

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NESPRESSO USA, INC.,
Petitioner,

v.

K-FEE SYSTEM GMBH,
Patent Owner.

IPR2024-00299
Patent 11,554,910 B2

Before GRACE KARAFFA OBERMANN, JON B. TORNQUIST, and
JAMES J. MAYBERRY, *Administrative Patent Judges*.

MAYBERRY, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Petitioner, Nespresso USA, Inc., filed a Petition (Paper 7, “Pet.”) requesting *inter partes* review of claims 1–8 (“Challenged Claims”) of U.S. Patent No. 11,554,910 B2 (Ex. 1001, the “’910 patent”). Pet. 1.¹ Patent Owner, K-fee System GmbH, filed a Preliminary Response (“Prelim. Resp.”) to the Petition. Paper 8.

We have authority under 35 U.S.C. § 314 to determine whether to institute review. 35 U.S.C. § 314 (2018); *see also* 37 C.F.R. § 42.4(a) (2023) (permitting the Board to institute trial on behalf of the Director). To institute an *inter partes* review, we must determine that the information presented in the Petition shows “a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reasons set forth below, upon considering the Petition, Preliminary Response, and evidence of record, we institute an *inter partes* review.

B. *Real Parties-in-Interest*

Petitioner identifies itself and Nestlé USA, Inc., Nestlé Nespresso SA, and Société Des Produits Nestlé SA as the real parties-in-interest. Pet. 89.

Patent Owner identifies itself as the sole real party-in-interest. Paper 3, 1 (Patent Owner Mandatory Notices). Patent Owner adds that it “is a wholly owned subsidiary of Kruger GmbH & Co. KG, along with Kruger North America, Inc.” *Id.*

¹ Paper 7 is the corrected version of the Petition.

C. Related Matters

The '910 patent is the subject of litigation in the U.S. District Court for the Central District of California, in a case styled *K-Fee System GmbH v. Nespresso USA, Inc.*, Case No. 2:22-cv-09295-GW. Pet. 89; Paper 3, 1.

Patent Owner indicates that patents related to the '910 patent are challenged in IPR2022-01574, IPR2023-00485, IPR2023-00502, IPR2024-00239, IPR2024-00254, IPR2024-00257, and IPR2024-00304. Paper 3, 1. Patent Owner adds that the '910 patent is part of the same family of patents challenged in IPR2021-01221, IPR2021-01222, and IPR2021-01223. *Id.* Also, Patent Owner indicates that the present *inter partes* review proceeding “may be affected by a decision in *K-fee System GmbH v. Nespresso USA, Inc.*, No. 2022-2042, pending at the United States Court of Appeals for the Federal Circuit and involving U.S. Patent Nos. 10,858,176, 10,858,177, and 10,870,531. *Id.* at 2.

D. The '910 Patent

The '910 patent, titled “Portion Capsule Having an Identifier,” issued January 17, 2023, from an application filed July 11, 2017, and ultimately claims priority to three German patent applications, the earliest of which was filed July 22, 2010. Ex. 1001, codes (54), (45), (22), (30). The application that matured into the '910 patent is related, through a series of continuation and divisional applications, to application PCT/EP2011/003677, filed on July 22, 2011. *Id.* at code (60).

The '910 patent is directed “to a portion capsule for producing a beverage.” Ex. 1001, 1:11–12. We reproduce Figure 2A from the '910 patent below.

