

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HAMILTON BEACH BRANDS, INC.,
Petitioner,

v.

COURTESY PRODUCTS, LLC,
Patent Owner.

Case IPR2014-01258
Patent 7,770,512 B2

Before GRACE KARAFFA OBERMANN, HYUN J. JUNG, and
CHRISTOPHER M. KAISER, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

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

I. INTRODUCTION

Hamilton Beach Brands, Inc. (“Petitioner”) filed a second¹ corrected Petition (Paper 7, “Pet.”), requesting institution of an *inter partes* review of claims 1, 9–11, 13, 16–28, 36–38, 40, and 43–73 of U.S. Patent No. 7,770,512 B2 (Ex. 1001, “the ’512 patent”). Courtesy Products, LLC (“Patent Owner”) timely filed a Preliminary Response (Paper 10, “Prelim. Resp.”). Based on these submissions, we instituted *inter partes* review of claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, 52, 53, 56–64, and 67–73. Paper 11 (“Dec. on Inst.”).

After institution, Patent Owner filed a Response (Paper 20, “PO Resp.”), and Petitioner filed a Reply (Paper 30, “Reply”). Petitioner proffered a Declaration of Kurt J. Krause (Ex. 1007, “Krause Declaration”) and a Declaration of Alexander H. Slocum (Ex. 1009, “Slocum Declaration”) with its Petition. Patent Owner proffered the Declaration of Alan D. Ball (Ex. 2004, “Ball Declaration”) with its Response. Also, deposition transcripts were filed for Mr. Ball (Ex. 1028).

Patent Owner moves to seal certain portions of its Response and Exhibit 2018. Paper 18. Petitioner moves to exclude the Ball Declaration and Exhibits 2002, 2007–2011, and 2013–2018. Paper 32.

A combined oral hearing in this proceeding and Case IPR2014-01257 was held on December 2, 2015; a transcript of the hearing is included in the record (Paper 45).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

¹ See Paper 8 (authorizing entry of second corrected petition).

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, 52, 53, 56–64, and 67–73 of the '512 patent are unpatentable. We also grant Patent Owner's motion to seal and deny Petitioner's motion to exclude.

A. Asserted Grounds of Unpatentability

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

References	Claims Challenged
Liu, ² Sylvan, ³ and Luedtke ⁴	1, 9–11, 13, 19–21, 25–28, 36, 38, 40, 46–48, 52, 53, 56–64, and 67–73
Bixby, ⁵ Sylvan, and Luedtke	1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52

B. Related Proceedings

The '512 patent is the subject of *Courtesy Products, LLC v. Hamilton Beach Brands, Inc.*, 1:13-cv-02012-SLR (D. Del.). Pet. 2–3; Paper 6, 2.

The application that issued as the '512 patent is a continuation-in-part of the application that issued as the patent that is the subject of an *inter partes* review petition in Case IPR2014-01257. Pet. 3; Paper 6, 2.

² U.S. Pat. No. 6,164,191, iss. Dec. 26, 2000 (Ex. 1002).

³ U.S. Pat. No. 5,840,189, iss. Nov. 24, 1998 (Ex. 1003).

⁴ U.S. Pat. No. 3,446,624, iss. May 27, 1969 (Ex. 1004).

⁵ U.S. Pat. No. 3,620,155, iss. Nov. 16, 1971 (Ex. 1005).

C. The '512 Patent (Ex. 1001)

The '512 patent relates to a “disposable brew basket for a coffee maker.” Ex. 1001, 1:17–18. Figure 2 of the '512 patent is reproduced below.

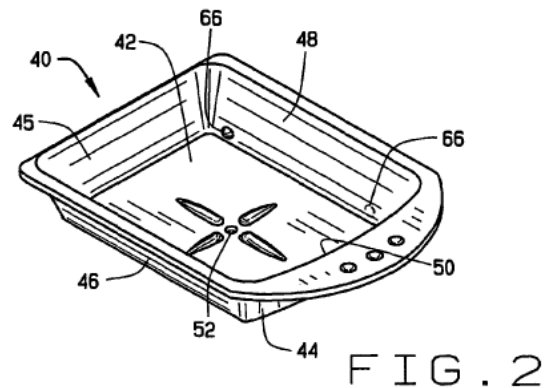


Figure 2 is a perspective view of an embodiment of the disposable brew basket. *Id.* at 2:43–44, 4:5–6. Disposable brew basket 40 is shaped and dimensioned to fit within a basket-receiving recess of an electric coffee machine instead of a reusable brew basket. *Id.* at 4:6–9. Heated water flows into the brew basket and saturates ground coffee contained therein. *Id.* at 3:58–60. Figures 12–21 depict other embodiments of the disposable brew basket. *See also* Pet. 6, 8 (asserting matter that was not included in the priority application).

Claims 1, 28, 53, 63, and 64 are the independent claims challenged by the Petition, and claim 1 is reproduced below:

1. Apparatus for use in an in-room beverage brewing system for a room of a lodging establishment, the beverage brewing system to be used by a number of different lodging guests expected to stay in the room over a period of time, the apparatus comprising:

a plurality of single serving disposable brew baskets comprising a body defining a brewing reservoir, the body being formed with a disposable rigid construction, the body having an opening therethrough to permit a brewed beverage to flow from the brewing reservoir of the disposable brew basket into a beverage container, the body extending upwardly from a bottom of the brewing reservoir to an open top that is configured to receive heated water from the brewing machine, the heated water flowing through the open top during a brewing operation, the brewing reservoir having a size dimensioned appropriate to make approximately only a single serving of beverage during a brewing operation, a brewing area being sufficiently large to hold a filter pack and the heated water while brewing without a level of the heated water rising above and overflowing the open top, wherein the plurality of disposable brew baskets comprise a number of the brew baskets relating to the number of different lodging guests expected to stay at the lodging establishment over the period of time.

II. CLAIM CONSTRUCTION

A. 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); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012); *In re Cuozzo Speed Techs. LLC*, 793 F.3d 1268, 1278 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 84 U.S.L.W. 3218 (Jan. 15, 2016) (No. 15-446). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner proposes a construction for “brewing reservoir.” Pet. 16–17. Based on our review of the complete record, we determine that this term does not need express construction for the purposes of this decision.

The preamble of claim 1 recites an “[a]pparatus for use in an in-room beverage brewing system for a room of a lodging establishment, the beverage brewing system to be used by a number of different lodging guests expected to stay in the room over a period of time.” Petitioner argues that “the manner of operating an apparatus does not differentiate the limitations of an apparatus claim from the prior art.” Pet. 19, 40 (citing MPEP § 2113.II). Petitioner also argues that “limitations directed to a number of components of the beverage brewing system relating [to] the number of different lodging guests expected to stay at a lodging establishment over the period of time do not hold patentable weight.” *Id.* at 20, 40.

Patent Owner quotes the preamble of independent claim 64, which recites “[a]n in-room beverage system for a room of a lodging establishment, the system to be used by a number of different lodging guests expected to stay in the room over a period of time” and states that claims 1 and 53 “recite features similar to claim 64.” PO Resp. 4. Patent Owner responds that the “lodging establishment and numerical relationship limitations denote an actual state of configuration that fundamentally ties the recited functions to the physical character of the claimed beverage brewing system” and “hold patentable weight.” *Id.* at 5. In particular, Patent Owner contends that the “lodging establishment limitations of the preambles of claims 1 and 64 . . . provide antecedent bases for terms in the later-recited numerical relationship[s]” and “thus give life, meaning, and vitality to the claims by defining the claimed structure through their impact on the number of

disposable brew baskets (or brewing reservoirs).” *Id.* at 6. Patent Owner also asserts that “the prosecution history of the ’512 patent reveals the Applicant intended for the lodging and numerical relationship limitations to limit independent claims 1, 53, and 64.” *Id.* at 7–10 (citing Ex. 1006, 43–44, 156, 165, 172–173, 179–180, 186, 351–358).

Petitioner replies that the lodging establishment terms of claims 1, 53, and 64 are “based on the location of use or number of users and do not differentiate the claimed apparatus from the prior art.” Reply 10–11. Petitioner also argues that “[i]t is irrelevant whether the preamble provides antecedent basis for non-limiting terms recited in the body of the instituted claims.” *Id.* at 12–13. Petitioner contends that “‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or **intended use** for the invention, the preamble is **not a claim limitation**’” and the “terms directed to use in a room of a lodging establishment by guests do not recite ‘structural limitations’ of the brewing system.” *Id.* at 13 (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997)).

