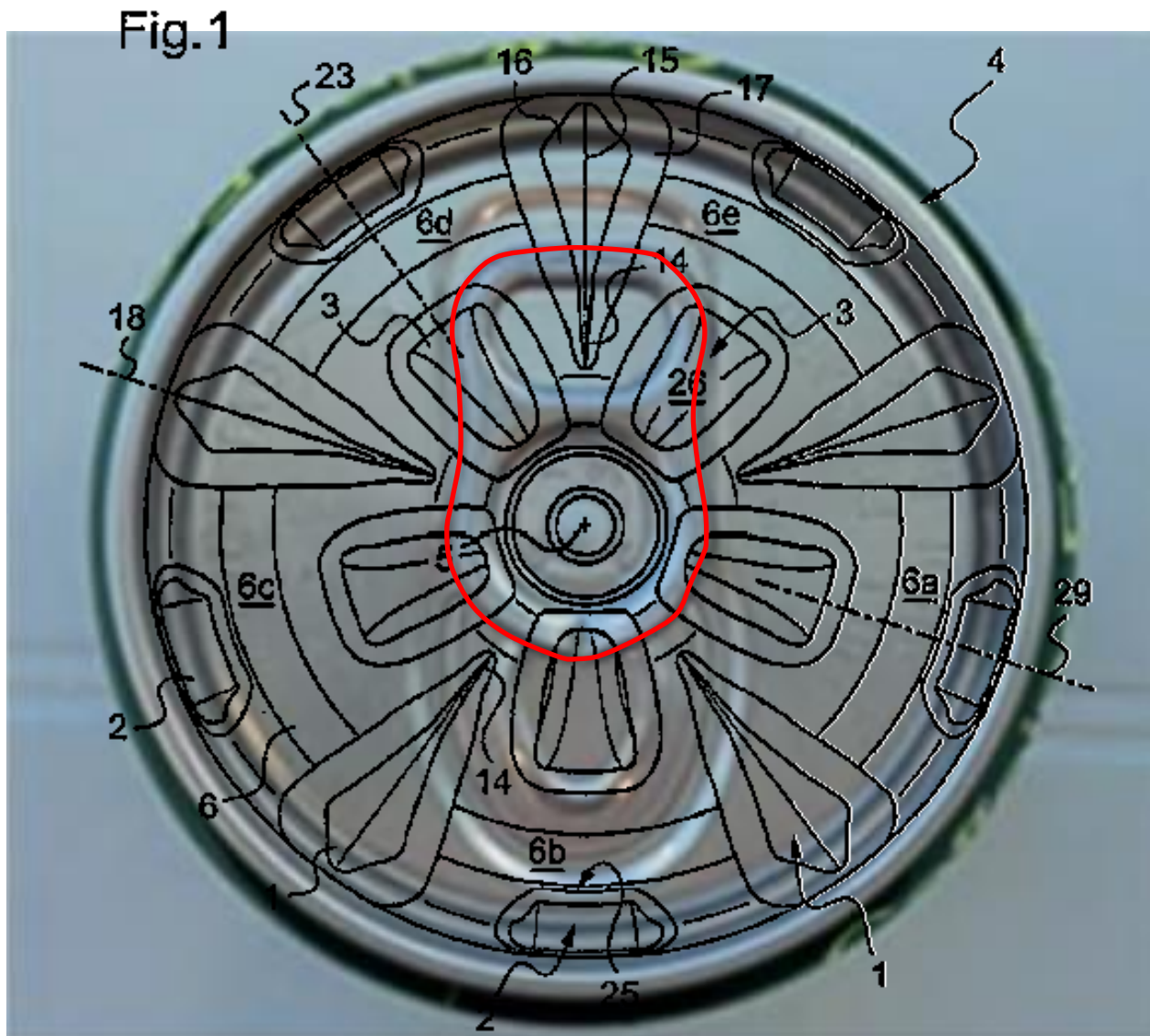
Pet., 16 (cropped and annotated)



no annular nose

Protais, Fig. 2 (annotated)

77. Protais's bottom similarly does not include an adequate space to accommodate the pull-tab when stacked, as shown by the figure below, overlapping Protais's base over the PCAN's lid.



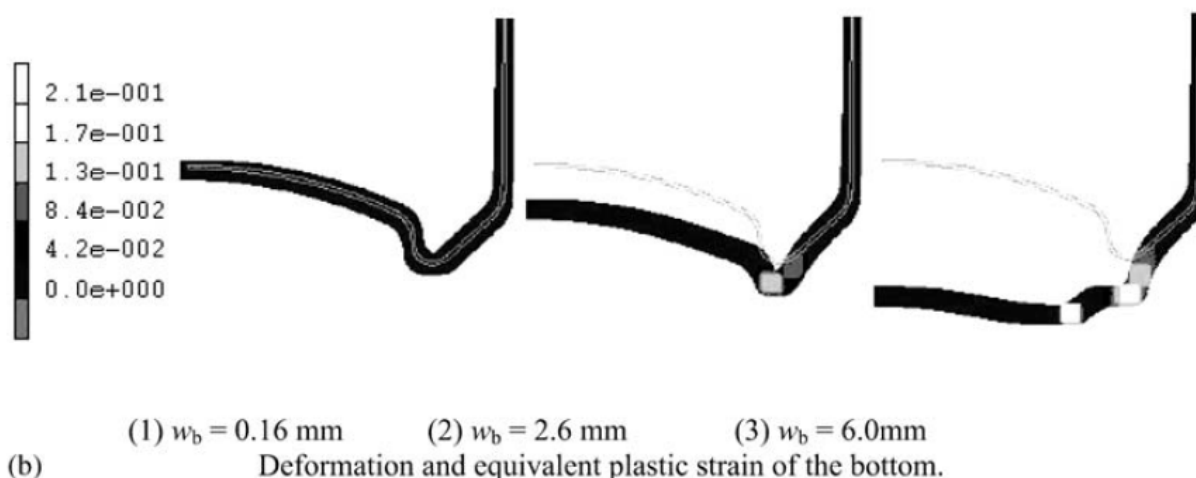
**Ex.1008, Fig. 1 overlaid over figure from Pet., 16
(pull-tab outlined in red)**

78. Even assuming Protais's base would fit within the Sprite Can's lid, as shown above, it would contact the pull-tab of the Sprite Can lid, causing it to rest on an uneven surface (i.e., the pull-tab). This uneven contact would cause the upper Sprite Can to rock in response to external forces, significantly impairing the stability of stacked cans.

