

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MPL BRANDS NV, INC.

Petitioner,

v.

BUZZBALLZ, LLC

Patent Owner.

PTAB Case No. PGR2024-00035

U.S. Patent No. 11,932,441

**REPLY DECLARATION OF NATHAN J. DELSON, PH.D., IN
SUPPORT OF PETITION FOR POST-GRANT REVIEW OF
U.S. PATENT NO. 11,932,441**

I. INTRODUCTION

1. My name is Nathan J. Delson. I am a Senior Teaching Professor at the University of California, San Diego (UCSD).

2. I have been engaged by MPL Brands NV, Inc. (“MPL”) as a consultant in connection with MPL’s Petition for Post-Grant Review of U.S. Patent No. 11,932,441 (the “’441 Patent”).

3. On June 6, 2024, I submitted a declaration in support of MPL’s PGR Petition.

4. I submit this reply declaration in response to certain portions of the declaration of Folkers Eduardo Rojas, Ph.D. (EX2028), to certain portions of the declaration of Richard D. Kirkpatrick (EX2001), and Patent Owner’s Response (“POR”).

5. My qualifications and materials considered are set forth in my opening declaration (EX1002). Any new materials considered for this reply declaration are set forth below.

A. Contrary to the assertions of Dr. Rojas and Mr. Kirkpatrick, the figures of the lids in the ’195 and ’813 applications depict different structures.

6. In his declaration, Mr. Kirkpatrick states that Figure 4 of the ’195 application and Figure 2 of the ’183 application show the same design. (EX2001, ¶12 (“Figure 2 of the ’813 Application shows the same design as Figure 4 of the

'195 Application.”); *id.*, ¶20 (“... the geometry of the container lid in each figure is identical.”).) Mr. Kirkpatrick further states “These very minor ‘differences’ in the drawings in no way reflect a change in the design of the lid, but instead simply show two approaches a draftsman may choose to illustrate the same design.” (*Id.*, ¶16; *id.*, ¶19 (“Based on a comparison of the figures alone, it is plain to see that both figures reflect the same product design.”).)

7. Mr. Kirkpatrick makes these assertions, but he provides no evidence that he looked at any actual can lids, much less lids of varying design. At most, he refers to pictures in the prosecution history of the lid of a BuzzBallz container and the lid of a Coke can. (*Id.*, ¶25.) Mr. Kirkpatrick’s declaration includes an enlarged image of the BuzzBallz lid (*id.*, ¶26), which Mr. Kirkpatrick says shows “an angled ridge forms what appears to be a slight depression in the tear strip portion” (*id.*, ¶27). Given the grainy nature of the photograph, I believe that it is not possible to tell if any angled ridge connects that depressions/contours that start on each side of the tab and curve downward and inward.

8. Mr. Kirkpatrick appears to conclude that if the BuzzBallz image shows a slight depression connecting the contours that start on each side of the tab, then all lids have such slight depression connecting the contours, and therefore Fig. 4 of the '195 application and Fig. 2 of the '813 application depict the same lid design. For

the reasons set forth below, I believe this is an unsupported logical leap that is incorrect.

