

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FRYMASTER, L.L.C. and
HENNY PENNY CORP.,
Petitioner,

v.

SHERWOOD SENSING SOLUTIONS LLC,
Patent Owner.

IPR2020-00752
Patent 10,285,539 B2

Before PHILLIP J. KAUFFMAN, JAMES A. WORTH, and
ERIC C. JESCHKE, *Administrative Patent Judges*.

JESCHKE, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Granting Patent Owner's Revised Motion to

Amend as to Canceling Claims 1–11

Denying Patent Owner's Revised Motion to

Amend as to Substituting Claims 12–20

35 U.S.C. § 318(a)

I. BACKGROUND

Frymaster, L.L.C. and Henny Penny Corporation (collectively, “Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–11 (the “challenged claims”) of U.S. Patent No. 10,285,539 B2 (Ex. 1001, “the ’539 patent”). Paper 1 (“Pet.”). Sherwood Sensing Solutions LLC (“Patent Owner”) timely filed a Patent Owner’s Preliminary Response. Paper 7 (“Prelim. Resp”). Upon review of the arguments and supporting evidence, we instituted an *inter partes* review of all claims and grounds asserted in the Petition. Paper 9 (“Decision on Institution” or “Dec. Inst.”).

After institution, Patent Owner did not file a Patent Owner Response, but did file a Motion to Amend (Paper 15, “MTA”). Petitioner filed a Reply in support of the Petition (Paper 25, “Pet. Reply”), and also filed an opposition to Patent Owner’s Motion to Amend (Paper 24). On March 26, 2021, pursuant to Patent Owner’s request (*see* MTA 1), we issued Preliminary Guidance on Patent Owner’s Motion to Amend. Paper 26 (“PG”). Patent Owner then filed a Revised Motion to Amend with proposed substitute claims 12–20 (Paper 27, “RMTA”), but did not file a Sur-reply to Petitioner’s Reply. Petitioner opposed Patent Owner’s Revised MTA. Paper 31 (“RMTA Opp.”). Patent Owner filed a Reply in support of its Revised Motion to Amend (Paper 35 (“RMTA Reply”)), to which Petitioner filed a Sur-reply (Paper 36 (“RMTA Sur-reply”)).

Petitioner relies on the declaration testimony of Dr. Kevin M. Keener, Ph.D., P.E. filed with the Petition (Ex. 1004, “Keener Pet. Decl.”), and with the Opposition to Patent Owner’s Revised Motion to Amend (Ex. 1037, “Keener RMTA Decl.”) (including the authorized errata (Ex. 1059)).

Patent Owner relies on the declaration testimony of Dr. John P. Abraham, Ph.D. filed with the Revised Motion to Amend (Ex. 2006, “Abraham RMTA Decl.”), and with the Reply in Support of the Revised Motion to Amend (Ex. 2007, “Abraham RMTA Reply Decl.”). An oral argument in this proceeding was held on July 14, 2021, and a copy of the transcript was entered into the record. Paper 40 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6, and we issue this Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons below, we grant in part Patent Owner’s Revised Motion to Amend as to canceling claims 1–11. We deny, however, Patent Owner’s Revised Motion to Amend as to substituting proposed claims 12–20. We determine Patent Owner has failed to carry its burden on the statutory and regulatory requirements as to the Revised Motion to Amend, and, to the extent Patent Owner did carry its burden, we determine that Petitioner has proven, by a preponderance of the evidence, the unpatentability of proposed substitute claims 12–20.

A. Related Proceedings

The parties identify two proceedings in U.S. District Courts involving the ’539 patent: (1) *Sherwood Sensing Solutions LLC v. Frymaster, L.L.C.*, No. 5:19-cv-01351 (W.D. La.), filed October 15, 2019, and (2) *Sherwood Sensing Solutions LLC v. Henny Penny Corp.*, No. 3:19-cv-00366 (S.D. Oh.), filed November 19, 2019 (collectively, the “District Court Litigations”). Paper 22 (Petitioner’s Amended Mandatory Notices) § B; Paper 13 (Patent Owner’s Amended Mandatory Notices) § 2.

B. The '539 Patent

The '539 patent relates to systems and methods for frying food. Ex. 1001, code (57), 1:21–23. According to the '539 patent, “[c]onventional frying processes are carried out with heated cooking oil, in which food items are immersed [and] exposed to air,” which “results in deterioration of the quality and appearance of the oil due to constant oxidation of the oil by air.” *Id.* at 1:27–30. With the conventional processes, the '539 patent states, “[t]he quality of the fried food may be spoiled by partially oxidized oil, and consumption of the fried food can pose a health hazard.” *Id.* at 1:30–33. In addition, the '539 patent describes how, in conventional processes, “oil penetrates into the food items being fried” and how “[r]emoving cooking oil from the surface of the food items . . . leaves substantial amounts of oil in the interior of the food items,” which, in turn, “adds to the caloric content of the food items.” *Id.* at 1:34–41.

Figure 1 is reproduced below:

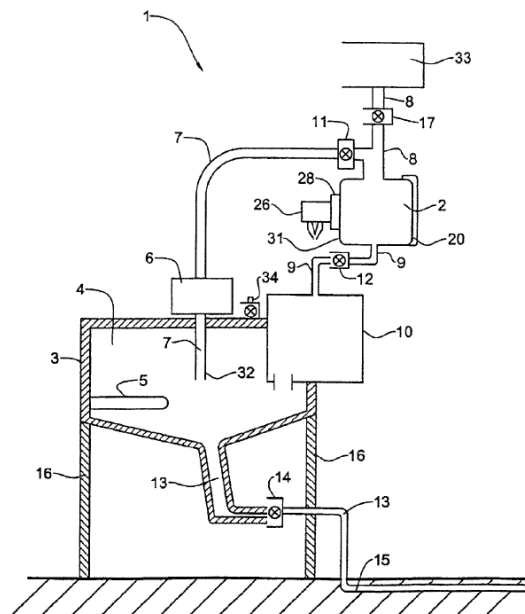


Figure 1 depicts “a frying system in accordance with one embodiment.” Ex. 1001, 3:7–8. In this embodiment, frying system 1 includes “a frying tank 2 into which food to be fried is inserted” and “vat 3 for heating cooking oil 4 by means of a heating element 5 inside the vat 3.” *Id.* at 3:20–23.¹ “Under the action of the oil pump 6, oil 4 is pumped out of the vat 3, and then passes through a segment of a pipe 7 to a pipe 8 before entering the frying tank 2 through the top of the frying tank 2.” *Id.* at 3:27–30. In addition, “[o]il 4 leaves the frying tank 2 from the bottom of the frying tank 2 through a pipe 9, and then passes through oil filter 10 before returning to the vat 3.” *Id.* at 3:30–33. System 1 also includes “vacuum pump 33 for removing air from the frying tank 2.” *Id.* at 3:42–44.

Figure 2 is reproduced below:

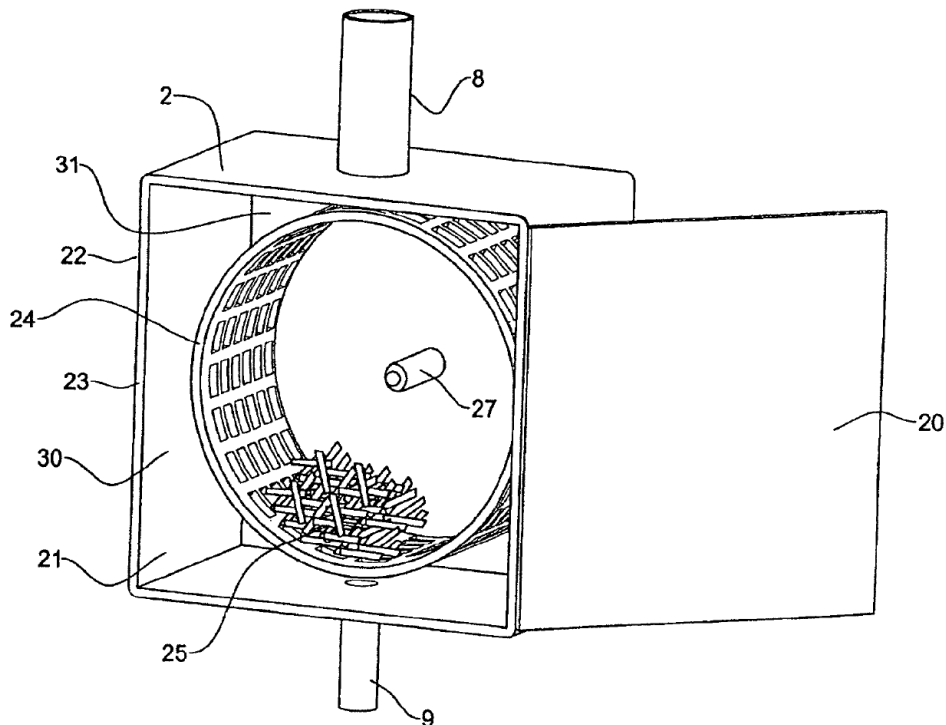


FIG. 2

¹ Throughout this Decision, we omit any bolding of reference numerals in quotations from the '539 patent and from prior art references.

Figure 2 depicts frying tank 2 from the system in Figure 1. Ex. 1001, 3:9. Tank 2 includes hinged side door 20, “shown in its open position . . . so as to expose an interior frying chamber 21.” *Id.* at 3:46–49. “In use, the door 20 is closed, as shown in” Figure 1. *Id.* at 3:49–50. Tank 2 also includes “cylindrical frying drum 24,” “formed as a wire mesh basket, so that when the frying chamber 21 is filled with cooking oil 4, the oil contacts food items 25 located inside the frying drum 24.” *Id.* at 3:50–54.

In use, after the food items are inserted and door 20 is closed, “oil pump 6 is activated so as to cause pre-heated cooking oil 4 to flow from the vat 3 through the pipes 7 and 8 into the interior chamber 21 of the frying tank 2.” *Id.* at 3:55–64. “The flow rate of the oil into the interior chamber under the influence of the oil pump 6 is adjusted to exceed the drainage rate from the interior chamber 21 via the pipe 9.” *Id.* at 3:64–67. “The oil level in the interior chamber 21 thus rises . . . until all air initially present in the interior chamber 21 has been expelled from the interior chamber 21 and the interior chamber 21 is completely filled with oil.” *Id.* at 3:67–4:7; *see also id.* at 4:22–25 (“The cooking oil is then confined to a closed system which prevents avoids exposure of the oil to air so as to prevent oxidation of the oil and release of oil vapors and cooking odors into the environment.”). The cooking oil continues to circulate as the food is fried. *Id.* at 4:25–31. After the cooking oil is removed from interior chamber 21, vacuum pump 33 is “activated[,] which removes air from the interior chamber 21[,] causing excess oil to be leached out of the fried food items 25.” *Id.* at 4:47–51.

