

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TC HEARTLAND LLC,
Petitioner,

v.

KRAFT FOODS GROUP BRANDS LLC,
Patent Owner.

Case IPR2015-01129
Patent 8,511,472 B2

Before TONI R. SCHEINER, HYUN J. JUNG, and
SUSAN L. C. MITCHELL, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

TC Heartland LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”), requesting institution of an *inter partes* review of claims 1–28 of U.S. Patent No. 8,511,472 B2 (Ex. 1001, “the ’472 patent”). Kraft Foods Group Brands LLC (“Patent Owner”) timely filed a Preliminary Response (Paper 6, “Prelim. Resp.”). Upon considering these submissions, we instituted *inter partes* review of claims 1–28 of the ’472 patent. Paper 7 (“Dec. on Inst.”).

After institution, Patent Owner filed a corrected Response (Paper 31¹, “PO Resp.”), and Petitioner filed a Reply (Paper 40, “Pet. Reply”). Petitioner proffered a Declaration of Robert M. Kimmel, Sc.D. (Ex. 1018, “Kimmel Declaration”) with its Petition and a Second Declaration of Dr. Kimmel (Ex. 1211, “Second Kimmel Declaration”) with its Reply. Patent Owner proffered a Declaration of S. Paul Singh, Ph.D. (Ex. 2007, “Singh Declaration”). Also, deposition transcripts were filed for Dr. Kimmel (Exs. 2008, 2009) and Dr. Singh (Ex. 1208).

Petitioner moves to exclude paragraphs 30–38 of the Singh Declaration. Paper 46. Also, Patent Owner moves to exclude Exhibits 1009, 1012–1015, and 1216 and paragraph 35 of the Second Kimmel Declaration. Paper 48. Petitioner filed a Response (Paper 53) to the motion, and Patent Owner filed a Reply (Paper 56).

Patent Owner also filed a Motion for Observations (Paper 49), and Petitioner filed a response (Paper 54).

¹ Page 32 of the originally filed Patent Owner Response (Paper 27) was blank due to software error, and Patent Owner was authorized to file a corrected Patent Owner Response. See Paper 32.

A combined oral hearing in this proceeding and Cases IPR2015-01128 and IPR2015-01131 was held on August 2, 2016; a transcript of the hearing is included in the record (Paper 61, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–28 of the ’472 patent are unpatentable. We also dismiss both Patent Owner’s motion to exclude and Petitioner’s motion to exclude.

A. Grounds of Unpatentability at Issue

We instituted *inter partes* review, under 35 U.S.C. § 103, on the following grounds:

claims 1–3, 5, 13–16, 18–22, and 25–27 are unpatentable over Lohrman², Lermer³, and Duru⁴;

claims 4 and 28 are unpatentable over Lohrman, Lermer, Duru, and Nature’s Plus⁵;

claim 6 is unpatentable over Lohrman, Lermer, Duru, and Key⁶;

claim 7 is unpatentable over Lohrman, Lermer, Duru, and Lakey⁷;

² U.S. Patent No. 5,495,944 to Lermer, iss. Mar. 5, 1996 (Ex. 1008).

³ U.S. Patent No. 5,632,420 to Lohrman, iss. May 27, 1997 (Ex. 1007).

⁴ Mintel Group Ltd., *Desire Shower Gel* (2006) (Ex. 1009).

⁵ Mintel Group Ltd., *Liquid Dietary Supplement* (Feb. 2006) (Ex. 1012).

⁶ U.S. Patent No. 6,385,878 B1 to Key, iss. May 14, 2002 (Ex. 1004).

⁷ U.S. Patent No. 5,957,584 to Lakey, iss. Sept. 28, 1999 (Ex. 1024).

claims 8 and 24 are unpatentable over Lohrman, Lermer, Duru, Wiley⁸, and Key;

claim 9 is unpatentable over Lohrman, Lermer, Duru, and Shih⁹;

claims 10 and 11 are unpatentable over Lohrman, Lermer, Duru, and Shelby¹⁰;

claim 12 is unpatentable over Lohrman, Lermer, Duru, and Cheerios On-the-Go¹¹;

claim 17 is unpatentable over Lohrman, Lermer, Duru, and Colgate Kids¹²; and

claim 23 is unpatentable over Lohrman, Lermer, Duru, Wiley, Key, and Colgate Kids.

B. Related Proceedings

The parties indicate that the '472 patent is asserted in *Kraft Food Group Brands LLC v. TC Heartland LLC*, No. 14-128 (D. Del.). Pet. 1; Paper 5, 2.

The parties also indicate that Cases IPR2015-01128 and IPR2015-01131, involving different patents, may affect, or be affected by, this proceeding. See Pet. 1; Paper 5, 2.

⁸ *The Wiley Encyclopedia of Packaging Technology* (Aaron L. Brody & Kenneth S. Marsh eds., 2d ed. 1997) (Ex. 1019).

⁹ U.S. Patent No. 5,859,116 to Shih, iss. Jan. 12, 1999 (Ex. 1025).

¹⁰ U.S. Patent No. 6,362,306 B1 to Shelby, iss. Mar. 26, 2002 (Ex. 1026).

¹¹ Mintel Group Ltd., *Toasted Whole Grain Oat Cereal* (Feb. 2007) (Ex. 1014).

¹² Mintel Group Ltd., *2in1 Toothpaste & Mouthwash* (2006) (Ex. 1013).

C. The '472 Patent (Ex. 1001)

The '472 patent relates to “easy open containers having a perforated shrink wrap sleeve.” Ex. 1001, 1:16–17. Figure 1 of the '472 patent is reproduced below.

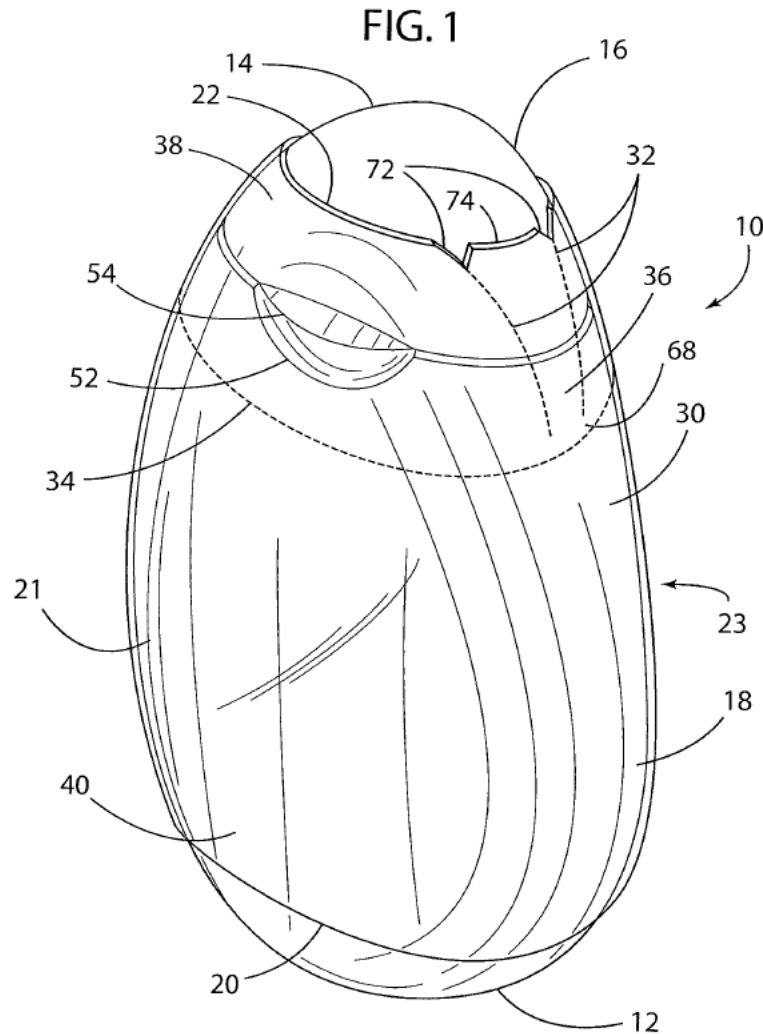


Figure 1 is a front perspective view of a container having a perforated shrink wrap sleeve. *Id.* at 3:7–8. Container 10 includes first end 12, second end 14 having hinged flip top cap 16, and tubular sidewall 18. *Id.* at 4:50–56. Sidewall 18 “can take any suitable cross section.” *Id.* at 4:56–58. First end 12 “acts as a secure base for the container 10 to rest upon.” *Id.* at 4:62–63.

Perforated shrink wrap sleeve 30 partially covers container 10 and includes vertical perforations 32 that extend downward toward circumferential perforation ring 34. *Id.* at 5:4–8. Perforations permit removal of the shrink wrap to allow access to a container opening, such as flip cap top 16 and can be configured to remove an upper portion of the shrink wrap in one motion or by removing a vertical tab first and then the remaining upper portion. *Id.* at 4:5–7, 22–24. Container 10 preferably has a body circumference variation along a vertical axis, and shrink wrap sleeve 30 can cover the circumference variation to prevent the shrink wrap seal from slipping off the container. *Id.* at 5:26–29, 34–45, 64–67.

