

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EXTRACTIONTEK SALES LLC,
Petitioner,

v.

GENE POOL TECHNOLOGIES, INC.,
Patent Owner.

IPR2022-01011
Patent 9,144,751 B2

Before JEFFREY N. FREDMAN, CYNTHIA M. HARDMAN, and
JAMIE T. WISZ, *Administrative Patent Judges*.

HARDMAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner ExtractionTek Sales LLC requests *inter partes* review of claims 1–20 of U.S. Patent No. 9,144,751 B2 (“the ’751 patent,” Ex. 1001). Paper 1 (“Pet.”). Patent Owner Gene Pool Technologies, Inc. did not file a Preliminary Response.

Considering the arguments and evidence of record, we determine that the Petition demonstrates “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Thus, we institute an *inter partes* review.

The following preliminary findings of fact and conclusions of law are made solely for determining whether to institute review. Any final decision will be based on the full trial record.

A. *Real Parties in Interest*

The parties identify themselves as the real parties in interest. Pet. 2;¹ Paper 8, 1.

B. *Related Matters*

Petitioner states that the ’751 patent is among several patents asserted in *Gene Pool Technologies, Inc. v. ANM, Inc.*, Case No. 1:21-cv-01154-CL (D. Oregon). Pet. 2. According to Petitioner, this case was transferred to the United States District Court for the Central District of California and captioned *Gene Pool Technologies, Inc. v. ANM, Inc.*, Case No. 2:21-cv-08756-JWH-SHK, and was then consolidated into *Gene Pool Technologies,*

¹ Petitioner states that it has “two trade names: ExtractionTek Solutions and ExtractionTek Stainless.” Pet. 2.

Inc. v. Coastal Harvest, LLC, Case No. 5:21-cv-01328-JWH-SHK (C.D. California) (the “California Action”). *Id.* at 2–3.

As related matters, Patent Owner identifies the California Action and *Gene Pool Technologies, Inc. v. ANM, Inc.*, 2:21-cv-08756 (C.D. California), which it indicates is also consolidated into the California Action. Paper 8, 1.

Patent Owner identifies related U.S. Patent Nos. 9,682,333, 9,926,513, 10,595,555, and 10,974,165. *Id.* at 2.

The parties also identify IPR2022-00832, which concerns U.S. Patent No. 9,145,532, and IPR2022-00625, which concerns U.S. Patent No. 9,587,203. *Id.* at 2–3; Pet. 3; Paper 9.

C. The '751 Patent (Ex. 1001)

The '751 patent relates to systems and methods for extracting solute from source material. Ex. 1001, codes (54), (57), 1:7–8. According to the Specification, “many existing systems are configured to extract solute from a single container of source material,” and are thus “unable to simultaneously extract solute from materials stored in a plurality of distinct containers,” leading to a “bottleneck.” *Id.* at 1:11–18. Per the Specification, “many conventional extraction systems do not allow extraction to be performed in a single, closed loop process that reclaims solvent and re-introduces the reclaimed solvent in subsequent cycles of the system,” and manual reclaiming and reuse of solvent is inefficient. *Id.* at 1:25–31. The Specification identifies “a need for cooling reclaimed solvent to a liquid state prior to collecting the solvent,” because “[l]iquid solvent may be more efficiently stored” than gaseous solvent. *Id.* at 1:45–48.

Figure 1 of the '751 patent is reproduced below.