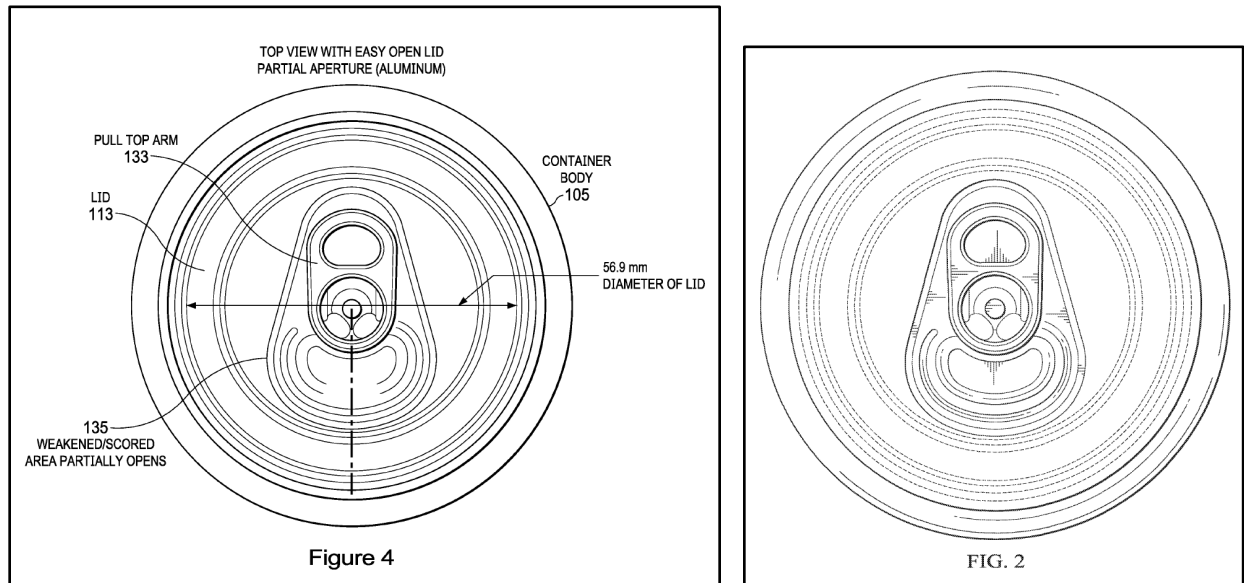
9. Dr. Rojas also asserts that “A POSITA, familiar with technical drawings and drawing conventions, would immediately recognize that the design as a whole shown in Figure 2 of the ’813 Application was the same design shown in Figure 4 of the ’195 Application.” (EX2028, ¶50.) Dr. Rojas further states that the differences in the two figures are “mere shading or contour lines.” (*Id.*; *id.*, ¶53 (“A POSITA would have recognized that these lines simply conveyed shading or contour information **of the same design**.” (emphasis in original).))

10. I disagree with Dr. Rojas’ unsupported assertion that the differences in the two figures show “mere shading,” as they reflect different lid designs with different physical structures, as demonstrated below.

11. Like Mr. Kirkpatrick, Dr. Rojas does not state that he inspected any actual lid designs in forming his opinion.

12. In response to the assertions made by Mr. Kirkpatrick and Dr. Rojas, I inspected Fig. 4 of the ’195 application (EX2002, 106) and Fig. 2 of the ’183 application (EX1003, 87). A comparison of those two figures shows that they depict differing lid designs. Fig. 4 of the ’195 application depicts a lid that has contour lines that start on either side of the tab, curve downward and inward, and then stop. The contour lines do not connect. Fig. 2 of the ’183 application depicts a lid that has

contour lines that start on either side of the tab, curve downward and inward, and continue until they connect.



(EX2002, 106; EX1003, 187.)

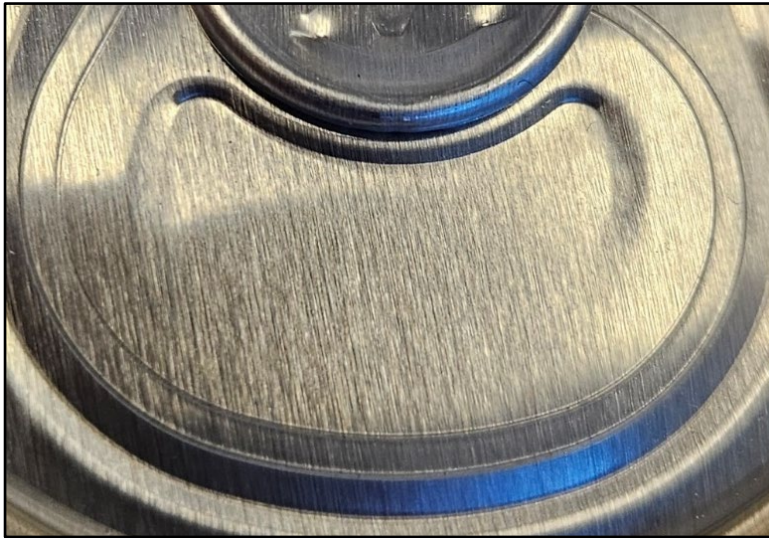
13. In response to the assertions made by Mr. Kirkpatrick and Dr. Rojas, I also inspected the lids of a number of various cans. Some of those cans—Lagunitas IPA, Stella Artois, Pirate Water Wicked Tea, and North Coast Brewing Co. Russian Imperial Stout—have contour lines like those depicted in Fig. 4 of the '195 patent application, where the contour lines do not connect:



14. Other cans that I inspected—Zittauer Burgerrbrau Blond, FiftyFifty Brewing Company Tahoe IPA, Paulaner Munchner Lager, and Unami IPA— have contour lines like those depicted in Fig. 2 of the '183 patent application, where the contour lines do connect, with some of the contours being indents and some of them being protrusions:



15. I examined the actual cans, enlarged versions of these images, and felt the depressions, protrusions, and contour lines with my fingers. That first set of cans have contours that do not connect, and the second set of cans have contours that do; it is not a matter of lighting or viewing angle. These are actual differences in the structures of the lids, as reflected in the enlarged images of the North Coast Brewing Company and Tahoe IPA cans shown below:



16. Figure 4 of the '195 application and Fig. 2 of the '183 application depict these differing types of designs, with the former having contour lines that do not connect, while the latter has contour lines that connect.

17. The design of the pull tabs of the beverage cans described and depicted above require significant effort and optimization so that they function properly. The

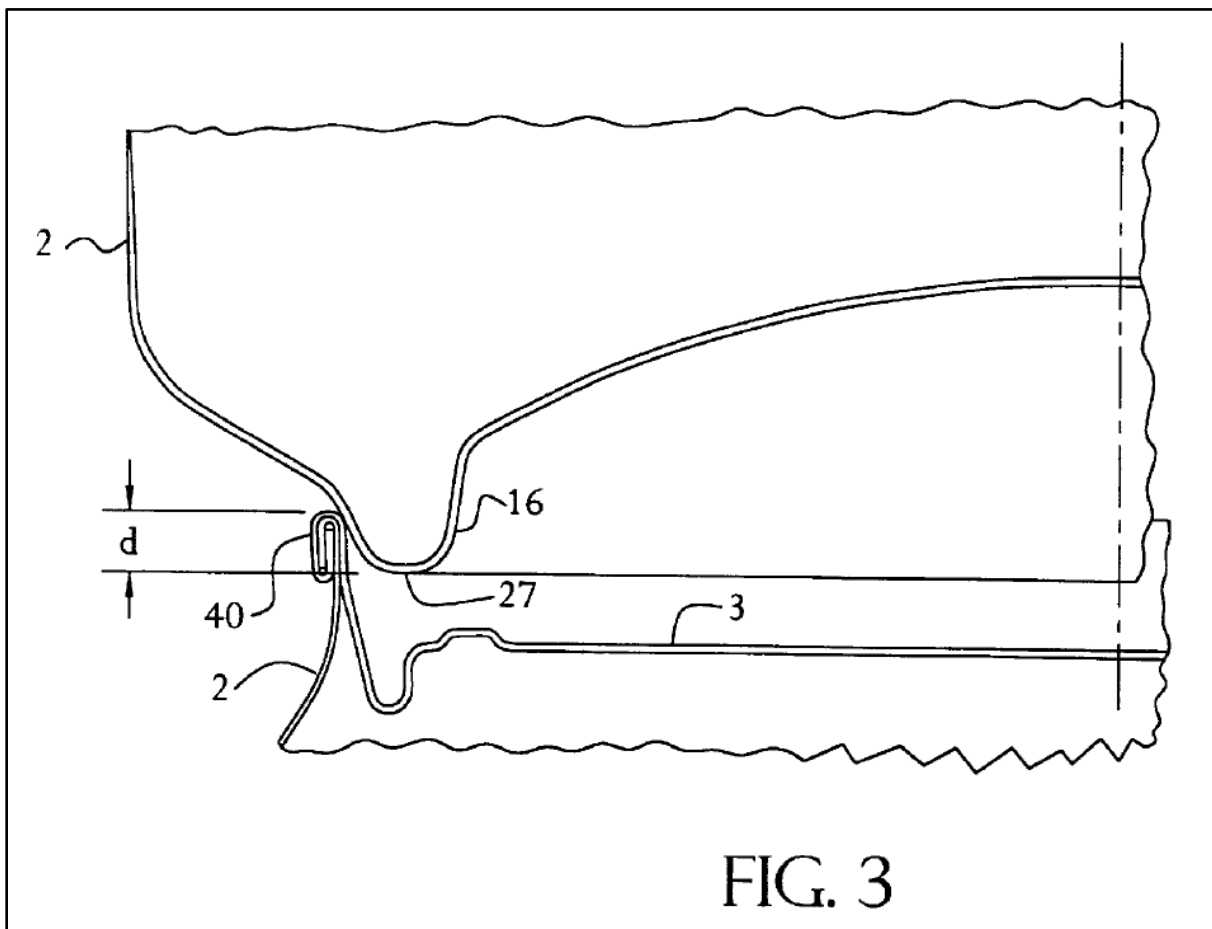
lid of the can must have a weak point that is punctured, and the tab must have sufficient rigidity so that it creates a large enough opening as it is pushed downwards so that fluid can flow appropriately. The location and continuity of the contour lines are critical design elements necessary to achieve proper function for a specific lid. These design elements are different in the figures shown in EX2002, 106 ('195 application, Figure 4) relative to those shown in EX1003, 187 ('813 application, Figure 2). It is not possible to determine the intent of the illustrator(s) when drawing these figures. However, a POSITA would recognize that the two figures depict different lid designs. The function of these different designs would most likely vary in terms of the performance and reliability of the pull tab operation.