C. Illustrative Claim

The '472 patent has 28 claims, all of which are being challenged. Claim 1 is the sole independent claim and is reproduced below:

1. A container containing a liquid concentrate and configured for squeezing to dispense a jet of the liquid concentrate, the container comprising:

a container body having a circumference/perimeter variation along a vertical axis, a bottom surface, and a flip top cap having a moveable hinged part having a top surface, the container body having a pair of sidewalls extending between front and rear surfaces, the sidewalls converging toward the flip top cap, the front and rear surfaces each having a greater maximum width than the sidewalls;

an axially oriented shrink wrap sleeve covering a portion of the body of the container having a circumference variation and a portion of the hinged part, and a bottom edge of the shrink wrap sleeve being spaced from the bottom surface;

the shrink wrap sleeve having a pair of generally vertical perforations descending from a shrink wrap top edge towards a circumferential perforation ring oriented below the moveable hinged part, the circumferential perforation ring extending between the pair of generally vertical perforations;

wherein the shrink wrap sleeve covering a portion of the container body circumference variation has one of a smaller or larger circumference at at least one point between the circumferential perforation ring and the bottom edge as compared to adjacent portions both above and below the circumference variation in order to prevent the shrink wrap sleeve from slipping off the container after removal of the portion thereof extending between the circumferential perforation ring and the top edge;

a span of an exterior of the container extending from immediately below the moveable hinged part to an opposite side of the circumferential perforation ring, the span including a continuously increasing circumference extending away from the moveable hinged part and toward the bottom of the container; and

wherein the hinged part of the cap is moveable about a protruding hinge and the top edge of the shrink wrap sleeve terminates at a height such that the hinge is completely covered by the shrink wrap sleeve such that there are no gaps between the top edge of the shrink wrap sleeve and the hinged part of the cap above the hinge.

Ex. 1001, 7:32–8:8.

II. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under that standard, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary

skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

A. “a container containing a liquid concentrate and configured for squeezing to dispense a jet of the liquid concentrate” (claim 1)

Petitioner asserts that the phrase “containing a liquid concentrate and configured for squeezing to dispense a jet of the liquid concentrate” in the preamble of claim 1 is not limiting. Pet. 20–21. In particular, Petitioner contends that the preamble does not affect the claimed structure, the preamble only states a purpose or intended use, and the claims do not rely on the preamble for antecedent basis. *Id.* at 21. Petitioner also contends that remarks made in prosecution history do not qualify as “clear reliance” because “the Examiner never agreed to allow any of the claims in response to the applicants’ arguments” and “the claims were allowed only after a separate limitation was imported from dependent claim 26 into independent claim 1.” *Id.* (citing *Symantec Corp. v. Computer Assocs. Int’l, Inc.*, 522 F.3d 1279, 1288–89 (Fed. Cir. 2008)).

Patent Owner responds that the preamble is limiting because the “language recites a distinct structural characteristic” that the specification of the ’472 patent indicates as being important. PO Resp. 13. Patent Owner directs us to a portion of the ’472 patent that states the “container 10 utilizes some or all of these properties while dispensing a jet of the liquid concentrate into a target container having a target liquid therein.” *Id.* (quoting Ex. 1001 at 4:33–44). Patent Owner contends that the specification of the ’472 patent “does not describe any modes of dispensing the liquid concentrate from the container other than in a ‘jet’ of fluid.” *Id.*

Patent Owner also asserts that the “prosecution history demonstrates a ‘clear reliance’ on the preamble ‘to distinguish the claimed invention from the prior art.’” *Id.* at 14–15 (citing Ex. 1003, 153, 158, 255, 259). In response to Petitioner’s assertion that the claims were allowed because of another limitation, Patent Owner argues that Petitioner “cites no authority that suggests that demonstrating ‘clear reliance’ on the preamble . . . requires the patent owner to show that the preamble was *the* reason for allowance.” *Id.* at 15 (discussing Pet. 21). Patent Owner further contends that the preamble is “not merely ‘duplicative’ of the claim language” and thus, Petitioner’s citation to *Symantec*, 522 F.3d at 1288–89 is “not on point.” *Id.* at 16–17 (discussing Pet. 21). Petitioner replies that “Lohrman . . . discloses a container capable of dispensing a ‘jet’ of liquid” (Pet. Reply 14), but does not provide arguments in addition to those discussed above from its Petition that the preamble of claim 1 is not limiting (*see id.* at 14–15).

Whether to treat a preamble as a limitation is based on a review of the entire patent. *See Catalina Mktg. Int’l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). Generally, “a preamble limits the invention if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Id.* “No litmus test defines when a preamble limits claim scope,” but aiding the determination are guideposts, such as “when reciting additional structure . . . underscored as important by the specification, the preamble may operate as a claim limitation.” *Id.* Also, “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation.” *Id.*

Regarding whether the preamble of claim 1 recites “essential structure,” we are not persuaded that the preamble of claim 1 “recites a distinct structural characteristic” that the specification of the ’472 patent indicates is important, as asserted by Patent Owner (*see* PO Resp. 13). Although the specification states that “container 10 utilizes some or all of these properties while dispensing a jet of the liquid concentrate into a target container having a target liquid therein” (Ex. 1001 at 4:41–43), we find that it also states before the quoted portion above that “container 10 can be used to dispense a liquid concentrate in a desirable manner” (*id.* at 4:32–33) and that “container 10 can include desirable properties, for example, . . . a jet that minimizes splashing . . . and a jet that maximizes mixing” (*id.* at 4:33–41).

The specification further describes that the “container 10 described herein can dispense liquid concentrate in such a way as to enter the target liquid without substantial splashing or splatter while also causing sufficient turbulence or mixing.” *Id.* at 4:43–49. Because we find that the specification discusses container 10 generally before specifying that container 10 “utilizes some or all of these properties while dispensing a jet of the liquid concentrate” (*id.* at 4:41–43), we are not persuaded that the specification of the ’472 patent indicates dispensing in a jet is important, as asserted by Patent Owner, or limiting. Also, because we find that the specification of the ’472 patent describes that a liquid concentrate can be dispensed in a “desirable manner” that can include one or more example “desirable properties” (*id.* at 4:32–43) and describes jets in the list of example desirable properties (*id.* at 4:33–41), we are not persuaded that the specification of the ’472 patent indicates dispensing in a jet as a limiting

mode. Patent Owner's arguments that the preamble of claim 1 recites an essential structure, therefore, do not persuade us.

Although we are not persuaded that the preamble of claim 1 recites "essential structure," we are persuaded by Patent Owner's arguments based on prosecution history. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) ("In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence."); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (instructing the PTO to consider prosecution history in *inter partes* review). During prosecution of the '472 patent, the Examiner determined that U.S. Patent No. 6,385,878 to Key disclosed "a container containing a liquid concentrate and configured (capable of) for squeezing to dispense a jet of the liquid concentrate." Ex. 1003, 133 (Office Action dated Aug. 2, 2012). Patent Owner points us to (1) an "Agenda for Interview of Sept. 21, 2012" that includes for "Discussion of Rejections Under 35 U.S.C. § 103" the meaning of a "container . . . configured for squeezing to dispense a jet of the liquid concentrate" (Ex. 1003 at 153), and (2) an "Amendment" that argues "there is no disclosure in Key that its container is capable of dispensing a jet of liquid concentrate" (*id.* at 158).

In a subsequent Office Action, the Examiner determined that another reference, U.S. Patent No. D428,816 to Shiokawa, disclosed "a container configured for squeezing (see claim) to (capable of) dispense a jet of the liquid concentrate." *Id.* at 239 (Office Action dated Dec. 17, 2012). Patent Owner directs us to (1) an "Agenda for Interview of Jan. 10, 2013" that

includes for “Discussion of Rejections Under 35 U.S.C. § 103” the language a “container . . . configured for squeezing to dispense a jet of the liquid concentrate” (*id.* at 255), and (2) an “Amendment” that argues “[m]issing from the Office action is any identification of a container . . . which is configured for squeezing to dispense a jet of a liquid concentrate” (*id.* at 259; *see also id.* at 260 (arguing that the “cited references fail to disclose this feature”)).

Petitioner does not explain adequately why Patent Owner’s cited portions of the prosecution history of the ’472 patent are not “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art” that transforms the preamble of claim 1 into a claim limitation. Petitioner’s argument that “applicants’ citations of the preamble in remarks made during prosecution do not qualify as ‘clear reliance’ . . . because the Examiner never agreed to allow any of the claims in response to the applicants’ arguments” (Pet. 21) does not indicate how remarks, such as those described above, made during prosecution history fail to demonstrate reliance on the preamble of claim 1 to distinguish over the Examiner’s cited references.

Similarly, the argument that “the claims were allowed only after a separate limitation was imported from dependent claim 26 into independent claim 1” (Pet. 21 (citing *Symantec*, 522 F.3d 1279)) does not explain adequately why, at least, the above cited statements from prosecution history fail to demonstrate reliance on the preamble of claim 1 to distinguish over the cited references as well. Petitioner refers to an amendment that resulted in claim 1 incorporating the subject matter of then-pending claim 26 and reciting the limitation regarding the “hinged part of the cap.” *See* Ex. 1003

at 289–294, 302. That amendment did not change the preamble of claim 1 or render it superfluous. *See id.* Petitioner also indicates that there is “no clear reliance when preamble and limitation were amended concurrently to overcome prior art” (Pet. 21), but the argument is not persuasive because, as described above, the amendment identified by Petitioner did not amend the preamble. Nor does Petitioner explain how the amendment of claim 1 to include the recitation of claim 26 affects in any way any part of the preamble of claim 1. *See* Pet. 20–21.

For the foregoing reasons, Patent Owner persuades us that a “container . . . configured for squeezing to dispense a jet of the liquid concentrate” in the preamble of claim 1 should be considered a limitation.

B. “shrinkage rate” (claim 10) and “shrinkage ratio” (claim 11)

Petitioner also proposes interpreting “shrinkage rate” and “shrinkage ratio” as “characteristics of a shrink wrap film provided as either a percentage or a ratio.” Pet. 21 (citing Ex. 1001, 5:17–21). Patent Owner contends that Petitioner’s proposed constructions are not relevant to its arguments for claims 10 and 11. PO Resp. 17 (citing Pet. 21).

We agree with Patent Owner that “shrinkage rate” and “shrinkage ratio” do not require express construction. PO Resp. 11–12, 17–18. We also determine that express construction of any other term is not necessary to resolve patentability. *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.”).