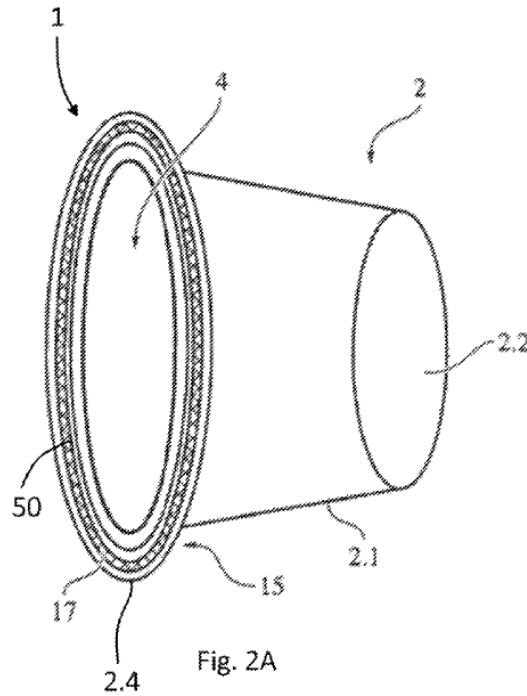


Figure 2A depicts “a portion capsule containing a barcode.” Ex. 1001, 7:31–32. Portion capsule 1 includes base element 2 with wall region 2.1 and bottom area 2.2. *Id.* at 8:41–43. Portion capsule 1 includes barcode 50 on the top surface of membrane 4. *Id.* at 8:43–45. Alternatively, barcode 50 could be placed on the edge region of flange 17, opposite membrane 4, as indicated by arrow 15. *Id.* at 8:50–52. “Such a barcode is read out by a detector 13 placed, for example, in the media chute. The barcode represents the identifier according to invention.” *Id.* at 8:52–54.

We reproduce Figures 16A and 17A from the '910 patent below.

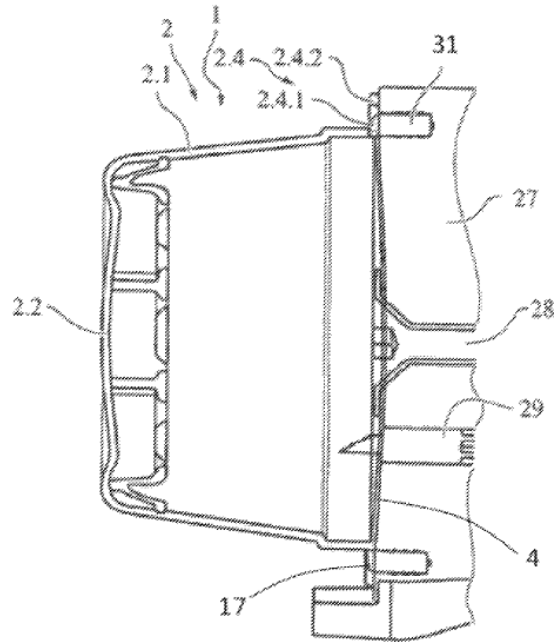


Fig. 16A

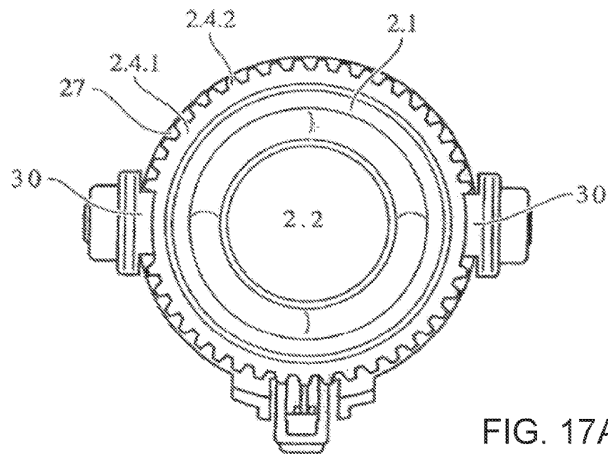


FIG. 17A

Figure 16A depicts “a portion capsule with a gearwheel placed in the brewing chamber,” and Figure 17A depicts an embodiment of the portion capsule of Figure 16A. Ex. 1001, 7:55–58. These figures show flange 17/edge region 2.4 that includes a structure for fit locking, friction locking and/or detection 2.4.2 in the outer area (that is, the outer circumference of flange 17/edge region 2.4). *Id.* at 10:13–18. In this example, the structure is a gearwheel that is formed by several recesses/bulges evenly arranged in the edge region. *Id.* at 10:18–22. As

seen in Figure 17A, portion capsule 1 is held by two holding arms 30, which interact with the gearwheel structure. *Id.* at 10:35–37. Without this structure, the holding arms do not hold the portion capsule and the portion capsule is not inserted into the brewing chamber. *Id.* at 10:39–42.

We reproduce Figure 19 below.