“Whether to treat a preamble as a limitation is a determination ‘resolved only on review of the entire[] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.’” *Catalina Mktg. Int’l. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Corning Glass Works v. Sumitomo Electric U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)). A preamble is not limiting where a structurally complete invention is defined in the claim body and the preamble only states a purpose or intended use for the invention. *Id.*

The preambles of claims 1 and 64 recite where and how the apparatus and system are to be used. The preamble of claim 1 recites an “[a]pparatus for use in an in-room beverage brewing system for a room of a lodging establishment, the beverage system to be used by a number of different lodging guests.” The preamble of claim 64 recites an “in-room beverage system for a room of a lodging establishment, the system to be used by a number of different lodging guests.” The preamble of claim 53 recites only a “beverage brewing system.” Claims 1 and 64 are drafted with the phrases “for use,” “to be used by,” or “for,” which, in the context of these claims, plainly indicate the intended use and user of the apparatus or system.

Also, the bodies of claims 1, 53, and 64 define a structurally complete apparatus or system. The body of claim 53 includes no references to its preamble. The apparatus of claim 1 comprises disposable brew baskets, and the system of claim 64 comprises a beverage brewing machine, disposable brewing reservoirs, and packaging. The pluralities of disposable brew baskets and brewing reservoirs of claims 1 and 64 are required to be related “to the number of different lodging guests expected to stay at the lodging establishment over the period of time.” Claims 1 and 64 are drafted to relate the number in the plurality of brew baskets or brewing reservoirs to the number of intended users, which are described in their preambles. The “lodging establishment” term, thus, does not further limit the apparatus or system of claims 1 and 64 structurally, but in the context of these claims, is used to describe the intended use and user.

The Specification of the ’512 patent also does not indicate how the beverage brewing machine or packaging of claims 1, 53, and 64 are configured specifically for lodging establishments. Instead, the

Specification states that “[i]n some respects, the electric coffee machine **10** is similar to conventional drip-type electric coffee brewing machines” and that “the disposable brew basket embodiments described and illustrated herein may be used with any suitable coffee maker, such as, but not limited to, those described and illustrated below.” Ex. 1001, 3:50–52, 9:20–23. The Specification does state that “in the context of the hotel industry, there are additional reasons why disposable brew baskets are preferred” (*id.* at 10:11–13), but the claims already recite that the brew baskets or brewing reservoirs are disposable.

The intended use or user is referenced in the body of claims 1, 53, and 64 by the recitation that the plurality of disposable brew baskets or reservoirs comprises a number relating to a “number of different lodging guests expected to stay at the lodging establishment over the period of time.” Relating the number of disposable brew baskets or reservoirs to the number of intended users could be deemed structural. The prosecution history of the ’512 patent, however, indicates that claims 1, 53, and 64 were amended to include such a recitation to distinguish over applied prior art. Ex. 1006, 152–156, 179–180, 186. The Specification of the ’512 patent provides no guidance as to what the relationship is. We are not persuaded that these claims require a specific numerical relationship to the number of intended users.

Accordingly, based on the complete record before us, we need not provide an express construction for the lodging establishment and numerical relationship recitations, but for the purposes of this decision, we determine that the lodging establishment recitations in the preambles and recitations

requiring some relationship to the number of intended users have no patentable weight in the patentability analysis.

III. CHALLENGE BASED ON LIU, SYLVAN, AND LUEDTKE

To prevail in its challenge of claims 1, 9–11, 13, 19–21, 25–28, 36, 38, 40, 46–48, 52, 53, 56–64, and 67–73 as unpatentable over Liu, Sylvan, and Luedtke and in its challenge of claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52 as unpatentable over Bixby, Sylvan, and Luedtke, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). To establish obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *See CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

A patent claim composed of several elements, however, is not proved obvious merely by demonstrating that each of its elements was known, independently, in the prior art. *KSR*, 550 U.S. at 418. For an obviousness analysis it is important to identify a reason that would have prompted one of skill in the art to combine prior art elements in the way the claimed invention does. *Id.* Obviousness can be established when the prior art,

itself, would have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

A. Liu (Ex. 1002)

Liu describes a single serving beverage maker. Ex. 1002, Abstract. Single serving beverage maker 8 includes base housing 10, water storage reservoir 20, and brewing compartment 30. *Id.* at 1:57–67, Fig. 1. Support basket 162 of brewing compartment 30 can be used to retain ground coffee. *Id.* at 3:3–8; Fig. 2. Liu also describes that, “[i]n operation, if it is desired to brew one cup of coffee, . . . the desired amount of ground coffee is placed in the brewing reservoir . . . in a prefilled, porous bag **24**, similar to a conventional teabag.” *Id.* at 4:34–37.

B. Sylvan (Ex. 1003)

Sylvan “relates to an imperforate beverage filter cartridge which is adapted to hermetically contain a beverage extract and which is yieldably pierceable, both to accommodate an injection of liquid into the cartridge for combination with the extract to produce a beverage, and to accommodate an outflow of the beverage.” Ex. 1003, 1:14–19. Beverage filter cartridge 10 includes pierceable hollow base 12, filter element 14 that stores extract 38 of the beverage to be made, such as coffee, and pierceable cover 16. *Id.* at 2:66–3:2, 3:36–39, Fig. 1. Sylvan also describes that the filter cartridge “can be disposed of after a single use.” *Id.* at 1:49–51.

C. Luedtke (Ex. 1004)

Luedtke relates “to a throw-away device adapted to instantly drip brew a single cup of coffee.” Ex. 1004, 1:36–38. The disposable drip brewing device includes “nested filter cups **2** and **4** defining a chamber containing a measured quantity of ground coffee **6**.” *Id.* at 2:54–57, Fig. 1.

Luedtke also describes that the devices “may be individually packaged in a packet **23** of air tight material such as metallic foil.” *Id.* at 3:40–42.

D. Independent Claims 1, 28, 53, 63, and 64

Petitioner argues that independent claims 1, 28, 53, 63, and 64 are unpatentable under 35 U.S.C. § 103 over Liu, Sylvan, and Luedtke, referring to disclosures in the references and claim charts. Pet. 22–24, 27–29, 31–33, 35–37. Petitioner also relies on the Krause Declaration (Ex. 1007) and Slocum Declaration (Ex. 1009). *Id.* at 4.

Petitioner argues that Liu teaches or suggests all the limitations of claim 1 except “a plurality of single serving disposable brew baskets comprising: a body defining a brewing reservoir, the body being formed with a disposable rigid construction” and “wherein the plurality of disposable brew baskets comprise a number of the brew baskets relating to the number of different lodging guests expected to stay at the lodging establishment over the period of time.” Pet. 22–24 (citing Ex. 1002, 1:58–59, 1:67–2:2, 3:4–6, 3:9–15, 4:34–38, Figs. 1, 2).

For the “beverage brewing system” recited by independent claim 28, Petitioner argues that Liu teaches or suggests all its limitations except for “a plurality of filter packs, the filter packs containing an amount of grinds sufficient to brew approximately only a single serving of beverage,” “a plurality of single serving disposable brew baskets utilized with the beverage brewing machine during separate brewing operations . . . comprising a body defining a brewing reservoir, the body being formed with a disposable rigid construction,” and “packaging that includes at least first and second packages, the first package including at least one of the brew baskets and the second package including at least another of the brew baskets, the first and

second packages being separate from one another.” Pet. 27–29 (Ex. 1002, 1:57–2:10, 3:5–6, 3:42–51, Fig. 2). Petitioner refers to its arguments made for claim 1. *Id.* Petitioner also argues that Liu and Luedtke teach or suggest the recited “plurality of filter packs.” *Id.* at 28 (citing Ex. 1002, 1:67–2:2, 4:34–38; Ex. 1004, 1:37–38, 1:61–62, 2:54–57, Fig. 3).

Petitioner asserts that Liu and Sylvan teach or suggest the limitations of the “beverage brewing system” of independent claim 53 with citations to Liu and with references to arguments made for independent claims 1 and 28. Pet. 31–33 (citing Ex. 1002, 1:57–2:10, Fig. 2). Independent claim 63 recites a “beverage brewing system,” and Petitioner refers to its arguments for independent claims 1, 28, and 53. Pet. 35–36. Petitioner argues that Liu, Sylvan, and Luedtke teach or suggest the limitations of independent claim 64, which recites “[a]n in-room beverage system,” with references to Liu and its arguments for previous claims. Pet. 36–37 (citing Ex. 1002, 1:63–67).

Petitioner contends that “combining Liu, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior art, and their combination yielded nothing but predictable results.” Pet. 20 (citing Ex. 1009 ¶¶ 45–53). Patent Owner does not present any specific arguments regarding the filter pack limitations of claims 1, 28, 53, 63, and 64.

A person of ordinary skill in the art “is not an automaton,” and would have recognized the sanitary benefit of combining Liu’s pre-filled porous coffee bags with Luedtke’s disposable filter—a combination suggested by Sylvan’s single-service coffee beverage filter cartridge. *KSR*, 550 U.S. at 421. Based on the full record before us, therefore, we agree with Petitioner

that the cited portions of Liu, Sylvan, and Luedtke teach or suggest the limitations of claims 1, 28, 53, 63, and 64 described above. We address below the remaining limitations of these claims.