Figure 4 is reproduced below:

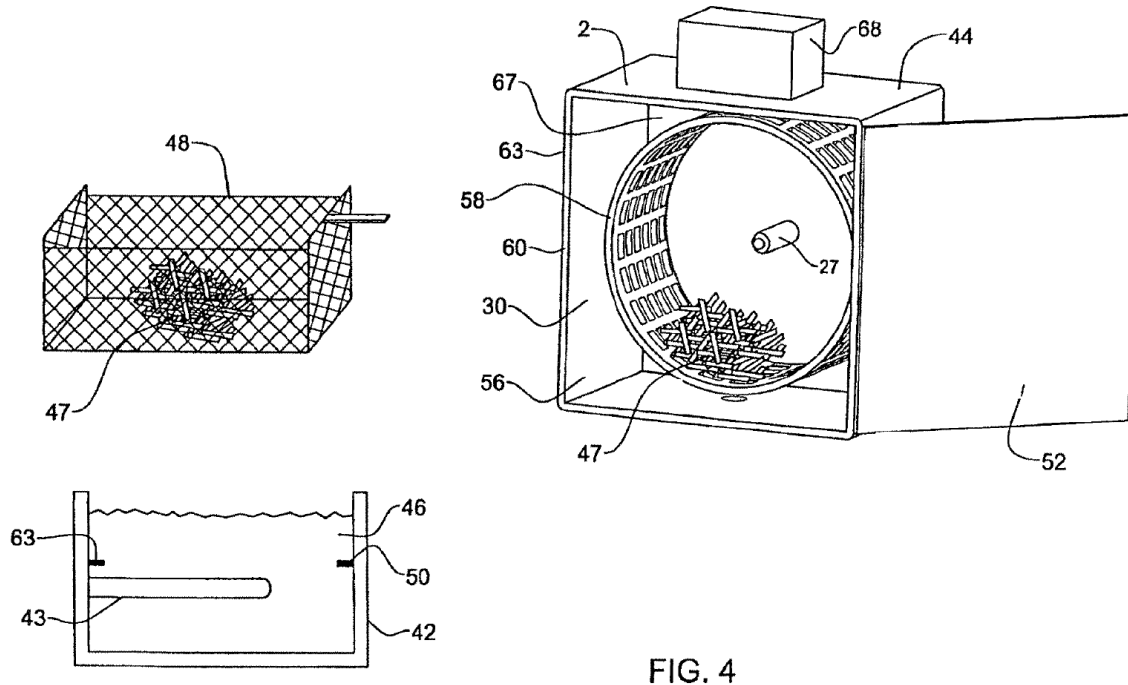


FIG. 4

Figure 4 depicts “a frying system in accordance with another embodiment of the invention having an open frying tank.” Ex. 1001, 3:13–14. The depicted system includes “frying tank 42 for frying food items 47” using basket 48, and also includes “vacuum chamber 44 for deoiling fried food items.” *Id.* at 5:42–44. The ’539 patent discloses that “frying tank 42 has an open top, so that cooking oil 46 in the tank is exposed to ambient air, and hence to atmospheric pressure.” *Id.* at 5:44–46.

C. Illustrative Claim

Petitioner challenges claims 1–11, of which only claim 1 is independent. Claim 1 is below, reformatted as compared to the ’539 patent:

1. A system for frying one or more food items, comprising:
 - (a) a frying tank having an interior chamber configured to receive the one or more food items,

the frying tank including a heater for heating cooking oil; and

(b) a cooking oil delivery system comprising:

a vat including a substantially hollow inner chamber for holding cooking oil, and

a pump,

the pump being activated to deliver cooking oil from the vat to the interior chamber of the frying tank in an amount that exceeds the drainage of cooking oil from the interior chamber or the cooking oil that is removed from the interior chamber during the cooking process so as to raise the cooking oil level to continuously maintain a desired cooking oil level in the interior chamber of the frying tank.

Ex. 1001, 6:15–31.

D. Asserted Grounds of Unpatentability

Petitioner challenges claims 1–11 on the following grounds:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
1–11	102	Campbell ³
1–11	102	Van Den Berg ⁴
1–11	102	Sugimoto ⁵

II. DISCUSSION

A. The Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including the “type of problems encountered in the art; prior art

² The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Pub. L. No. 112-29, §§ 3(b)–3(c), 3(n)(1), 125 Stat. 284, 285–87, 293 (2011). Because there is no dispute that the challenged claims of the ’539 patent have an effective filing date before March 16, 2013, we apply the pre-AIA versions of these statutes.

³ US 5,404,796, issued April 11, 1995 (Ex. 1008, “Campbell”).

⁴ WO 93/04617, published March 18, 1993 (Ex. 1009, “Van Den Berg”).

⁵ Japanese Publication No. 2002-10924 (with translation and translator declaration), published January 15, 2002 (Ex. 1010 (Japanese version); Ex. 1011 (translation), “Sugimoto”; Ex. 1012 (translator declaration)).

solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.* (internal quotation marks and citation omitted).

Petitioner contends, with supporting testimony from Dr. Keener, that a person having ordinary skill in the art “with respect to the ’539 patent has a Bachelor’s degree in mechanical engineering, biological and agricultural engineering, systems engineering, food process engineering, or a related field” and “would have a minimum of one year of work experience in deep fryer design and development.” Pet. 17 (citing Keener Pet. Decl. ¶ 48). In the Decision on Institution, we adopted Petitioner’s proposed level of ordinary skill in the art, stating that it “appear[ed] consistent with the record at th[at] stage of the proceeding, including the prior art.” Dec. Inst. 9.

In the Reply, Petitioner argues that the level of ordinary skill in the art is “undisputed” in that Patent Owner did not file a response contesting the issue. Pet. Reply 2–4. In the Revised Motion to Amend, however, Patent Owner states a slightly different level of ordinary skill in the art as compared to that proposed by Petitioner: “a BS degree in mechanical engineering, food process engineering, or a related field, plus a minimum of one year *of relevant work experience.*” RMTA 12 (emphasis added). Specifically, Patent Owner proposes broadening the required work experience from “one year of work experience in deep fryer design and development” (Dec. Inst. 9) to “one year of relevant work experience.” *Id.* Although Patent Owner does not expressly define “relevant work experience,” Patent Owner does state that the “relevant art pertains to heat transfer and fluid flow, and, in particular, to a system that heats a fluid and delivers the fluid to a tank *in order to fry food.*” *Id.* (emphasis added). Although this statement seems to

align with the level stated in the Decision on Institution, Patent Owner's arguments as to the qualifications of Dr. Abraham indicate that "relevant work experience" need merely relate to, for example, "analysis and design of systems implementing pumps, valves, filters, flow sensors, fluid filling sensors, sensors, and piping systems that convey and heat transfer" rather than experience in deep fryers design and development. *Id.* at 13.

For the analysis below, we do not adopt Patent Owner's broader statement of the level of ordinary skill in the art at the time of the invention because Patent Owner's position is not supported by adequate evidence of record. *See* RMTA 12; *Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1359 (Fed. Cir. 2018) (rejecting attorney argument as to the alleged understanding of one of skill in the art on an issue when no evidence was presented). Patent Owner states its broader understanding of the level of ordinary skill in the art, but does not identify support for that statement, and then argues that Dr. Abraham qualifies as one of ordinary skill in the art under that definition. *See id.* at 12–14. Dr. Abraham, in his declaration filed with the Revised Motion to Amend, states the opinion "that the relevant art pertains to heat transfer and fluid flow" (Abraham RMTA Decl. ¶ 24), restates Patent Owner's proposal as to the level of ordinary skill in the art, and then immediately states that he "exceed[s] this level of skill in the art" (*id.* ¶ 25). Although Dr. Abraham states that his "understanding and opinion on the educational background and work experience possessed by a person of ordinary skill in the art at issue in this IPR proceeding are disclosed in my curriculum vitae (Ex. 2002)," that exhibit does not address the issue at all. *Id.* ¶ 26; *see also id.* ¶¶ 23–30 (entire testimony regarding "A Person of Ordinary Skill in the Art (POSITA)"). Accordingly, and because the level

of ordinary skill in the art proposed by Petitioner and adopted in the Decision on Institution continues to appear consistent with the complete record developed at trial, we continue to apply that level of ordinary skill below. *See* Dec. Inst. 8–10.

Having maintained the previously adopted level of ordinary skill in the art, we now turn to Petitioner’s argument that Patent Owner’s declarant, Dr. Abraham, “has never been a person of ordinary skill in the art, either now or at the time of the invention.” Pet. Reply 4; *see id.* at 4–7 (entire argument on this issue). Specifically, as to the requirement for “a minimum of one year of work experience in deep fryer design and development,” Petitioner argues that Dr. Abraham had only *nine months* of experience in “‘analysis’ of an already-existing Cargill deep fryer.” *Id.* at 4–5. According to Petitioner, Dr. Abraham’s “testimony and opinions should be afforded no weight in evaluating the merits of Petitioner[’s] anticipatory references” because he does not qualify as one of ordinary skill in the art. *Id.* at 5–7 (citing, e.g., *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1362 n.4 (Fed. Cir. 2008)); *see also* RMTA Sur-reply 12 (similar argument).

Contrary to Petitioner’s argument, as provided in the Board’s Trial Practice Guide, “[a] person may not need to be a person of ordinary skill in the art in order to testify as an expert under Rule 702, but rather must be ‘qualified in the pertinent art.’” TPG 34 (citing *Sundance*, 550 F.3d at 1363–64). Indeed, failure to possess certain characteristics of the level of ordinary skill in the art “may not preclude an expert from providing testimony that is helpful to the Board, so long as the expert’s experience provides sufficient qualification in the pertinent art.” *Id.* Here, based on Dr. Abraham’s experience and qualifications (Ex. 2002), we view him as

qualified in the pertinent art and consider his testimony helpful in our analysis whether or not he qualifies as one of ordinary skill in the art at the time of the invention. For example, as noted by Patent Owner, Dr. Abraham has a Ph.D. in Mechanical Engineering (Thermal Sciences) and has extensive teaching and work experience in fluid flow and heat transfer. RMTA 13–14 (discussing Ex. 2002).