18. Any assertion by Mr. Kirkpatrick or Dr. Rojas that the two figures depict the same design is incorrect. And for the same reason, a POSITA would not have recognized that a patent applicant in possession of the lid design in Fig. 4 of the '195 application was in possession of the lid design in Fig. 2 of the '183 application. Instead, a POSITA would recognize that those two figures represent different designs. The differences in the figures are therefore not minor inconsistencies, but rather they change what a POSITA would understand to be covered by the figures.

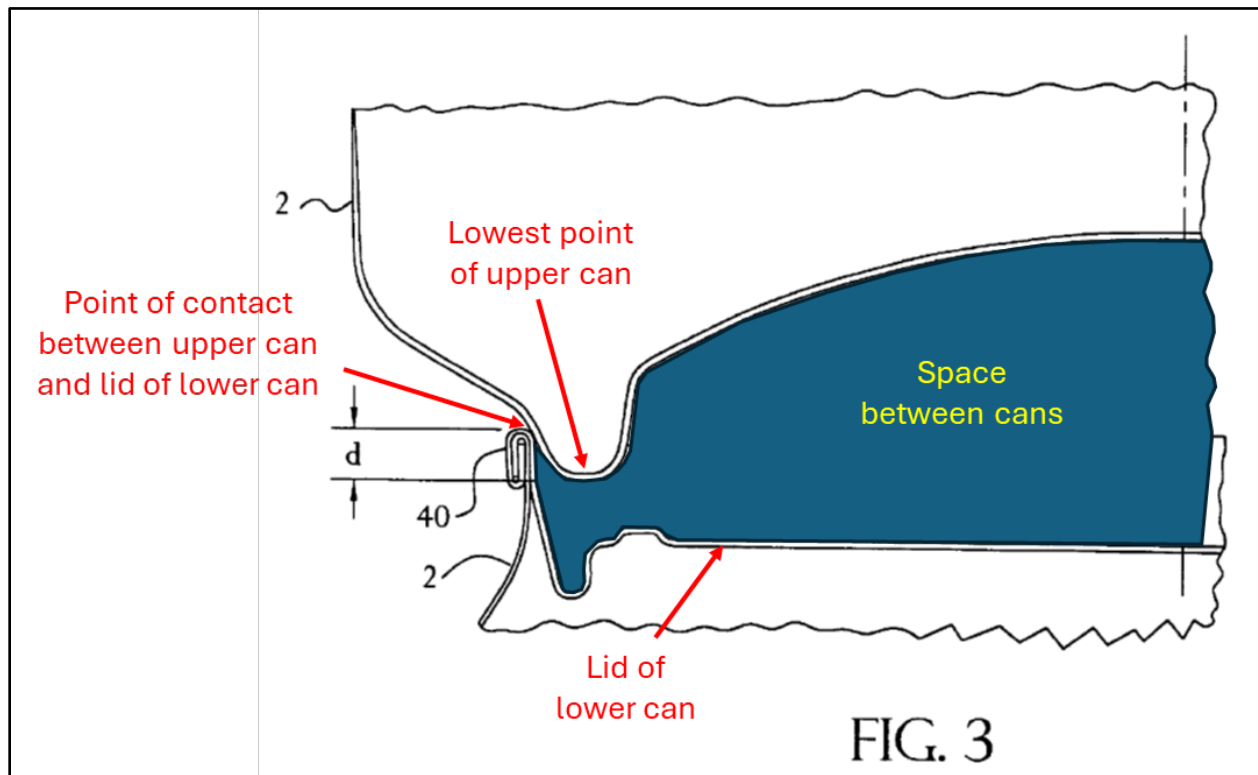
B. Cans with Protrais' bottom and the Coke PET can lid, as set forth in Ground 2, can be stacked.