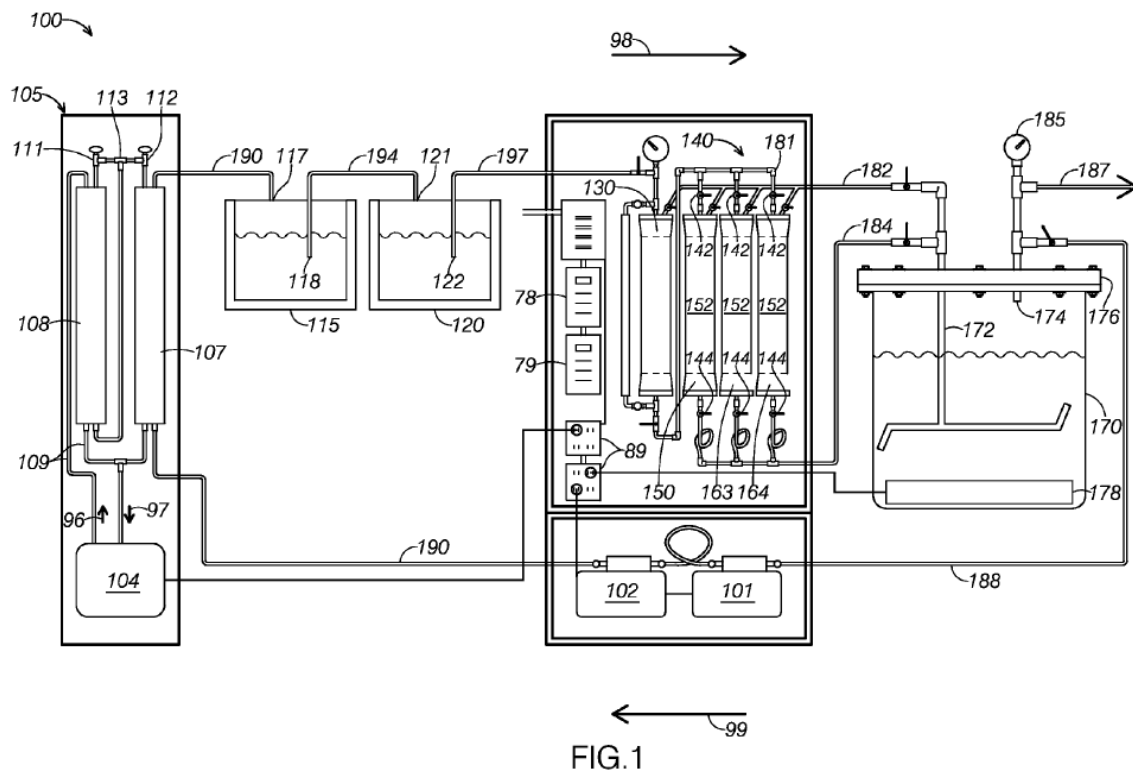


Figure 1, reproduced above, depicts a system for extracting solvent from a source material. *Id.* at 2:17–18. The system includes solvent source container 120, solvent compressor 130, detachable canister system 140, extract container 170, first pump 101, second pump 102, condensing system 105, and solvent collection container 115. *Id.* at 2:60–64.

The Specification explains that “[s]ource container output 122 is configured to direct solvent contained in solvent source container 120 to solvent compressor 130 via a solvent source line 197.”² *Id.* at 3:49–51. The Specification states that “solvent source line 197 may include an internal filter,” which “may be used to remove impurities in solvent prior to

² Throughout this Decision, we omit bolding of reference numbers in quotes from the challenged patent and prior art references.

introducing the solvent to detachable canister system 140.” *Id.* at 3:54–57.
“Solvent compressor 130 may be used to compress solvent to an extraction pressure, the extraction pressure selected to maintain solvent in a liquid state even when exposed to an elevated extraction temperature.” *Id.* at 4:36–39.

According to the Specification, “detachable canister system 140 allows a user to refill a selected canister as one or more of the other canisters remain closed and to continue extracting solute from contained source material.” *Id.* at 5:5–8. Additionally, “solvent compressor 130 is configured to communicate with each detachable canister individually,” so that “when one canister is attached and extracting, solvent compressor 130 may charge solvent for a second canister.” *Id.* at 5:1–4, 6:1–3.

The Specification describes an example in which butane is used to extract essential oils from lavender plants contained within a canister to produce an extract solution. *Id.* at 3:2–4. The extract mixture is heated “to a distilling temperature to produce an evaporated portion of the solvent in extract container 170,” where “[t]he distilling temperature . . . is greater than the boiling point of butane and less than typical essential oil boiling points.” *Id.* at 8:6–10. Condensing system 105 is configured to cool post-extraction solvent before the solvent reaches solvent collection container 115. *Id.* at 8:67–9:2.

D. The Challenged Claims

Petitioner challenges all twenty claims of the '751 patent. Claims 1, 15, and 18 are independent. Claim 1, reproduced below with bracketed letter and number designations added, is illustrative:

1. [1(a)] A system for extracting essential oil from a plant material, the system comprising:
 - [1(b)] a solvent source container configured to store a solvent;
 - [1(c)] a canister being:
 - in fluid communication with the solvent source container;
 - [1(d)] configured to contain the plant material; and
 - [1(e)] configured to receive solvent from the solvent container in its interior to produce an extract solution having the solvent and the essential oil extracted from the plant material;
 - [1(f)] an extract container in fluid communication with the canister, the extract container being configured to fluidly receive and collect the extract solution from the canister; and
 - [1(g)] a heating element thermally coupled with the extract container and configured to heat the extract container to a distilling temperature, the distilling temperature being greater than or equal to a boiling point of the solvent and below a boiling point of the essential oil to produce a post-extraction portion of the essential oil in the extract container, wherein the solvent source container is in fluid communication with the extract container.