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2019). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner proposes a construction for the phrase “a frying tank having an interior chamber” in claim 1 and proposed substitute claim 12 (“the ‘interior chamber’ limitation”). Pet. 10–17. According to Petitioner, the “[p]lain and ordinary meaning” of that limitation is “a frying tank with an internal space that is enclosed during cooking.” *Id.* at 10. In the Decision on Institution, we preliminarily determined that the “interior chamber” need not be fully enclosed during cooking. *See* Dec. Inst. 10–16. Because the prior art applied below discloses the “interior chamber” limitation under even Petitioner’s narrower proposed construction, we do not discern a need

to construe explicitly that limitation or any other claim terms because doing so would have no effect on the analysis below. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. Asserted Anticipation of Claims 1–11 by Campbell, by Van Den Berg, and by Sugimoto

Petitioner asserts that claims 1–11 of the ’539 patent are anticipated by Campbell, by Van Den Berg, and by Sugimoto, all “under pre-AIA 35 U.S.C. §102(b) and post-AIA 35 U.S.C. §102(a).” Pet. 9–10, 22–90. Patent Owner did not file a response or sur-reply with arguments addressing these asserted grounds. Prior to the oral hearing, we understood the Revised Motion to Amend to be contingent on our determination that claims 1–11 are unpatentable. Supporting that initial understanding, Patent Owner states that “each amendment proposes only one substitute claim for *each conditionally canceled claim.*” *Id.* at 2 (emphasis added); *see also Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 3 (PTAB Feb. 25, 2019) (precedential) (“*Lectrosonics*, Paper 15”) (“A request to cancel claims will not be regarded as contingent. However, *a request to substitute claims ordinarily will be treated as contingent.* In other words, a proposed substitute claim normally will be considered only if a preponderance of the evidence establishes that the original patent claim that it replaces is unpatentable.” (emphasis added)). Petitioner has the same understanding, stating that Patent Owner has “*has refused to disclaim the Challenged Claims*, which would obviate the need to make any finding regarding their patentability.” Pet. Reply 1 (emphasis added). During the oral hearing,

however, Patent Owner made clear that it has unconditionally cancelled claims 1–11. *See* Tr. 33:6–34:22. We grant the cancellation of those claims. Accordingly, we need not address the alleged unpatentability of those claims.

D. Revised Motion to Amend

Under 35 U.S.C. § 316(d)(1) and 37 C.F.R. § 42.121(a), Patent Owner moves to substitute cancelled claims 1–11 with proposed claims 12–20. RMTA 1–3.

1. Proposed Substitute Claims

Patent Owner submits the following proposed substitute independent claim 12, which corresponds to independent claim 1 (with added material underlined, and deleted material bracketed):

12. [12A] A system for frying one or more food items, comprising:

[12B] (a) a frying tank having an interior chamber configured to receive the one or more food items, [12C] the frying tank including a heater for heating cooking oil, [12D] wherein the frying tank is configured to receive a fry basket containing the one or more food items with the fry basket held at a predetermined position within the frying tank;

[12E] (b) a cooking oil delivery system comprising:

[12F] a vat including a substantially hollow inner chamber for holding cooking oil, [12G] wherein the substantially hollow inner chamber of the vat does not enclose a filter for filtering the cooking oil in the cooking delivery system;

[12H] a pump,

[12I] the pump being activated to deliver cooking oil from the vat to the interior chamber of the frying tank in an amount that exceeds the drainage of cooking oil from the interior chamber or the cooking oil that is removed from the interior chamber during the cooking process so as to raise the cooking oil level to continuously maintain a substantially constant ~~[desired]~~ cooking oil level in the interior chamber of the frying tank.

RMTA 28 (Claims App.); RMTA Opp. xii–xiii (providing designations).⁶ Proposed substitute claims 13–19 and 20 correspond to cancelled claims 2–8 and 11, respectively, with changes only to the claim number from which the substitute claims depend. *See* RMTA 29–31 (Claims App.). Claims 9 and 10 are cancelled with no proposed substitute claims. *Id.* at 30–31.

2. Legal Standard

In an *inter partes* review, amended claims are not added to a patent as a matter of right; rather, they must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). In reviewing a motion to amend, the Board assesses the patentability of the proposed substitute claims “without placing the burden of persuasion on the patent owner.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); *see Lectrosonics*, Paper 15 at 3–4.

Notwithstanding the foregoing, a patent owner’s proposed substitute claims must meet the statutory requirements of 35 U.S.C. § 316(d) and the procedural requirements of 37 C.F.R. § 42.121. *Lectrosonics*, Paper 15 at 4–

⁶ We adopt Petitioner’s designations for the elements of proposed substitute claim 12. We apply these designations below.

8. In particular, a patent owner must demonstrate: (1) the amendment proposes a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure (and any earlier filed disclosure for which the benefit of a filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121.

3. Claim Construction

Neither Patent Owner nor Petitioner proposes that any language in the amendments in the proposed substitute claims needs express construction. *See* RMTA; RMTA Reply; RMTA Opp.; RMTA Sur-reply. We agree.

4. Statutory and Regulatory Requirements

“Before considering the patentability of any substitute claims, . . . the Board first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121.” *Lectrosonics*, Paper 15 at 4.

a. Reasonable Number of Substitute Claims

First, we consider whether the Revised Motion to Amend proposes a reasonable number of substitute claims. *See* 35 U.S.C. § 316(d)(1)(B). We apply “a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.” *Lectrosonics*, Paper 15 at 4–5 (citing 37 C.F.R. § 42.121(a)(3)). Patent Owner proposes nine substitute claims for eleven challenged claims. RMTA 1–5. Thus, Patent Owner has proposed a reasonable number of substitute claims.

b. Responsive to a Ground of Unpatentability

Second, we consider whether the proposed substitute claims respond to a ground of unpatentability involved in this trial. *Lectrosonics*, Paper 15 at 5–6. Proposed substitute claim 12 amends the language of claim 1 to recite additional features of the system for frying food, and Patent Owner asserts that the proposed substitute claims are patentable over the instituted grounds and references at issue in this proceeding, based on the amended language. RMTA 17–24. We conclude that the proposed substitute claims are responsive to grounds of unpatentability involved in this trial because Patent Owner adds limitations in a manner intended to address the prior art cited by Petitioner in relation to the originally challenged claims.

c. Scope of the Substitute Claims

Third, we consider the scope of the substitute claims, as “[a] motion to amend may not present substitute claims that enlarge the scope of the claims of the challenged patent or introduce new subject matter.” *Lectrosonics*, Paper 15 at 6 (citing 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii)). We first address the alleged enlargement of the scope of the claims.

(1) Allegedly Enlarged Claim Scope

“A patent owner may not seek to broaden a challenged claim *in any respect* that enlarges the scope of the claims of the patent, for example, in the name of responding to an alleged ground of unpatentability.” *Lectrosonics*, Paper 15 at 6 (emphasis added). “Likewise, a proposed substitute claim may not remove a feature of the claim in a manner that broadens the scope of the claims of the challenged patent.” *Id.*

In the context of proposed substitute claim 12, Patent Owner seeks to revise the requirement “to continuously maintain a *desired* cooking oil

level” to the requirement “to continuously maintain a *substantially constant* cooking oil level.” RMTA 28 (Claims App.) (emphasis added). Patent Owner states that this revision “is made for the purpose of clarifying the language in response to the Board’s Preliminary Guidance regarding the patentability of this limitation under 35 U.S.C. § 112 and to distinguish from prior art of record in this proceeding” and “is not intended to, and indeed does not, enlarge the scope of the claim.” *Id.* at 4.

Petitioner argues that this proposed revision enlarges the scope of the claims because “a fryer that maintains a ‘substantially constant’ oil level covers fryers not previously covered when the claim recited a ‘desired’ oil level” in that “[t]he substitute claims now cover a fryer maintaining an oil level that is ‘undesired,’ which does occur, such as an oil level that would (i) not contact the food, or (ii) only partially submerge food like French fries, fish, and chicken during cooking, so long as the oil level stays ‘substantially constant.’” RMTA Opp. 9 (citing Keener RMTA Decl. ¶¶ 91–93).

We are persuaded by Patent Owner’s argument that the revision at issue does not enlarge the scope of the claims. Although the original term “desired” likely lacks “objective boundaries” for the reasons stated in the Preliminary Guidance (PG 10–11), Petitioner’s argument assumes as clear the scope of the *opposite* term: “undesired.” *See* RMTA Opp. 9. For similar reasons, the scope of that term is equally unclear. We view Dr. Abraham’s statement that an oil level “such that the food is partially submerged” is “not a desired oil level” as merely indicating that, during normal operation, the food is entirely submerged in oil, rather than indicating a clear scope as to the terms “desired” versus “undesired.” *See* Ex. 1047 (Deposition of Dr. Abraham), 170:6–9, *cited at* RMTA Opp. 9. In other words, with little

clarity as to the scope of the term “desired,” we do not agree with Petitioner’s implied understanding of that term—i.e., as limited to a level that provides optimal operation of the system. Accordingly, we do not view proposed substitute claim 12 as enlarging the scope of claim 1 by replacing “desired” with “substantially constant.”

(2) Alleged New Matter

New matter is any addition to the claims without support in the original disclosure. *See TurboCare Div. of Demag Delaval Turbomach. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001) (“When [an] applicant adds a claim . . . the new claim[] . . . must find support in the original specification.”). The test for adequate written description support is “whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). In the Revised Motion to Amend, Patent Owner provides a discussion and claim charts identifying alleged support for each limitation in the proposed substitute claims. *See* RMTA 5–12. Patent Owner argues that proposed substitute claim 12 is directed at the Figure 4 embodiment and that that embodiment would be understood by one of ordinary skill in the art as comprising all of the elements claimed even though some of the claimed elements are not expressly shown in that embodiment. *Id.* at 16–17.