1. *“a plurality of single serving disposable brew baskets comprising: a body defining a brewing reservoir, the body being formed with a disposable rigid construction”*

For a plurality of single serving, disposable, brew baskets, Petitioner relies on Liu for teaching or suggesting a brewing compartment that receives support basket 162 (Pet. 22 (citing Ex. 1002, 3:5–6, Fig. 2) and Sylvan for teaching or suggesting that “base 12 of beverage filter cartridge 10 ‘can be disposed of after a single use’” (*id.* (citing Ex. 1003, 1:49–51)). For the body of brew baskets defining a brewing reservoir and being formed with a disposable, rigid construction, Petitioner relies on Liu for teaching or suggesting that “support basket 162 is made of a single piece of material (*e.g.*, plastic) that . . . defines a brewing reservoir” (*id.* (citing Ex. 1002, Fig. 2)) and Sylvan for teaching or suggesting that base 12 “‘may be made of polystyrene, ethylene vinyl alcohol, and polyethylene’” (*id.* at 22–23 (citing Ex. 1003, 2:32–33)).

In addition to arguing that “combining Liu, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior art, and their combination yielded nothing but predictable results” (Pet. 20 (citing Ex. 1009 ¶¶ 45–53)), Petitioner further argues that:

[M]odifying Liu according to the teachings of Sylvan would have involved a simple substitution of one known element (*i.e.*, Liu’s reusable support basket 162) for another (*i.e.*, Sylvan’s base 12 of disposable cartridge 10) to provide disposable brew baskets . . . to obtain the predictable results of significant cost savings in the cleaning of the in-room coffee maker for the hotel and increased guest convenience and satisfaction.

Id. at 20–21 (citing Ex. 1007 ¶¶ 24–27; Ex. 1009 ¶¶ 45–46).

Patent Owner states that “claim 1 ‘recites a plurality of single serving *disposable brew baskets*’ [and] claims 28, 53, 63, and 64 recite similar features.” PO Resp. 30–31. Patent Owner responds that substitution of Liu’s reusable support basket 162 for Sylvan’s base 12 “is anything but ‘simple’ and obvious” (emphasis omitted), “would require fundamentally changing the basic principles under which the . . . Liu system . . . operates,” “would render . . . Liu’s . . . system inoperable for its intended purpose,” and “would not satisfy the ‘port’ limitations of the claims” because “Sylvan does not have any opening on the bottom of its impermeable, imperforate, yieldably pierceable disposable base 12.” PO Resp. 31–33, 37–41 (citing Ex. 1002, 1:25–31, 2:6–13, 2:48–51, 3:3–26, 3:36–39, 3:42–46, Figs. 2–5; Ex. 1003, 1:49–52, 2:66–3:1, 3:3–17, 3:49–56, 4:16–27; Ex. 2004 ¶¶ 51, 53–60, 67–71; Ex. 2005, 865).

After considering the full record before us, we agree with Petitioner that Liu teaches a single serve brew basket. Pet. 22; Ex. 1002, 1:67–2:2 (“It is to be understood that the beverage maker **8** is sized throughout to only make or brew a single serving at a time”); Ex. 1009 ¶¶ 27, 28, 42; Ex. 2004 ¶ 36 (“The ’191 (Liu) patent describes a single serve drip coffeemaker system which utilizes a multiple serving water reservoir in combination with a single serving measuring reservoir to brew and dispense successive single servings of cups of coffee without the need to replenish the water reservoir after each cup brewed.”). Liu also teaches that “infused water exits through discharge opening **164** into underlying cup **98**.” Ex. 1002, 3:12–13; Ex. 1009 ¶ 31.

We also agree with Petitioner that Sylvan teaches that its cartridge 10 can be disposed of after a single use. Pet. 22; Ex. 1003, 1:49–51 (“It is a further object of this invention to provide an improved beverage filter cartridge which is simple and has very few parts so it can be disposed of after a single use.”); Ex. 1009 ¶¶ 36, 42. We, thus, determine that a single serve brew basket and a disposable cartridge were known in the prior art. Pet. 22.

We also determine that Sylvan teaches an imperforate cartridge adapted to hermetically contain a beverage extract. Ex. 1003, 1:14–16, 2:8–17; *see also* PO Resp. 37 (describing Sylvan). We determine that Sylvan teaches “[b]oth the cover and base are yieldably piercable, the cover to accommodate an injection of liquid into the first chamber for combination with the extract to produce a beverage, and the base to accommodate the outflow of the beverage from the second chamber.” Ex. 1003, 2:17–21; *see also* PO Resp. 37 (describing Sylvan); Ex. 2004 ¶ 51. We agree with Patent Owner’s expert that Sylvan’s “cartridge is designed as a stand-alone hermetically sealed food package for the beverage extract.” Ex. 2004 ¶ 51 (citing Ex. 1003, 3:48–56, Figs. 4, 5). We also agree with Patent Owner’s expert that, to make a beverage, Sylvan’s “cartridge base is also pierced to allow the beverage to drain from the cartridge.” Ex. 2004 ¶ 51 (citing Ex. 1003, 3:15–17, 4:24–27). Thus, we determine that one of ordinary skill in the art would understand Sylvan’s cartridge, when unpierced, provides a hermetically sealed food package for a beverage extract, and when pierced, allows a beverage made from the extract to drain.

In view of these teachings of Sylvan and the full record before us, we agree with Petitioner that combining Liu, Sylvan, and Luedtke demonstrates

that all the elements were known in the prior art, and their combination yielded nothing but predictable results. Pet. 20. As discussed above, we determine that Liu and Sylvan demonstrate that single serve brew baskets, brew baskets with an opening for dripping infused beverages, and disposable cartridges that, when pierced, make a beverage from an extract were known. The complete record does not indicate that the combination yielded any result that was not predictable.

In view of the teachings of Sylvan and the full record before us, we also agree with Petitioner that Sylvan's base 12 can be substituted for Liu's basket 162. Patent Owner's arguments are based on one of ordinary skill in the art failing to understand that Sylvan's base must be pierced to make a beverage from the beverage extract. See PO Resp. 30–41. We determine, however, that one of ordinary skill in the art would have understood Sylvan's cartridge, when pierced, allows a beverage made from the extract to drain, thereby teaching or suggesting that the cartridge functions as a brew basket.

Moreover, one of ordinary skill in the art need only modify the cartridge of Sylvan by providing a port. To the extent that some modification would be required, "we do not ignore the modifications that one skilled in the art would make to a device borrowed from the prior art." *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007). Liu indicates that providing a port to a brew basket would have been within the level of ordinary skill in the art. See PO Resp. 23 (stating "the purpose of the opening 164 is to enable the delivery of fresh, single servings of a heated beverage on demand") (citing Ex. 1002, 1:25–31).

Patent Owner argues that, contrary to Petitioner's rationale, the material of Sylvan is not reusable, is more expensive, and is intended for food storage, not for use as a brew basket. *Id.* at 43–48 (citing Pet. 21, 41–42; Ex. 1002, 3:8–10; Ex. 1003, 1:57–59, 3:8–12; Ex. 1009 ¶ 47; Ex. 1020; Ex. 2002, 1; Ex. 2004 ¶¶ 51, 57, 72, 73; Ex. 2006, 186, 191–193, 481, 483). Patent Owner notes that the Slocum Declaration cites the Krause Declaration in support of “cost savings” and, further, argues that the Krause Declaration misreads the cost analysis from the prosecution history. *Id.* at 48–50 (citing Ex. 1006, 183; Ex. 1007 ¶¶ 24–27; Ex. 1009 ¶ 46; Ex. 1027, 63, 65, 71, 74, 82). These arguments are not persuasive because we determined above that Sylvan's cartridge is disposable and the challenged claims do not require an inexpensive material for the recited brew baskets.

Moreover, the '512 patent states that, “[a]nother example of materials that may be used to make the disposable brew basket **40** includes one or more plastics and/or other polymers . . . such as, but not limited to . . . ethylene vinyl alcohol . . . polyethylene, . . . [and] polystyrene.” Ex. 1001, 5:55–6:14. Sylvan teaches that the “base may be made of polystyrene, ethylene vinyl alcohol, and polyethylene,” the “base **12** is typically formed from a polymeric laminate,” and “[o]ne example of a base material is Product No. C**150**.” Ex. 1003, 2:32–33, 3:8–10. Although Patent Owner presents evidence that Sylvan's material is expensive, the complete record does not indicate that the many listed plastics provide unexpected results for the brew basket or that it is beyond ordinary skill to select one of the listed plastics for Petitioner's combination of Liu and Sylvan.