79. Petitioner's first proposed reason for the modification—"increased strength," Pet., 70—would be far outweighed by either a significantly greater risk of falling if PCANs were stacked or significantly increased complexity of storage if the PCANs could not be stacked. Petitioner's second proposed reason—"making the Coca-Cola PCAN shorter...allowing the user of standard filling and packaging equipment," Pet., 70—is also far outweighed by the greater risk of falling when stacked, as well as rebutted by the testimony of Mr. Norris, who explained that "[t]he minor changes" between the PCAN and standard aluminum cans "did not materially affect the filling and assembly process." Ex.1005, ¶22. Because neither of Petitioner's proposed reasons for modification are correct, the claims provide the only reason for replacing the Sprite Can's base with the base of another unrelated container.

80. In addition, ample documentation shows that the dome shaped base of standard cans is not only adequate, but superior for resisting internal pressure and

conserving material used. For example, Han described an “optimization technique” for “beverage bottle design” in which the ideal dome shape was determined to be a dome shape similar to the bottom of the Sprite Can. *See* Ex.2020, 310 (Fig. 10a). In addition, Han shows, below, how a domed bottom of a can deform under internal pressure to a greater degree without failure because the dome may bulge downward while preserving the shape of the remainder of the bottle. *See* Ex.2026, 306 (Fig. 3b). Protais's bottom does not allow for this deformation of the bottom while preserving the shape of the remainder of the bottle.



Ex.2026, 306 (Figure 3b)

81. Given that the design of the Sprite Can's bottom is already adequately strong against internal pressure from carbonation while also preserving the interlocking features important for stacking, storing, and transporting, a POSITA would not have been motivated to modify the PCAN base to one of equal strength

but sacrificing interlocking features when stacked. For at least these reasons, a POSITA would not have been motivated to modify the PCAN base as Petitioner suggests.

82. Accordingly, the combination of the Sprite Can and Protais does not render obvious claims 9-20 of the '441 patent.

B. Ground 2 of the Petition does not set forth the mapping of the prior art with particularity.

83. It is my understanding that a PGR petition must identify the grounds it presents clearly and consistently. Petitioner's challenge in the second ground is not sufficiently clear or consistent to understand what combination of containers or references Petitioner is relying on.

84. Specifically, the Petition initially explains its proposed combination for the second ground as “a container that has the body and lid of the Coca-Cola PCAN, *and Protais' bottom.*” Pet., 69.

85. Independent claim 15 includes multiple limitations (at least limitations [15.E]-[15.J] and [15.L]-[15.M]) that recite a container bottom with various features. See, e.g., Ex.1001, 4:14-16 (Limitation [15.E]) (“a base portion”), 4:17-19 (Limitation [15.F]) (“base portion comprises a bottom and a first depression...”), 4:20-21 (Limitation [15.G]) (“first depression...partially defines a first outline”), 4:22-24 (Limitation [15.H]) (“base portion further comprises a

center element”). For each of these limitations, Petitioner provides no analysis explaining how its proposed combination of the Sprite Can with **Protais**’ bottom renders the claim limitations obvious. Instead, the Petition only includes citations to the claim 1 analysis. However, given that Petitioner’s second ground proposes a combination of the Sprite Can and Protais, it is not clear whether these are citations to the claim 1 analysis from the first ground, mapping the Sprite Can to the claims, or to the third ground, mapping Protais to the claims.

86. As an example, limitation [1.G] recites “*wherein the first depression at least partially defines a first outline.*” Ex.1001, 4:20-21. The second ground purports to show how the combination of the Sprite Can’s container and lid combined with Protais’s bottom render claims 9-20 obvious. *See* Pet., 69. According to this combination, this second ground would presumably show how Protais’s bottom includes a “*first depression*” that “*at least partially defines a first outline.*” If the Petition meant to refer the reader to the analysis in the first ground, this analysis addresses the Sprite Can alone, is inconsistent with the second ground, and does not show how Protais’s bottom discloses or renders obvious the limitation. If, however, the Petition meant to refer the reader to the analysis in the third ground, such an internal reference is not at all clear, and the analysis in the third ground is inconsistent with the second ground because it combines Protais’s

bottom with Metzger's container. In addition, to the extent the Petition's analysis for limitation [15.G] of the second ground does refer to the analysis of the third ground, Protais's bottom does not disclose or render obvious a "*first depression*" that "*at least partially defines a first outline.*" See § IX.C. However, Patent Owner maintains that the internal references for at least limitations [15.E]-[15.J] and [15.L]-[15.M] are not sufficiently clear to meet the requirement that a petition identify "with particularity...the evidence that supports the grounds for the challenge to each claim." 35 U.S.C. § 312(a)(3). Accordingly, ground 2 is also insufficient to render obvious claim 15, as well as claims 16-20 depending from claim 15.

IX. THE COMBINATION OF METZGER, PROTAIS, AND KAMINSKI DOES NOT RENDER THE CLAIMS OBVIOUS.

87. Petitioner's third ground presents a combination of Metzger, Protais, and Kaminski. For the reasons presented below, Petitioner's third ground does not render the claims obvious.

A. Metzger does not disclose a container body...made out of a resin, as required by limitation [1.C].

88. Limitation [1.C] recites "*wherein the container body is made out of a resin.*" Ex.1001, 4:12. Claims 2, 5-6, and 8 add that "*the resin is a polyethylene terephthalate (PET) resin.*" Ex.1001, 6:4-6, 12-21, 26-29.

89. None of the prior art references of ground 3 make any reference to “a resin,” or “a polyethylene terephthalate (PET) resin.” Instead, the Petition simply says that “Metzger’s container was made of ‘various plastics’” and “plastics can be made out of a resin.” Pet., 108 (quoting Ex.1010, 3:56-58). Petitioner’s analysis is insufficient for at least two reasons.

1. Petitioner’s argument that plastics are equivalent to resins invokes inherency and is not supported by any evidence.

90. By equating plastic with resin, Petitioner is, effectively, arguing that any disclosure of plastic inherently also discloses a resin. It is my understanding that if a claim limitation is not disclosed by the prior art, a patent challenger can fill the gap if the missing limitation is necessarily present and that the mere possibility or probability that it is present is not sufficient. For limitation [1.C], Petitioner has not demonstrated that all plastics are necessarily also resins, as it must given the lack of disclosure of resin in the prior art. Rather, Petitioner merely argues that “plastics can be made out of a resin.” Pet., 108. Therefore, Petitioner has not made the necessary showing that the prior art relied upon renders obvious a resin in spite of the lack of disclosure.