(a) “Substantially Constant Cooking Oil Level”

Petitioner argues that the original disclosure lacks adequate support for the full scope of the requirement, in element 12I, to “continuously maintain a substantially constant cooking oil level.” *See* RMTA Opp. 6–7

(citing *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1346 (Fed. Cir. 2005) (stating that “a patentee cannot always satisfy the requirements of section 112, in supporting expansive claim language, merely by clearly describing one embodiment of the thing claimed”)). Specifically, Petitioner argues that “[t]he only disclosures identified by [Patent Owner]—indeed the only disclosure in the patent—regarding maintaining an oil level relate to a fryer that ‘**completely fill[s]**’ the fryer tank.” RMTA Opp. 6–7 (citing RMTA 9–10; Ex. 1001, 2:40–48, 2:55–59, 3:58–4:7, 4:19–21). Petitioner contends that “[t]he ’539 patent does not describe a fryer that maintains a constant oil level at any other level.” *Id.* at 7 (citing Keener RMTA Decl. ¶¶ 112–113). In contrast, Petitioner asserts that “[a]ll substitute claims are far broader than the described fryer that completely fills the fryer tank because they purport to cover a fryer that maintains cooking oil **at any level**, so long as that level remains ‘substantially constant.’” *Id.*

For the reasons below, Patent Owner has not shown adequate support for the full scope of proposed substitute claim 12. Although “[a] claim will not be invalidated on section 112 grounds simply because the embodiments of the specification do not contain examples explicitly covering the full scope of the claim language,” *LizardTech*, 424 F.3d at 1345, “the case law does ‘not compel the conclusion that a description of a species always constitutes a description of a genus of which it is a part.’” *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998) (quoting *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1568 (Fed. Cir. 1997)). “[A] broad claim is invalid when the entirety of the specification clearly indicates that the invention is of a much narrower scope.” *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1365 (Fed.

Cir. 2003) (quoting *Cooper Cameron Corp. v. Kvaerner Oilfield Prod., Inc.*, 291 F.3d 1317, 1323 (Fed. Cir. 2002)).

The facts here are similar to those in *Gentry Gallery*, in which “the original disclosure clearly identifie[d] the console as the only possible location for the controls,” 134 F.3d at 1479, even though certain claims did not limit the location of the controls to the console, *id.* at 1475–76. In that case, the court determined that the disclosure did not “support claims in which the location of the recliner controls is other than on the console.” *Id.* at 1479; *see also id.* (“It is a truism that a claim need not be limited to a preferred embodiment. However, in a given case, the scope of the right to exclude may be limited by a narrow disclosure.”).

Similarly, here, as argued by Petitioner, the written description identified by Patent Owner does not support claims in which the “substantially constant cooking oil level” is *other than* a level with the “interior chamber” completely full. Specifically, as argued by Petitioner (RMTA Opp. 6–7), each textual disclosure identified in the Revised Motion to Amend, when viewed in context, discloses the process of filling the interior chamber of the tank until it is *completely full*. *See* RMTA 9–10 (citing Ex. 1001, code (57), 2:46–48, 2:58–59, 3:25–30, 3:60–4:2,⁷ 4:19–28; Ex. 1002 at 12–15 (¶¶ 12, 15, 21, 24, 26, 28); Ex. 2003, code (57), 3:17–19, 3:28–29, 4:26–5:2, 5:25–6:1, 6:15–17); *see also* RMTA Opp. 6–7 (citing RMTA 9–10; Ex. 1001, 2:40–48, 2:55–59, 3:58–4:7, 4:19–21). Patent

⁷ Patent Owner cites this passage but notably omits the next sentence, cited by Petitioner, which describes the filling process as continuing “until all air initially present in the interior chamber 21 has been expelled from the interior chamber 21 and the interior chamber 21 *is completely filled with oil*.” Ex. 1001, 4:4–7 (emphasis added); *see also* Ex. 2003, 6:3–6 (same).

Owner only cites to Figures 1 and 3, *not Figure 4*, in support of this requirement. *See* RMTA 9–10. We view as untimely Patent Owner’s efforts in the Reply in support of the Revised Motion to Amend to rely on the Figure 4 embodiment for alleged written description support. *See id.* at 5–6. Moreover, as acknowledged by Patent Owner in the Reply in support of the Revised Motion to Amend, the Figure 1 and 3 embodiments show a level that is “completely full.” RMTA Reply 5.

In addition, even if we were to consider the arguments as to the Figure 4 embodiment, Patent Owner provides no evidence to support the assertion that one of ordinary skill in the art would have understood that embodiment as depicting a system able to maintain a cooking oil level *other than* “completely full”—including one that is “sufficient to cover the food items within the fry basket.” RMTA Reply 5; *Elbit Sys.*, 881 F.3d at 1359 (rejecting attorney argument as to the alleged understanding of one of skill in the art on an issue when no evidence was presented). Notably, the text accompanying Figure 4 does not discuss maintaining the oil level at all, much less maintaining it at an oil level other than full. *See* Ex. 1001, 5:41–6:13. Further supporting that the applicant was not in possession of maintaining an oil level less than full, we note that the only original claim recited a requirement to “continuously completely fill the interior chamber with cooking oil.” Ex. 1002 at 18; *see also In re Myers*, 410 F.2d 420, 427 (CCPA 1969) (affirming new matter rejection of claims specifically claiming cobalt and nickel binders where original disclosure, including original claims, did not specifically identify that these two types of metal could be used but only broadly disclosed a class of operable metals).

Patent Owner also provides no evidence to support the related assertion that “[c]ontrol of the oil level in an open top fryer at a substantially constant level is readily achieved, even without the use of oil level sensors, through selective placement of the port for the exhaust pipe draining the circulating cooking oil from the frying tank, which [one of ordinary skill in the art] could implement.” RMTA Reply 6.

In the claim chart section in the Revised Motion to Amend addressing the alleged support for the claim language at issue, Patent Owner cites to one paragraph of Dr. Abraham’s declaration filed with the Revised Motion to Amend. RMTA 9–10 (citing Ex. 2006 ¶ 64). In that paragraph, Dr. Abraham states that “[d]uring operation, the pump may run continuously to maintain the oil level in the frying tank at a substantially constant level, which may be completely full for closed frying tanks or at a level above the position of food inserted into the frying basket inserted into the frying tank (42) for open top systems.” Ex. 2006 ¶ 64. We are not persuaded by this statement, however, as Dr. Abraham does not identify support in the original disclosure for that understanding. For these reasons, we determine, by a preponderance of the evidence, that Patent Owner has not shown adequate support for the full scope of proposed substitute claim 12.

(b) “Vat Does not Enclose a Filter”

Petitioner argues that the original disclosure lacks adequate support for element 12G, which recites: “wherein the substantially hollow inner chamber of the vat does not enclose a filter for filtering the cooking oil in the cooking delivery system.” See RMTA Opp. 7–8. Petitioner argues that the Specification does not support this limitation and that Patent Owner’s “identified support is insufficient.” RMTA Opp. 7. Petitioner states, “[o]n

the contrary, as the Board already observed, Figs. 1, 3 show filter 10 at least partially *within* the vat 3, ([Dec. Inst.] 28; Keener [RMTA Decl. ¶¶] 118–19), meaning that [Patent Owner] seeks claims that would exclude its embodiments and introduce new matter.” *Id.* at 8.

In the Revised Motion to Amend, Patent Owner cites alleged support for elements 12F and 12G together. *See* RMTA 8–9. For the reasons below, we determine that Patent Owner has adequately shown support for element 12G, at least in Figures 1 and 3 and the disclosure of oil flow “through the oil filter 10 and into the oil vat 3.” Ex. 1001, 4:36–41, Figs. 1 & 3; Ex. 1002 at 15 (¶ 28), Figs. 1 & 3; Ex. 2003, 6:27–7:1, Figs. 1 & 3, *all cited at* RMTA 8. As an initial matter, although the parties do not expressly construe the term “enclose” in element 12G, we understand that term to mean surrounded on all sides—i.e., fully within. *See, e.g.*, Dec. Inst. 15.⁸ Accordingly, Petitioner’s admission that Figures 1 and 3 show filter 10 as at most “partially *within*” vat 3 supports that filter 10 is *not* fully within vat 3, as required. *Cf.* RMTA Opp. 7. Dr. Keener makes the same admission, stating that one of ordinary skill in the art would “understand that at least a portion of the filter 10 is also within the vat.” Kenner RMTA Decl. ¶ 119. Here, Figures 1 and 3 strongly support Patent Owner’s position. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1565 (Fed. Cir 1991) (“[U]nder proper circumstances, drawings alone may provide a ‘written description’ of an invention as required by § 112.”).

⁸ Unlike in the context of the meaning of “open top” in claim 4, in the context of element 12G, the alternative meaning of “enclose” as merely surrounded by a “wall, fence, etc.” does not appear applicable, and Petitioner does not assert that it is. *See* Dec. Inst. 15.

Petitioner also argues that element 12G includes a “negative limitation, which requires ‘the specification [to] describe[] a reason to exclude the relevant limitation.’” RMTA Opp. 7–8 (quoting *Inphi Corp. v. Netlist, Inc.*, 805 F.3d 1350, 1355 (Fed. Cir. 2015)). According to Petitioner, “[t]hat is lacking.” *Id.* at 8. The *Inphi* decision cited by Petitioner does not hold that a negative limitation *requires* a textual explanation of a reason to exclude the relevant aspect. In fact, the Federal Circuit squarely addressed that and held the opposite, stating that a textual explanation is merely *one possibility* of showing support for a negative limitation:

The *Santarus* court found that the patent-at-issue’s express recitation of (dis)advantages was sufficient to provide a reason to exclude the claim limitation at issue. That court did not hold, however, that such recitations were required to satisfy the written description requirements of § 112, paragraph 1 for negative claim limitations. Nor do we see any reason to now articulate a new and heightened standard for negative claim limitations.

Inphi Corp. v. Netlist, Inc., 805 F.3d 1350, 1356 (Fed. Cir. 2015) (discussing *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344 (Fed. Cir. 2012)).

Moreover, the *Inphi* decision indicates that reliance, at least in part, on a drawing may provide adequate support for a negative limitation. *See id.* at 1357 (“The Board’s review of the specification makes it clear that there was substantial evidence that Netlist possessed the negative claim limitation as of the filing date, as is evidenced through the Board’s reliance on the JEDEC standard, Table 2, and other various passages in the specification, *including Figure 9A.*” (emphasis added)). For these reasons, we determine, by a preponderance of the evidence, that Patent Owner has identified adequate support for element 12G in proposed substitute claim 12.

(c) Allegedly Combining Embodiments

Petitioner argues that the proposed substitute claims introduce new matter because proposed substitute claim 12 combines three distinct embodiments disclosed in the '539 patent. *See* RMTA Opp. 2–6; RMTA Sur-reply 3–4. Patent Owner opposes. *See* RMTA 15–16; RMTA Reply 1–5. Because we have already determined that Patent Owner has not satisfied the statutory and regulatory requirement as to the Revised Motion to Amend, we do not address this additional basis. *See SAS Inst. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (nonprecedential) (stating that the “Board need not address issues that are not necessary to the resolution of the proceeding,” such as “alternative arguments with respect to claims [the Board] found unpatentable on other grounds”).