III. SOLE INDEPENDENT CLAIM 1

To prevail in its challenge of claims 1–3, 5, 13–15, 16, 18–22, and 25–27 as unpatentable over Lohrman, Lermer, and Duru, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Petitioner contends that the subject matters of claims 1–3, 5, 13–16, 18–22, and 25–27 are rendered obvious by Lohrman, Lermer, and Duru with citations to the disclosures in, at least, these references, claim charts, and the Kimmel Declaration (Ex. 1018). Pet. 25–58.

A. Lohrman (Ex. 1007)

Lohrman relates to a dispensing package, in which a flexible bottle, when inverted and squeezed, discharges the contents of the bottle. Ex. 1007, 1:10–18. Figure 1 of Lohrman is reproduced below.

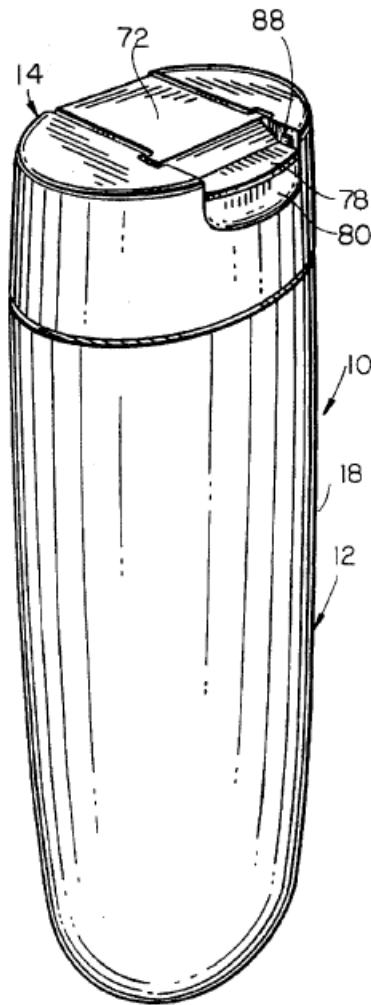


FIG. 1

Figure 1 is a front perspective view of a dispensing package. *Id.* at 2:7–10. Dispensing package 10 “is particularly adapted for dispensing fluid products, such as liquid soaps” and includes bottle 12 and overcap 14. *Id.* at 2:56–61. Bottle 12 is flexible so as to permit manual deformation by squeezing sidewall 18 and exhibits a bias to return to its undeformed condition. *Id.* at 2:65–3:3. Sidewall 18 may be oval in cross section. *Id.* at 3:8–9. Overcap 14 includes lid 72 that is pivoted by means of hinge 74 (not pictured). *Id.* at 4:17–22.

B. Lermer (Ex. 1008)

Lermer relates to “tamper-evident packaging utilizing a thin film that has been shrunk onto and thus encases the substance-bearing container.” Ex. 1008, 1:8–10. Figure 1 of Lermer is reproduced below.

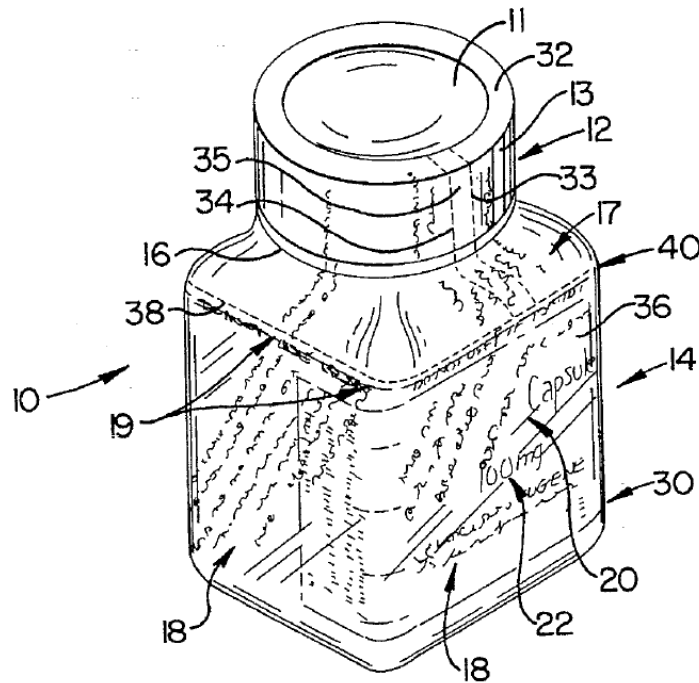


FIG. 1.

Figure 1 is a perspective view of an unopened container encased in film. *Id.* at 2:10–11. Container 10 comprises bottle 14 and mating cap 12 encased in wrapper 30. *Id.* at 2:28–30. Wrapper 30 comprises an upper portion 32 and lower portion 36. *Id.* at 3:14–16. Latitudinal perforations 38 separate upper portion 32 and lower portion 36. *Id.* at 3:17–18. Upper portion 32 includes vertical perforations 33, 34, each of which extends from where upper portion 32 overlies cap 12 to latitudinal perforations 38. *Id.* at 3:20–24.

C. Duru (Ex. 1009)

Duru is from a Global New Products Database (“GNPD”) operated by Mintel Group Ltd. Pet. 16; Ex. 1009, 1. An image from page 2 of Duru is reproduced below.



The image shows a bottle that “has an injection moulded flip-top cap.” Ex. 1009 at 1.

D. Printed Publication

As listed above in Section I.A, we instituted review on grounds that rely on Duru and other references from the Global New Products Database (“GNPD”), specifically Nature’s Plus (Ex. 1012), Colgate Kids (Ex. 1013), and Cheerios-On-the-Go (Ex. 1014).

Petitioner states, and the full record persuades us, that the GNPD, which published Duru, Nature’s Plus, Colgate Kids, and Cheerios-On-the-Go (collectively, the “Mintel references”), “is available to persons skilled in the packaging arts . . . and its entries are regularly consulted by persons working in the packaging field.” Petitioner’s contention is supported by a

declaration by a vice president of the Mintel Group, Ltd., which maintains the database, and the Kimmel Declaration. Pet. 16–17 (citing Ex. 1018 ¶ 28; Ex. 1022 ¶¶ 1–3, 10). Patent Owner argues that the Mintel references are not printed publications because, for reasons detailed below, the Mintel references were not sufficiently accessible to a person of ordinary skill in the art exercising reasonable diligence before the critical date of the ’472 patent. *Id.* at 1–2, 19.

To qualify as a printed publication, a reference “must have been sufficiently accessible to the public interested in the art.” *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989). “Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the touchstone in determining whether a reference constitutes a ‘printed publication’ bar under 35 U.S.C. § 102(b).” *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1989). A reference will be considered publicly accessible if it was “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008).

Patent Owner first contends that the GNPD “is a subscription-based service costing as much as \$200,000 per subscriber” and that access “is typically restricted to specific types of products.” PO Resp. 21 (citing Ex. 2005, 11:4–12, 12:13–19; Ex. 2006, 26:7–11; Ex. 2007 ¶ 30). Patent Owner contends that even if one of ordinary skill in the art paid the subscription, he or she would not subscribe to each and every product category. *Id.* at 22. Patent Owner notes that Duru and Colgate Kids do not come from a food category of the GNPD. *Id.* at 23.

We agree with Petitioner that, in this case, the “cost associated with a subscription to the Mintel GNPD does not alter its status as a printed publication” and that “cost does not undermine the factual basis for finding that the Mintel references were publicly accessible as of August 16, 2009.” Pet. Reply 5–6. Patent Owner’s arguments that the subscription for GNPD was high and that the typical subscription did not include each and every product category do not persuade us that the Mintel references are not printed publications. The record indicates that the subscription cost did not prevent access. For example, Patent Owner’s declarant states that “I qualify as a person of ordinary skill in the art” (Ex. 2007 ¶ 15), that “I have access to the Mintel GNPD through MSU’s academic license” (*id.* ¶ 29), and that “the MSU Product Center, which is a center that helps individuals and businesses . . . commercialize products and create businesses in the food, agricultural, and natural resource sectors, maintains a commercial license to the Food Category of the Mintel GNPD” (*id.* ¶ 30). The record provides insufficient evidence to find that the subscription cost was so high that it prohibited a person of ordinary skill from accessing the GNPD. Also, the record does not indicate that persons of ordinary skill were prevented from accessing more than one category. See Ex. 2006 at 31:8–11 (Ms. O’Connell, the head of operations for Mintel, answering “Correct” to the question “And if I searched for shrink sleeve, that would search the millions of products in the *entire database*, right?”) (emphasis added); see also Ex. 2007 ¶ 30 (stating “*most companies* decide, *for economic reasons*, to only subscribe to the Category or *Categories* relevant to its business”) (emphases added). Moreover, because the GNPD is a service offered commercially to the

public, we find it unlikely ordinarily skilled artisans are prevented from accessing it. See Ex. 1018 ¶ 28; Ex. 1022 ¶¶ 1–3, 10.

Second, Patent Owner asserts that a person of ordinary skill in the art “would not have been able to navigate and search the GNPD in a manner that would have yielded a manageable number of references,” and thus, “the Mintel References could not have been located through the exercise of reasonable diligence.” PO Resp. 23. Patent Owner argues that the “GNPD has over two million product references” (*id.* at 24 (citing Ex. 2005 at 19:6–9)), that “Petitioner’s expert . . . did not independently search for and locate all of the Mintel References” (*id.* (citing Ex. 2008 at 166:6–7, 168:19–169:3)), that “Dr. Kimmel’s suggested searches for Duru returned more than one million results” (*id.* at 25 (citing Ex. 2007 ¶ 34)), and that “Dr. Singh estimates that it would take him over 382 weeks . . . to view all of the results returned in the searches suggested by Dr. Kimmel” (*id.* at 27 (citing Ex. 2007 ¶ 35)).