Patent Owner asserts that Petitioner's motivation is hindsight reasoning because Liu and Sylvan “fail to provide any reasonable

motivation” for Petitioner’s modification and “the system of Sylvan is very different than the coffee system[] taught in Liu.” *Id.* at 41–43 (citing Ex. 1002, 3:3–14, 3:42–46; Ex. 1003, 1:46–52, 3:15–17, 4:24–27; Ex. 2004 ¶¶ 53–60, 67–71). “A person of ordinary skill is also a person of ordinary creativity, not an automaton” (*KSR*, 550 U.S. at 421) and it would have been a matter of “ordinary creativity” to modify the reusable support basket of Liu to be disposable. As for Sylvan being different from Liu, we determine that Sylvan is in the relevant field of endeavor and is reasonably pertinent to the problem with which the inventor was concerned. In particular, both Sylvan and Liu relate to single serving beverage makers. Neither reference is “too remote to be treated as prior art.” *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992) (quoting *In re Sovish*, 769 F.2d 738, 741 (Fed. Cir. 1985).

2. “*packaging that includes at least first and second packages, the first package including at least one of the brew baskets and the second package including at least another of the brew baskets, the first and second packages being separate from one another*”

For independent claim 28, Petitioner argues that Liu, Sylvan, and Luedtke teach or suggest “packaging that includes at least first and second packages, the first package including at least one of the brew baskets and the second package including at least another of the brew baskets, the first and second packages being separate from one another.” Pet. 29 (citing Ex. 1004, 3:39–42). Independent claim 63 recites a similar limitation regarding “brewing reservoirs” instead of “brewing baskets,” and Petitioner refers to its arguments for claim 28 for the limitation. *Id.* at 35–36.

In addition to arguing that “combining Liu, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior

art, and their combination yielded nothing but predictable results” (*id.* at 20 (citing Ex. 1009 ¶¶ 45–53)), Petitioner argues that “it would have also been obvious . . . to extend Luedtke’s teaching of packaging of disposable articles to taking a disposable brew basket, as taught by the combination of Liu and Sylvan, and individually packaging the disposable brew basket . . . to yield the predictable result of a more sanitary product protected against contamination” (*id.* at 21–22 (citing Ex. 1007 ¶¶ 38–40; Ex. 1009 ¶ 50)).

Patent Owner responds that Luedtke “teaches nothing more than the specific concept of wrapping a filter in foil,” that “Luedtke merely discloses wrapping a *filter*—and with food products in air-tight foil so as to prevent spoilage of the food product,” and that a person of ordinary skill would “not read Luedtke as teaching providing a package for anything other than ground coffee because such other items *do not spoil* and *do not require freshness*.” PO Resp. 18–20 (citing Pet. 29; Ex. 1004, Abstract, 2:69–71, 3:26–27, 3:29–31, 3:38–42, Figs. 1, 3; Ex. 1009 ¶¶ 49–53; Ex. 2004 ¶¶ 71, 78). Patent Owner also argues that “it would not have been obvious to extend Luedtke’s teaching of wrapping a filter pack in foil to meet the claimed packaging limitation” and “there is no teaching or suggestion in Luedtke of wrapping anything other than a flexible filter in foil.” *Id.* at 21–22 (citing Pet. 21, 42; Ex. 1004, 3:23–27, Figs. 1, 3, 6; Ex. 2004 ¶¶ 75–78). Patent Owner also asserts that “there is nothing in the other relied-upon references (Liu or Bixby and Sylvan) that lends itself to being folded in the manner taught by Luedtke.” *Id.* at 22–23 (citing Ex. 1003, 3:8–10; Ex. 2002, 1; Ex. 2003, 16:10–17:2; Ex. 2004 ¶ 79).

Petitioner replies that Patent Owner “relies on the completely unsubstantiated ‘novelty’ of packaging a non-food item . . . that comes into

contact with food.” Reply 18. Petitioner reiterates its assertion that it would have been obvious to extend Luedtke’s teaching of packaging disposable articles to a disposable brew basket. *Id.* at 19 (citing Ex. 1007 ¶¶ 38–40; Ex. 1009 ¶ 49).

On the full record before us, for the reasons discussed above, we are persuaded that Liu, as modified by Sylvan, teaches or suggests a disposable brew basket. The full record before us also persuades us that Luedtke teaches or suggests the packaging limitations of independent claims 28 and 63.

We determine that Luedtke teaches individually packaging a disposable filter device 3. Ex. 1004, 3:38–42 (“a plurality of the devices 3 . . . each may be individually packaged in a packet 23”); *see also* Pet. 29 (“Luedtke discloses that a plurality of devices 3 ‘may each be individually packaged.’”); Ex. 1009 ¶ 44 (“a [person having ordinary skill in the art] would have recognized that Luedtke discloses individually packaging at least one filter device in a package, the package being separate from other packages (*e.g.*, a package that includes a brew basket)”; Ex. 2004 ¶ 61 (stating that Luedtke “describes that the filter could be packaged in an individual package or a plurality of them may be packaged in a can”). Dr. Slocum’s statement that “the technique of individually packaging a disposable filter device was well known in the art” is supported by Luedtke’s express teaching that filter devices 3 “may be individually packaged in a packet 23.” Ex. 1004, 3:39–42; Ex. 1009 ¶ 51.

We also find that Luedtke relates to “a throw-away device” or a “disposable device.” Ex. 1004, 1:10–12, 1:36–38, 1:55–57, 1:61–63; *see also* Ex. 2004 ¶ 62 (stating “Luedtke discloses a one piece inexpensive

disposable device that allows the user to drip brew a cup of coffee with only a coffee cup and hot water”) (citing Ex. 1004, 4:26–30).

We are persuaded that, in view of Luedtke’s express teaching that disposable filter devices 3 “each may be individually packaged in a packet 23” (Ex. 1004, 3:38–42), one of ordinary skill in the art at the time of the invention would have modified Liu and Sylvan to package individually a disposable brew basket to obtain a “more sanitary product protected against contamination,” as argued by Petitioner. Pet. 21–22 (citing Ex. 1007 ¶¶ 38–40; Ex. 1009 ¶ 50). Patent Owner’s expert acknowledges that separate packaging is used to prevent contamination but states that separate packaging increases cost and, therefore, is only for items that directly contact a person’s mouth. Ex. 2004 ¶ 77 (“[s]eparate packaging is also used to prevent contamination of items that come into direct contact with a user’s mouth, such as a straw or cutlery”). A preponderance of the evidence supports a finding, therefore, that one of ordinary skill in the art would have considered contamination when contemplating separate packaging. See Pet. 21–22; Ex. 1009 ¶ 50; Ex. 2004 ¶ 77).

We are persuaded that the full record supports Petitioner’s assertion that one of ordinary skill would have extended Luedtke’s teaching of individually packaging “disposable” or “throw-away” filter devices 3 to a disposable brew basket. Paragraph 51 of the Slocum Declaration states, and we agree, that “modifying the combination of Liu and Sylvan according to the teachings of Luedtke would have used a known technique to improve similar devices in the same way” and thus, “it would have been obvious . . . to extend Luedtke’s known technique to also individually packaging a disposable brew basket (*i.e.*, a similarly disposable component to be used

with a single-serving beverage machine), as taught by Liu and Sylvan, separate from any other components.” We agree that Luedtke teaches individually packaging filter devices that are disposable like the brew basket of Liu, as modified by Sylvan. Pet. 21–22; Ex. 1004, 3:38–42.

Patent Owner’s arguments require that we determine that one of ordinary skill in the art would understand Luedtke only for its express teachings and that the teachings of Luedtke cannot be applied beyond its filter device 3. PO Resp. 18–23. However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. A preponderance of the evidence shows that extending the individual packaging of disposable filters, as taught by Luedtke, to a disposable brew basket was within the level of ordinary skill in the art. Petitioner provides “an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 417–418. Petitioner asserts that Liu, Sylvan, and Luedtke would be combined to result in a “more sanitary product protected against contamination.” See Pet. 21–22. We find that Petitioner’s articulated reasoning has rational underpinning because the full record before us indicates that, as discussed above, individual packaging of disposable filter devices was known and contamination was a consideration for individual packaging. See Pet. 29; Ex. 1004, 3:39–42; Ex. 2004 ¶ 77. We are therefore satisfied that Petitioner provides “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418.

Patent Owner's remaining arguments, regarding hospitality industry regulations advanced by Petitioner, are also not persuasive because we do not rely on those hospitality industry regulations in our analysis, given that no showing is made that a skilled artisan would have been cognizant of the regulations. See PO Resp. 23–30 (citing Pet. 21–22, 42; Ex. 1007 ¶¶ 3, 21, 29, 30, 35, 39–42, 44; Ex. 1008; Ex. 1009 ¶¶ 1, 8, 10–12, 20, 43, 46, 50, 80; Exs. 1015–1018; Ex. 2003, 8–9, 14:1–16, 18:2–21, 23:17–24:21; Ex. 2004 ¶¶ 70, 77, 79, 97–105).