5. Burden on Petitioner to Prove Unpatentability of Proposed Substitute Claims 12–20

For the reasons above, Patent Owner’s Revised Motion to Amend does not meet the requirements of 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121. Regardless, to provide a full record on the issues, we analyze below (*see* § II.D.5–8) whether Petitioner has met its burden of persuasion as to the alleged unpatentability of proposed substitute claims 12–20. *See* Rules of Practice To Allocate the Burden of Persuasion on Motions To Amend in Trial Proceedings Before the Patent Trial and Appeal Board, 85 Fed. Reg. 82,923, 82,924, 82,935 (Dec. 21, 2020) (codified at 37 C.F.R. pt. 42) (stating that “[a] petitioner bears the burden of persuasion to show, by

a preponderance of the evidence, that any proposed substitute claims are unpatentable” as to any motion to amend filed on or after January 20, 2021).

6. *Asserted Indefiniteness of Proposed Substitute Claims 12–20*

Petitioner argues that aspects of element 12I of proposed substitute claim 12 renders all the proposed substitute claims indefinite. *See* RMTA Opp. 24–25. Specifically, Petitioner states that “[a]ll substitute claims require a pump to ‘deliver cooking oil . . . ***in an amount that exceeds***’ any oil loss from drainage or absorption during cooking so as to ‘***raise*** the cooking oil level’ but also ‘***continuously maintain a substantially constant*** cooking oil level’ in the frying tank.” *Id.* at 24. First, according to Petitioner, “[t]here are no objective boundaries for the amount of oil delivered by the pump so that the oil level both rises and also remains ‘substantially constant.’” *Id.* (citing Keener RMTA Decl. ¶¶ 518–523). In support of the alleged “nonsensical” nature of this language, Petitioner highlights an argument by Patent Owner in the context of the Revised Motion to Amend that the “gradual and continuous rise and fall of oil level 12 in Boots does not contemplate maintaining the oil level in the frying tank at a constant level.” *Id.* at 24–25 (citing Abraham RMTA Decl. ¶ 94, *cited at* RMTA 24).

Second, Petitioner argues “there are no objective boundaries for the term ‘continuous[.]’” in the language at issue in that neither the claims nor the Specification “provides an objective time interval over which the oil level must be uninterrupted, leaving [one of ordinary skill in the art] asking whether the level must be uninterrupted for seconds, minutes, hours, days, or some other timeframe, for example.” Pet. Reply 25 (citing Keener RMTA Decl. ¶ 526). As noted by Petitioner, Patent Owner does not address the

indefiniteness arguments in the Reply in support of the Revised Motion to Amend. *See* RMTA Sur-reply 2. Regardless, for the reasons below, we determine that Petitioner has not demonstrated, by a preponderance of the evidence, that proposed substitute claim 12 is indefinite.

To satisfy the definiteness requirement of § 112, a patent’s claims must, when “viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014); *see also* Memorandum from Andrei Iancu, Andrew Hirshfield, and Scott R. Boalick to Members of the Patent Trial and Appeal Board (Jan. 6, 2021), *available at* <https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf> (applying *Nautilus* in the context of *inter partes* reviews).

Although a petitioner cannot assert indefiniteness of the original claims in the context of a petition (35 U.S.C. § 311(b)), a petitioner may assert indefiniteness of substitute claims proposed in a motion to amend. *See Amazon.com, Inc. v. Uniloc Luxembourg S.A.*, IPR2017-00948, Paper 34 at 5 (PTAB Jan. 19, 2019) (precedential) (“In contrast to § 311(b), the statutory provision providing a right to a motion to amend, 35 U.S.C. § 316(d), does not prevent us from considering unpatentability under sections other than § 102 and § 103 with respect to substitute claims.”), *aff’d Uniloc 2017 LLC v. Hulu, LLC*, 966 F.3d 1295 (Fed. Cir. 2020); *see also* TPG 73 (discussing the precedential decision in *Amazon.com* and stating that, in opposition to a motion to amend, a “petitioner may raise, and the Board may consider, other grounds of unpatentability, including 35 U.S.C. §§ 101 and 112, as to proposed substitute claims”).

As to the first argument, we are not persuaded that the proposed substitute claims are rendered indefinite based on the alleged conflicting requirements for a pump to simultaneously “raise the cooking oil level” while also “continuously maintain[ing] a substantially constant cooking oil level.” *See* RMTA Opp. 24–25. Underlying Petitioner’s argument is the assumption that the recited “cooking oil level” is a *single numerical value*, rather than a range (i.e., a maximum and minimum level). *See, e.g.*, RMTA Opp. 25 (stating that the claim language at issue “would require the pump to have two opposing effects on the cooking oil level: both raising it *and* keeping it constant” (citing Keener RMTA Decl. ¶ 521)). In the Decision on Institution, we preliminarily rejected a similar argument by Patent Owner, stating that we discern no reason to interpret “cooking oil level” so narrowly. *See* Dec. Inst. 32 n.10. For example, if the “cooking oil level” was a range and the specific numerical quantity was decreasing and near the lower end of the range, the “pump” may need to, as recited in element 12I, “raise the cooking oil level to continuously maintain a substantially constant cooking oil level in the interior chamber of the frying tank.”

Turning to the second argument, we are not persuaded that the term “continuously” in element 12I renders indefinite the proposed substitute claims. Instead, we view “continuously” as essentially the same as Petitioner: “uninterrupted in time.” RMTA Opp. 25 (citing Exs. 1056–1058; Keener RMTA Decl. ¶ 524). With that understanding, the system of proposed substitute claim 12 must include a “pump being activated” to “maintain a substantially constant cooking oil in the interior chamber” *at all times* during operation of the system. Contrary to Petitioner’s argument, this does not conflict with the possibility of the “pump” turning off and on—i.e.,

not operating all the time. *See, e.g.*, RMTA Opp. 25 (“But far from a system where the oil level is uninterrupted in time, the ’539 patent discloses a system where the oil level fluctuates because ‘the [fryer] vessel is *filled* with oil, and then it’s *emptied* of oil.’” (quoting Ex. 1047, 157:17–21) (citing *id.* at 152:24–157:16)). Indeed, as discussed above in this section, when viewing the “cooking oil level” *as a range*, the “level” may be “continuously maintain[ed]” even if the “pump” is operated intermittently. For these reasons, Petitioner has not demonstrated, by a preponderance of the evidence, that proposed substitute claim 12 is indefinite.

7. *Asserted Lack of Enablement of Proposed
Substitute Claims 12–20*

Petitioner argues that independent proposed substitute claim 12 lacks enablement for its full scope, thereby rendering unpatentable all of the proposed substitute claims. *See* RMTA Opp. 23–24. Specifically, Petitioner argues that the “substitute claims here are not enabled because they purport to cover fryers that the specification provides absolutely no guidance as to how to make or use” in that the “substitute claims cover a cooking oil level continuously maintained at *any level*, as long as that level remains ‘substantially constant.’” *Id.* at 23 (citing Keener RMTA Decl. ¶¶ 511–517). According to Petitioner,

[t]he amount of oil that must be delivered by the pump to “continuously maintain a substantially constant cooking oil level” depends on a number of factors, such as the size of the particular system and fryer vat at issue, the food type, volume of food being fried, food temperature, the volume of oil in use, and the oil temperature.

RMTA Opp. 23–24 (citing Keener RMTA Decl. ¶ 516). Petitioner contends that one of ordinary skill in the art “cannot reasonably predict how these

factors will influence the amount of oil needed across the full scope of the claims without undue experimentation.” *Id.* at 24 (citing Keener RMTA Decl. ¶ 516). As noted by Petitioner, Patent Owner does not address the enablement arguments in the Reply in support of the Revised Motion to Amend. *See* RMTA Sur-reply 2.

“To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *Trs. of Boston Univ. v. Everlight Elecs. Co.*, 896 F.3d 1357, 1362 (Fed. Cir. 2018). We consider certain factors to determine whether a disclosure satisfies the enablement requirement, including:

(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988); *see also Metall Zug AG v. Carl Zeiss Meditec AG*, IPR2020-00300, Paper 34 at 56–64 (PTAB June 17, 2021) (applying *In re Wands* to assess whether proposed substitute claims in a revised motion to amend in *inter partes* review lack enablement).

We are persuaded by Petitioner’s argument that proposed substitute claim 12 lacks enablement. As argued by Petitioner, the disclosures lack direction or guidance (factor 2 above) and lack working examples (factor 3 above) as to how to continuously maintain a cooking oil level at least as to a level other than completely full. *See* RMTA Opp. 23–24. This is supported by the testimony of Dr. Keener, who correctly states (1) that “[t]he only disclosure . . . about maintaining an oil level in the frying tank relates to the

tank being completely filled without even the presence of air” (Keener RMTA Decl. ¶ 513) and (2) that “[t]he specification provides no guidance or working examples about ways to sense the cooking oil level, how to determine when to add oil to the frying tank, and how to determine [how] much oil to add to the frying tank, how often to add oil” (Keener RMTA Decl. ¶ 515). Moreover, for the same reasons discussed above (*see* § II.D.4.c.2.a), the scope of proposed substitute claim 12 is broader than the disclosures and broader than claim 1 such that factor 8 weighs in favor of lack of enablement.

We are less persuaded that the other *Wands* factors strongly support lack of enablement. Although the factors listed by Petitioner and Dr. Keener do appear relevant to continuously maintaining a cooking oil level, we are not entirely persuaded of their unpredictability (factor 7) or that a high level of experimentation is needed (factor 1) given the relatively developed state of the art as to teachings addressing this claim language (factor 5⁹), the relatively low level of ordinary skill in the art (factor 6¹⁰), and the relatively simple nature of the claimed mechanical invention (factor 4). *See* Keener RMTA Decl. ¶ 516 (addressing these factors). Regardless, because the evidence as to factors 2, 3, and 8 weigh strongly in favor of Petitioner’s position, we determine that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 12 lacks enablement as to its full scope.

⁹ *See infra* § II.D.8.b.9 (addressing this limitation in the context of proposed substitute claim 12).

¹⁰ *See supra* § II.A.