We agree with Petitioner that the “question is not whether an individual, selecting terms from the claim language, could execute a single keyword search that would yield all relevant reference,” rather it “is whether it could be located by ‘persons interested and ordinarily skilled in the subject matter or art *exercising reasonable diligence.*’” Pet. Reply 8–9 (quoting *In re Lister*, 583 F.3d 1307, 1315 (Fed. Cir. 2009)). Patent Owner’s declarant provides charts of search results when searching for the Mintel references with various search terms based on the deposition of Petitioner’s declarant. Ex. 2007 ¶ 34. Those charts indicate that some search terms provided no results, as few as 10 results (*id.* ¶ 34 Table 1), and as many as 562,975 results (*id.* ¶ 34 Table 1). Although we do not find sufficient evidence in the

record to determine if any of the search terms demonstrates an exercise of reasonable diligence by one of ordinary skill in the art, we find that the charts provide evidence that one can reduce search results from over 500,000 to hundreds or dozens with additional or more precise search terms that can filter the search results. We, thus, determine that an exercise of reasonable diligence in searching the GNPD can yield hundreds, dozens, or some other manageable number of references, and thus, record evidence does not warrant a conclusion that the Mintel references were not publicly available.

Moreover, this is not a case where only one particular reference is required or even relied upon to show one particular feature. The record indicates that many other references show the same features for which the Mintel references are cited. The Petition cited to “variations.” *See e.g.*, Pet. 26 (arguing “[f]or variations of the container of Lohrman, *see* Duru at 1–3; Gavin, Figs. 1–6; Okin, Figs. 1–7”); *see also* Dec. on Inst. 17 (noting that “[a]lthough a particular reference is cited for each limitation of dependent claims 2–28, Petitioner additionally cites one or more other references as teaching the same limitation.”). We note that more than one reference evidences that certain features were known in the art, and thus, one of ordinary skill in the art would not need to find only the Mintel references, as implied by Patent Owner’s arguments.

Patent Owner further contends that search methodology used by Petitioner’s declarant may not have been feasible in 2009 because the search functionality of the GNPD has changed since that time. PO Resp. 27–28 (citing Ex. 2005 at 18:4–8, 22:10–12, 25:21–23; Ex. 2006 at 32:2–5, 34:20–21, 35:9–10, 39:18–40:7). Patent Owner, thus, asserts that a search in 2009

would have yielded more results, “rendering the Mintel References even less accessible than they are today.” *Id.* at 28. Petitioner replies that “the data contained in each publication has not changed, and the entire text has been searchable using keyword searches at least since August 16, 2009.” Pet. Reply 8 (citing Ex. ¶¶ 12).

We determine that Petitioner’s position is more persuasive because the evidence indicates that the GNPD could be searched by “free text” in 2009, but that the available fields of search has changed since then. *See* Ex. 2005 at 18:6–9 (“Q. . . . regarding the GNPD database, how -- how do users search the database? A. They can search in a variety of ways. They can search free text. There are a lot of specific fields that are available so that they can narrow their search kind of within these specific fields.”), 32:2–5 (“So there could be fields on here now that were not there originally because we added a field and then went and back-filled some of the information.”). There is insufficient evidence in the record to support Patent Owner’s proposition that a search in 2009 actually would yield more results because, for example, there is no evidence of an attempt to reproduce the search results using what was available in 2009.

Third, Patent Owner argues that the “exhibits submitted by Petitioner for the Mintel References do not reflect what the GNPD would have displayed on the critical date in August 2009,” and that “GNPD now shows additional information that was not available in 2009.” PO Resp. 29 (citing Ex. 2005 at 25:21–23; Ex. 2006 at 36:16–23). Patent Owner also argues that “Dr. Kimmel admitted that he manipulated the GNPD result to enhance certain images found in the database,” specifically that he “added a zoomed-in picture.” *Id.* at 29–30 (citing Ex. 2008 at 167:10–17, 277:11–278:15).

Patent Owner, thus, argues that “the Mintel References offered by Petitioner simply are not the alleged ‘printed publications’ that a POSA would have seen in 2009.” *Id.* at 30.

We agree with Patent Owner that the submitted Mintel references may show additional information that was not available in 2009. *See* Ex. 2006 at 36:24–37:2 (“Q. You couldn’t recreate what a subscriber would have seen at the time? A. No”). The record, however, persuades us that at least the images of the Mintel references were available in 2009. *See* Ex. 2005 at 27:7–15 (When asked “Is it true that the picture is the same picture that would have been available in February 2006?” Mr. Colber testified “Yes. We would keep that picture constant” and “You take the image and you include it with the product record and that stays static.”). The record also persuades us that the “date published” represents the date when the Mintel references were available on the GNPD. *See* Ex. 2006 at 17:11–19 (When asked “what does ‘Date published’ mean?” Ms. O’Connell answered “The ‘Date published’ is the date that we finish processing the record within the GNPD operations team” and “it’s when it was uploaded on to the system”).

E. Claim 1

Petitioner argues that Lohrman teaches all the limitations of claim 1 except for those related to a shrink wrap sleeve. Pet. 25–30 (citing Ex. 1007, 1:48–53, 2:56–3:1, 3:7–21, 4:17–21, Figs. 1, 4, 5, 7, 9, 10, 15). In particular, Petitioner contends that a resilient, flexible, deformable bottle of Lohrman teaches or suggests a container “configured for squeezing to dispense a jet of the liquid concentrate.” *Id.* at 25, 28 (citing Ex. 1007 at 1:48–53, 2:56–61, 2:65–3:1). Petitioner also cites Duru for teaching or suggesting a container “having, *inter alia*, deformable walls, side-walls,

front and rear surfaces, a flip-top cap moveable about a hinge, and a span of the container that continuously increases away from the hinge towards the bottom of the container.” Pet. 29 (citing Ex. 1009; Ex. 1018 at 16, 20, 21); *see also id.* at 25–28 (citing Duru as a variation of the container of Lohrman).

Petitioner relies on Lermer as teaching or suggesting an axially oriented shrink wrap sleeve with the required perforations and covering a circumference variation. Pet. 26–28 (citing Ex. 1008, 1:56–67, 2:28–33, 47–56, 3:13–41, 4:36–60, Figs. 1–3, 5), 29–30 (citing Ex. 1008, 1:6–10, 21–30, 1:55–2:6, 2:27–46, 3:13–40, 4:36–60, Figs. 1, 2, 5). Petitioner asserts that “a person having ordinary skill in the art . . . would have seen the commercial, regulatory, and safety benefits” of combining Lohrman and Lermer and “would have had reason to modify the container of Lohrman . . . to include the shrink wrap of Lermer . . . to provide tamper-evident packaging with a tab that can be removed to allow the hinged cap to open and the bottle to dispense, while afterwards providing a label that stays on the container and (if necessary) holds the cap in place.” Pet. 30–32 (citing Ex. 1018 at 13–14; Exs. 1019; 1021; 1023).

The full record before us supports Petitioner’s assertions of how Lohrman, Lermer, and Duru teach or suggest limitations of claim 1. Also, Petitioner’s rationale finds support in Lermer. In particular, Lermer states that, in the packaging of pharmaceuticals, cosmetics, and food, “[t]amper-evident packaging alerts the consumer that the package has been tampered with” and that “[m]any regulations have been enacted in an attempt to ensure that any tampering with certain products will indeed be evident.” Ex. 1008, 1:13–20. Lermer also states that its “wrapper upper portion is

removable from the container and the cap so that the cap can be separated from the container.” *Id.* at 1:64–66. As discussed below in more detail, Patent Owner does not persuade us that Petitioner fails to meet its burden in showing by a preponderance of the evidence the unpatentability of claim 1.

Patent Owner responds that Petitioner’s rationale “ignores the practical challenges” of combining Lohrman or Duru and Lermer because “Lermer’s tamper evident-feature is simply not compatible with a container like Lohrman or Duru, because it is not designed for a container meant to be repeatedly squeezed or deformed.” PO Resp. 31. Patent Owner characterizes Lermer as describing a tamper-evident feature that includes a frangible label and a wrapper made of shrink wrap film adhered to the label so that removing a lower portion of the wrapper would cause the label to rupture. *Id.* at 31–33 (citing Ex. 1008 at 1:30–39, 2:28–30, 2:57–67, 3:5–7, 3:13–32, 4:3–34, 4:62–5:3, 5:8–15, Fig. 1).

Patent Owner asserts that a person of ordinary skill in the art would not select the frangible label of Lermer for use on a deformable or squeezable container because Lermer’s label is suitable only for rigid containers that are not subjected to repeated squeezing or deforming. *Id.* at 34 (citing Ex. 2007 ¶¶ 61–62). Patent Owner contends that a person of ordinary skill in the art would recognize that a wrapper adhered to a label would not be suitable for the containers of Lohrman and Duru because those containers are subjected to repeated deformation. *Id.* at 33–34 (citing Ex. 1008 at 4:67–5:3, 5:5–8). Patent Owner also asserts that applying the label and wrapper of Lermer to Lohrman or Duru would destroy the label and the adhesive used would increase the rigidity and limit the squeeze force of their containers, thereby undermining the required squeeze force

necessary to dispense the liquid concentrate in a jet. *Id.* at 34. Patent Owner further asserts that Duru does not teach or suggest a container that includes a shrink wrap or any tamper-evident features and that the cost of providing Duru with tamper-evident features outweighs the benefit. *Id.* at 34–35 (citing Ex. 2007 ¶ 63).