19. Dr. Rojas asserts that a POSITA would not have been motivated to combine the design of the bottom of Protrais' container with the Coke PET cans because the cans allegedly would not be stackable. (EX2028, ¶¶68-79.) Dr. Rojas, however, made faulty assumptions in his analysis.

20. Dr. Rojas contends that for cans to be stackable in a stable manner, they must have an "annular nose" on the bottom and an upward arching bottom, as depicted in Cheng. (*Id.*, 71; EX2016, Fig. 3.)

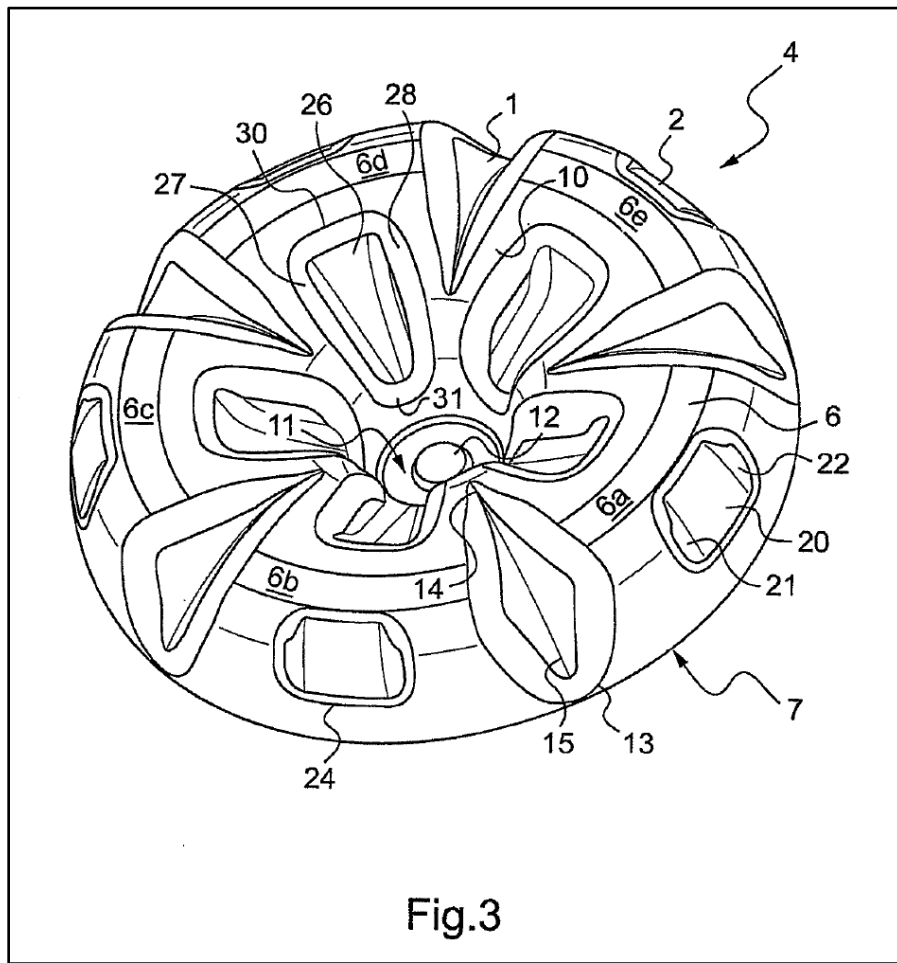


21. The first error in Dr. Rojas' analysis is that a POSITA would have known that by selecting the appropriate diameter and angle of the outer portion of Protrais' base, a top can could be stably nested within a lower can for stacking. And by properly selecting this diameter, the lowest point of the upper can would not touch the central part of the lid below, just as depicted in Chen.