3. *“wherein the plurality of disposable brew baskets comprise a number of the brew baskets relating to the number of different lodging guests expected to stay at the lodging establishment over the period of time”*

Patent Owner argues that the lodging establishment recitations of claims 1, 53, and 64 have patentable weight and that the references fail to teach or suggest the lodging establishment recitations. PO Resp. 3–16. For the reasons stated above, we determine that the recitations regarding the lodging establishment have no weight for the obviousness analysis because they pertain to the intended use and user, not the claimed apparatus or system.

Patent Owner also argues that the references do not teach or suggest a plurality of brew baskets or brewing reservoirs related to the “number of different lodging guests expected to stay at the lodging establishment over the period of time,” as recited by claims 1, 53, and 64. We determine for the same reasons above that these recitations also have no weight for the obviousness analysis.

Moreover, to the extent that the recitations requiring some relationship to the number of intended users have any structural limitation, Petitioner

cites Sylvan for teaching cartridge 10 that “can be disposed of after a single use.” Pet. 24, 32–33, 37 (citing Ex. 1003, 1:49–51). We determine that it would have been within the level of ordinary skill in the art to provide a different disposable brew basket or brewing reservoir to each user. On that point, Petitioner directs us to persuasive evidence that Liu, Sylvan, and Luedtke demonstrate the elements were known and their combination yields predictable results. See Pet. 20; Ex. 1009 ¶ 36 (stating a person of ordinary skill “would have recognized that because Sylvan’s disposable cartridges 10 . . . are for single-use only, a plurality of these disposable, single-use cartridges 10 would be provided with a coffee brewing machine”). As discussed above, we find Petitioner’s articulated reasoning has rational underpinning because the full record before us indicates that disposable cartridges were known. See Pet. 22; Ex. 1003, 1:49–51; Ex. 1009 ¶¶ 36, 42. Taking account of the inferences and creative steps that a person of ordinary skill in the art would employ (*KSR*, 550 U.S. at 418), we are not persuaded that the ordinary artisan would provide only one disposable brew basket under circumstances where there is an expectation that multiple cups of coffee will be brewed, or that providing more than one disposable brew basket was beyond the level of ordinary skill in the art. Moreover, “the mere duplication of parts has no patentable significance unless a new and unexpected result is produced.” See *In re Harza*, 274 F.2d 669, 774 (CCPA 1960). The complete record before us does not indicate that an unexpected result is produced from a plurality of brew baskets versus one brew basket.

For the reasons explained above, we determine that Petitioner has shown by a preponderance of the evidence that the elements of claims 1, 28, 53, 63, and 64 are taught by Liu, Sylvan, and Luedtke, and Petitioner

provides articulated reasoning with rational underpinning for its proposed combination to support a conclusion of obviousness.

E. Dependent Claims 9–11, 13, 19–21, 25–27, 36, 38, 40, 46–48, 52, 56–62, and 67–73

Claims 9–11, 13, 19–21, and 25–27 depend from claim 1, and Petitioner argues that Liu, Sylvan, and Luedtke teach or suggest the limitations of these claims. Pet. 24–27 (citing Ex. 1002, 4:34–38, Fig. 2; Ex. 1003, 2:32–33, 3:8–12; Ex. 1004, 1:37–38, 1:61–62, 3:39–42; Ex. 1007 ¶¶ 38–44; Ex. 1009 ¶¶ 36, 45–53, 82, 83, 87, 90, 91).

For claims 36, 38, 40, 46–48, and 52, which depend from independent claim 28, Petitioner refers to its arguments for dependent claims 9, 11, 19, and 27. Pet. 29–31 (citing Ex. 1007 ¶¶ 38–44; Ex. 1009 ¶¶ 93, 94, 96, 99). Claims 56–62 depend from independent claim 53, and Petitioner argues that Liu, either alone or in combination with Sylvan, teaches or suggests their limitations and refers to its arguments for claim 26. Pet. 33–35 (citing Ex. 1002, 1:63–67, 3:41–46, 4:34–37, Fig. 2; Ex. 1003, 4:16–19, Fig. 4; Ex. 1007 ¶¶ 36, 38–48; Ex. 1009 ¶¶ 102–107). Claims 67–73 depend from independent claim 64, and Petitioner relies on its arguments for claims 26–28 and 59–62. Pet. 37–39 (citing Ex. 1009 ¶¶ 110–116).

For claim 67, Patent Owner responds that the cited references do not teach or suggest its limitation of “packaging that includes at least first and second packages, the first package including at least one of the brewing reservoirs and the second package including at least another of the brewing reservoirs, the first and second packages being separate from one another.” PO Resp. 18–30. Patent Owner asserts the same arguments discussed above for similar limitations recited by independent claims 28 and 63. *See id.* For

the reasons discussed above with respect to those limitations, we are not persuaded.

The Patent Owner Response provides no arguments specifically for the other challenged, dependent claims (claims 9–11, 13, 19–21, 25–27, 36, 38, 40, 46–48, 52, 56–62, and 68–73), other than those addressed above for their respective independent claims. See PO Resp. 3–50. For the same reasons stated above, Patent Owner’s arguments do not persuade us that Petitioner fails to show that claims 1, 28, 53, and 64 are unpatentable over Liu, Sylvan, and Luedtke.

Based on the full record before us, we determine that Petitioner has shown by a preponderance of the evidence that the limitations of the challenged, dependent claims are taught or suggested by Liu, Sylvan, and Luedtke, and that Petitioner provides articulated reasoning with rational underpinning for combining Liu with Sylvan and Luedtke to support a conclusion of obviousness. See Pet. 19–22. We adopt Petitioner’s contentions as our findings with regard to the obviousness of the challenged, dependent claims because the cited portions of the references reasonably support Petitioner’s assertions that the elements of these claims were known and Petitioner provides a persuasive reason why a skilled artisan would have been prompted to combine prior art elements in the way of these claims.

F. Objective Indicia of Non-Obviousness

Factual inquiries for an obviousness determination include secondary considerations based on objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted,

including objective evidence of non-obviousness, may lead to a conclusion that the challenged claims would not have been obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984).

Secondary considerations may include any of the following: long-felt but unsolved needs, failure of others, unexpected results, commercial success, copying, licensing, and praise. *See Graham*, 383 U.S. at 17; *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

To be relevant, evidence of non-obviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (citing *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971)); *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998). In that regard, in order to be accorded substantial weight, there must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). “Nexus” is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining non-obviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden of producing evidence showing a nexus lies with the patent owner. *Id.*; *Prometheus Labs, Inc. v. Roxane Labs, Inc.*, 805 F.3d 1092, 1101–02 (Fed. Cir. 2015).

1. Commercial Success

Patent Owner provides arguments and evidence that Courtesy’s CV1 Program “embodies at least claims 28, 36, and 63” and [i]ts tremendous success is rooted in its disposable brew baskets.” PO Resp. 50–57 (citing

Ex. 1006, 548–559; Ex. 2004 ¶¶ 87–92; Exs. 2007–2008; Ex. 2018 ¶¶ 1, 2, 4–6, 18). Petitioner replies that Patent Owner has failed to establish a nexus between the claimed invention and commercial success because the claimed disposable brew baskets are not novel and were found in the prior art during prosecution. Reply 23–25 (citing Reply 3–7; Ex. 1006, 153, 351; Ex. 1027, 40–41).

Evidence of commercial success “is only significant if there is a nexus between the claimed invention and the commercial success.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). To establish a proper nexus between a claimed invention and the commercial success of a product, a patent owner must offer “proof that the sales [of the allegedly successful product] were a direct result of the unique characteristics of the claimed invention—as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996).

Considering Patent Owner’s arguments and evidence as to how its CV1 Program meets the limitations of claims 28, 36, and 63 and how substantial sales are based on its disposable brew baskets (PO Resp. 51–54), we are not persuaded by Petitioner’s arguments that Patent Owner has failed to establish a nexus (Reply 23–24). Petitioner does not explain why the CV1 Program fails to embody the claimed features or what claimed features are missing. Even though Patent Owner’s evidence establishes a nexus between the commercial success of its CV1 Program and the disposable brew baskets recited in the independent claims, Patent Owner has failed to demonstrate that “the asserted commercial success of the product [is] due to the merits of the claimed invention *beyond what was readily available in the*

prior art.” See J. T. Eaton & Co. v. Atlantic Paste & Glue Co., 106 F.3d 1563, 1571 (Fed. Cir. 1997) (emphasis added). As discussed above, the record establishes that the disposable brew baskets recited in the independent claims were taught in the prior art. Further, Patent Owner’s arguments and evidence focus on this single element of its claimed invention, and Patent Owner does not identify any evidence indicating that the claimed disposable brew baskets or any other claimed feature had unique properties or advantages beyond those found in the prior art relied on by Petitioner.