As summarized above, Petitioner proposes modifying the container of Lohrman to include the shrink wrap of Lermer to provide tamper-evident packaging with a removable tab to allow opening a hinged cap and that provides a label that stays on the container. Pet. 30–32. Petitioner does not propose further modifying Lohrman to include Lermer’s additional teaching of “another feature of the container 10 that can evidence tampering,” which is “[i]f someone tampering with the container 10 were to remove a portion of the wrapper lower portion 36 and therefore lift the portion of the wrapper lower portion overlying the label 20,” such tampering “causes the label 20 to rupture,” as taught by Lermer. Ex. 1008 at 4:61–67; *see also* Pet. 31–32 (asserting it was known to provide shrink wrap labels (citing Ex. 1021, 1) and shrink labels with tamper-evidence features such as neck bands (citing *id.* at 3)). We find that Petitioner provides sufficient evidence that it was within ordinary skill in the art to provide either a shrink wrap label, as evidenced in the record by Nature’s Plus, Colgate Kids, or Cheerios-On-the-Go, meeting the limitations of claim 1, or a frangible label, as evidenced by Lermer. The record does not indicate that one of ordinary skill in the art would necessarily have applied a frangible label to the proposed combination of Lohrman and Lermer. *See* Ex. 1018 ¶¶ 29–30 (Dr. Kimmel stating that “[w]hen designing a package, one begins . . . with defining the needs and constraints of the desired package” such as that “food and

pharmaceutical product packages display appropriate labeling of the product contained by the package, both before and after the package is opened.”); *see also KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007) (stating “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

Patent Owner also argues that a person of ordinary skill in the art “would understand the jet capability to be an important feature of the overall invention claimed.” PO Resp. 35 (citing Ex. 2007 ¶ 51). As discussed above in Section II.A, we find that the specification of the ’472 patent describes that a liquid concentrate can be dispensed in a “desirable manner” that can include one or more exemplary “desirable properties” (Ex. 1001 at 4:32–43) that can be “a jet that minimizes splashing,” “a jet that maximizes mixing,” or another listed example (*id.* at 4:33–41). We are thus not persuaded that the specification of the ’472 patent indicates dispensing in a jet “to be an important feature of the overall invention claimed.”

Patent Owner also responds that “the fact that Lohrman’s container can be squeezed and has a valve does not mean that it is capable of dispensing its contents in a ‘jet’” and that “the manner in which a fluid is dispensed from a package depends on a combination of several factors, including the viscosity of the liquid, the squeeze force applied to the package, and the size of the valve opening.” PO Resp. 36 (citing Ex. 2007 ¶ 52). Patent Owner also contends that Lohrman teaches a dispensing package for “‘high-viscosity’ or thick fluids” that “are more resistant to flow tha[n] liquid beverage concentrates.” *Id.* at 36–37 (citing Ex. 2007 ¶ 53). Patent Owner argues that Lohrman describes dispensing highly viscous liquids “in a neat fashion” by “use of a single hand” and thus, contemplates only a

squeeze force necessary to shift its valve from a sealed position to an open position. *Id.* at 37 (citing Ex. 1007 at 1:49–55, 1:63–67; Ex. 2007 ¶ 54). Patent Owner, thus, argues that Lohrman is not capable or intended to dispense its liquid in a jet because, for example, dispensing shampoo in a jet would not be “in a neat fashion” and defeat the stated purpose of Lohrman. *Id.* at 37–38 (citing Ex. 1007 at 1:63–67; Ex. 2007 ¶ 54).

Petitioner replies, and we agree, that the challenged claims “have no viscosity limitation” and the “term ‘liquid concentrate’ does not imply a specific viscosity.” Pet. Reply 15 (citing PO Resp. 36–37; Ex. 1001; Ex. 1211 ¶¶ 30, 37; Ex. 2007 ¶¶ 50–58). Also, Patent Owner’s argument relies on Lohrman’s container dispensing only high-viscosity fluids and thereby failing to dispense in a “jet.” The full record, however, does not persuade us that Lohrman’s disclosure is as limited as Patent Owner asserts. Lohrman describes dispensing shampoo as an example. Ex. 1007 at 1:65–67 (“If the dispensing package is used in a shower and contains shampoo, for example, one hand can squeeze the bottle while the other receives the shampoo.”). Lohrman also goes on to describe “a dispensing product 10 [that] is particularly adapted for dispensing fluid products, such as liquid soaps, household cleaners, polishes, moisturizing creams, foodstuffs, and the like.” Ex. 1007 at 2:56–61. We find that the list of example “fluid products” does not require a particular viscosity, and thus, we find that Lohrman is not limited to high-viscosity fluids, as asserted by Patent Owner.

Also, Lohrman incorporates Brown (Ex. 1016) in its entirety by reference and refers to Brown for details regarding the valve. Ex. 1007 at 3:37–40; *see also* Ex. 1208 at 64:9–15 (Dr. Singh testifying that he understands Lohrman as incorporating Brown in its entirety). Patent Owner

responds that “Brown describes the flow of the dispensed liquid as any of ‘relatively wide column-like streams, thin needle-like streams, dollops [or] the like’” but “does not describe the flow of the dispensed liquid as a ‘jet’” and does not teach or suggest dispensing to minimize splashing and promote mixing. PO Resp. 38 (citing Ex. 1016, 4:48–51, 10:39–42). Patent Owner also contends that one of ordinary skill in the art would understand “stream” to be different from “jet.” *Id.* (citing Ex. 2007 ¶ 57). Regarding Duru, Patent Owner asserts that it does not teach or suggest dispensing in a jet or a valve. *Id.* at 39 (citing Ex. 2007 ¶ 50).

Claim 1 requires a “container . . . configured for squeezing to dispense a jet of the liquid concentrate” but does not further limit “jet” elsewhere in the claim. Patent Owner’s arguments rely on distinguishing “jet” from a “stream;” however, Patent Owner does not propose an interpretation of “jet” or any other term that would tend to distinguish the “jet” of claim 1 from what Brown teaches or suggests. See PO Resp. 11–18. Also, Patent Owner argues implicitly that the jet must minimize splashing and maximize mixing, but as discussed above in Section II.A, we find that the ’472 patent describes that a liquid concentrate can be dispensed in a “desirable manner,” that can include one or more exemplary “desirable properties” such as jets that minimize splashing or maximize mixing (Ex. 1001 at 4:32–43). The record provides insufficient evidence to compel reading these features from the specification of the ’472 patent into claim 1.

Petitioner replies, and we agree, that Brown discloses “a valve that dispenses a ‘substantially constant flow’ in the form of a ‘thin, needle-like stream[.]’” Pet. Reply 14 (citing Ex. 1016 at 10:28–31, 10:39–42, Fig. 3; Ex. 1211 ¶¶ 33–35). Patent Owner’s declarant also states that “Brown

describes the flow of the dispensed product as any of ‘relatively wide column-like streams, thin needle-like streams, dollops, [or] the like.’”

Ex. 2007 ¶ 50. Petitioner also argues, and we agree, that Brown “discloses a valve that is intended for use with a ‘wide variety of different types of fluid products,’ including ‘highly concentrated fluid products.’” Pet. Reply 15 (citing Ex. 1007 at 3:37–40; Ex. 1016 at 2:10–14, 4:48–56; Ex. 1017 at 10:21–47, 14:26–31; Ex. 1211 ¶¶ 31–33). Therefore, based on the above findings regarding Brown, we determine that Lohrman and Brown teach or suggest a “container . . . configured for squeezing to dispense a jet of the liquid concentrate,” and Patent Owner’s arguments do not persuade us that Lohrman or Brown fails to teach or suggest the “jet” of claim 1.

Patent Owner further argues that a person of ordinary skill in the art “would not consult publications unless they disclose or suggest an embodiment that contains beverages.” PO Resp. 39 (citing Ex. 2007 ¶ 64). Patent Owner contends that any combination of the “pill bottles like Lerner,” “containers or packages intended for health or beauty products or high-viscosity liquids such as Lohrman and Duru,” the toothpaste container of Colgate Kids, and the edible product containers of Cheerios On-the-Go and Nature’s Plus “would not be an obvious combination of references . . . when designing a container and shrink wrap sleeve for a liquid concentrate as claimed in the ’472 Patent.” *Id.* at 39–40 (citing Ex. 2007 ¶ 65).

The argument is not persuasive because the record does not indicate that a person of ordinary skill in the art would have looked only to embodiments that contain beverages. Petitioner’s declarant states that the “level of skill in the art . . . included the knowledge of the packaging technology and materials science reflected in,” at least, Lohrman, Lerner,

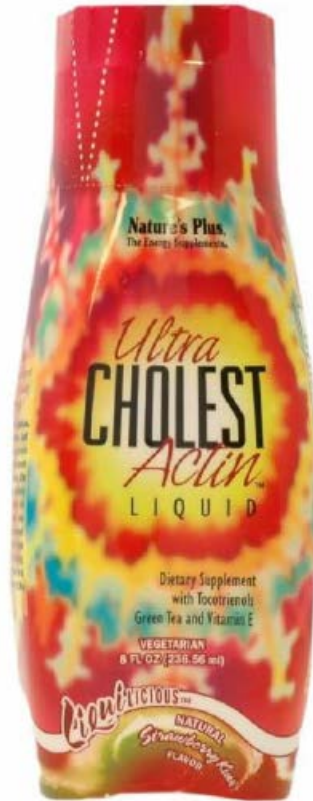
and the other asserted references. Ex. 1018 ¶¶ 14–15. Patent Owner’s declarant also states that a “person of ordinary skill in the art of the subject matter claimed in the ’472 Patent would be a person with . . . at least five years of experience in the design and manufacture of consumer product packaging” (Ex. 2007 ¶ 15) and testifies that “[c]onsumer products are . . . the category of products that range from shampoos, lotions, to things that range from household cleaners to health and beauty aids” and that “they come in very different -- a lot of different and distinct forms of packaging” (Ex. 1208 at 27:10–28:11). Because the record indicates that a person of ordinary skill in the art would have known about the asserted references and thus had knowledge of different forms of packaging with various contents, we are not persuaded that a person of ordinary skill in the art would have looked only to beverage containers and not to other containers that the record shows were known to such a skilled artisan. To the extent that Patent Owner’s arguments are asserting that any one of Petitioner’s references should be considered non-analogous art, Patent Owner directs us only to paragraphs 64–65 of its Singh Declaration, which do not address whether Petitioner’s asserted references are within the field of endeavor or reasonably pertinent to the problem with which the ’472 patent is concerned. Thus, we are not persuaded that Lohrman, Lermer, and any of the other asserted references would not have been combined.