8. Asserted Anticipation of Proposed Substitute Claims 12–20 by Van Den Berg and Asserted Obviousness of Proposed Substitute Claims 12–20 Based on Van Den Berg, Either Alone or in Combination with Lavi

Petitioner contends that Van Den Berg anticipates proposed substitute claims 12–20, or, in the alternative, renders obvious proposed substitute claims 12–20, either alone or in combination with WO 2003/086156 A3 to Lavi (Ex. 1036). RMTA Opp. 10–15; RMTA Sur-reply 5–6. Petitioner states that “[a]ll of the limitations in substitute claims 12–20 that are unchanged by the amendments are disclosed for the reasons presented in the Petition.” RMTA Opp. 10 (citing Pet. § IX.B; Keener RMTA Decl. ¶¶ 149–279). We first summarize aspects of Van Den Berg.

a. Van Den Berg

Van Den Berg discloses “deep-frying device having a closed system, wherein the frying fat or oil can be pumped round continuously from a feedstock reservoir” “to [a] deep-frying vessel . . . and back to the feedstock reservoir.” Ex. 1009, Abstract. Figures 1 and 2 are below:

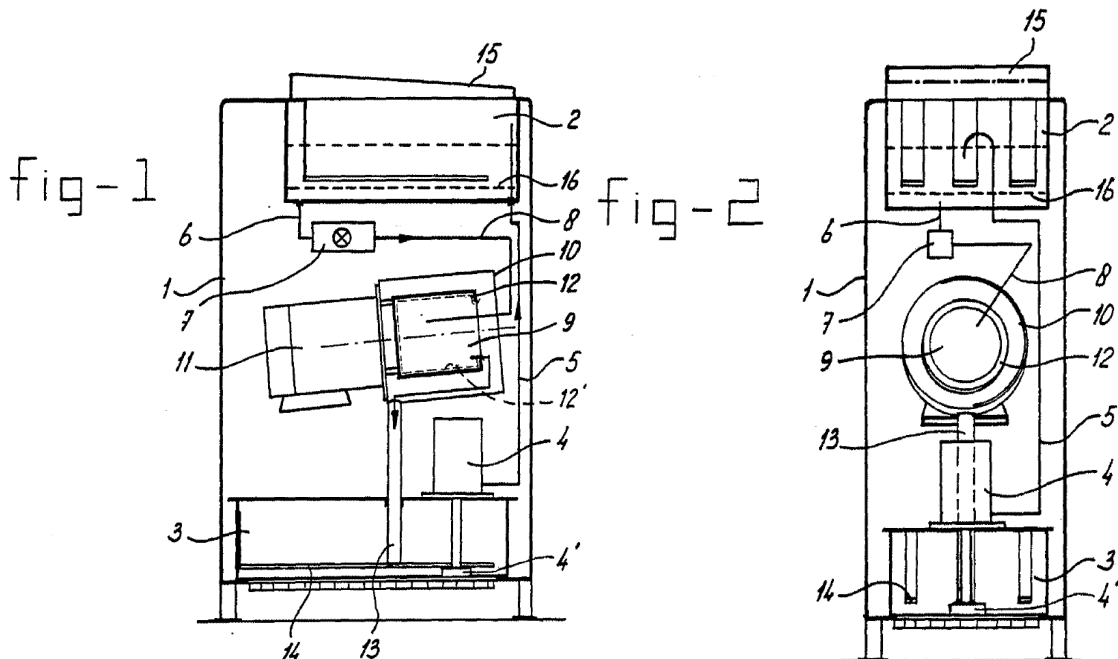


Figure 1 is a side view of a deep-frying device and Figure 2 is a front view of the same. Ex. 1009, 6:29–31. These Figures show, “at the top, a deep-frying vessel 2 provided with a heating element, and, underneath, a feedstock reservoir 3.” *Id.* at 7:1–3. In addition, “pump 4’ driven by a motor 4 is located in the feedstock reservoir 3” and “introduces melted fat or oil, via the pipe 5, into the deep-frying vessel 2.” *Id.* at 7:3–5.

Van Den Berg discloses that “[t]he level in the deep-frying vessel can be controlled by a level switch which cooperates, for example, with a valve 7 located between pipes 6 and 8, through which fat or oil can flow from the vessel,” and also discloses that “[t]he valve 7 can be such that, whether in conjunction with a level switch or not, it regulates the flow quantity so as to keep the level in the deep-frying vessel constant.” Ex. 1009, 7:8–12, 7:32–34. Via pipes 6 and 8, contaminated oil reaches centrifuge 9, where the oil is cleaned before being returned to feedstock reservoir 3 via discharge pipe 13. *Id.* at 7:16–20.

b. Proposed Substitute Claim 12

(1) Element 12A

In claim language maintained from the preamble of claim 1, proposed substitute claim 12 recites “[a] system for frying one or more food items, comprising.” RMTA 28 (Claims App.). To address this claim language, Petitioner states that “Van Den Berg discloses a ‘deep-frying device.’” Pet. 46 (citing Ex. 1009, code (57), 1:1, Fig. 1). We find, based on the complete record, that, to the extent this claim language is limiting, Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this aspect. Patent Owner does not present arguments for this claim language.

(2) Element 12B

In claim language maintained from claim 1, proposed substitute claim 12 recites “a frying tank having an interior chamber configured to receive the one or more food items.” RMTA 28 (Claims App.). To address this claim language, Petitioner identifies “deep-frying vessel 2” in Figure 1 of Van Den Berg as the “frying tank” and states that “the ‘deep-frying vessel 2’ with the ‘cover 15’ has an internal space that is enclosed during cooking.” Pet. 46 (citing Ex. 1009, 7:39–8:1 (“Finally, the deep-frying vessel *can be provided* with a cover 15.” (emphasis added))), Fig. 1; Keener Pet. Decl. ¶ 218). As noted by Petitioner, due to the *optional* presence of cover 15, Van Den Berg would satisfy this limitation under even Petitioner’s narrower proposed construction. Pet. 47. We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation. Patent Owner does not present arguments for this limitation.

(3) Element 12C

In claim language maintained from claim 1, proposed substitute claim 12 recites “the frying tank including a heater for heating cooking oil.” RMTA 28 (Claims App.). To address this claim language, Petitioner identifies heating element 16 and states that Van Den Berg “discloses ‘the heating element 16 in the deep-frying vessel comes into operation and *ensures that fat . . . in the vessel is heated.*’” Pet. 47 (citing Ex. 1009, 8:2–7, 4:39–5:2; Keener Pet. Decl. ¶¶ 222–223). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation. Patent Owner does not present arguments for this limitation.

(4) Element 12D

In element 12D, entirely added in the context of the Revised Motion to Amend, proposed substitute claim 12 recites: “wherein the frying tank is configured to receive a fry basket containing the one or more food items with the fry basket held at a predetermined position within the frying tank.” RMTA 28 (Claims App.). In the alternative to the alleged disclosure of this element by Van Den Berg alone, Petitioner argues that this limitation would have been obvious based on Van Den Berg alone, or in combination with Lavi. *See* RMTA Opp. 11–14. Specifically, Petitioner states that “[f]ry baskets held at a predetermined position were known before the ’539 patent, and [Dr. Abraham] admitted the same” and states that Lavi is one example. *See id.* at 12 (citing Keener RMTA Decl. ¶¶135–146 (citing Exs. 1036, 1038–1043); Ex. 1047, 142:5–143:4). As to Lavi, Petitioner focuses on the embodiment in Figure 4, identifying wire basket 42 and noting the disclosure that upper hook 45 is used to “immerse the wire basket 42, and the potato sticks therein.” *Id.* (quoting Ex. 1036, 7:3–6) (citing Ex. 1036, 6:15–21, Fig. 4; Keener RMTA Decl. ¶ 172). According to Petitioner, “Lavi’s ‘wire basket 42’ and ‘upper hook 45’ disclose a fry basket held at a predetermined position.” *Id.* (citing Keener RMTA Decl. ¶¶ 170–173).

Petitioner provides two alternative motivations to combine Van Den Berg with a fry basket as disclosed in Lavi. RMTA Opp. 12–14. First, Petitioner highlights disclosures in Van Den Berg as to frying “various types of products” including “fish” and contends that “the prior art recommended using a basket for frying fish.” *Id.* at 12–13 (quoting Ex. 1009, 6:10–19) (citing Ex. 1046 at 8; Ex. 1047, 188:12–16). According to Petitioner, “[b]ecause Van Den Berg would be used to fry smaller food products and

fish, [one of ordinary skill in the art] would have been motivated to combine a basket held at a predetermined position with Van Den Berg.” *Id.* at 13 (citing Keener RMTA Decl. ¶ 176).

Second, Petitioner asserts that one of ordinary skill in the art “would also have understood that baskets provide, in general, an easier way to insert, control, and remove food in a fryer” in that “[a] basket keeps food from sinking to the bottom of the frying tank, and prevents the food from contacting the sides of the frying tank,” which would “keep the frying tank clean longer.” RMTA Opp. 13 (citing Keener RMTA Decl. ¶ 177). Petitioner also contends there would have been a reasonable expectation of success in the proposed modification. *See id.* at 14 (citing Keener RMTA Decl. ¶¶ 164–169, 179). We focus the discussion below on the proposed combination of Van Den Berg and Lavi.

Patent Owner first argues that Lavi is nonanalogous art and thus would not have been considered by one of ordinary skill in the art to combine with Van Den Berg. *See* RMTA Reply 6–8. Specifically, Patent Owner contends that “Lavi is not implemented with an oil delivery, circulation, or replenishment system” but, instead, “the frying tank is manually filled and emptied for each cook cycle.” *Id.* at 7. Patent Owner argues that “Lavi is an individual use, counter-top appliance having dimensions of a consumer product for home use” whereas the ‘539 Patent “is directed to continuous use, industrial sized commercial frying systems.” *Id.*

“Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the

inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004), *quoted in Donner Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020) (applying the tests from *In re Bigio* in an appeal from an *inter partes* review).

Petitioner responds that Lavi is in the same field as the ’539 patent: “systems for frying food.” RMTA Sur-reply 10–11 (citing Keener RMTA Decl. ¶ 147). Petitioner also argues that Lavi is “pertinent to the problem that the substitute claims sought to solve”—the “problem of reducing the amount of oil in the food”—in that Lavi “sought to reduce ‘the amount of oil absorbed by the food articles during the deep-frying process.’” *Id.* at 11 (quoting Ex. 1036, 1:11–15, 1:18–22) (citing Keener RMTA Decl. ¶ 148).

We agree with Petitioner that both analogous art tests are satisfied here. As to the field of the invention, we agree that both Lavi and the ’539 patent are in the same field of endeavor: systems for frying food. *See* RMTA Sur-reply 10–11. As argued, the title, Field of the Invention, and preamble of the proposed substitute claims of the ’539 patent all support that view. *See* Ex. 1001, code (54) (“FRYING SYSTEM AND METHOD”), 1:21–23 (“The present invention relates to methods and systems for cooking, and more specifically to such methods and systems for frying.”); RMTA 28 (Claims App.) (proposed substitute claim 12 reciting a “system for frying one or more food items, comprising”). This aligns with the field of the invention in Lavi: “a cooking appliance and a cooking method particularly useful for deep-frying food articles, such as potatoes, chicken parts, and the like, in a cooking oil.” Ex. 1036, 1:4–6, *cited at* RMTA Sur-reply 10–11.