Based on the full record, we determine that Patent Owner’s evidence for the secondary consideration of commercial success does not weigh against finding the challenged claims obvious in view of Liu, Sylvan, and Luedtke.

2. Copying

Patent Owner argues Petitioner “copied the disposable brew baskets in Courtesy’s CV1® Program,” “licensed the application that matured into the ’512 patent,” and “again copied the disposable brew baskets.” PO Resp. 57–59 (citing Exs. 2012–2017, 2018 ¶ 13).

Copying, as objective evidence of non-obviousness, requires evidence of effort to replicate a specific product. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010); *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004).

While Patent Owner presents evidence regarding the disposable brew basket limitations of independent claims 1, 28, 53, 63, and 64, Patent Owner’s evidence of copying does not show sufficiently that Petitioner’s product is a copy of the patented technology. See Exs. 2012, 2013, 2015,

2017. For example, Patent Owner’s evidence does not show how Petitioner’s product includes the packaging limitations of independent claims 28 and 63. Patent Owner also has not pointed to any evidence showing that Petitioner copied Patent Owner’s claimed invention after expending great effort to develop their own solution. *See Pentec, Inc. v. Graphic Cntrls. Corp.*, 776 F.2d 309, 317 (Fed. Cir. 1985) (alleged copying is not persuasive of nonobviousness when the copy is not identical to the claimed product, and the other manufacturer has not expended great effort to develop its own solution); *Vandenberg v. Dairy Equip. Co., a Div. of DEC Int’l, Inc.*, 740 F.2d 1560, 1567 (Fed. Cir. 1984) (evidence of copying found particularly persuasive where copyist had itself attempted for a substantial length of time to design a similar device, and failed). Accordingly, we determine that Patent Owner’s evidence for the secondary consideration of copying does not weigh against finding the challenged claims obvious in view of Liu, Sylvan, and Luedtke.

G. Conclusion as to the Challenge Based on Liu, Sylvan, and Luedtke

Having considered all of the evidence and contentions of the parties regarding the obviousness of claims 1, 9–11, 13, 19–21, 25–28, 36, 38, 40, 46–48, 52, 53, 56–64, and 67–73, including secondary evidence and indicia of non-obviousness presented by Patent Owner, we determine that Petitioner has established by a preponderance of the evidence that claims 1, 9–11, 13, 19–21, 25–28, 36, 38, 40, 46–48, 52, 53, 56–64, and 67–73 are unpatentable over Liu, Sylvan, and Luedtke. The relatively weak secondary evidence of non-obviousness is insufficient to overcome the relatively strong evidence of obviousness presented by Petitioner. *See Sud-Chemie, Inc. v. Multisorb Techs., Inc.*, 554 F.3d 1001, 1009 (Fed. Cir. 2009) (“evidence of unexpected

results and other secondary considerations will not necessarily overcome a strong prima facie showing of obviousness”).

IV. CHALLENGE BASED ON BIXBY, SYLVAN, AND LUEDTKE

Petitioner argues that claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52 are unpatentable under 35 U.S.C. § 103 over Bixby, Sylvan, and Luedtke, referring to disclosures in the references and claim charts. Pet. 4, 39–59. Petitioner also relies on the Krause Declaration (Ex. 1007) and the Slocum Declaration (Ex. 1009). *Id.* at 4.

A. Bixby (Ex. 1005)

Bixby describes a “[c]offee brewing apparatus using a filter bag.” Ex. 1005, 1:13. Figure 1 of Bixby is reproduced below.

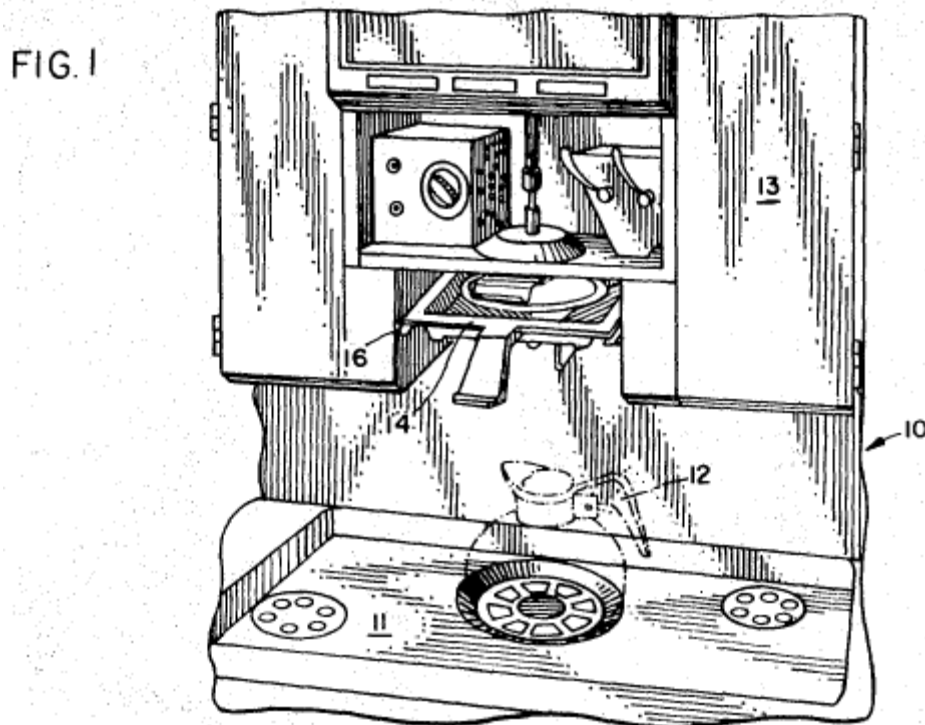


Figure 1 is a perspective view of the apparatus. *Id.* at 2:3–4. Chassis 10 provides housing 13 which contains brewer 14 and other elements to provide brewed, liquid coffee. *Id.* at 2:20–26.

Sylvan and Luedtke are discussed above.

B. Independent Claims 1 and 28

Petitioner contends that Bixby teaches or suggests all the limitations of claim 1 except “a plurality of single serving disposable brew baskets comprising: a body defining a brewing reservoir, the body being formed with a disposable rigid construction” and “wherein the plurality of disposable brew baskets comprise a number of the brew baskets relating to the number of different lodging guests expected to stay at the lodging establishment over the period of time.” Pet. 43–45 (citing Ex. 1005, 2:20–24, 2:41–43, 2:56–57, 2:59–63, 3:14–17, Figs. 1, 2).

Petitioner also argues that Bixby teaches or suggests all the limitations of independent claim 28 except for a plurality of filter packs, a plurality of brew baskets, a body of the brew baskets defining a brewing reservoir and being formed with a rigid construction, and the brewing reservoir having a size to make a single serving. Pet. 48–50 (citing Ex. 1005, 2:20–22, 31, 34, 37–39, Fig. 1; arguments for claim 1). Petitioner argues that Bixby and Luedtke teach or suggest the plurality of filter packs. *Id.* at 48–49 (citing Ex. 1004, 1:37–38, 1:61–62, 2:54–57, Fig. 3; Ex. 1005 3:15–17).

Petitioner contends that “combining Bixby, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior art, and their combination yielded nothing but predictable results.” Pet. 40–41 (citing Ex. 1009 ¶¶ 72–80).

Patent Owner presents arguments regarding the recited disposable brew baskets of claims 1 and 28 and the required packaging of claim 28. Patent Owner does not provide arguments regarding the other limitations of these claims.

A person of ordinary skill in the art “is not an automaton,” and would have recognized the sanitary benefit of combining Bixby with Luedtke’s disposable filter. *KSR*, 550 U.S. at 421. Based on the full record before us, therefore, we agree with Petitioner that the cited portions of Bixby, Sylvan, and Luedtke teach or suggest the limitations of claims 1 and 28 described above. We address below the remaining limitations of these claims.

1. *“a plurality of single serving disposable brew baskets”*

For a plurality of single serving, disposable, brew baskets, Petitioner relies on Bixby for teaching or suggesting brewer 14 (Pet. 43 (citing Ex. 1005, Fig. 1) and Sylvan for teaching or suggesting that “base 12 of beverage filter cartridge 10 ‘can be disposed of after a single use’” (*id.* (citing Ex. 1003, 1:49–51)). For the body of brew baskets defining a brewing reservoir and being formed with a disposable, rigid construction, Petitioner relies on Bixby for teaching or suggesting that brewer 14 “may advantageously be formed integrally of injection molded plastic” (*id.* (citing Ex. 1005, 3:12–14) and Sylvan for teaching or suggesting that “base 12 of beverage filter cartridge 10 ‘can be disposed of after a single use’” (*id.* (citing Ex. 1003, 1:49–51)).