Ex. 1001, 17:8–31.³

Independent claims 13 and 17 contain features similar to independent claim 1, with a few differences. For example, claim 13 recites that the canister is “detachably connected in fluid communication with the solvent

³ For ease of reference, we adopt the letter and number designations Petitioner uses in the Petition. *See* Pet. 14 n.1.

source container,” and includes a limitation directed to “a canister interface.” *Id.* at 18:51–52, 19:1–5. Claim 17 recites, among other things, “a solvent collection line” and “a coolant thermally coupled with the solvent collection line.” *Id.* at 20:8–17.

The challenged dependent claims add additional features. For example, claims 2–12 depend directly or indirectly from claim 1 and relate to features such as a solvent collection container, the solvent being butane, a pump, a solvent collection line, a solvent compressor, and a canister interface. *Id.* at 17:32–18:47.

Claims 14–16 depend directly or indirectly from claim 13 and relate to features such as the canister interface, a solvent compressor, and a canister heating element. *Id.* at 19:7–31.

Claims 18–20 each depend directly from claim 17 and relate to features such as a coolant line and pump, a coolant loop line, and a canister interface. *Id.* at 20:18–50.

E. The Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–20 are unpatentable on the following five grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	1–3, 6–9, 17	§ 103	Britt ⁴
2	18	§ 103	Britt, Joseph ⁵

⁴ Britt, U.S. Patent Pub. 2006/0041154 A1, published February 23, 2006 (“Britt,” Ex. 1005).

⁵ Joseph, U.S. Patent No. 9,132,363 B2, issued September 15, 2015 (“Joseph,” Ex. 1007).

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
3	4, 5, 10–12, 20	§ 103	Britt, Buese ⁶
4	13–16	§ 103	Buese, Britt
5	19	§ 103	Britt, Buese, Joseph

Pet. 5–6. Petitioner supports its contentions with the Declaration of Fritz Chess. Ex. 1002.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

We consider the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art as of the effective filing date of the challenged claims. Petitioner contends that one of ordinary skill in the art would typically have either:

- (1) a bachelor’s degree in mechanical engineering, chemical engineering, petroleum engineering, or an equivalent field; and some academic or industry experience working with, designing, or studying methods of extracting solute from a source material or similar devices; or
- (2) at least four years of industry experience working with, designing, or studying methods of extracting solute from a source material or similar devices.

Pet. 9 (citing Ex. 1002 ¶ 13).

Because Petitioner’s proposed level of ordinary skill in the art is undisputed on this record and is consistent with the cited prior art, we adopt it for purposes of this Decision.

⁶ Buese et al., U.S. Patent No. 9,242,189 B2, issued January 26, 2016 (“Buese,” Ex. 1006).

B. Claim Construction

In an *inter partes* review, we interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Petitioner asserts that “the claim terms should be construed according to their ordinary and customary meaning,” but also notes that certain terms “warrant clarification.” Pet. 10. For purposes of this Decision, we provide preliminary constructions for the terms “canister,” “extract container,” and “solvent source container.” At this stage we need not construe two additional terms Petitioner addresses (i.e., “essential oil” and “boiling point”), or any other term. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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)).

Any final written decision entered in this case may include final claim constructions that differ from the preliminary understanding of the claims set forth below, or from any discussion of claim scope provided in our analysis below. Any final claim constructions will be based on the full trial record.

1. “canister”

Petitioner contends that the claimed “canister” “serves as a repository of a source material,” and “[w]ithin the canister, the source material is exposed to a solvent to create an extract mixture.” Pet. 10 (citing Ex. 1001,

2:16–20). We adopt this understanding of the term “canister,” because it is supported by the cited portion of the Specification.

2. *“extract container”*

Petitioner contends that the claimed “extract container” “serve[s] as a repository for the extract mixture created in the ‘canister’, wherein the extract container is configured to evaporate the solvent to separate the solvent from the extract solution.” Pet. 10–11 (citing Ex. 1001, 2:20–25). We adopt this understanding of the term “extract container,” because it is supported by the cited portion of the Specification. *See also* Ex. 1001, 3:30–31 (noting that the extract container is configured to separate the solvent from the extracted solute).

3. *“solvent source container”*

Petitioner contends that the claimed “solvent source container” “serves as a repository for post-process solvent separated from the extract solution in the ‘extract container(s).’” Pet. 11 (citing Ex. 1001, 2:3–7, 4:30–40). We adopt this understanding of the term “solvent source container,” because it too is supported by the cited portions of the Specification.