91. When asked about the issue at deposition, Dr. Delson refused to take any position at all. He stated “I have not given an opinion on every type of – of various plastics that are out there to determine – to evaluate Metzger’s intent.”

Ex.2015, 49:21-23. When asked if Metzger's "various plastics"...include plastics both formed from a resin and plastics not formed from a resin," Dr. Delson responded "I have not evaluated that" and again said "I have not considered all of the various plastics that Metzger is referring to." Ex.2015, 50:6-12.

92. In reality, not all plastics are necessarily resins. The Dictionary of Science and Technology 1992 defines plastic as "any of various synthetic or organic materials that can be molded or shaped, generally when heated, and then hardened into a desired form." Ex.2020, 1667. "[R]esins" are included as just one of many examples of plastics, with other non-resin plastics including "polymers" from "cellulose derivatives." Ex.2020, 1667.

93. Because the prior art does not disclose a resin and Petitioner has not met its burden to show that a resin is inherently disclosed by the "various plastics" it references, the combination of Metzger, Protais, and Kaminski do not render obvious limitation [1.C], claim 1, or any of its dependent claims.

2. Petitioner has not provided any reason that a POSITA would select a resin-based plastic.

94. To the extent the Board finds that Petitioner does not need to show that Metzger's "various plastics" necessarily include a resin, Petitioner's analysis is still insufficient because it has not provided any reason or motivation to specifically select a resin-based plastic.

95. Even assuming Metzger did list a resin-based plastic as one of its “various plastics” (see § IX.A.1), Petitioner has not identified any reason that a POSITA would have selected a resin-based plastic. For this additional reason, the combination of Metzger, Protais, and Kaminski do not render obvious limitation [1.C], claim 1, or any of its dependent claims. Limitation [15.C] is identical to limitation [1.C] and the combination of Metzger, Protais, and Kaminski do not render obvious limitation [15.C] for the same reasons. Claims 16-20 depend from claim 15 and are, therefore, also not rendered obvious by the combination of ground 3.

B. A POSITA would have recognized that Metzger's container cannot be made of PET.

96. As mentioned above, claims 2, 5-6, and 8 add that “*the resin is a polyethylene terephthalate (PET) resin.*” Ex.1001, 6:4-6, 12-21, 26-29. Here, Petitioner plainly acknowledges that “Metzger did not explicitly disclose a PET resin.” Pet., 149. Instead, Petitioner argues that a POSITA would have been motivated to construct Metzger's container using PET because Protais's mentions PET and says it has “good mechanical strength and thermal resistance.” Pet., 149 (quoting Ex.1008, 1:50-51). In reality, a POSITA would not have been motivated to make Petitioner's proposed modification because constructing Metzger's container from PET would render it unsuitable for its intended purpose.

97. Metzger's container was specifically designed to address "the pressure and temperature rigors of [a] thermal retort process" which often "compromise[s] the seal." Ex.1010, 2:19-22. A thermal retort process is a process for sealing food in a container and then raising the temperature for a period of time to eliminate harmful microorganisms that may cause food spoilage. *See* Ex.2027, 1-3. Metzger explains that "[d]uring a thermal retort process, the container and the food inside the container will be brought to a temperature of about at least 200 degrees Fahrenheit." Ex.1010, 11:35-37. In "exemplary embodiments," the container is brought "to a temperature of between 200 degrees Fahrenheit and 275 degrees Fahrenheit." Ex.1010, 11:37-40. Metzger's container, it explains, "should be able to withstand a thermal retort process of about 250 degrees Fahrenheit...for a period of about 45 minutes." Ex.1010, 11:43-49.

98. A POSITA would have recognized that PET would not have been able to withstand the thermal retort process because the glass transition temperature of PET is below the temperatures of Metzger's thermal retort process.

99. As a thermoplastic "is raise above the glass-transition temperature, T_g , or melting point, T_m , certain polymers become easier to form or molded into desired shapes. The increased temperature weakens the secondary bonds (through thermal vibration of the long molecules), and the adjacent chains thus move more

easily when subjected to external shaping forces.” Ex.2022, 202. “If the temperature of a thermoplastic polymer is raised above its T_g , it first becomes *leathery* and then increasing temperature, *rubbery*.” Ex.2022, 202.

100. Regarding PET specifically, Protais explains that “[w]hen conventional bi-oriented PET containers are taken to a temperature higher than the glass transition temperature, they undergo significant shrinkage due to release of stresses.” Ex.1008, 1:37-39.

101. Huang discloses the “glass transition temperature (T_g)” of PET as 73.6° Celsius (164.5° Fahrenheit). Ex.2018, 2. The Materials Data Book (2003 Edition) from the Cambridge University Engineering Department indicates a range between 68° C and 80° C for the glass transition temperature of PET. Ex.2023, 9; *see also* Ex.2024, 9. A third reference from the online MatWeb website lists the glass transition for PET between 70° C and 82° C. Ex.2025, 3. Because PET transitions from a rigid structure to a leathery and rubbery structure between about 155° and 180° Fahrenheit, a POSITA would have recognized that PET would not be a suitable material for Metzger’s container because it could not withstand the thermal retort temperatures it describes, including a minimum of 200° Fahrenheit and a preferred “250 degrees Fahrenheit...for a period of about 45 minutes.” Ex.1010, 11:43-49.

102. If Metzger's container were made of PET, a POSITA would have known that it would undergo a softening as the increase in temperature weakens the secondary bonds in the material resulting in a leathery material that significantly deforms depending on the geometry, magnitude of the temperature above the glass transition, and pressurization within the container.

103. That PET containers are only suitable for lower temperatures is confirmed by Protais's disclosure as well. Protais describes containers used for containing liquids of temperatures at or below the glass transition temperature of PET—"between about 60° C. and 80° C." (140-176 degrees Fahrenheit). Ex.1008, 2:25-29. Protais's containers are not subjected to the temperatures of Metzger's thermal retort process in excess of 200 degrees Fahrenheit. In fact, Protais's container is only exposed to temperatures equivalent to Metzger's thermal retort process during blow molding manufacturing. See Ex.1008, 1:40-46 ("[W]hile the container is still in contact with the walls of the blow mold, a temperature between about 120° C. and 250° C. [248-482° Fahrenheit] is applied.").