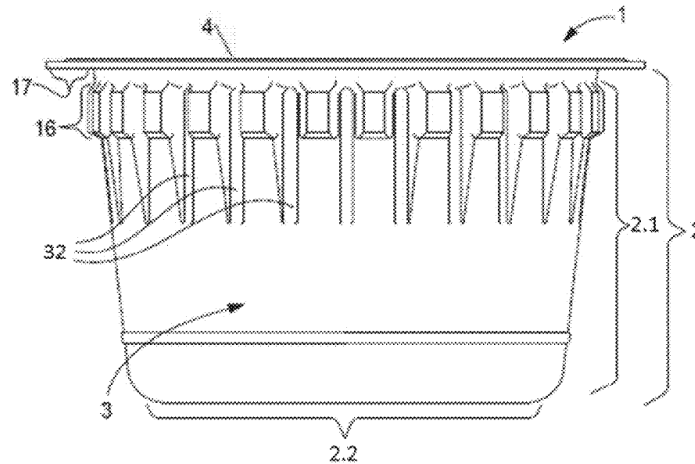


Fig.19

Figure 19 depicts a schematic of a different embodiment of a portion capsule. Ex. 1001, 11:18–20. Portion capsule 1 includes frustoconically-shaped base element 2, which encloses cavity 3 sealed with membrane 4. *Id.* at 11:24–27. Base element 2 includes flange 17. *Id.* at 11:34–35. The wall region of base element 2 includes grooves 32. *Id.* at 11:62–12:2; *see also id.* at Fig. 21 (showing convexities 34, which are in the inside cavity and formed by grooves 32 (*id.* at 12:44–47)).

E. Illustrative Claim

Of the Challenged Claims, claims 1 and 8 are independent claims.

We reproduce claim 1, which is representative, below.

1. A portion capsule for making a beverage and having an individualization identifier capable of being detected by a sensor/detection system for determining whether the portion

capsule is suitable for a specific coffee machine, the portion capsule comprises:

[1.a]² a base element with a cavity, in which a raw beverage material is provided, the base element is deep drawn, made of metal, and [1.b] has an open upper end portion, a closed bottom, and a wall that extends from the open upper end portion to the closed bottom, the wall is rotationally symmetrical about a central longitudinal axis of the base element, the wall includes an outside surface and an inside surface that faces the raw beverage material, the base element has a first height that is defined between the open upper end portion and the closed bottom;

[1.c] a flange extending outwardly from the wall at the open upper end portion of the base element, the flange having a top side and an opposing bottom side, [1.d] the individualization identifier is located on the bottom side of the flange;

[1.e] a plurality of vertically oriented grooves arranged on the outside surface of the wall, [1.f] the plurality of vertically oriented grooves each have a radiused top end and a radiused bottom end and are spaced a distance between the flange and the closed bottom, [1.g] the plurality vertically oriented grooves cover 20% to 80% of the wall between the flange and the closed bottom;

[1.h] a plurality of vertically oriented ribs arranged on the inside surface of the wall;

[1.i] a barrier sheet to prevent moisture or aroma from escaping out of the portion capsule;

[1.j] a cover comprising a metal foil that is sealed to the top side of the flange, the cover having a central region and a perimeter, [1.k] the cover is bowed upwardly to a second height at the central region relative to the perimeter, [1.l] the second height of the cover is less than the first height of the base element, [1.m] the cover being dimensioned and configured to provide a sealing area that is configured to bear against a seal of the specific coffee machine, the cover being dimensioned and

² The bracketed reference numerals correspond to Petitioner's identification of limitations of the independent claims. *See* Pet. 95–96; *see also id.* at 96–98 (providing reference numerals for independent claim 8).

configured to provide a piercing area that is configured to be pierced by a mandrel of the specific coffee machine, the piercing area being laterally offset from the central longitudinal axis of the base element;

[1.n] wherein the portion capsule is free of a filter inside of the cavity; and

[1.o] wherein the individualization identifier:

i) comprises at least two areas which differ in their optically detectable reflection properties;

[1.p] ii) includes an optically detectable, machine readable, repeat pattern;

[1.q] iii) encodes information used by the specific coffee machine to individualize the portion capsule so the portion capsule is permitted to be used with the specific coffee machine;

[1.r] iv) encodes information used by the specific coffee machine to activate a pump of the specific coffee machine;

[1.s] v) encodes information used by the specific coffee machine to control a beverage-making process, which includes setting a quantity of hot water, pressure of the hot water, and/or a temperature of the hot water;

[1.t] vi) is further provided on the outside surface of the wall of the base element; and

[1.u] vii) is compared to a stored reference to determine if the portion capsule is suitable for the specific coffee machine.

Ex. 1001, 12:52–13:53. Claim 8 recites the same subject matter as claim 1, except claim 8 does not include limitation 1.t. *Compare id.* at 14:5–15:6, *with id.* at 12:52–13:53.

F. Prior Art and Asserted Grounds

Petitioner asserts that the Challenged Claims are unpatentable on the following ground:

Claim(s) Challenged	35 U.S.C. § ³	References/Basis
1–8	103(a)	Yoakim, ⁴ Jarisch '929, ⁵ Rapparini, ⁶ Rossi ⁷

Pet. 21.