C. *Alleged Obviousness*

As will be discussed, on this record Petitioner has established a reasonable likelihood that at least one of the challenged claims would have been obvious over the asserted prior art combinations.

1. *Legal Standards*

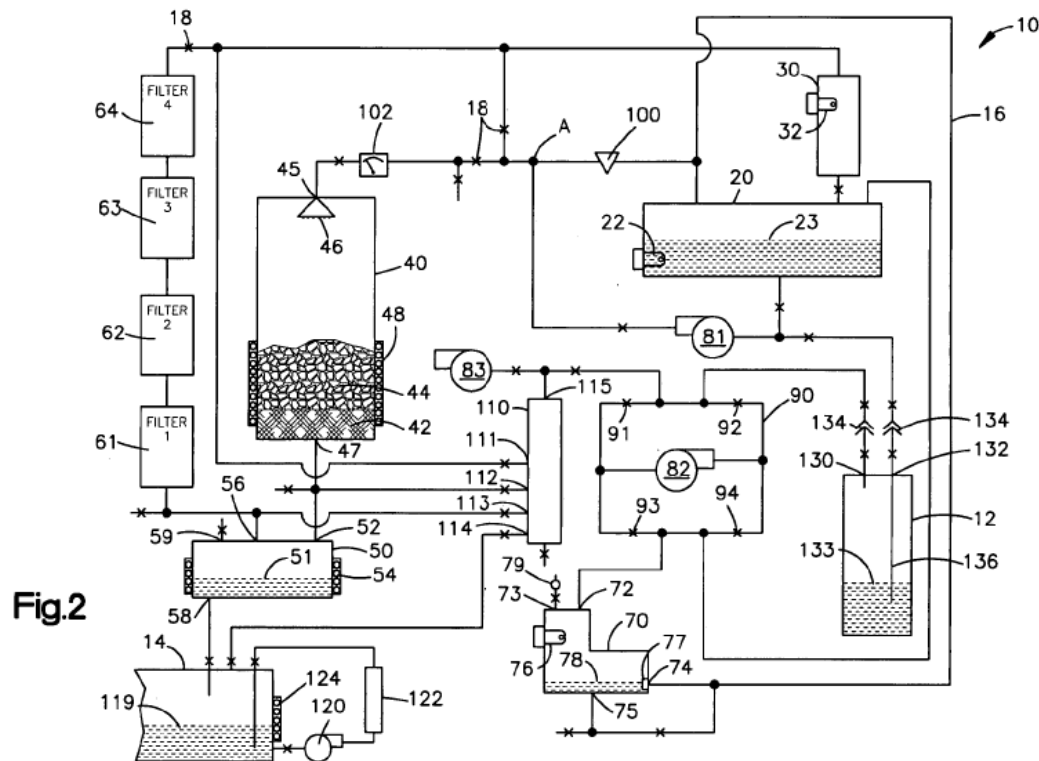
A claim is unpatentable as obvious “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the

claimed invention pertains.” 35 U.S.C. § 103; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any objective indicia of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An obviousness determination requires a reason to combine “accompanied by a reasonable expectation of achieving what is claimed in the patent-at-issue.” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

2. *Overview of Asserted Prior Art References*

a) *Britt (Ex. 1005)*

Britt, titled “Oil Extraction Method,” “relates to methods for extracting oils from oil bearing materials.” Ex. 1005, code (54), ¶ 2. We reproduce Britt’s Figure 2 below.



Britt's Figure 2, reproduced above, is a schematic diagram of an oil extraction system, which can be used to extract oil from plant materials.

Id. ¶¶ 5–6, 10.

During system operation, plant materials such as rose petals 44 are placed in extraction tank 40. *Id.* ¶¶ 13, 23. Solvent 23 is pumped from reservoir 20 through the rose petals to extract rose oil and yield a mixture of solvent and oil. *Id.* ¶¶ 12, 13. Distillation tank 50 receives the solvent/oil mixture from extraction tank 40. *Id.* ¶ 14. The mixture is heated “to a temperature that is high enough to evaporate the solvent, but low enough to avoid decomposing or evaporating the oil.” *Id.* ¶¶ 28, 14. Evaporated solvent vapor flows out of distillation tank 50, leaving the oil in distillation tank 50. *Id.* ¶¶ 15, 28. The solvent continues through filter tanks 61–64 to remove particles, water, and acid, and then flows through chiller 30 back to

the reservoir 20. *Id.* ¶¶ 15, 28. Chiller 30 has a cooling coil 22 for condensing solvent vapor into a liquid and maintaining the solvent in the liquid phase. *Id.* ¶ 12.