104. Because PET would not withstand Metzger's thermal retort process, which Metzger's container is specifically designed to address, a POSITA would have recognized that Metzger's disclosure of "various plastics" could not include

PET. For similar reasons, a POSITA would not have attempted to modify Metzger's container to be made of PET as required by Petitioner's combination.

105. Therefore, the combination of Metzger, Protais, and Kaminski also do not render obvious claims 2, 5-6, and 8 of the '441 patent.

C. The first depression of Protais's base, identified by the Petitioner, does not partially define[] a first outline, as required by limitation [1.G].

106. Limitation [1.G] recites "*wherein the first depression at least partially defines a first outline.*" Ex.1001, 4:20-21.

107. A first depression partially defining a first outline is illustrated in Figure 3 of the '441 patent, annotated below.

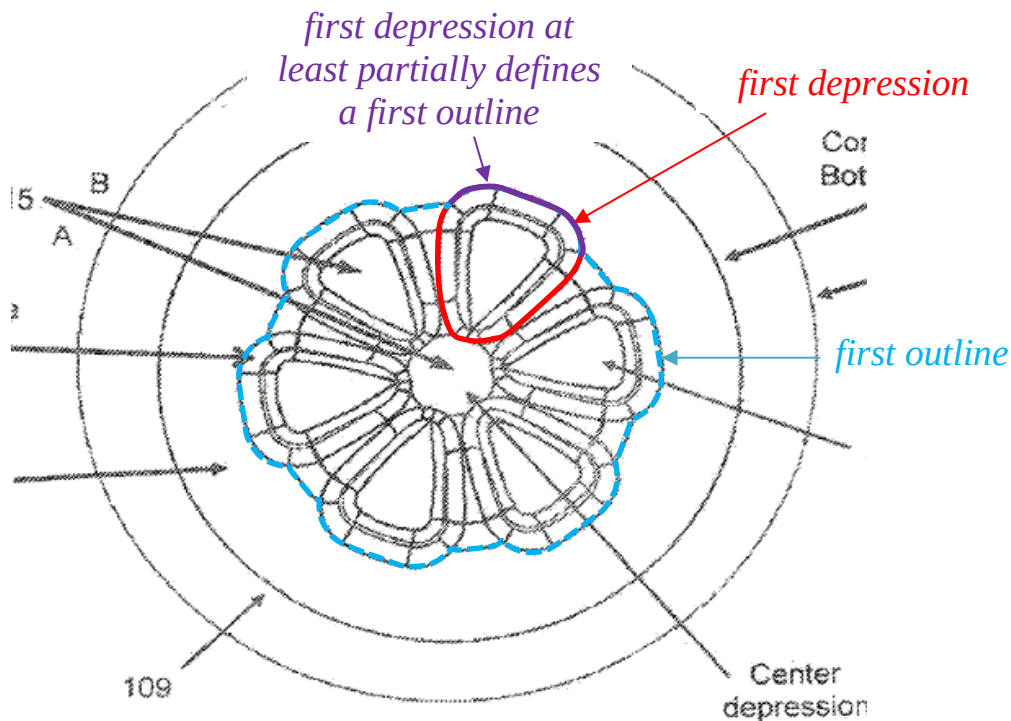


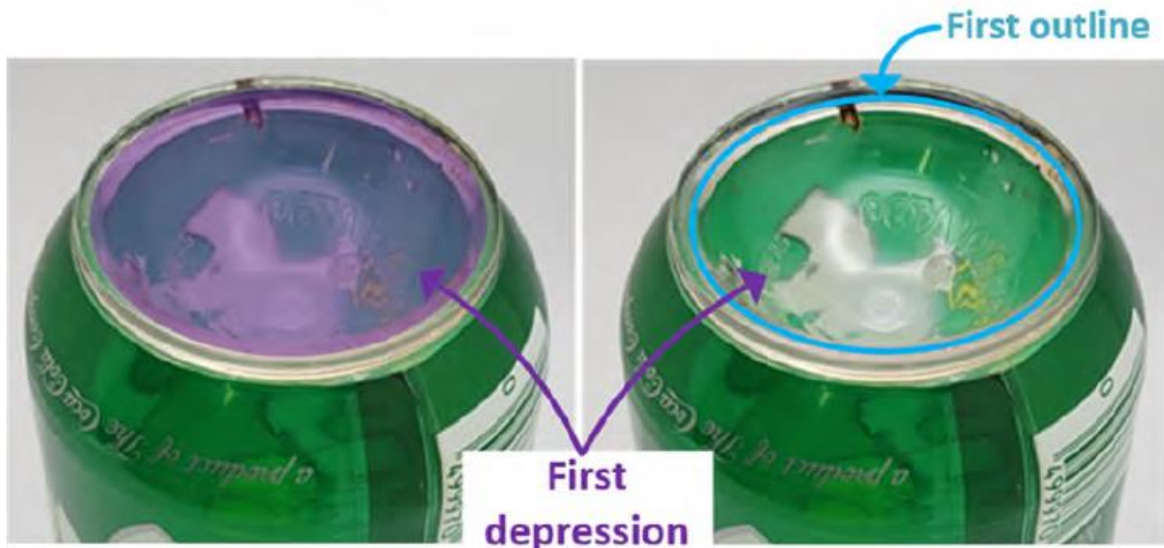
Figure 3

Ex.1001, Fig. 3 (cropped and annotated)

108. As shown in Figure 3 above, a portion of the first depression at least partially defines the first outline because it forms a portion of the first outline. This portion shared by both the first depression and the first outline is highlighted in purple, above.

109. Petitioner's interpretation of a first depression at least partially defining the first outline is consistent with the '441 patent's description for grounds 1 and 4. For ground 1, Petitioner shows that the first depression of the

PCAN not only partially defines the first outline, but completely defines the first outline because it forms the entire first outline.



Pet., 29

110. Dr. Delson confirmed that the first outline in blue on the right is defined “based on the outer boundary of [the] first depression.” Ex.2015, 72:14-17.

111. For ground 4, Petitioner shows two interpretations of a first depression and explains how either partially define the first outline. In one example, Petitioner defines the first depression as the circular region shown in purple.