Petitioner relies on the declaration testimony of Michael Jobin to support its unpatentability contentions. *See* Ex. 1003 (providing the Declaration).

The following subsections provide brief descriptions of the asserted prior art references.

1. Yoakim

Yoakim, titled “Method for Preparing a Beverage or Food Liquid and System Using Brewing Centrifugal Force,” published September 23, 2010, from an application filed May 7, 2010. Ex. 1004, codes (54), (43), (22). Yoakim “relates to a capsule, device, system and method for preparing a

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 296–07 (2011), took effect on September 16, 2011. The changes to 35 U.S.C. §§ 102 and 103 in the AIA do not apply to any patent application filed before March 16, 2013. Because neither party, at this juncture, disputes that the application for the patent at issue has an effective filing date before March 16, 2013, we refer to the pre-AIA version of the statute. *See* Pet. 25 (arguing that the earliest possible priority date for the '910 patent is July 22, 2011).

⁴ US 2010/0239734 A1, published September 23, 2010 (Ex. 1004, “Yoakim”).

⁵ US 2013/0064929 A1, published March 14, 2013 (Ex. 1006, “Jarisch '929”). Petitioner includes “929” when referring to Exhibit 1006, to distinguish it from Exhibit 1005, where Jarisch is also the first named inventor. We adopt this convention for our Decision.

⁶ US 2012/0269933 A1, published October 25, 2012 (Ex. 1008, “Rapparini”).

⁷ WO 2010/099806 A1, published September 10, 2010 (Ex. 1041, “Rossi”).

beverage or food liquid from a food substance which is brewed or extracted by using centrifugal forces exerted on a capsule which contains the substance.” *Id.* ¶ 2.

Yoakim’s device identifies different capsules and operates its beverage device based on predetermined parameters for the identified capsule. Ex. 1004 ¶ 25; *see, e.g., id.* ¶ 192 (“[T]he control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according the capsule which is inserted in the device.”). “A recognition system uses a code on the capsule and recognized by the device, such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof.” *Id.* ¶ 192.

We reproduce Yoakim’s Figure 1, below.

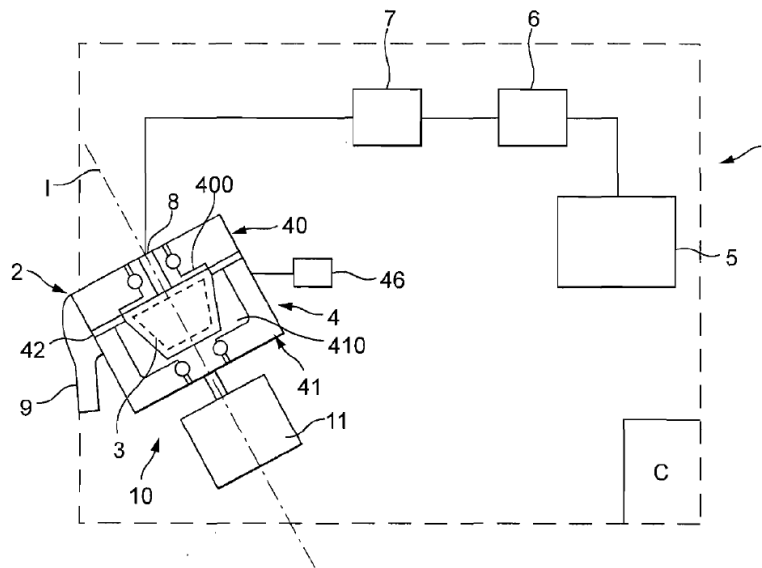


FIG. 1

Figure 1 depicts “a schematic representation of [Yoakim’s] system.” Ex. 1004 ¶ 30. System 1 includes device 2 and capsule 3, with device 2 having brewing module 4, which receives capsule 2 for brewing. *Id.* ¶ 180. After

brewing, the capsule is removed and discarded. *Id.* Module 4 is connected to water reservoir 5, with the water delivered to module 4 by low pressure pump 6. *Id.* Water heater 7 heats the water to the desired temperature for the capsule. *Id.*

2. *Jarisch '929*

Jarisch '929, titled “Support and Capsule for Preparing a Beverage by Centrifugation, System and Method for Preparing a Beverage by Centrifugation,” published March 14, 2013, from an application filed May 12, 2011. Ex. 1006, codes (54), (43), (22). Jarisch '929 “relates in particular to coding supports adapted to store information related to a capsule, capsules associated with/or embedding coding supports, reading and processing arrangements for reading and using such information for preparing a beverage.” *Id.* ¶ 1.