In addition to asserting that “combining Bixby, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior art, and their combination yielded nothing but predictable results” (Pet. 40–41 (citing Ex. 1009 ¶¶ 72–80)), Petitioner argues that

a change in size, for example, modifying Bixby from a multi-cup beverage maker to a single-serving beverage maker, would have been an obvious design choice because Bixby does not disclose any particular significance to the multi-cup capability of chassis 10, and single-use components such as a disposable cartridge and a disposable filter bag for use with a single-serving beverage maker were well known in the art.

Id. at 41 (citing. Ex. 1009 ¶¶ 72–73). Petitioner additionally contends that “[t]he ’512 Patent also fails to disclose that a single-serve-sized brewer would perform different than a multi-serving brewer.” *Id.*

Petitioner further asserts that:

[M]odifying Bixby according to the teachings of Sylvan would have involved a simple substitution of one known element (*i.e.*, Bixby’s brewer unit 14) for another (*i.e.*, Sylvan’s disposable base 12) to obtain the predictable result of substantial cost savings for a hotel and increased user satisfaction of hotel guests.

Id. at 41 (citing Ex. 1009 ¶ 74). Petitioner relies on its arguments for claim 1 for the “plurality of single serving disposable brew baskets” recited by independent claim 28. *Id.* at 49–50.

Patent Owner responds that the substitution of Bixby’s reusable brewer 14 for Sylvan’s base 12 is not simple and obvious, changes the basic principles of Bixby, would render Bixby inoperable for its intended purpose, and does not satisfy the port limitations for the same reasons discussed above for Petitioner’s combination of Liu, Sylvan, and Luedtke. PO Resp. 31–32, 33–43 (citing Ex. 1003, 1:49–52, 2:66–3:1, 3:3–17, 3:49–56, 4:16–27; Ex. 1005, 2:19–30, 2:32–36, 3:7–33, 3:59–62, 3:64–69, 3:71–4:1, 4:7–26, Figs. 2–6; Ex. 2004 ¶¶ 51, 53–60, 67–71; Ex. 2005, 865).

Considering the full record before us, we determine that Bixby teaches brewer 14 includes discharge opening 23. Ex. 1005, 3:71–73, Figs. 3–6. As discussed above, we agree with Petitioner that Sylvan teaches

that its cartridge 10 can be disposed of after a single use. Pet. 43; Ex. 1003, 1:49–51 (“It is a further object of this invention to provide an improved beverage filter cartridge which is simple and has very few parts so it can be disposed of after a single use.”); Ex. 1009 ¶¶ 65, 72.

We also determine that Sylvan teaches an imperforate cartridge adapted to hermetically contain a beverage extract. Ex. 1003, 1:14–16, 2:8–17; *see also* PO Resp. 37 (describing Sylvan). We determine that Sylvan teaches “[b]oth the cover and base are yieldably piercable, the cover to accommodate an injection of liquid into the first chamber for combination with the extract to produce a beverage, and the base to accommodate the outflow of the beverage from the second chamber.” Ex. 1003, 2:17–21; *see also* PO Resp. 37 (describing Sylvan); Ex. 2004 ¶ 51. We agree with Patent Owner’s expert that Sylvan’s “cartridge is designed as a stand-alone hermetically sealed food package for the beverage extract.” Ex. 2004 ¶ 51 (citing Ex. 1003, 3:48–56, Figs. 4, 5). We also agree with Patent Owner’s expert that, to make a beverage, Sylvan’s “cartridge base is also pierced to allow the beverage to drain from the cartridge.” Ex. 2004 ¶ 51 (citing Ex. 1003, 3:15–17, 4:24–27). Thus, we determine that one of ordinary skill in the art would understand Sylvan’s cartridge, when unpierced, provides a hermetically sealed food package for a beverage extract, and when pierced, allows a beverage made from the extract to drain.

In view of these teachings of Sylvan and the full record before us, we agree with Petitioner that combining Bixby, Sylvan, and Luedtke demonstrates that all the elements were known in the prior art, and their combination yielded nothing but predictable results. Pet. 40–41. As discussed above, we determine that Bixby and Sylvan demonstrate that

brewers with discharge openings, single-use cartridges, and disposable cartridges that, when pierced, make a beverage from an extract were known. The complete record does not indicate that the combination yielded any result that was not predictable.

In view of the teachings of Sylvan and the full record before us, we also agree with Petitioner that Sylvan's base 12 can be substituted for Bixby's brewer unit 14. Contrary to Patent Owner's arguments about one of ordinary skill in the art failing to understand that Sylvan's base must be pierced to make a beverage from the beverage extract (*see* PO Resp. 30–41), we determine that one of ordinary skill in the art would understand Sylvan's cartridge, when pierced, allows a beverage made from the extract to drain, thereby teaching or suggesting that the cartridge functions as a brew basket.

Moreover, one of ordinary skill in the art need only modify the cartridge of Sylvan by providing an opening. To the extent that some modification would be required, “we do not ignore the modifications that one skilled in the art would make to a device borrowed from the prior art.” *In re ICON Health & Fitness*, 496 F.3d at 1382. Bixby indicates that providing a discharge opening to a brewer is within ordinary skill. *See* PO Resp. 36 (stating “Bixby further discloses that after the water passes through the grounds, it is directed by the sloping bottom walls 17 toward the discharge opening 23”) (citing Ex. 1005, 3:71–73).

For the reasons explained above, Patent Owner's additional arguments that the material of Sylvan is not reusable, is more expensive, and is intended for food storage, not for use as a brew basket are unpersuasive. PO Resp. 43–48. Patent Owner's further arguments regarding the Slocum and

Krause Declarations are also unpersuasive for the same reasons previously discussed. *Id.* at 48–50.

We are also not persuaded by Patent Owner’s arguments that Petitioner’s motivation is hindsight. *Id.* at 41–43. “A person of ordinary skill is also a person of ordinary creativity, not an automaton” (*KSR*, 550 U.S. at 421) and it would have been a matter of “ordinary creativity” to modify the reusable brewer of Bixby to be disposable. As for Sylvan being different from Bixby, we determine that Sylvan is in the relevant field of endeavor and is reasonably pertinent to the problem with which the inventor was concerned because both relate to beverage makers.

Furthermore, for the same reasons given above, Patent Owner’s arguments regarding the lodging establishment recitations and a plurality of brew baskets related to the number of different lodging guests are not persuasive. We determine that the recitations regarding the lodging establishment and relationship of disposable brew baskets or reservoirs to number of intended users have no weight for the obviousness analysis because they pertain to the intended use and user, not the claimed apparatus or system. We also determine that, to the extent there is any structural limitation, providing a different disposable brew basket or brewing reservoir to each user would have been within the level of ordinary skill in the art, and we are persuaded by Petitioner’s assertion that all the elements were known and their combination yields predictable results. *See* Pet. 20; Ex. 1009 ¶ 36.

2. *“packaging that includes first and second packages, the first package including at least one of the brew baskets and the second package including at least another of the brew baskets, the first and second packages separate from one another”*

Petitioner argues that Bixby, Sylvan, and Luedtke teach or suggest packaging the brew baskets separately, as required by independent claim 28. Pet. 50 (citing Ex. 1004, 3:39–42).

Petitioner also argues that “combining Bixby, Sylvan, and Luedtke demonstrates that all the elements in the ’512 Patent were known in the prior art, and their combination yielded nothing but predictable results” (*id.* at 40–41 (citing Ex. 1009 ¶¶ 72–80)), and that “it would have also been obvious . . . to extend Luedtke’s teaching of packaging of disposable articles to taking a disposable brew basket, as taught by the combination of Bixby and Sylvan, and individually packaging the disposable brew basket . . . to yield the predictable result of a more sanitary product protected against contamination” (*id.* at 42 (citing Ex. 1007 ¶¶ 38–40; Ex. 1009 ¶¶ 79–80)).

As discussed above, Patent Owner presents arguments directed toward the teachings of Luedtke. PO Resp. 18–23. For the reasons discussed above, we are persuaded that Bixby, as modified by Sylvan, teaches or suggests the disposable brew baskets. We are also persuaded that Luedtke teaches or suggests the packaging limitation of independent claim 28.

As discussed above, we determine that Luedtke teaches individually packaging a disposable filter device 3. Ex. 1004, 3:38–42; Ex. 1009 ¶ 71; Ex. 2004 ¶ 61. We also find that Luedtke relates to “a throw-away device” or a “disposable device.” Ex. 1004, 1:10–12, 1:36–38, 1:55–57, 1:61–63.