b) Buese (Ex. 1006)

Buese, titled “Continuous Extractor, Concentrator and Dryer,” relates “to a continuous immersion extraction system.” Ex. 1006, code (54), 2:18–19. Buese describes a unit that allows “the recycling of the extraction solvent, and the drying of the extracted plant material while all are fully contained within the unit.” *Id.* at 1:35–40. “The unit employs a plurality of extraction chambers such that one extraction chamber is removed and replaced without halting the extraction process in other extraction chambers.” *Id.* at 1:41–44. Buese describes the use of connectors, such as quick release connectors, for its system. *Id.* at 4:48–51.

Buese explains that “[t]he temperature at which the solvent is introduced into the extraction chambers can be controlled by employing a heater, chiller, or other heat exchanger in the solvent reservoir or the conduits situated prior to flow into the extraction chambers.” *Id.* at 5:10–14. Buese discloses that butane can be used as a solvent. *Id.* at 7:7–65.

c) Joseph (Ex. 1007)

Joseph, titled “Extraction System,” describes “[a]n extraction apparatus [that] comprises an extraction vessel configured to remove an extracted material from a source material in contact with a process fluid to form a mixture.” Ex. 1007, code (57). The apparatus “comprises a temperature regulator configured to permit re-circulation of a temperature regulation fluid and regulate the temperature of the process fluid.” *Id.* The temperature regulator can include “a chiller/heater 144 with temperature

regulation fluid circulation line 142 running through the extraction apparatus 100 to regulate temperature of the process fluid.” *Id.* at 6:56–63.

“[T]emperature regulation fluid circulation line 142 can run in close proximity to the process fluid circulation conduit [130],”⁷ and “can form a coil around the temperature regulation fluid circulation line 142.” *Id.* at 6:65–7:2.

3. *Analysis*

In its five obviousness grounds, Petitioner, supported by Mr. Chess, asserts that the cited prior art teaches or suggests each limitation of the challenged claims, and that a person of ordinary skill in the art would have had a reason to combine the cited prior art teachings to reach the claimed subject matter. Pet. 12–49; Ex. 1002 ¶¶ 61–78. We have considered the arguments and evidence of record and find that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that at least one of the challenged claims would have been obvious over the cited prior art.

a) *Ground 1 – Alleged Obviousness Over Britt*

In Ground 1, Petitioner argues that claims 1–3, 6–9, and 17 would have been obvious over Britt. Pet. 12–25; Ex. 1002 ¶¶ 61–62. For example, as to claim 1, Petitioner asserts that Britt discloses limitation 1(a), the preamble (“[a] system for extracting essential oil from a plant material, the system comprising:”), because it discloses “oil extraction systems” that can

⁷ Although in this sentence Joseph refers to “process fluid circulation conduit 142,” we understand this to be a typographical error. Ex. 1007, 6:65–7:2. Joseph elsewhere uniformly refers to the process fluid circulation line of Figure 1 using reference number 130, not 142. *See, e.g., id.* at 4:33–5:19.

“extract oil from an oil bearing material,” including plant materials such as rose petals.⁸ Pet. 14 (quoting Ex. 1005 ¶ 10). Regarding limitation 1(b) (“a solvent source container configured to store a solvent”), Petitioner cites Britt’s “reservoir 20,” which is “a tank that holds the solvent.” *Id.* (quoting Ex. 1005 ¶ 12); *see also id.* at 13 (arguing that Britt’s “reservoir” is analogous to claim 1’s “solvent source container”).

For limitation 1(c) (“a canister being: in fluid communication with the solvent source container;”), Petitioner cites Britt’s teaching that extraction tank 40 receives solvent from reservoir 20. *Id.* at 14 (citing Ex. 1005 ¶ 27); *see also id.* at 13 (arguing that Britt’s “extraction tank” is analogous to claim 1’s “canister”). Regarding limitation 1(d) (canister “configured to contain the plant material”), Petitioner cites Britt’s teaching that extraction tank 40 holds the plant material, such as rose petals. *Id.* at 14 (quoting Ex. 1005 ¶ 13). For limitation 1(e) (canister “configured to receive solvent from the solvent container in its interior to produce an extract solution having the solvent and the essential oil extracted from the plant material;”), Petitioner cites Britt’s teaching that solvent is sprayed into extraction tank 40 and flows through the petals to “yield a mixture of the solvent and the oil.” *Id.* (quoting Ex. 1005 ¶ 13).