We also agree that Lavi is reasonably pertinent to the particular problem with which the inventor of the '539 patent was involved: reducing the amount of oil absorbed into food. *See* Ex. 1001, 1:27–41 (discussing how “[t]he oil present in the food items adds to the caloric content of the food items”), *cited at* Keener RMTA Decl. ¶ 148; Ex. 1036, 1:11–15, 1:18–22, *cited at* RMTA Sur-reply 11; Keener RMTA Decl. ¶ 148. Patent Owner’s argument identifies certain differences between Lavi and the '539 patent, but does not explain why these impact the analogous art analysis. *See* RMTA Reply 6–8.

Second, Patent Owner argues that “the fry basket of Lavi is not easily combinable with the frying system of [Van Den Berg] as doing so would require considerable modification to both the basket of Lavi and the frying tank of [Van Den Berg].” RMTA Reply 9 (citing Abraham RMTA Reply Decl. ¶ 18). Patent Owner contends the “oil delivery system” of Van Den Berg “would have to be re-designed to provide clearance for use of a fry basket affixable to the user side (right side in Fig. 1) of the frying tank” and that “[t]he level switch would also need to be moved or replaced with a different sensing element for control of the oil circulating pumps . . . to avoid interference with the fry basket when placed in the frying tank.” *Id.* at 9–10 (citing Abraham RMTA Reply Decl. ¶¶ 18–19).

The record does not support Patent Owner’s view that these alleged technical issues would have dissuaded one of ordinary skill in the art from combining Van Den Berg and Lavi. First, as noted by Petitioner, the need to perform *some* modification in the context of the combination does not necessarily undermine the motivation to combine. *See* RMTA Sur-reply 5 (citing *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1343

(Fed. Cir. 2020) (“[A] person of ordinary skill is also a person of ordinary creativity, not an automaton, so the fact that it would take some creativity to carry out the combination does not defeat a finding of obviousness.” (citation omitted))). In addition, as argued by Petitioner (*id.* at 12), “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference” (*Allied Erecting & Dismantling Co., Inc. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016)).

The record also does not support the existence of the alleged technical issues. For example, because oil delivery pipe 5 in Van Den Berg is shown far to the right side in deep frying vessel 2 (*see* Ex. 1009, Fig. 1), it is unclear why it would need to be “re-designed” to provide more “clearance” for a fry basket, as argued by Patent Owner. *See* RMTA Reply 9. Further, given that Van Den Berg does not actually indicate the location of the level switch, it is unclear why that structure would “need to be moved or replaced with a different sensing element.” *Id.* at 9–10; *see* Ex. 1009, 7:8–12 (discussing the level switch but not describing a location). Moreover, as discussed in the Decision on Institution, we do not understand Petitioner as relying on the embodiment of Van Den Berg that uses a level switch. *See* Dec. Inst. 40 (citing Ex. 1009, 7:32–34 (“The valve 7 can be such that, *whether in conjunction with a level switch or not*, it regulates the flow quantity so as to keep the level in the deep-frying vessel constant.” (emphasis added))). Dr. Abraham’s testimony largely restates Patent Owner’s argument and does not clarify or add support for these issues. RMTA Reply 9–10 (citing Abraham RMTA Decl. ¶ 82; Abraham RMTA Reply Decl. ¶¶ 18–19).

For the reasons above, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg as modified by Lavi discloses the subject matter of this limitation, that one of ordinary skill in the art at the time of the invention would have had reason to modify Van Den Berg based on Lavi, as proposed, and that the articulated reasoning is supported by rational underpinning. We need not address Petitioner’s alternative positions that this limitation is disclosed by Van Den Berg or that it would have been obvious based on Van Den Berg alone. *See Boston Sci.*, 809 F. App’x at 990 (stating that the “Board need not address issues that are not necessary to the resolution of the proceeding,” such as “alternative arguments with respect to claims [the Board] found unpatentable on other grounds”).

(5) Element 12E

In claim language maintained from claim 1, proposed substitute claim 12 recites “a cooking oil delivery system comprising.” RMTA 28 (Claims App.). To address this claim language, Petitioner highlights Van Den Berg’s disclosure of “a separating or filtering system, a feedstock reservoir, means for heating the oil, a pump and a pipe system which connects these parts to each other in such a way ***that oil can be fed from the feedstock reservoir into the deep-frying vessel and can be returned from the deep-frying vessel***, via the separating system to the feedstock reservoir.” Pet. 48 (quoting, with emphasis added by Petitioner, Ex. 1009, 1:1–8) (citing Ex. 1009, code (57); Keener Pet. Decl. ¶¶ 226–227). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation. Patent Owner does not present arguments for this limitation.

(6) Element 12F

In claim language maintained from claim 1, proposed substitute claim 12 recites “a vat including a substantially hollow inner chamber for holding cooking oil.” RMTA 28 (Claims App.). To address this claim language, Petitioner identifies feedstock reservoir 3 and highlights the disclosure in Van Den Berg that “oil can pass from the deep-frying vessel, via the centrifuge, to the *feedstock reservoir where it is kept* in a fluid state or its temperature is maintained.” Pet. 49 (quoting, with emphasis added by Petitioner, Ex. 1009, 8:18–24) (citing Keener Pet. Decl. ¶¶ 230). Petitioner argues that “Van Den Berg’s reservoir is not any less ‘substantially hollow’ than the ’539 patent’s ‘vat,’ which is shown to have a ‘filter 10,’ ‘heating element 5,’ and ‘pipe 7,’ inside it.” Pet. 50 (citing Ex. 1001, Figs. 1, 3; Keener Pet. Decl. ¶ 231). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation. Patent Owner does not present arguments for this limitation.

(7) Element 12G

In element 12G, entirely added in the context of the Revised Motion to Amend, proposed substitute claim 12 recites: “wherein the substantially hollow inner chamber of the vat does not enclose a filter for filtering the cooking oil in the cooking delivery system.” RMTA 28 (Claims App.).

As to this element, Petitioner states that “Van Den Berg discloses ‘a feedstock reservoir (3)’ (the ‘vat’) that does not enclose a ‘centrifuge 9’ (the ‘filter’).” RMTA Opp. 14 (citing Ex. 1009, 7:1–20; Fig. 1; Keener RMTA Decl. ¶ 190). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg

discloses this limitation. Patent Owner does not present arguments for this limitation.

(8) Element 12H

In claim language maintained from claim 1, proposed substitute claim 12 recites “a pump.” RMTA 28 (Claims App.). To address this claim language, Petitioner identifies pump 4’ in Figure 1 of Van Den Berg. Pet. 50 (citing Ex. 1009, 1:4–8, 7:1–8; Keener Pet. Decl. ¶¶ 234–236). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation. Patent Owner does not present arguments for this limitation.

(9) Element 12I

In element 12I, revised in the context of the Revised Motion to Amend, proposed substitute claim 12 replaces “desired” with “substantially constant” such that element 12I recites:

the pump being activated to deliver cooking oil from the vat to the interior chamber of the frying tank in an amount that exceeds the drainage of cooking oil from the interior chamber or the cooking oil that is removed from the interior chamber during the cooking process so as to raise the cooking oil level to continuously maintain a *substantially constant* cooking oil level in the interior chamber of the frying tank.

RMTA 28 (Claims App.) (emphasis added).

To address aspects of the original claim language, Petitioner states that “Van Den Berg discloses ‘*a pump* and a pipe system [such] that *oil can be fed from the feedstock reservoir into the deep-frying vessel.*’” Pet. 51 (quoting, with emphasis added by Petitioner, Ex. 1009, 1:4–8). Petitioner then notes the disclosure of a “regulating system [that] can fill the deep-frying vessel, by means of the pump, *as soon as the ‘frying operation’ is*

switched on and can then ensure a continuous feed to the deep-frying vessel from the feedstock reservoir.” *Id.* (quoting, with emphasis added by Petitioner, Ex. 1009, 3:22–26). In the Opposition to the Revised Motion to Amend, Petitioner also states that “Van Den Berg discloses a ‘continuous system’ wherein ‘the pump . . . ensure[s] a *continuous feed* to the deep-frying vessel from the feedstock reservoir . . . *so as to keep the level in the deep-frying vessel constant*’ as oil is ‘used up during the frying process.” RMTA Opp. 14–15 (quoting, with emphasis added by Petitioner, Ex. 1009, 3:22–30, 7:8–12, 7:28–34, 8:6–11) (citing Keener RMTA Decl. ¶¶ 197–203); *see also* Pet. 52 (citing Keener Pet. Decl. ¶¶ 240–241) (providing similar arguments in the Petition).

Patent Owner argues that this element “requires that the pump is ‘activated’ to add oil to the frying tank in order to ‘continuously maintain a substantially constant cooking oil level’” and that, in contrast, in Van Den Berg, “the pump is on continuously, and the regulating drain valve (7) . . . is operated to remove oil from the frying tank to control the oil level.” RMTA Reply 10 (citing Ex. 1047, 217:64–225:6, 223:25–225:6; Abraham RMTA Decl. ¶¶ 64, 66; Ex. 1009, 3:14–26, 7:8–12, 7:32–34). According to Patent Owner, “the drain valve of [Van Den Berg] is the component which is used to maintain the oil level, not the inlet pump as is required by the claims.” *Id.*

Petitioner responds that “Van Den Berg’s pump is ‘activated’ when the “frying operation” is switched on [at which point it] can then ensure a continuous’ feed of oil to the vessel” and that “it is immaterial that Van Den Berg’s pump may work in conjunction with a valve to control the oil level.” RMTA Sur-reply 6 (citing Keener RMTA Decl. ¶ 198).

We agree with Petitioner’s understanding of element 12I and are not persuaded by Patent Owner’s contrary argument that element 12I requires that the “pump” *alone* perform all of the recited functions. Here, the “pump” is *necessary* to performing the functions in element 12I in that, without the pump, oil *could not* be delivered from the vat to the interior chamber of the frying tank and the cooking oil level *could not* be raised to continuously maintain a substantially constant level. As argued by Petitioner, that *other structures* are *also* involved in performing those functions in Van Den Berg does not undermine that the pump is “activated” at startup to enable performance of those functions by the system overall, as required by element 12I. *See* RMTA Sur-reply 6 (“The presence of additional features that help control the oil level is irrelevant. *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1319 (Fed. Cir. 2009).”); *see Exergen Corp.*, 575 F.3d at 1319 (“The claim uses the term ‘comprising,’ which is well understood in patent law to mean ‘including but not limited to.’”). We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this limitation.