(EX2016, Fig. 3 (annotated).)

22. The second error in Dr. Rojas' analysis is that he assumes that the bottom of Protrais is generally flat, other than the individual depressions. But Figure 3 of Protrais shows that the bottom of the container is generally arched upward toward the interior of the can.



(EX1008, Fig. 3.) Protrais' specification also confirms that the bottom is generally arched upward toward the interior of the container. (*Id.*, Abstract, 3:38 (describing the "concave inner wall" of the bottom").) Thus, when cans combining the Coke PET can and lid with Protrais' bottom as described above would be stackable with plenty of room for a tab that would not interfere with the stacking.

23. Dr. Rojas' assertion that an annular nose on the bottom of a can, as depicted in Chen, is necessary to stably stack cans is refuted by BuzzBallz's own

can design. The BuzzBallz cans do not have such an annular nose, but I have observed the cans stacked in both advertisements and in liquor stores that I visited.



24. Thus, Dr. Rojas’ assertion that Coke PET cans with Protrais’ bottom could not be stackable is incorrect.

C. Dr. Rojas’ reliance on Han is misplaced, as that article concerns the optimal design for an *aluminum* can bottom.

25. Dr. Rojas asserts that a POSITA also would not be motivated to use Protrais’ bottom with the Coke PET cans because the Coke PET cans allegedly already use the “ideal dome shape.” Dr. Rojas cites Han et al., “Application of structure optimization technique to aluminum beverage bottle design,” Springer-Verlag (2005) (Ex.2026) to support his assertion. (EX2028, ¶¶80.) Dr. Rojas states:

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.

(*Id.*) What Dr. Rojas apparently fails to recognize, or at least fails to mention in paragraph 80 of his report, is that Han concerns the optimum design for an aluminum can bottom, as noted in the title of the article and throughout the body of the article. (EX2026, 1 (article titled “Application of structure optimization technique to **aluminum** beverage bottle design.”) (emphasis added); *id.* 1 (Abstract stating “This paper deals with shape optimization of two-piece **aluminum** beverage bottle bottom ...”) (emphasis added); *id.* 8 (Conclusion stating “A progressive design variable optimization method based on RSA was proposed and applied to optimize the shape of **aluminum** beverage bottle bottoms.”) (emphasis added).) Han therefore does not address the optimal design for a plastic container bottom. (Any references in the article to “plastic” or “plasticity” are in reference to ability of a material to change shape under stress without fracturing, not in reference to a container made of a plastic material, such as PET.) There are significant differences between the manufacturing process of aluminum beverage containers and plastic beverage containers. Accordingly, the optimal shape for an aluminum

beverage bottom and a plastic beverage bottom are likely to be significantly different.

26. I also disagree with Dr. Rojas' assertion that Protrais' bottom does not have at least some of the dome shaped characteristic of the container bottom depicted in Han. As discussed above, Dr. Rojas appears to contend that Protrais' bottom is generally flat, other than the individual depressions. But as I discussed above, Protrais' bottom is generally concave shaped, as it arches upward toward the inside of the container. (EX1008, Fig. 3, Abstract, 3:38.)

27. Additionally, Han has a date of 2004 (submitted in April 2004, revised in July 2004, and published in October 2004). (EX2026, 304.) This is about two years earlier than Protas' earliest patent submission in August 2006. Therefore, not only is Han's analysis focused only on optimization of aluminum cans, it is also outdated by Protas more recent description, and its explanation: "The invention seeks to provide a new bottle bottom structure, wherein all of the individual characteristics make it possible to obtain a strength that exceeds that of most currently known bottoms, and allows it to recover its shape after deformation." (EX1008, 3:14-18.)

28. I further note that Protrais specifically addresses issues concerning the strength of the bottom of a container that arise specifically in the context of blow molded plastic containers. Protrais explains a number of these issues as follows:

The invention relates to the technical field of hollow bodies made of thermoplastic material, particularly containers such as jars or bottles.