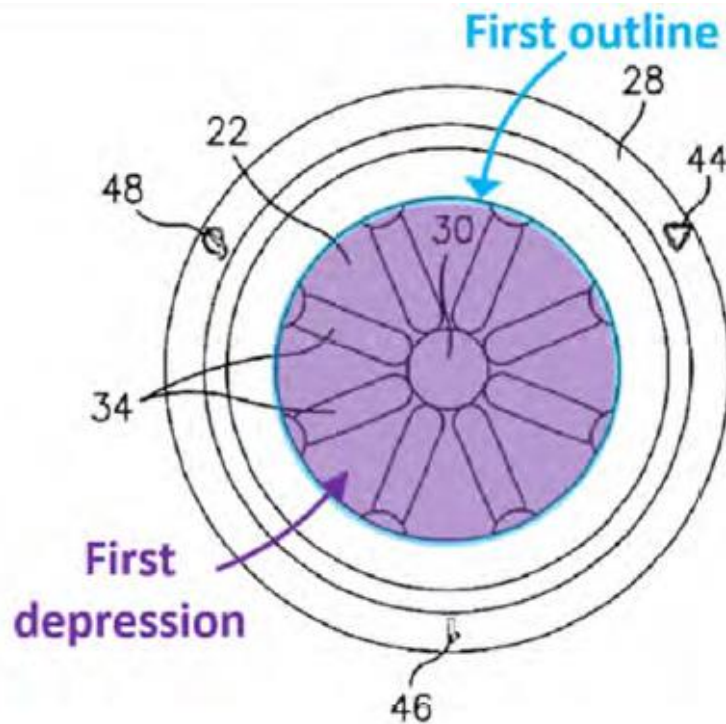
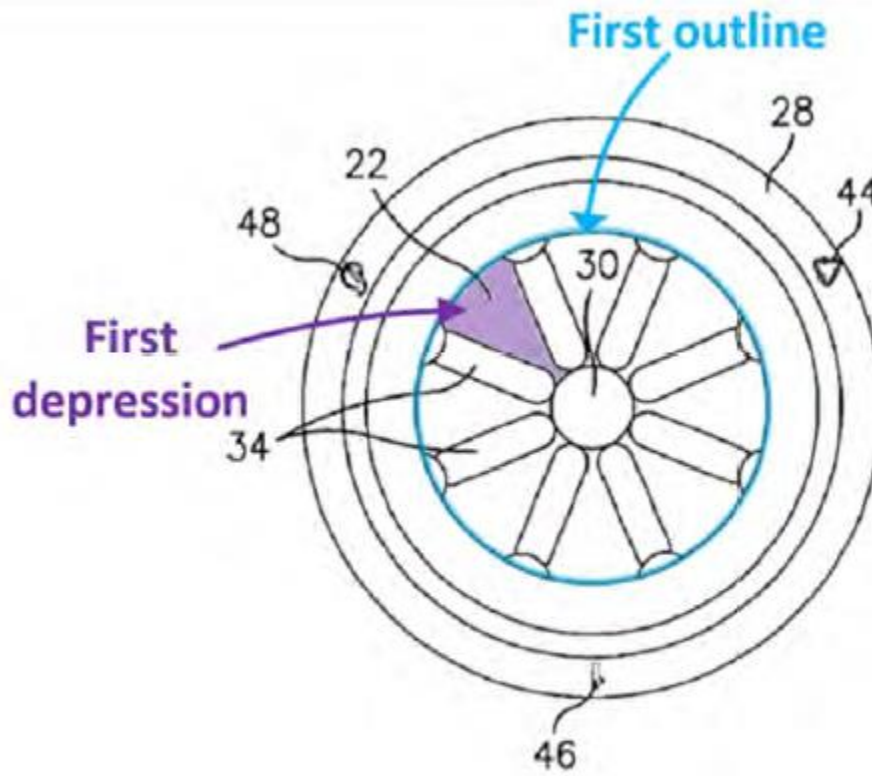


FIG. 2

Pet., 186

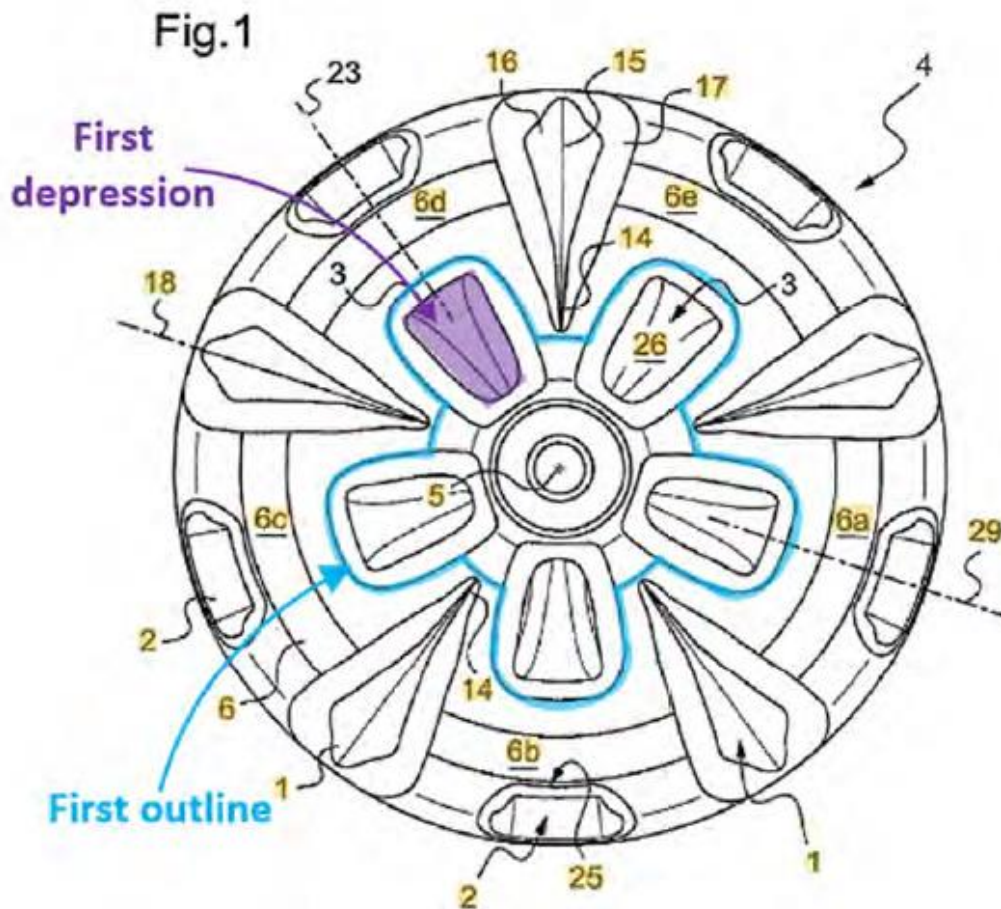
112. For this example, Dr. Delson also confirmed that the first outline “indicat[ed] the outer contours of boundaries of...the first depression.” Ex.2015, 76:10-14. Like Petitioner’s mapping for ground 1, the first depression not only partially defines the first outline, it completely defines it.