For the foregoing reasons, we determine that Petitioner has proven by a preponderance of the evidence the unpatentability of claim 1 over Lohrman, Lermer, and Duru.

IV. DEPENDENT CLAIMS 2–28

A. Nature's Plus (Ex. 1012)

An image from Nature's Plus is reproduced below.



The image shows a “bottle [that] has extended label with tear-strip that provides tamper evidence.” Ex. 1012, 1.

B. Dependent Claim 4

Claim 4 depends from claim 1 and recites “wherein the generally vertical perforations descending from the shrink wrap top edge are progressively closer together as they approach the circumferential perforation ring.” Petitioner incorporates its arguments for claim 1 and additionally relies on Nature’s Plus to teach or suggest features of claim 4. Pet. 34–35 (citing Ex. 1012, 1–2). Patent Owner first responds that “Petitioner has not established that Duru or Nature’s Plus are printed

publications.” PO Resp. 45. For the reasons above in Section III.D, we determine that Duru and Nature’s Plus are printed publications.

Petitioner also contends that claim 4 “represents nothing more than a routine design choice for the perforation pattern” and that a “person having ordinary skill in the art, confronted with the problem of making the generally vertical perforations aesthetically noticeable or easier to tear, would have had reason to further modify the combined container of Lohrman and Lermer as illustrated . . . in Nature’s Plus . . . to bring the vertical perforations progressively closer together.” Pet. 35 (citing Ex. 1018, 24–25).

Patent Owner responds that Petitioner fails to provide articulated reasoning for its combination of Lohrman, Lermer, Duru, and Nature’s Plus. PO Resp. 46. Patent Owner contends that Petitioner does not explain why a problem with aesthetics or tearing existed (*id.* (citing Ex. 1018 ¶¶ 53–55)), that neither Lermer nor Nature’s Plus teaches or suggests such problems (*id.* at 46–47 (citing Ex. 1008 at 3:20–41, Fig. 1)), and that the Kimmel Declaration does not support that the perforation pattern of Nature’s Plus is easier to tear (*id.* at 47 (citing Ex. 1018 ¶ 62)).

We find that the image from Nature’s Plus teaches or suggests “vertical perforations descending from the shrink wrap top edge [that] are progressively closer together.” See Ex. 1012. We, thus, find that such perforations were known in the prior art and that Nature’s Plus is evidence that applying such perforations is within the ordinary skill in the art.

We are also persuaded that applying the perforation pattern of Nature’s Plus to the container of Lohrman as modified with Lermer to arrive at the subject matter of claim 4 represents design choice. The full record

includes insufficient evidence to find that the claimed feature presents unexpected results, performs differently from the prior art, results in a function different from the prior art, or is not within the ordinary skill of the art. *See* Ex. 1018 ¶ 55; *see also* Ex. 1008 at 3:32–39 (Lerner describing that “another embodiment where the wrapper upper portion 32 includes a series of diagonal perforations 34a” would be suitable). For the reasons above, we are persuaded that claim 4 represents a matter of design choice within the ordinary skill of the art.

Therefore, we determine that Petitioner has shown by a preponderance of the evidence that claim 4 is unpatentable.

C. Key (Ex. 1004)

Key relates “generally to labels.” Ex. 1004, 1:22–24. Figure 6 of Key is reproduced below.

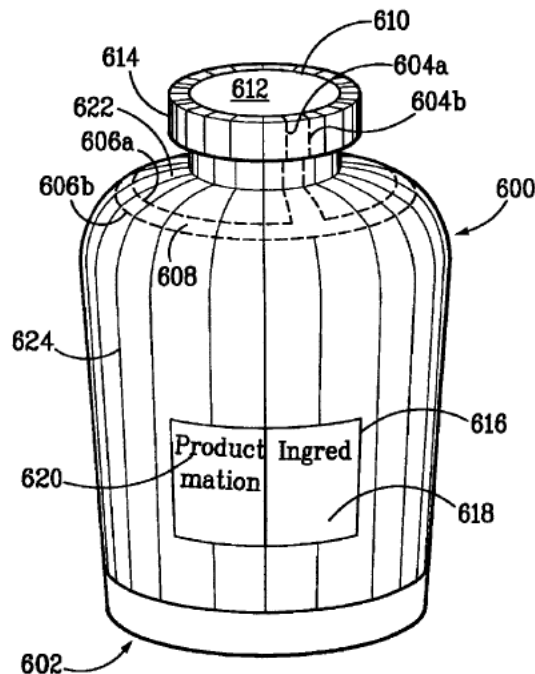


FIG. 6

Figure 6 shows a “label system, showing shell heat-shrunk about a container.” *Id.* at 3:23–25. Shell 600 heat-shrunk about container 602 has two vertical perforation lines 604a and 604b and two horizontal perforation lines 606a and 606b. *Id.* at 6:48–54.

D. Dependent Claim 6

Claim 6 depends from claim 1 and recites “wherein the generally vertical perforations descending from the shrink wrap top edge terminate at a space of about two perforations above the circumferential perforation ring.” Petitioner incorporates its arguments for claim 1 and additionally relies on Key to teach or suggest “generally vertical perforations (604a and 604b) descending from the shrink wrap top edge terminat[ing] at a space of about two perforations above the circumferential perforation ring (606b).” Pet. 36–37 (citing Ex. 1004, Fig. 6). Petitioner argues that the subject matter of claim 6 “represents nothing more than a routine design choice for the perforation pattern.” Pet. 37 (citing Ex. 1018, 26–27).

Patent Owner responds that “Key does not disclose or suggest an embodiment wherein the vertical perforations terminate at a space about two perforations above the circumferential ring and Petitioner has not established that a [person of ordinary skill in the art] would have further modified the combination of Lohrman, Lerner, and Duru with Key to result in a container having the features of claim 6.” PO Resp. 49–50.

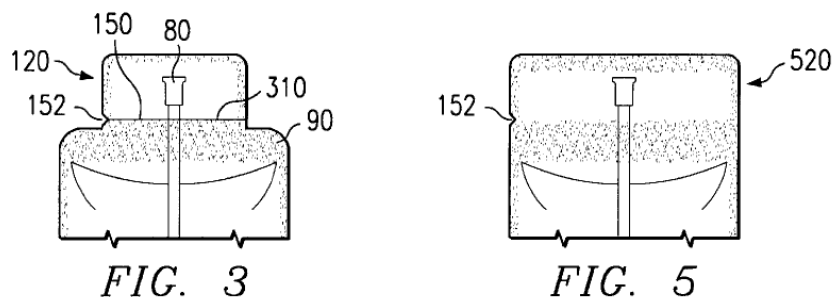
We agree with Petitioner that Key “discloses two horizontal perforations in Figure 6” but “only one of them is a circumferential *ring*.” Pet. Reply 17 (citing Ex. 1004, Fig. 6; Ex. 1211 ¶ 39). We also find that Key evidences that such perforations were known in the prior art and that applying such perforations is within the ordinary skill in the art. *See* Ex.

1004, Fig. 6. We further agree that claim 6 represents routine design choice. The full record presents insufficient evidence to find that the claimed feature presents unexpected results, performs differently from the prior art, results in a function different from the prior art, or is not within the ordinary skill of the art. Moreover, we find that the '472 patent indicates that its “horizontal (circumferential) perforation ring 34” can “generally define an upper edge of the shrink wrap sleeve 30 remaining after the upper band 38 is removed” (Ex. 1001 at 5:4–8, 6:7–11), and Figure 6 of Key teaches or suggests that perforation 606b would define an upper edge of its shell 600 after its perforated portion is removed.

Thus, we determine that Petitioner has shown by a preponderance of the evidence that claim 6 is unpatentable.

E. Lakey (Ex. 1024)

Lakey relates to “flexible lightweight packaging for beverages.” Ex. 1024, 1:11–13. Figures 3 and 5 are reproduced below.



Figures 3 and 5 show front views of alternative tamper evident sections 520. *Id.* at 3:14, 3:16–17. Lakey describes that “notch 152 can be formed to assist the tearing action along score line 150” and can be a “V notch” as shown in Figures 3 and 5. *Id.* at 4:31–33.

F. Dependent Claim 7

Claim 7 depends from claim 4 and recites “wherein the generally vertical perforations descending from the shrink wrap top edge begin with an initial perforation cut, followed by relatively smaller perforation cuts, configured so that when the shrink wrap is applied to the container body, each of the larger cuts forming a ‘V’ shape at a top of each vertical perforation to define a tab between the vertical perforations.”

Petitioner incorporates its arguments for claims 1 and 4 and relies on Lakey to teach or suggest “an initial perforation cut 152 forming a ‘V’ shape notch to initiate a tear.” Pet. 37 (citing Ex. 1024, 4:31–38, Figs. 3, 5). Petitioner contends that the limitation of claim 7 “represents nothing more than a routine design choice,” that “it is well-known in the art that nicking the edge of a shrink wrap edge increases the ease with which shrink wrap can be torn” (*id.* at 38 (citing Ex. 1018 at 27–28)), that a “person of ordinary skill in the art would understand that if a shrink wrap perforation intersected with the top edge . . . it would open into a ‘V’ shape once it was shrunk” (*id.* (citing Ex. 1018 at 33)), and that a “person of ordinary skill in the art would be motivated to exploit this property of shrink wrap to create a tear tab” (*id.* (citing Ex. 1018 at 27–28)).