More particularly, the invention relates to hollow bodies obtained by blowing or stretching then blowing an injected preform made of thermoplastic material (injection-blowing).

For several years the manufacture of containers of plastic material from previously injected preforms has experienced considerable expansion, particularly due to the use of polyethylene terephthalate (PET).

...

It is known that blowing or stretch-blowing causes a structural hardening of PET. Blowing or stretch-blowing also causes a crystallization induced by deformation, leaving the material translucent. For conventional deformation speeds, the crystallinity increases as the speed of deformation increases and the rate of deformation increases.

...

Bi-oriented PET has good mechanical strength and thermal resistance. However, as was mentioned above, the bottom of the containers is much less stretched than the body of the containers, so the mechanical

strength and thermal resistance of the bottom is less than that of the body.

...

The bottom of the container must be impact-resistant, for example when the container is dropped.

The container bottom must withstand internal pressure, particularly when the container contains a carbonated beverage. Excess internal pressure can result from an increase in the storage temperature of the full bottles and/or from the shrinkage of the plastic material of these bottles, said shrinkage generally occurring over the course of two or three weeks following their manufacture and filling.

(*Id.*, 1:7-2:5.)

29. Protrais therefore proposed an improved design for the bottom of a blow molded plastic container, preferably made of PET, to address these problems. (*Id.*, 3:14-18 (“The invention seeks to provide a new bottle bottom structure, wherein all of the individual characteristics make it possible to obtain a strength that exceeds that of most currently known bottoms, and allows it to recover its shape after deformation.”); *id.*, 4:24-29 (“According to a second aspect, the invention relates to hollow bodies of thermoplastic material, especially a polyester such as PET, obtained by blowing or stretch-blowing of a preform, said hollow bodies comprising

a side wall and a bottom joined to said side wall, said bottom being as presented above.”.)

30. Therefore, a POSITA would be motivated to combine the Coke PET can with Protails’ bottom design to address the issues and achieve the benefits discussed in Protrais.

D. Using a resin-based plastic and using PET to make a plastic beverage or food container was obvious to a POSITA long before 2010.

31. Dr. Rojas states that not all plastics are resins. (EX2028, ¶ 92.) I agree.

32. But Dr. Rojas then says “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, Protails, and Kaminski do not render obvious limitation [1.C], claim 1, or any of its dependent claims.” (*Id.*, ¶93 (emphasis added).)

33. To be clear, I never stated that the use of a resin or the use of PET was “inherent” in light of the disclosures of those references. I said that the use of a resin and the use of PET (which is a type of resin-based plastic) would have been **obvious** to a POSITA. That is because the use of PET to make food and beverage containers was so widely known by 2010, the limitations reciting that the claimed container was made of a resin and/or PET would have been obvious to a POSITA, as I stated in my opening declaration. (*See, e.g.*, EX1002, ¶23 (explaining that PET had been

used “for decades” to make food and beverage containers and citing patents that reflected that knowledge in the art); *id.*, ¶¶36, 43, 187, 232, 319, 381; EX1002, Appendices E and F (patents discussing the common use of PET to make beverage containers).)

34. Notably, Dr. Rojas never disputes that the use of PET, a resin-based plastic, was well-known to POSITAs by 2010 and had been in common use to make beverage and food containers for decades prior to 2010, such as in the Coke PET cans and soda bottles. (*See also* EX 1002, Appendix E (patent, from application filed in 1983, addressing PET beverage containers and discussing a number of earlier patents that also concerned PET beverage containers); EX1002, Appendix F (patent, from application filed in 2007, discussing that “[p]olyethylene terephthalate (PET) bottles are used in many fields owing to their excellent properties of resistance, lightness, transparency and organolepticity.”).)

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IN SUPPORT OF PETITION FOR POST-GRANT REVIEW
OF U.S. PATENT NO. 11,932,441

I hereby declare that all the statements made in this declaration are based on my own true knowledge, that all statements made on information and belief are believed to be true, and that all statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001. I declare under penalty of perjury under the laws of the United States that all statements made in this declaration are true and correct.

Dated this 29 day of May, 2025



Nathan J. Delson, PhD