113. Petitioner’s second alternative, in which a first depression is defined as only one segment, highlighted below, shows an example of partially defining the first outline.

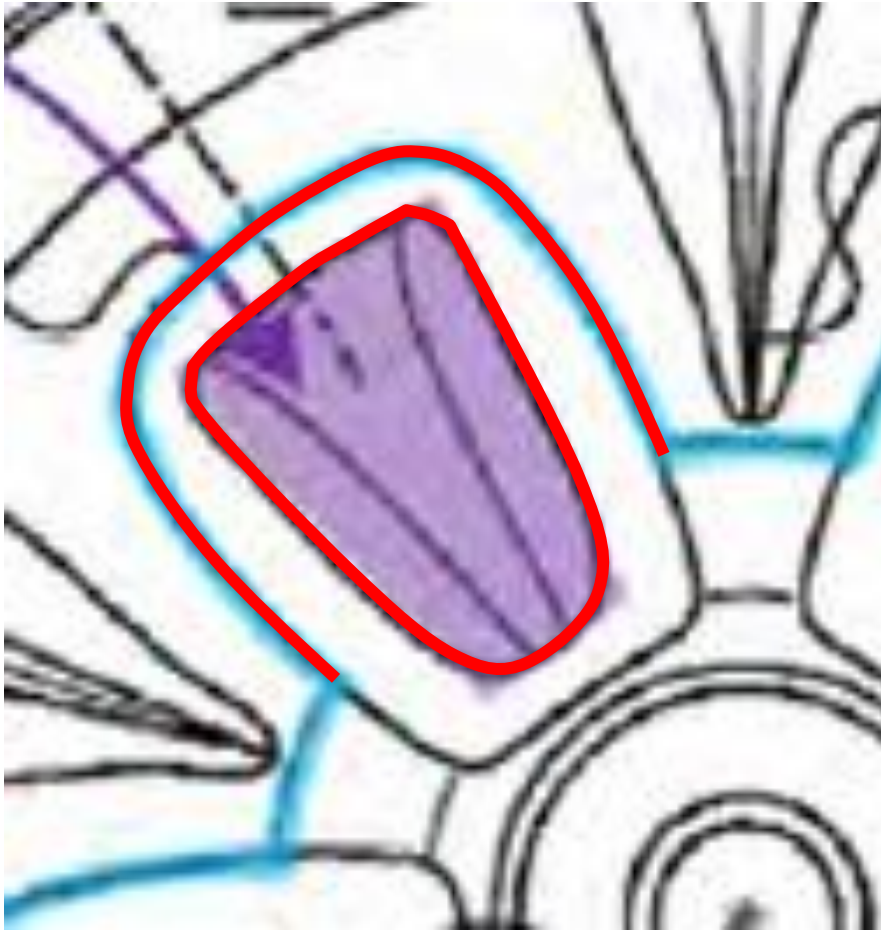
**FIG. 2****Pet., 188**

114. Here again, Dr. Delson confirmed that the “outer edge of the first depression forms part of the first outline.” Ex.2015, 77:25-78:3.

115. Petitioner’s mapping for ground 3, however, stands in contrast to these examples above of depressions that define or partially define the first outline. For ground 3, the Petition identifies the first depression and first outline as shown below.

**Pet., 114**

116. Unlike the depressions and outlines in every other example of the Petition, no portion of the outer boundary of the first depression forms or defines the first outline in any way. The shapes of the first depression and the first outline are not the same and are not based on one another. Even the portion of the first outline around the first depression is a different shape than the first depression, as highlighted in red below.



Pet., 114 (enlarged)

117. Accordingly, the first depression of Protais's base does not *partially define a first outline*, as claimed. For this independent reason, the combination of Metzger, Protais, and Kaminski does not disclose or render obvious limitation [1.G]. Claims 2-14 all depend from independent claim 1 and are therefore not rendered obvious by the combination for the same reasons. Limitation [15.G] is identical to limitation [1.G] and the combination of Metzger, Protais, and Kaminski do not render obvious limitation [15.G] for the same reasons. Claims 16-

20 depend from claim 15 and are, therefore, also not rendered obvious by the combination of ground 3.

X. THE COMBINATION OF GARDINER, PEDMO, AND BROWN DOES NOT RENDER THE CLAIMS OBVIOUS.

118. Petitioner's fourth ground presents a combination of Gardiner, Pedmo, and Brown. For the reasons presented below, Petitioner's fourth ground does not render the claims obvious.

A. Gardiner does not disclose a container body...made out of a resin, as required by limitation [1.C].

119. Like the combination in ground 3, the combination of Gardiner, Pedmo, and Brown does not disclose or render obvious a resin. Limitation [1.C] recites "wherein the container body is made out of a resin." Ex.1001, 4:12. Claims 2, 5-6, and 8 add that "the resin is a polyethylene terephthalate (PET) resin." Ex.1001, 6:4-6, 12-21, 26-29.

120. Like ground 3, none of the prior art references of ground 4 make any reference to "*a resin*," or "*a polyethylene terephthalate (PET) resin*." Here again, the Petition simply argues that "[i]t would have been obvious to a POSITA that plastics can be made out of a resin." Pet., 178. As described above regarding Metzger in ground 3, the combination of ground 4 does not render obvious limitation [1.C] because Petitioner's argument that plastics can be made out of

resin requires either (1) an argument for inherency—that all plastics are necessarily made out of a resin—or (2) some reason or motivation that would have prompted a POSITA to specifically select a resin-based plastic for Gardiner's container.

Petitioner has not shown either and ground 4 fails for the same reasons described above. *See* § IX.A.1-2.

B. Petitioner has not provided any reason to modify Gardiner's container to be made of PET.

121. Claims 2, 5-6, and 8 add that “*the resin is a polyethylene terephthalate (PET) resin.*” Ex.1001, 6:4-6, 12-21, 26-29.