Regarding limitation 1(f) (“an extract container in fluid communication with the canister, the extract container being configured to

⁸ Generally, a preamble does not limit a claim. *See Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Petitioner does not address whether the preamble is limiting. We need not decide whether it is limiting because Petitioner sufficiently demonstrates for purposes of institution that Britt discloses the preamble.

fluidly receive and collect the extraction solution from the canister; and”), Petitioner cites Britt’s disclosure of “distillation tank 50,” which “receives the solvent/oil mixture 51 through its inlet 52 from the extraction tank 40.” *Id.* at 14 (quoting Ex. 1005 ¶ 14); *see also id.* at 13 (arguing that Britt’s “distillation tank” is analogous to claim 1’s “extract container”).

For the portion of limitation 1(g) relating to a heating element and distilling temperature (“a heating element thermally coupled with the extract container and configured to heat the extract container to a distilling temperature, the distilling temperature being greater than or equal to a boiling point of the solvent and below a boiling point of the essential oil to produce a post-extraction portion of the essential oil in the extract container”), Petitioner cites Britt’s teaching that “distillation tank 50 is heated by its heating coil 54 to a temperature that is high enough to evaporate the solvent, but low enough to avoid decomposing or evaporating the oil.” *Id.* at 41–42 (quoting Ex. 1005 ¶ 28). Petitioner explains that a person of ordinary skill in the art would have appreciated that “evaporative separation of a solvent from an oil . . . is most efficient at the boiling point of the solvent,” and that “an oil decomposes at or near its own boiling point.” Pet. 15–16 (citing Ex. 1002 ¶ 61 (limitation 1(g))). As such, Dr. Chess opines that a person of ordinary skill in the art would have found it obvious “to separate the solvent from the solute by heating the extract container to a distilling temperature . . . greater than or equal to a boiling point of the solvent and below a boiling point of the essential oil.” Ex. 1002 ¶ 61 (limitation 1(g)); Pet. 15–16.

For the remaining portion of limitation 1(g) (“wherein the solvent source container is in fluid communication with the extract container”),

Petitioner explains that in Britt’s system, the solvent flows out of distillation tank 50, flows through chiller 30, and returns to reservoir 20. Pet. 15–16 (citing Ex. 1005 ¶ 28, Fig. 5).

After considering the arguments and evidence of record, we find that for purposes of institution, Petitioner has demonstrated a reasonable likelihood that Britt would have rendered claim 1 obvious. We have reviewed the arguments and evidence of record regarding claims 2, 3, 6–9, and 17 in Ground 1, and similarly find that for purposes of institution, Petitioner has demonstrated a reasonable likelihood that Britt would have rendered these claims obvious.⁹ See Pet. 16–25; Ex. 1002 ¶¶ 61–62.

b) Ground 2 – Alleged Obviousness Over Britt and Joseph

In Ground 2, Petitioner argues that claim 18 would have been obvious over Britt and Joseph. Pet. 25–29; Ex. 1002 ¶¶ 63–66. Claim 18 depends from independent claim 17, and further comprises a coolant line having a coiled portion and a coolant pump, wherein the solvent collection line recited in claim 17 includes a coiled portion that is engaged with the coiled portion of the coolant line. Ex. 1001, 20:18–24.

Petitioner relies on Britt for teaching the limitations of claim 17. See Pet. 28 (citing Ground 1 arguments for claim 17). Regarding claim

⁹ Claims 6 and 8, which each depend directly from claim 1, recite “the solvent collection container.” Claim 1, however, does not provide antecedent basis for this term. Petitioner changes the first recitation of “the solvent collection container” in claims 6 and 8 to “[a] solvent collection container.” See Pet. 17, 20. To the extent Patent Owner disagrees with this change, Patent Owner should timely provide its view on this claim language during trial.

limitation 18(a) (“The system of claim 17, further comprising: a coolant line defining a coiled portion;”), Petitioner asserts that Britt describes a chiller and chiller coils, with Joseph providing “a more in-depth description of a chiller.” *Id.* In particular, Petitioner cites Joseph’s chiller/heater 144 having a temperature regulator comprising a temperature regulation fluid circulation line 142 that “can form a coil.” *Id.* (quoting Ex. 1007, 6:56–7:2; citing Ex. 1002 ¶ 65 (limitation 18(a))).