(10) *Conclusion*

For the reasons above, we determine, based on the complete record, that Petitioner has demonstrated, by a preponderance of the evidence, that proposed substitute claim 12 would have been obvious based on Van Den Berg and Lavi. We do not reach whether proposed substitute claim 12 is anticipated by Van Den Berg or would have been obvious based on Van Den Berg alone.

c. Proposed Substitute Claim 13

In claim language maintained from claim 2, proposed substitute claim 13 recites “wherein the cooking oil that is removed from interior chamber of the frying tank during the cooking process is removed through absorption of cooking oil into food items or the evaporation of cooking oil.” RMTA 29 (Claims App.). To address this claim language, Petitioner states that the removal processes recited are inherent features of a frying process such as that disclosed in Van Den Berg. Pet. 53 (citing Ex. 1009, 8:6–7; Ex. 1017 at 8, 15). Petitioner asserts that one of ordinary skill in the art “would know that this oil consumption is due to the absorption of cooking oil into the food or the evaporation of cooking oil, as both are well-known, natural occurrences in this field and necessarily occur during frying.” *Id.* (citing Keener Pet. Decl. ¶ 250).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See In re NuVasive*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (explaining that a patent owner waives an argument presented in the preliminary response if it fails to renew that argument in the patent owner response after trial is instituted). We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 13 would have been obvious based on Van Den Berg and Lavi.

d. Proposed Substitute Claim 14

In claim language maintained from claim 3, proposed substitute claim 14 recites “wherein at least a portion of the cooking oil that is removed from

the interior chamber of the frying tank during the cooking process is removed by drainage, and at least a portion of the drained cooking oil is reintroduced to the interior chamber of the frying tank through the cooking oil delivery system.” RMTA 29 (Claims App.). To address this claim language, Petitioner identifies passages in Van Den Berg showing that some of the melted fat or oil is removed via valve 7 (Pet. 54–55 (citing Ex. 1009, 7:8–20, 8:1–11; Keener Pet. Decl. ¶¶ 257–258)) and that pump 4 reintroduces the melted fat or oil to vessel 2 (Pet. 55–56 (citing Ex. 1009, code (57), 8:1–11, Fig. 1; Keener Pet. Decl. ¶¶ 261–263)).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 14 would have been obvious based on Van Den Berg and Lavi.

e. Proposed Substitute Claim 15

In claim language maintained from claim 4, proposed substitute claim 15 recites “wherein the frying tank has an open top through which one or more food items may be introduced into the interior chamber or removed from the interior chamber.” RMTA 29 (Claims App.). To address this claim language, Petitioner highlights optional cover 15 and states that one of ordinary skill in the art “would understand that Van Den Berg’s ‘deep-frying vessel 2’ would have an ‘open top’ so that food is placed inside it when ‘cover 15’ is removed.” Pet. 57 (citing Ex. 1009, 7:39–8:1; Keener Pet. Decl. ¶¶ 269–270). Petitioner adds that “[w]hen the ‘cover 15’ is off, the

‘open top’ of the ‘interior chamber’ is exposed, and food is added to the ‘interior chamber.’” Pet. 58 (citing Keener Pet. Decl. ¶¶ 269–272). In the alternative, Petitioner relies on the embodiment of Van Den Berg without cover 15 present. *See* Pet. 58 n.12. The version of Van Den Berg’s system with cover 15 satisfies this claim language under even Petitioner’s narrower proposed construction. *See* § II.B.

Thus, we find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 15 would have been obvious based on Van Den Berg and Lavi.

f. Proposed Substitute Claim 16

In claim language maintained from claim 5, proposed substitute claim 16 recites “wherein the frying tank has an open state in which one or more food items may be introduced into the interior chamber or removed from the interior chamber.” RMTA 29–30 (Claims App.). To address this claim language, Petitioner again highlights optional cover 15 and states that one of ordinary skill in the art “would understand that Van Den Berg’s ‘deep-frying vessel 2’ would have an ‘open state’ when ‘cover 15’ is opened, such as when the food is added or removed.” Pet. 59 (citing Ex. 1009, 7:39–8:1; Keener Pet. Decl. ¶¶ 279–281).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present

arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 16 would have been obvious based on Van Den Berg and Lavi.

g. Proposed Substitute Claim 17

In claim language maintained from claim 6, proposed substitute claim 17 recites “wherein the cooking oil delivery system further comprises: a first conduit in communication with the pump for conducting cooking oil from the vat to the interior chamber, and a second conduit to drain cooking oil from the interior chamber.” RMTA 30 (Claims App.). To address this claim, Petitioner identifies pipe 5 on the right side of Figure 1 of Van Den Berg as the “first conduit” and identifies pipes 6 and 8 together as the “second conduit.” Pet 60–62 (citing Ex. 1009, 7:3–5, 7:8–21, Fig. 1; Keener Pet. Decl. ¶¶ 287–290, 293–295).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 17 would have been obvious based on Van Den Berg and Lavi.

h. Proposed Substitute Claim 18

In claim language maintained from claim 7, proposed substitute claim 18 recites “wherein at least a portion of the cooking oil drained from the frying tank is reintroduced into the cooking oil delivery system.” RMTA 30 (Claims App.). To address this claim, Petitioner identifies passages in Van

Den Berg showing that some of the oil is removed from vessel 2 via pipes 6 and 8 via into feedstock reservoir 3 (Pet. 62–63 (citing Ex. 1009, 7:3–5, 7:8–12, 7:16–20, Fig. 1; Keener Pet. Decl. ¶ 301)) and that oil is pumped around continuously from feedstock reservoir 3 to vessel 2 and back to feedstock reservoir 3 (Pet. 63–64 (citing Ex. 1009, code (57), 8:3–24, Fig. 1; Keener Pet. Decl. ¶¶ 302, 304–306)).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 18 would have been obvious based on Van Den Berg and Lavi.

i. Proposed Substitute Claim 19

In claim language maintained from claim 8, proposed substitute claim 19 recites “wherein the pump is operated to continuously provide the frying tank with a quantity of cooking oil.” RMTA 30 (Claims App.). To address this claim, Petitioner highlights a disclosure in Van Den Berg that, “[w]hen the fat is melted, the pump 4’ can be switched on and the valve 7 can be opened. Circulation then begins, a relatively large quantity of melted fat or oil thus being circulated through the deep-frying vessel and through the centrifuge.” Ex. 1009, 8:8–11, *quoted at* Pet. 64–65 (citing Ex. 1009, 8:3–24, 7:28–31, 3:22–30; Keener Pet. Decl. ¶ 312). Petitioner also notes the disclosure that “the frying fat or oil can be pumped round continuously from a feedstock reservoir (3), in which the oil can be kept at the desired

temperature, to the deep-frying vessel (2) and back to the feedstock reservoir (3).” Ex. 1009, code (57), *quoted at* Pet. 65 (citing Keener Pet. Decl. ¶ 313).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 19 would have been obvious based on Van Den Berg and Lavi.

j. Proposed Substitute Claim 20

In claim language maintained from claim 11, proposed substitute claim 20 recites “wherein the pump is activatable for delivering cooking oil to raise the cooking oil level in the interior chamber of the frying tank when desired.” RMTA 31 (Claims App.). To address this claim, Petitioner identifies pump 4 in Van Den Berg as the “pump” and highlights a disclosure that “the regulating system can fill the deep-frying vessel, **by means of the pump, as soon as the ‘frying operation’ is switched on** and can then ensure a continuous feed to the deep-frying vessel from the feedstock reservoir.” Pet. 68 (quoting, with emphasis added by Petitioner, Ex. 1009, 3:22–30) (citing Ex. 1009, 7:8–12; 7:32–34). According to Petitioner, “Van Den Berg’s pump is therefore ‘activatable’ when the frying operation ‘is switched on’ (i.e. ‘when desired’).” *Id.* (citing Keener Pet. Decl. ¶¶ 335–336).

We find, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that Van Den Berg discloses this additional limitation. Patent Owner does not present

arguments addressing this claim. *See NuVasive*, 842 F.3d at 1381. We determine, based on the complete record, that Petitioner has demonstrated by a preponderance of the evidence that proposed substitute claim 20 would have been obvious based on Van Den Berg and Lavi.

9. Asserted Unpatentability of Proposed Substitute Claims 12–20 Based on Sugimoto and Based on Boots

Petitioner contends that Sugimoto anticipates proposed substitute claims 12–20, or, in the alternative, renders obvious proposed substitute claims 12–20, either alone or in combination with Lavi. RMTA Opp. 15–18; RMTA Sur-reply 7–9. In addition, Petitioner contends that Boots anticipates proposed substitute claims 12–20, or, in the alternative, renders obvious proposed substitute claims 12–20, either alone or in combination with Lavi. RMTA Opp. 18–22; RMTA Sur-reply 9–11. Because the ground based on Van Den Berg is dispositive as to all the proposed substitute claims, we need not reach the grounds based on Sugimoto or Boots. *See SAS*, 138 S. Ct. at 1359; *Boston Sci.*, 809 F. App'x at 990; *SK Hynix Inc. v. Netlist, Inc.*, IPR2017-00692, Paper 25 at 40 (PTAB July 5, 2018) (determining all challenged claims to be unpatentable and not addressing additional grounds).

III.CONCLUSION

Based on Patent Owner's non-contingent request, we grant in part Patent Owner's Revised Motion to Amend as to canceling claims 1–11. We deny, however, Patent Owner's Revised Motion to Amend as to substituting proposed claims 12–20. We determine that Patent Owner has failed to carry its burden as to the statutory and regulatory requirements as to the Revised Motion to Amend, and, to the extent Patent Owner did carry its burden, we

determine that Petitioner has proven, by a preponderance of the evidence, the unpatentability of proposed substitute claims 12–20.¹¹

IV. ORDER

For the reasons above, it is:

ORDERED that Patent Owner’s Revised Motion to Amend is *granted* as to canceling challenged claims 1–11;

FURTHER ORDERED that Patent Owner’s Revised Motion to Amend is denied as to proposed substitute claims 12–20; and

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

¹¹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding, 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. §§ 42.8(a)(3), (b)(2).

In summary:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–11	102	Campbell ¹²		
1–11	102	Van Den Berg		
1–11	102	Sugimoto		
Overall Outcome				

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	1–11
Substitute Claims Proposed in the Amendment	12–20
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	12–20
Substitute Claims: Not Reached	

¹² As explained above, we do not reach any of these rejections as claims 1–11 have been unconditionally cancelled.

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Patent 10,285,539 B2

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