122. Petitioner acknowledges that “Gardiner did not explicitly disclose a PET resin.” Pet., 235. The Petition then asserts that Pedmo “explained that PET was a material used to manufacture plastic containers.” Pet., 235. The Petition, however, fails to identify any reason or motivation that would have prompted a POSITA to make the proposed combination. The Petition simply asserts that a “POSITA would have been motivated to use PET to manufacture the Gardiner-Pedmo-Brown container based on Pedmo's teachings.” Pet., 235-236 (citing Ex.1013, 3:9-10, 4:8-9). The portion of Pedmo Petitioner cites as providing a motivation to combine Pedmo with Gardiner does nothing of the sort. Pedmo, 3:9-10 is a partial sentence that recites: “Preferably, the plastic is polyethylene terephthalate; however, other suitable plastics may be readily used alone or.”

Ex.1013, 3:9-10. Pedmo, 4:8-9 is claim 4, which recites: “A hollow plastic bottle according to claim 1, wherein said bottle is polyethylene terephthalate.” Ex.1013, 4:8-9. Nothing about these passages provides any reasons that would motivate a POSITA to modify Gardiner’s teachings to use PET to manufacture the container.

123. For claim 2, the Petition then cites to paragraphs 380 and 381 of Dr. Delson’s declaration. *See* Pet., 236. However, Dr. Delson only states that a POSITA would be motivated to combine Pedmo with Gardiner because “PET was a suitable plastic for containers” and was used “for making plastic bottles.” Ex.1002, ¶381. That a modification to a prior art reference is merely “suitable” and is used in other prior art is not a sufficient motivation to combine.

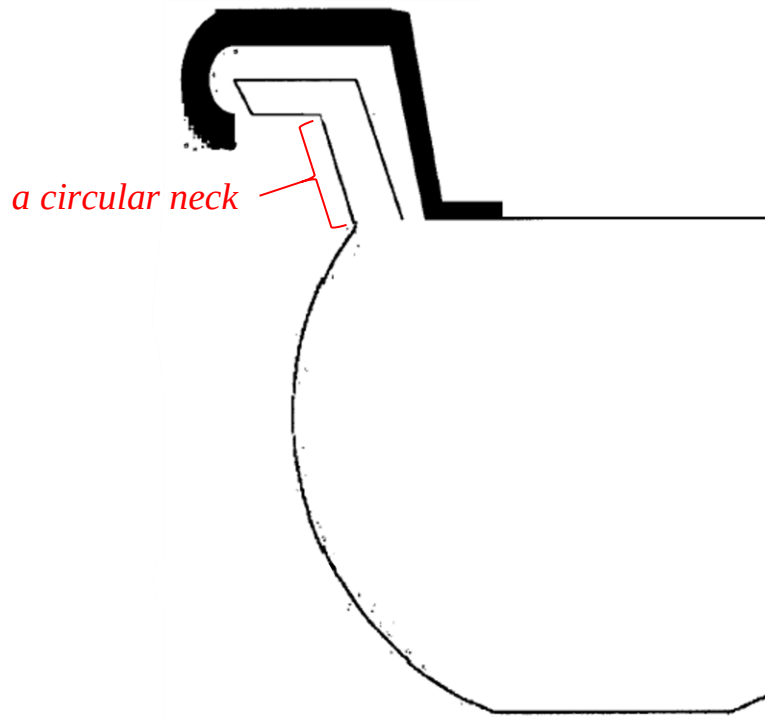
124. The Petition references this same analysis for claims 5, 6, and 8. *See* Pet., 236-237. Accordingly, for this additional, independent reason, the combination of Gardiner, Pedmo, and Brown do not render obvious claims 2, 5-6, and 8.

C. Gardiner does not disclose a circular neck, as required by limitation [1.N], or a lip, as required by limitation [1.P].

125. Claim limitations [1.N]-[1.R] recite various features of the upper region of the claimed container. Specifically, limitation [1.N] recites “*the container body further comprises a circular neck.*” Ex.1001, 4:44-47. This circular neck “*extend[s] from the container side wall*” (limitation [1.N]) and is “*adjacent to*” the

“upper edge of the container side wall” (limitation [1.O]). Ex.1001, 4:44-49.

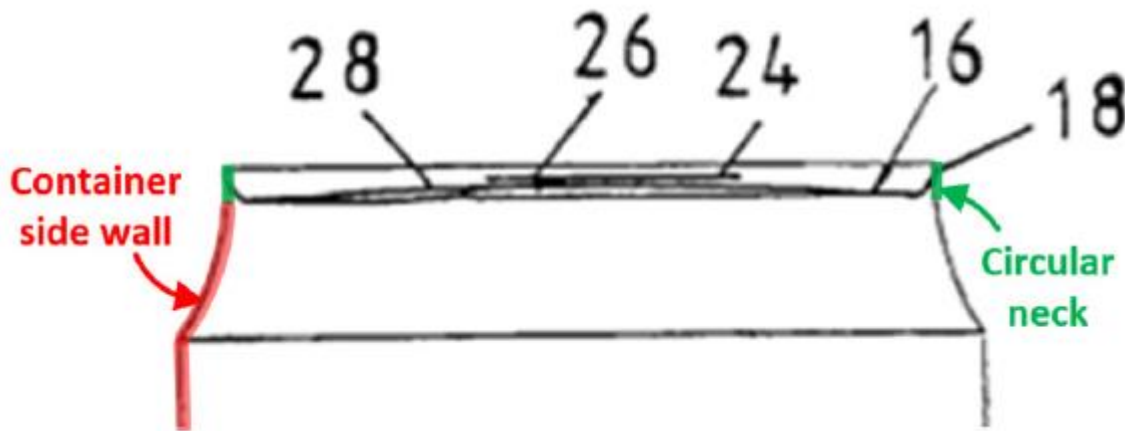
Examples of these claim features are illustrated in Figure 5 of the '441 Patent, shown below with annotations.



Ex.1001, Fig. 5 (annotated)

126. The Petition has not identified these features in the prior art presented in ground 4. What Petitioner identifies as *“a circular neck”* of *“the container body”* for limitation [1.N] is, in fact, not a part of the container body in Gardiner.

127. At limitation [1.N], Petitioner points to the “rim 18” as the claimed “circular neck” of the container body. *See Pet.*, 200.