We are persuaded that, in view of Luedtke’s express teaching that disposable filter devices 3 “each may be individually packaged in a packet 23” (Ex. 1004, 3:38–42), one of ordinary skill in the art at the time of the invention would have modified Bixby and Sylvan to package individually a disposable brew basket to obtain a “more sanitary product protected against

contamination,” as argued by Petitioner. Pet. 40–41 (citing Ex. 1009 ¶¶ 72–80). Patent Owner’s expert acknowledges that separate packaging is used to prevent contamination but states that separate packaging increases cost and, therefore, is only for items that directly contact a person’s mouth. Ex. 2004 ¶ 77 (“[s]eparate packaging is also used to prevent contamination of items that come into direct contact with a user’s mouth, such as a straw or cutlery”). Thus, a preponderance of the evidence supports a finding that one of ordinary skill in the art would have considered contamination when contemplating separate packaging. See Pet. 40–41; Ex. 1009 ¶¶ 72–80; Ex. 2004 ¶ 77).

A preponderance of the evidence shows that one of ordinary skill would have extended Luedtke’s teaching of individually packaging “disposable” or “throw-away” filter devices 3 to a disposable brew basket. Paragraph 79 of the Slocum Declaration states, and we agree, that “modifying the combination of Bixby and Sylvan according to the teachings of Luedtke would have used a known technique to improve similar devices in the same way” and thus, “it would have been obvious . . . to extend Luedtke’s known technique to also individually packaging a disposable brew basket (*i.e.*, a similarly disposable component to be used with a single-serving beverage machine), as taught by Bixby and Sylvan, separate from any other components.” We agree that Luedtke teaches individually packaging filter devices that are disposable like the brewer of Bixby, as modified by Sylvan. Pet. 40–41; Ex. 1004, 3:38–42.

Patent Owner’s arguments regarding Luedtke are not persuasive for the reasons stated above.

C. Dependent Claims 9–11, 13, 16–21, 25–27, 36, 38, 40, 46–48, and 52

As for the claims that depend from claim 1, Petitioner argues that Bixby, Sylvan, and Luedtke teach or suggest the limitations of claims 9–11, 13, 16–21, and 25–27. Pet. 45–48 (citing Ex. 1003, 2:32–33, 3:3–6, 3:8–12, Fig. 1; Ex. 1004, 1:37–38, 1:61–62, 3:39–42; Ex. 1005, 3:12–17, Fig. 2; Ex. 1007 ¶¶ 38–44; Ex. 1009 ¶¶ 60, 72–80, 117–120, 123, 124).

For the claims that depend from claim 28, Petitioner refers to arguments made for claims 9, 11, 16, 19, or 27 to argue that Bixby, Sylvan, and Luedtke teach or suggest the limitations of claims 36, 38, 40, 43–48, and 52. Pet. 50–52 (also citing Ex. 1007 ¶¶ 34–44; Ex. 1009 ¶¶ 126–129, 132).

Patent Owner provides no arguments other than the ones discussed above for independent claims 1 and 28. *See* PO Resp. 3–50. For the reasons stated above, Patent Owner’s arguments do not persuade us that Petitioner fails to show that claims 1 and 28 are unpatentable over Bixby, Sylvan, and Luedtke.

Based on the full record before us, we determine that Petitioner has shown by a preponderance of the evidence that the limitations of the challenged, dependent claims are taught or suggested by Bixby, Sylvan, and Luedtke, and that Petitioner provides articulated reasoning with rational underpinning for combining Liu with Sylvan and Luedtke to support a conclusion of obviousness. *See* Pet. 19–22. We adopt Petitioner’s contentions as our findings with regard to the obviousness of the challenged, dependent claims because the cited portions of the references reasonably support Petitioner’s assertions that the elements of these claims were known

and Petitioner provides a persuasive reason why a skilled artisan would have been prompted to combine prior art elements in the way of these claims.

D. Objective Indicia of Non-Obviousness

For the reasons discussed above, based on the full record, we determine that Patent Owner's evidence for the secondary considerations of commercial success and copying do not weigh against finding the challenged claims obvious in view of Bixby, Sylvan, and Luedtke.

E. Conclusion as to Challenge Based on Bixby, Sylvan, and Luedtke

Having considered all of the evidence and contentions of the parties regarding the obviousness of claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52, including secondary evidence and indicia of non-obviousness presented by Patent Owner, we determine that Petitioner has established by a preponderance of the evidence that claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52 are unpatentable over Bixby, Sylvan, and Luedtke. The relatively weak secondary evidence of non-obviousness is insufficient to overcome the relatively strong evidence of obviousness presented by Petitioner. *See Sud-Chemie, Inc.*, 554 F.3d at 1009 (“evidence of unexpected results and other secondary considerations will not necessarily overcome a strong prima facie showing of obviousness”).

V. MOTION TO SEAL

Patent Owner seeks to seal Exhibit 2018 and portions of the Patent Owner Response that discuss Exhibit 2018. Paper 18, 2, 3–4. Patent Owner also states that the “parties have agreed to the terms of the Default Protective Order located in Appendix B of the Trial Practice Guide.” *Id.* at 4.

Upon review, good cause exists to seal the above information. In addition, the Default Protective Order will be entered. We note that none of the sealed information was relied upon or disclosed in this Decision.

Because there is an expectation that information will be made public where the information is identified in a final written decision, confidential information that is subject to a protective order ordinarily would become public 45 days after final judgment in a trial, unless a motion to expunge is granted. 37 C.F.R. § 42.56; 77 Fed. Reg. at 48,761. In view of the foregoing, the confidential documents filed in the instant proceeding will remain under seal, at least until the time period for filing a notice of appeal has expired or, if an appeal is taken, the appeal process has concluded. The record for the instant proceeding will be preserved in its entirety, and the confidential documents will not be expunged or made public, pending possible appeal. Notwithstanding 37 C.F.R. § 42.56 and the Office Patent Trial Practice Guide, neither a motion to expunge confidential documents nor a motion to maintain these documents under seal is necessary or authorized at this time. *See* 37 C.F.R. § 42.5(b).

VI. MOTION TO EXCLUDE

Petitioner moves to exclude the Ball Declaration (Ex. 2004) “because he does not qualify as an expert either in the lodging industry or the field of hotel management,” Exhibit 2002 “because the document is not from the relevant time period,” and Exhibits 2007–2011 and 2013–2018 “because they are not relevant to the patentable limitations” and “consist[] of publications citing hearsay statements of third parties.” Paper 32, 1–2, 5, 7–

8. Patent Owner filed an opposition to Petitioner’s motion to exclude (Paper 35, “Opp.”), and Petitioner filed a reply to the opposition (Paper 36).

After considering the parties’ arguments, we find that Mr. Ball is qualified sufficiently to testify as an expert witness “in the field of designing coffee brewers,” as argued by Patent Owner. Opp. 5; Ex. 2004 ¶¶ 4–20. As discussed above, we considered his testimony against the full record and found it to be unpersuasive in some instances. We, therefore, decline to exclude Mr. Ball’s testimony, 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 any of Exhibits 2002, 2007–2011, and 2013–2018. These exhibits are cited to indicate where Patent Owner finds support for its arguments. We, thus, deny the motion to exclude.

VII. CONCLUSION

For the foregoing reasons, based on the full record before us, we are persuaded that Petitioner has demonstrated, by a preponderance of the evidence, that, under 35 U.S.C. § 103, claims 1, 9–11, 13, 19–21, 25–28, 36, 38, 40, 46–48, 52, 53, 56–64, and 67–73 of the ’512 patent are unpatentable over Liu, Sylvan and Luedtke and that claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, and 52 are unpatentable over Bixby, Sylvan, and Luedtke.

VIII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 9–11, 13, 16–21, 25–28, 36, 38, 40, 43–48, 52, 53, 56–64, and 67–73 of U.S. Patent No. 7,770,512 B2 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Seal is *granted*;

FURTHER ORDERED that the Default Protective Order (Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, App. B (Aug. 14, 2012)) is entered;

FURTHER ORDERED that the information sealed in this Decision remain under seal, and the record preserved, until the time period for filing a notice of appeal of this Decision has expired or, if an appeal is taken, the appeal process has concluded;

FURTHER ORDERED that Petitioner’s Motion to Exclude is *denied*; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirement of 37 C.F.R. § 90.2.

IPR2014-01258
Patent 7,770,512 B2

PETITIONER:

William S. Foster, Jr.
Kassity Y. Liu
Tina J. Yang
BAKER BOTTS LLP
william.foster@bakerbotts.com
kassity.liu@ bakerbotts.com
tina.yang@ bakerbotts.com

PATENT OWNER:

Robert L. Burns
Joshua L. Goldberg
David C. Reese
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP
robert.burns@finnegan.com
joshua.goldberg@finnegan.com
david.reese@finnegan.com