Regarding claim limitation 18(b) (“a coolant pump, the coolant pump configured to pump a cooling fluid through the coolant line;”), Petitioner states that Joseph does not explicitly disclose a coolant pump, but teaches that “[t]he temperature regulator can be configured to permit recirculation of the temperature regulation fluid,” and it was known in the art that a pump is utilized for recirculation. Pet. 28–29 (citing Ex. 1007, 1:62–63). Petitioner also cites Britt’s teaching that its chiller and chiller coils are chilled by “[t]he heating/cooling system 200 [which] includes a heat pump.” *Id.* (citing Ex. 1005 ¶ 43; Ex. 1002 ¶ 65 (limitation 18(b))). In view of these teachings, Petitioner argues that a person of ordinary skill in the art would have found it obvious to include a coolant pump configured to pump a cooling fluid through the coolant line.

Finally, regarding limitation 18(c) (“wherein the solvent collection line defines a coiled portion, the coiled portion of the solvent collection line being engaged with the coiled portion of the coolant line”), Petitioner cites Joseph’s teaching that “the heat exchanger 146 can be a tube-in-tube configuration, allowing the process fluid to be in close physical proximity to the temperature regulation fluid, thereby allowing for the exchange of heat between the two fluids while maintaining their separation from one another,”

and that “[a]lternative configurations of the heat exchanger 146 could include . . . a coil design.” Pet. 29 (citing Ex. 1007, 7:19–26).

Based on the arguments and evidence of record, we find that for purposes of institution, Petitioner has demonstrated a reasonable likelihood that Britt and Joseph would have rendered claim 18 obvious.

c) Ground 3 – Alleged Obviousness Over Britt and Buese

In Ground 3, Petitioner argues that dependent claims 4, 5, 10–12, and 20 would have been obvious over Britt and Buese. Pet. 29–39; Ex. 1002 ¶¶ 67–69. We have reviewed the arguments and evidence of record and find that Petitioner has demonstrated a reasonable likelihood that Britt and Buese would have rendered dependent claims 4, 5, 10–12, and 20 obvious.

For example, dependent claim 4 recites, among other things, a supplemental extract container and a supplemental solvent collection container. Ex. 1001, 17:49–58. Petitioner cites Buese’s teaching regarding a redundancy of receivers and separation chambers, and asserts that a person of ordinary skill in the art would have included such redundant containers to scale the system capacity and enhance commercial opportunities. Pet. 32–34 (citing Ex. 1006, 4:55–59; Ex. 1002 ¶¶ 67–69).

For dependent claim 5, which recites that the solvent is butane, Petitioner cites Buese’s teaching that “the solvent can be . . . butane.” Ex. 1001, 17:59–60; Pet. 34 (citing Ex. 1006, 7:63–65; Ex. 1002 ¶ 69).

Dependent claims 12 and 20 recite a canister interface configured to removably support the canister. Ex. 1001, 18:42–47, 20:45–50. Petitioner cites Buese’s disclosure of multiple extraction chambers that can be

removed and exchanged. Pet. 38–39 (citing Ex. 1006, 4:19–24; Ex. 1002 ¶ 69).

Based on the arguments and evidence of record, we find that for purposes of institution, Petitioner has demonstrated a reasonable likelihood that Britt and Buese would have rendered dependent claims 4, 5, 10–12, and 20 obvious.

d) Ground 4 – Alleged Obviousness Over Buese and Britt

In Ground 4, Petitioner argues that claims 13–16 would have been obvious over Buese and Britt. Pet. 39–46; Ex. 1002 ¶¶ 71–74. For example, as to independent claim 13, Petitioner asserts that Buese discloses limitation 13(a), the preamble (“[a] system for extracting solute from a source material, the system comprising:”), because it discloses “[a] continuous unit for the extraction of a desired product from plant or other extractable material.”¹⁰ Pet. 30 (citing Ex. 1006, 1:35–36).

As to limitation 13(b) (“a solvent source container configured to store a solvent;”), Petitioner cites Buese’s solvent receiver 100. *Id.* (citing Ex. 1006, 6:17–20); *see also id.* at 32 (equating Buese’s “solvent receiver” with the claimed “solvent source container”).

As to limitation 13(c) (“a canister detachably connected in fluid communication with the solvent source container and configured to store the source material in its interior, the canister configured to receive solvent from the solvent source container in its interior to produce an extract solution

¹⁰ Consistent with our discussion above (*see* n.8), here we need not decide whether this preamble is limiting, because Petitioner sufficiently demonstrates for purposes of institution that Buese discloses the preamble.

including the solvent and the solute extracted from the source material;”), Petitioner cites Buese’s disclosure of an extraction chamber, which is in fluid communication with solvent receiver 100 and which can be “removed from the unit and replaced with an equivalent extraction chamber containing fresh plant material for extraction.” Pet. 40–41 (citing Ex. 1006, 2:31–34, 2:38–40, 2:52–53, 6:16–20); *see also id.* at 32 (equating Buese’s “extraction chamber” with the claimed “canister”).