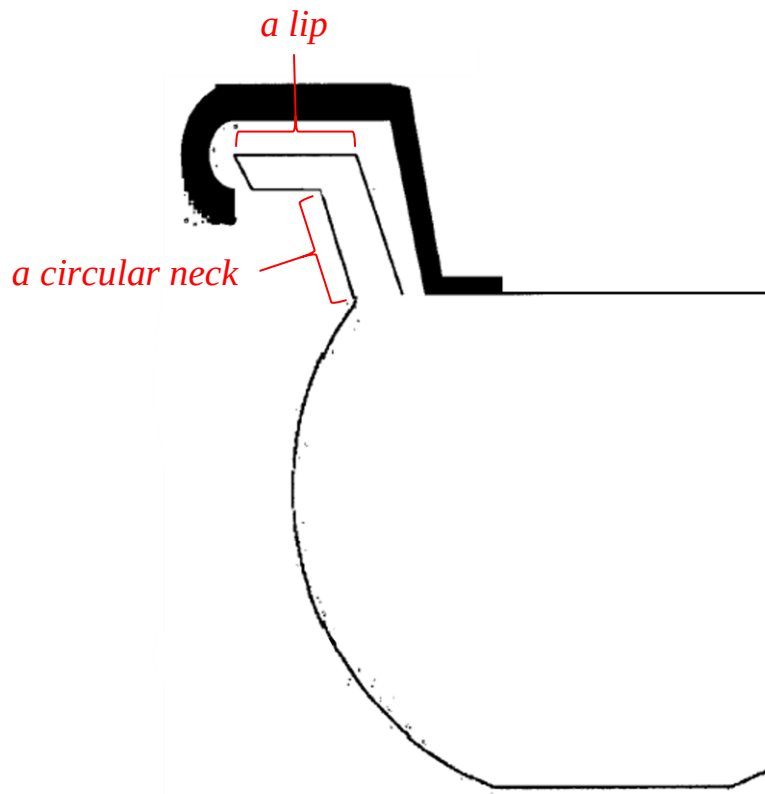
Pet., 125

128. But Gardiner's rim 18—what Petitioner points to as the “circular neck”—is not part of Gardiner's container body at all. Gardiner explains that the rim 18 is formed by positioning the peripheral 140 *of the cap member 100* around the open end of a can and seaming the cap to the container walls. Ex.1012, 5:42-46. This process of forming the rim 18 with the cap member 100 is described in detail. Specifically, Gardiner explains that “[t]he cap member is sealingly fixed to the body member...*forming a rim.*” Ex.1012, 1:64-67. “The cap member 100 has a cap body 120 with a peripheral 140 which is shaped to be positioned...over an open end of a can body and seamed thereat to join to the can body *for forming a rim of the can.*” Ex.1012, 5:42-46. Gardiner's abstract equates the rim 18 to the peripheral 140 of the cap member 100. Ex.1012, Abstract (“rim (18) or rim forming portion (140)”). Therefore, what Petitioner has mapped as the circular

neck *of the container* (the rim 18) is actually the peripheral 140 *of the cap member 100* after it has been sealed to the top of the can.

129. Accordingly, the component Petitioner has identified as being the claimed circular neck—the rim 18—is not a part of the container body, but a part of the cap member 100. The Petition fails to identify any prior art disclosure that renders obvious “*the container body further comprises a circular neck*” of limitation [1.N].

130. Compounding the shortcomings of limitation [1.N] above, the Petition also fails to describe “a lip” as required by limitation [1.P]. The claimed lip is required to be positioned “at the end of the circular neck opposite the edge of the container side wall,” as illustrated below. Ex.1001, 4:50-52 (Limitation [1.P]).



Ex.1001, Fig. 5 (annotated)

131. Like the circular neck, the claimed “lip” is also a part of the *container body*, not the lid. At limitation [1.P], addressing the claimed “lip,” Petitioner refers to a “reciprocal shape” that is neither described nor illustrated anywhere in Gardiner. Pet., 203. Petitioner points to Gardiner’s “cap member” shown in Figures 10 and 13 as the alleged disclosure of a “reciprocal shape” lip. Ex.1012, 3:56-58; Pet., 202-204.

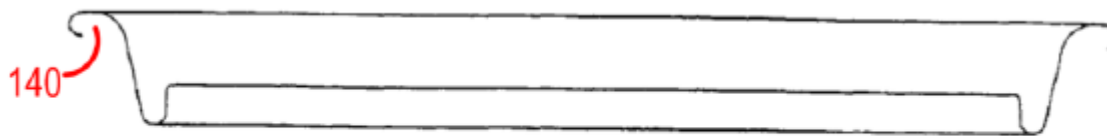


FIG. 13

Pet., 203

132. However, there is no such reciprocal shape. As explained above regarding the circular neck of limitation [1.N], the rim 18 is formed by seaming the peripheral 140 around “*an open end* of a can body.” Ex.1012, 5:42-46. There is simply no disclosure or suggestion of any lip on the open end of the can body in Gardiner.

133. A petition must specify where each element of the claim is found in the prior art. The Petition has not identified any prior art disclosure corresponding to a “lip ... at the end of the circular neck opposite the edge of the container side wall,” as required by independent claims 1 and 15. Accordingly, the combination of Gardiner, Pedmo, and Brown does not render obvious claim 1. Claims 2-14 all depend from independent claim 1 and are therefore not rendered obvious by the combination for the same reasons.

134. The combination presented in ground 4 does not render obvious claim 1. Claims 2-14 all depend from independent claim 1 and are therefore not rendered

obvious by the combination for the same reasons. Limitation [15.N] is identical to limitation [1.N] and the combination of Gardiner, Pedmo, and Brown do not render obvious limitation [15.O] for the same reasons. Claims 16-20 depend from claim 15 and are, therefore, also not rendered obvious by the combination of ground 4. In addition, Limitation [15.P] is identical to limitation [1.P] and the combination of Gardiner, Pedmo, and Brown do not render obvious limitation [15.P] for the same reasons. Claims 16-20 depend from claim 15 and are, therefore, also not rendered obvious by the combination of ground 4.

XI. CONCLUSION

135. This declaration and my opinions herein are made to the best of my knowledge and understanding, and based on the material available to me, at the time of signing this declaration. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 or Title 18 of the United States Code.

Date: March 12, 2025

Folkers Eduardo Rojas
Folkers Eduardo Rojas