Patent Owner responds that Lohrman, Lermer, Duru, and Lakey do not teach or suggest the limitations of claim 4 from which claim 7 depends. PO Resp. 53–55. As discussed above, we determine that the prior art teaches or suggests the limitations of claim 4. Patent Owner also responds that “Lakey explains that ‘packaging costs can skyrocket when tamper-evident features are employed,’” such as “shrink wrap[ping] the spout and/or entire cap portion of the bottle.” PO Resp. 54 (citing Ex. 1024 at 1:45–47, 2:49–52, 2:59–67). Patent Owner further argues that Petitioner’s declarant

“ignored the teaching away” and “did not explain why a [person of ordinary skill in the art] would ignore the teachings of Lakey, which includes an alternative to shrink wrap sleeves, and use it to modify the shrink sleeve wrapper of Lermer.” *Id.* at 54–55 (discussing Ex. 1018 ¶ 62). Petitioner replies that the “disclosure relied on by Patent Owner falls far short of ‘teaching away.’” Pet. Reply 18.

Based on the full record, Petitioner’s position is persuasive. Lakey describes that “a V notch . . . can be a simple slit or cut which provides the same concentration of stress to initiate a tear in the desired direction” and “can be formed to assist the tearing action along score line 150.” Ex. 1024 at 4:31–35. We do not find that Lakey would lead a person of ordinary skill in the art in a direction divergent from applying a V notch to a shrink wrap sleeve. Although Lakey does suggest that shrink wrapping the spout and cap of a sports bottles may be expensive when “individual or travel-sized portions are desired” (*id.* at 1:45–47, 2:49–52), we do not find that Lakey criticizes, discredits, or otherwise discourages a container “wherein the generally vertical perforations descending from the shrink wrap top edge being with an initial perforation cut, followed by relatively smaller perforation cuts, configured so that when the shrink wrap is applied to the container body, each of the larger cuts forming a ‘V’ shape at a top of each vertical perforation to define a tab between the vertical perforations,” as recited by claim 7.

We, therefore, determine that Petitioner has shown by a preponderance of the evidence that claim 7 is unpatentable.

G. Dependent Claim 14

Claim 14 depends from claim 12, which in turn depends from claim 1. Claim 12 requires the container of claim 1 to further comprise “a seam for the flip top cap, said seam being covered by the shrink wrap sleeve, said shrink wrap sleeve being at least partly opaque.” Claim 14 recites “wherein the seam is between the circumferential perforation ring and the bottom edge so that the shrink sleeve assists in maintaining the flip top cap on the container body after removal of the portion of the shrink sleeve extending between the circumferential perforation ring and the top edge.”

In addition to Lohrman, Petitioner relies on Duru to teach or suggest “a flip top cap having a seam with the container body, such that retained shrink sleeve will assist in maintaining the flip top cap on the container body.” Pet. 45 (citing Ex. 1009, 1–2).

Petitioner incorporates its arguments for claim 1 and asserts that the “additional limitation of claim 12 is nothing more than a routine design choice.” *Id.* (citing Ex. 1018 at 33–34). Petitioner also contends that for claim 14 a “person having ordinary skill in the art, confronted with the problem of hiding a potentially unattractive seam between a container body and a flip top cap while, at the same time, maintaining the flip top cap on the container body, would have had reason to choose an at least partly opaque shrink wrap that both covers the seam between the cap and body and that assists in maintaining the cap on the body after a portion of the shrink wrap is removed.” *Id.* Petitioner further contends that its proposed combination for claim 14 “represents nothing more than a routine design choice.” *Id.* (citing Ex. 1018 at 33–34).

Patent Owner responds that the relied upon references fail to disclose a seam between a flip top cap and a container body that is “below the

circumferential perforation ring such that the seam remains covered by the shrink wrap sleeve after the upper portion of the shrink wrap sleeve is removed.” PO Resp. 40. Patent Owner contends that “Lermer does not have a flip top cap” and that “[o]nce the upper portion of the wrapper is removed, the seam between the container body and the cap in Lermer is exposed” so that “the cap can be removed from the container and the contents accessed.” *Id.* at 43 (citing Ex. 1008 at 3:26–32). Patent Owner also argues that “no reference currently before the Board discloses or suggests an embodiment wherein the circumferential perforation ring is situated above the seam of the flip top cap and the container body. *Id.* at 43–44 (citing Ex. 2007 ¶ 69).

Patent Owner also responds that Petitioner fails to provide a reason why a person of ordinary skill in the art would have modified Lohrman, Lermer, and Duru to arrive at the container of claim 14. PO Resp. 41. Patent Owner asserts that Petitioner’s declarant “admits that whether a seam is unattractive is a ‘very subjective opinion’” and “does not articulate any reason why a [person of ordinary skill in the art] would have modified the combination of Lohrman, Lermer, and Duru to include a shrink wrap sleeve with a circumferential perforation ring that is placed above the seam of the flip top cap nor a reason why a [person of ordinary skill in the art] would use the shrink wrap sleeve to maintain the flip top cap on the container body.” *Id.* at 44 (citing Ex. 2008 at 247:19).

Based on our review of the full record, we find that it supports Petitioner’s position that the image of Duru, reproduced above in Section III.C, teaches or suggests a flip-top cap (see Pet. 45) and that one of ordinary skill in the art understood that “a partly opaque shrink wrap of the type

disclosed in Cheerio’s On-the-Go” can cover a seam (*see* Ex. 1018 ¶ 79; Pet. 45 (citing *id.*)). Thus, we find that such partly opaque shrink wraps were known in the prior art and that applying such shrink wraps to cover one or more features of a container is within the ordinary skill in the art. *See* Ex. 1018 ¶ 79; *see also* Exs. 1012–1014. We also agree that claim 14 represents routine design choice. The full record presents insufficient evidence to find that a “seam being covered by the shrink wrap sleeve . . . being at least partly opaque” and “wherein the seam is between the circumferential perforation ring and the bottom edge so that the shrink sleeve assists in maintaining the flip top cap on the container body after removal of the portion of the shrink sleeve extending between the circumferential perforation ring and the top edge” presents unexpected results, performs differently from the prior art, results in a function different from the prior art, or is not within the ordinary skill of the art.

Thus, we determine that Petitioner has shown by a preponderance of the evidence that claim 14 is unpatentable.

H. Dependent Claim 16

Claim 16 depends from claim 1 and recites “wherein the increasing circumference is predominantly in the sidewalls as compared to the front and rear surfaces.” Petitioner cites both Lohrman and Duru as each teaching or suggesting a container in which “the increasing circumference is predominately in the sidewalls as compared to the front and rear surfaces.” Pet. 46–47 (citing Ex. 1009 at 1–2). Petitioner incorporates its arguments for claim 1 and argues that the subject matter of claim 16 represents nothing more than routine design choices. *Id.* at 47 (citing Ex. 1018, 35–36). Petitioner also asserts that a “person having ordinary skill in the art,

confronted with the problem of creating a package that is intended to contain a liquid and that can be squeezed . . . would have had reason to provide a container shaped in the form of . . . Duru . . . to facilitate squeezing while being held in the hand.” *Id.* (citing Exs. 1007, 1009, 1010; Ex. 1018, 35–36).

We find that the image from Duru (reproduced above in Section III.C) teaches or suggests an “increasing circumference [that] is predominantly in the sidewalls as compared to the front and rear surfaces.” *See* Ex. 1009. We, thus, find that such a container was known in the prior art and that Duru is evidence that such a container is within the ordinary skill in the art. Also, we are persuaded that the subject matter of claim 16 represents design choice. *See* Ex. 1018 ¶ 83. The full record includes insufficient evidence to find that the claimed feature presents unexpected results, performs differently from the prior art, results in a function different from the prior art, or is not within the ordinary skill of the art.

Patent Owner responds that “Petitioner has failed to establish that Duru qualifies as a printed publication.” PO Resp. 56. For the reasons discussed above in Section III.D, we determine that Duru and the other Mintel references are printed publications. Patent Owner also responds that Lohrman does not teach or suggest the limitation of claim 16 and that “[w]hile Duru may show a container that has more distinct sidewalls than Lohrman, Petitioner has failed to establish . . . that a [person of ordinary skill in the art] would have further modified the combination of Lohrman and Lermer with Duru to yield a container having the claimed limitations of claim 16.” *Id.* Patent Owner argues that “Dr. Kimmel does not explain why a [person of ordinary skill in the art] would modify the shape of the package

in Lohrman, which already teaches a squeezable container capable of being used by a user with one hand.” *Id.* at 57 (discussing Ex. 1018 ¶ 83). In view of the full record before us, we agree with Petitioner that its “explanation that changing the shape of a container is merely a routine design choice . . . is a sufficient rationale on its own.” Pet. Reply 20.

Therefore, we determine that Petitioner has shown by a preponderance of the evidence that claim 16 is unpatentable.

I. Dependent Claim 28

Claim 28 depends from claim 22, which in turn depends from claim 1. Claim 22 recites “wherein only a single circumferential perforation ring is provided in the sleeve,” and claim 28 further recites “wherein there is no direct intersection between the circumferential perforation ring and the vertical perforations.” Petitioner contends that Nature’s Plus teaches or suggests “a container having shrink wrap with no direct intersection between the circumferential [perforation] ring and the vertical perforations.” Pet. 58. Petitioner incorporates its arguments for claim 1 and asserts the claim 28 “represents nothing more than a routine design choice for the perforation pattern.” *Id.* (citing Exs. 1012, 1019, 1020; Ex. 1018 at 46–47). Petitioner also asserts that a person of ordinary skill in the art “would have had reason to leave a space between the vertical and circumferential perforations in order to maintain the integrity of each.” *Id.* (citing Ex. 1019, 7:3–8).

We find that the image from Nature’s Plus (reproduced above in Section IV.A) teaches or suggests “only a single circumferential perforation ring is provided in the sleeve” and “no direct intersection between the circumferential perforation ring and the vertical perforations.” See Ex. 1012. Nature’s Plus evidences that such perforation patterns were known in the

prior art and that applying such perforation patterns is within the ordinary skill in the art. We also agree that such a perforation pattern represents routine design choice. *See* Pet. 58; Ex. 1018 ¶ 112. The full record does not present sufficient evidence to determine that the claimed feature presents unexpected results, performs differently from the prior art, results in a function different from the prior art, or is not within the ordinary skill of the art.