As to limitation 13(d) (“an extract container in fluid communication with the canister, the extract container being configured to receive the extract solution from the canister;”), Petitioner cites Buese’s teaching that “[u]pon exit of the concentrated solution from extraction chambers . . . flow is directed through conduit 129 to the nozzle 130 within the separation chamber 140.” *Id.* at 41 (citing Ex. 1006, 3:64–67); *see also id.* at 32 (equating Buese’s “separation chamber” with the claimed “extract container”).

Regarding limitation 13(e) (“an extract container heating element thermally coupled with the extract container, the heating element configured to heat the extract solution received in the extract container to a distilling temperature . . . ;”), Petitioner cites Buese’s disclosure that the separation chamber can be heated to a vaporize solvent. *Id.* at 41 (citing Ex. 1006, 2:27–31, 3:8–9). Petitioner asserts that a person of ordinary skill in the art would have appreciated that

Buese effectively teaches [that] the optional heating element heats the separation chamber to a distilling temperature being greater than or equal to a boiling point of the solvent. It is effectively taught, since vaporization takes place above a boiling point, and that the boiling point is below that of the solute, because the extract remains in a liquid form.

Id. at 41. Petitioner further notes that Britt explicitly teaches that “[t]he distillation tank 50 is heated by its heating coil 54 to a temperature that is high enough to evaporate the solvent, but low enough to avoid decomposing or evaporating the oil.” *Id.* at 41–42 (citing Ex. 1005 ¶ 28; Ex. 1002 ¶ 73 (claim limitation 13(e))).

Finally, regarding limitation 13(f) (“a canister interface configured to removably support the canister in fluid communication with the solvent source container and the extract container and configured to detachably support a supplemental canister in fluid communication with the solvent source container and extract container.”), Petitioner points to Buese’s disclosure that

[u]pon removal of all, or nearly all of the solvent from extraction chamber 111, it is isolated from the system by closing valves 121 and 125, and removed from the system. Subsequently, an equivalent freshly loaded recycled extraction chamber 111 is placed in the system and has its valves aligned as are the valves of extraction chambers 112 and 113.

Id. at 38 (citing Ex. 1006, 4:19–24).

Based on the arguments and evidence of record, we find that for purposes of institution, Petitioner has demonstrated a reasonable likelihood that Buese and Britt would have rendered claim 13 obvious. We similarly find that in view of the arguments and evidence of record, Petitioner has demonstrated a reasonable likelihood that Buese and Britt would have rendered claims 14–16 obvious. *See* Pet. 42–46; Ex. 1002 ¶¶ 73–74.

e) Ground 5 – Alleged Obviousness Over Britt, Buese, and Joseph

In Ground 5, Petitioner argues that dependent claim 19 would have been obvious over Britt, Buese, and Joseph. Pet. 46–49; Ex. 1002 ¶¶ 75–78.

Claim 19 depends from independent claim 17 and further recites a coolant loop line having particular characteristics, including an expansion valve and coiled portions.¹¹ Ex. 1001, 20:25–44. Petitioner cites Joseph as showing the state of the art, including regarding the claimed details of the coolant loop line. Pet. 46–49; Ex. 1002 ¶¶ 75–78. We have reviewed the arguments and evidence of record and find that Petitioner has demonstrated a reasonable likelihood that Britt, Buese, and Joseph would have rendered dependent claim 19 obvious.

D. *Notices*

At this stage of the proceeding, the Board has not made a final determination regarding the patentability of any challenged claim. Thus, any conclusion reached in the foregoing analysis could change upon completion of the record.

The Board will deem forfeited any issue not raised in a timely response to the Petition, or as permitted in another manner during trial, even if discussed in this Decision.

Nothing in this Decision authorizes Petitioner, in a manner not otherwise permitted by the Board’s rules, to supplement the information pertaining to any ground advanced in the Petition.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted based on all grounds asserted in the Petition; and

¹¹ Claim 19 recites “the coiled portion of the coolant line,” but there does not appear to be antecedent basis for this recitation. Ex. 1001, 20:37. Patent Owner should timely provide its view on this claim language during trial.

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FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this Decision.

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