Patent Owner presents the same arguments in support of the patentability of claims 4 and 28. PO Resp. 45–47. For the reasons discussed above in connection with claim 4, those arguments are not persuasive for claim 28. Patent Owner also argues only for claim 28 that Nature’s Plus does not teach or suggest the limitations of claim 28, and Petitioner does not explain why a person of ordinary skill would modify the asserted references to arrive at the subject matter of claim 28. *Id.* at 47–48. Patent Owner further asserts that the Kimmel Declaration does not support Petitioner’s asserted modification. *Id.* at 48 (discussing Ex. 1018 ¶ 112). We disagree because we find that Nature’s Plus teaches or suggests the limitations of claim 28, and we determine that the record supports Petitioner’s asserted rationale of routine design choice.

We, thus, determine that Petitioner has shown by a preponderance of the evidence that claim 28 is unpatentable.

J. Dependent Claims 2, 3, 5, 8–13, 15, and 17–27

Petitioner asserts that Lohrman, Lermer, and Duru teach or suggest the limitations of claims 2, 3, 5, 13, 15, 18–22, and 25–27. Pet. 32–34, 36, 43–44, 45–46, 48–52, 55–57 (citing Ex. 1007 at 3:19–21, 4:26–31, Figs. 1,

3, 5, 9, 10; Ex. 1008 at 2:28–38, 3:13–26, Figs. 1, 5; Ex. 1009). In addition to Lohrman, Lermer, and Duru, Petitioner relies on:

- (a) Wiley and Key for teaching or suggesting limitations of claims 8 and 24 (*id.* at 38–40 (citing Ex. 1004 at 9:4–10, 9:42–65, Figs. 13a, 13b; Ex. 1019 at 69));
- (b) Shih for teaching or suggesting a limitation of claim 9 (*id.* at 40–41 (citing Ex. 1025));
- (c) Shelby for teaching or suggesting limitations of claims 10 and 11 (*id.* at 41–42 (citing Ex. 1026, 10:35–38, Fig. 5));
- (d) Cheerios On-the-Go for teaching or suggesting limitations of claim 12 (*id.* at 42–43 (citing Ex. 1014, 1–2));
- (e) Colgate Kids for teaching or suggesting limitations of claim 17 (*id.* at 47–48 (citing Ex. 1013, 2–3)); and
- (f) Wiley, Key, and Colgate Kids for teaching or suggesting limitations of claim 23 (*id.* at 52–53 (citing Ex. 1004 at 9:4–10, 9:42–65, Figs. 13a, 13b; Ex. 1013 at 2–3; Ex. 1019 at 69)).

For claims 2 and 3, Petitioner contends that one of ordinary skill, confronted with the problem of providing a container attractive to consumers and with a tamper-evident seal for commercial, safety, and regulatory reasons, would have had reason to provide the container of Lorman with the shrink wrap sleeve of Lermer or Cheerios On-the-Go. Pet. 33, 34 (citing Ex. 1018, 21–23).

For claims 5, 8, 9, 13, 15, and 17–25, Petitioner argues that the subject matter of these claims represents nothing more than routine design choices. Pet. 36 (citing Ex. 1018, 25–26), 39–40 (citing Ex. 1004, 9:4–10, 42–65, Figs. 13a, 13b; Ex. 1018 at 28–29; Ex. 1019 at 69), 40–41 (citing Ex. 1018

at 29–30; Ex. 1025 at 2), 44 (citing Ex. 1018 at 32–33), 46–56 (citing Ex. 1018 at 35–44). For claim 12, Petitioner asserts that its subject matter represents a routine design choice, and a person having ordinary skill in the art would have had reason to provide a partly opaque shrink wrap sleeve as shown in Cheerios On-the-Go. Pet. 43 (citing Ex. 1018, 32).

For claims 10, 11, and 27, Petitioner contends that their subject matter represents nothing more than discovering the optimum or workable ranges via routine skill in the art. Pet. 41, 42 (citing Ex. 1018 at 30–31), 57 (citing Ex. 1018 at 45–46). For claim 26, Petitioner relies on its arguments for claims 1 and 15. Pet. 56.

Based on the full record before us, we determine that Petitioner has shown that the limitations of dependent claims 2, 3, 5, 8–13, 15, and 17–27 are taught or suggested by the references listed above because the cited portions of those references support Petitioner’s assertions that the elements of these claims were known in the prior art. We also determine that Petitioner provides articulated reasoning with rational underpinning for combining the asserted references listed above because evidence in the record supports Petitioner’s reasons that would have prompted one of skill in the art to combine or modify prior art elements in the way of these claims. We, therefore, adopt Petitioner’s contentions as our findings with regard to the obviousness of claims 2, 3, 5, 8–13, 15, and 17–27.

Patent Owner provides no additional arguments for these claims, other than those addressed above for claim 1, from which they depend. For the reasons stated above, Patent Owner’s arguments do not persuade us that Petitioner fails to show that claim 1 is unpatentable over Lohrman, Lermer, and Duru. Accordingly, the full record persuades us that Petitioner has

shown by a preponderance of the evidence that claims 2, 3, 5, 8–13, 15, and 17–27 are unpatentable.

V. MOTIONS TO EXCLUDE

A. *Patent Owner’s Motion to Exclude*

Patent Owner moves to exclude Exhibits 1009, 1012–1015, 1216 and paragraph 35 of Exhibit 1211. Paper 48, 1. Patent Owner contends that Exhibits 1009 and 1012–1015, the Mintel references, have not been properly authenticated. *Id.* at 1–9. Patent Owner also contends that paragraph 35 of the Second Kimmel Declaration (Exhibit 1211) and Exhibit 1216 are improper reply evidence. *Id.* at 9–11. Petitioner filed an opposition to Patent Owner’s motion to exclude (Paper 53), and Patent Owner filed a reply to the opposition (Paper 56).

As discussed above, we considered the content of the Mintel references against the full record and found their images and publication dates to be reliable. *See also* Paper 53, 5–7 (arguing that Ms. O’Connell’s testimony also authenticates the Mintel references).

We, therefore, decline to exclude the Mintel references, and instead, give it appropriate weight where it is in conflict with other evidence. *See, e.g., Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding the Board has discretion to give more weight to one item of evidence over another “unless no reasonable trier of fact could have done so”); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”).

We also do not rely on paragraph 35 of the Second Kimmel Declaration or Exhibit 1216. We, thus, dismiss Patent Owner's motion to exclude.

B. Petitioner's Motion to Exclude

Petitioner moves to exclude paragraphs 30–38 of the Singh Declaration (Exhibit 2007). Paper 46, 1–2. Petitioner contends that these paragraphs of the Singh Declaration have insufficient factual bases or are unreliable. *Id.* at 3–7. Petitioner also contends that paragraphs 30–36 and 38 have limited probative value or are irrelevant. *Id.* at 8–10.

As described above, we considered Dr. Singh's testimony against the full record and found it to be unpersuasive in some instances. We, therefore, decline to exclude paragraphs 30–38 of the Singh Declaration, and instead, give it appropriate weight where it is in conflict with other evidence. *See, e.g.*, 601 F.3d at 1284; 367 F.3d at 1368. Furthermore, certain of these paragraphs are cited only to indicate where Patent Owner finds support for its arguments. We, thus, dismiss Petitioner's motion to exclude.

VI. CONCLUSION

For the foregoing reasons, based on the full record before us, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that, under 35 U.S.C. § 103, claims 1–28 of the '472 patent are unpatentable. Specifically, Petitioner has demonstrated, by a preponderance of the evidence, that:

- (a) claims 1–3, 5, 13–16, 18–22, and 25–27 are unpatentable over Lohrman, Lermer, and Duru;

- (b) claims 4 and 28 are unpatentable over Lohrman, Lermer, Duru, and Nature's Plus;
- (c) claim 6 is unpatentable over Lohrman, Lermer, Duru, and Key;
- (d) claim 7 is unpatentable over Lohrman, Lermer, Duru, and Lakey;
- (e) claims 8 and 24 are unpatentable over Lohrman, Lermer, Duru, Wiley, and Key;
- (f) claim 9 is unpatentable over Lohrman, Lermer, Duru, and Shih;
- (g) claims 10 and 11 are unpatentable over Lohrman, Lermer, Duru, and Shelby;
- (h) claim 12 is unpatentable over Lohrman, Lermer, Duru, and Cheerios On-the-Go;
- (i) claim 17 is unpatentable over Lohrman, Lermer, Duru, and Colgate Kids; and
- (j) claim 23 is unpatentable over Lohrman, Lermer, Duru, Wiley, Key, and Colgate Kids.

VII. ORDER

For the reasons given, it is:

ORDERED that claims 1–28 of U.S. Patent No. 8,511,472 B2 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude is *dismissed*;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed*; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the

IPR2015-01129
Patent 8,511,472 B2

decision must comply with the notice and service requirements of 37 C.F.R.
§ 90.2.

PETITIONER:

Richard M. Koehl
David E. Lansky
Stefanie Lopatkin
James Klaiber
HUGHES HUBBARD & REED LLP
richard.koehl@hugheshubbard.com
david.lansky@hugheshubbard.com
stefanie.lopatkin@hugheshubbard.com
james.klaiber@hugheshubbard.com

PATENT OWNER:

Joshua A. Lorentz
Richard J. McNeely
Jason M. Wejnert
John Luken
Nicole Sigurdson
DINSMORE & STOHL LLP
joshua.lorentz@dinsmore.com
richard.mcneely@dinsmore.com
jason.wejnert@dinsmore.com
john.luken@dinsmore.com
nicole.sigurdson@dinsmore.com