Jarisch '929's Figure 2 is relevant to our analysis and is reproduced below.

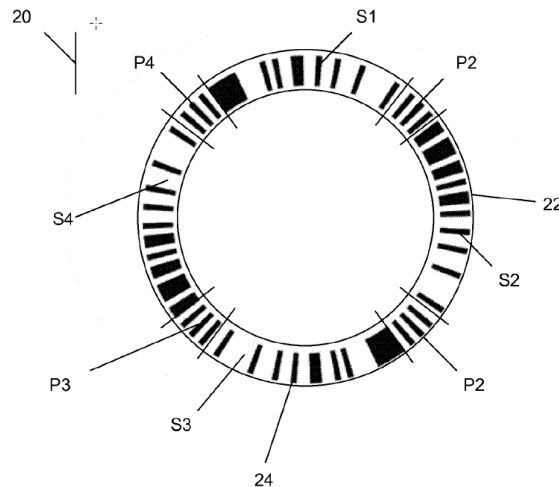


Fig. 2

Figure 2 depicts support 20, which is part of the beverage capsule. Ex. 1006 ¶ 51. Support 20 includes “section 22 on which at least one sequence S1,

S2, S3, S4 of symbols 24 is represented so as that each symbol is sequentially readable, by a reading arrangement of an external device,” with “each sequence coding a set of information related to the capsule.” *Id.* The information may include “information related to parameters for preparing a beverage with the capsule,” “information for retrieving locally and/or remotely parameters for preparing a beverage with the capsule,” “information related to the manufacturing of the capsule,” or “information for retrieving locally and/or remotely information related to the manufacturing of the capsule.” *Id.* ¶¶ 52–55. “The sequence is preferably repeated along the circumference in order to ensure a reliable reading.” *Id.* ¶ 68.

“The support can be part of, or be formed directly on, the body of the capsule. The support can also be disposed on the bottom side of the rim of the capsule.” Ex. 1006 ¶ 64; *see, e.g., id.* ¶ 90 (“[C]apsule 7 may comprise a support mounted having at least one sequence 70, and mounted on the bottom side 72 of the rim 73 of the capsule.”).

3. *Rossi*

Rossi, titled “System of Edible-Product Making Machine and Load Element and Process for Control of Machine,” published September 10, 2010. Ex. 1041, codes (54), (43). Rossi “relates to a system of an edible-product making machine and a load element [(e.g., a capsule containing coffee powder)], and a process for controlling the operation of the edible-product making machine.” Ex. 1041, 1.⁸

⁸ Consistent with Petitioner, we reference the pagination for the WO document, rather than the exhibit. For example, we cite to “Ex. 1041, 1” for page 1 of the publication, which appears on page 3 of the exhibit.

Relevant to our analysis here, Rossi states that using the wrong capsule or operating conditions “may cause the machine to malfunction and can prejudice the safety and integrity of the machine and the may harm the user.” Ex. 1041, 3. To address this and other concerns, Rossi discloses a process for controlling the operation of an edible-product making machine, with a first step of recognizing an identifying element and a validation element, a second step of validating the validation element, and a third step of operating the machine only if the identifying element is recognized and the validation element is validated. *Id.* at 4. Rossi explains that

The use of an identification element and recognition means, as well as the step of recognising the identification element allows the machine to recognise the load element and, hence, its contents. This in turn enables the machine to automatically select the operating conditions appropriate for that specific load element. This prevents the user from having to verify the contents of the load element, and from having to know and select the operating conditions appropriate therefor. It also helps to prevent the safety hazard associated with the use of inappropriate operating conditions.

Id. at 5.

Rossi’s machine includes a recognizing means, such as infrared barcode reader 7. Ex. 1041, 11. The reader is connected to checking means 8, which is stored in control unit 9. Checking means 8 allows the machine to be activated only if barcode reader 7/checking means 8 recognizes identification barcode 4 and validation barcode 5. *Id.*

4. *Rapparini*

Rapparini, titled “Filtering and Permeable Container for Substances Suitable for the Preparation of Beverages,” published October 25, 2012, from an application filed October 19, 2010. Ex. 1008, codes (22), (43), (54). Rapparini discloses a portion capsule that holds substances for preparing

beverages such as coffee. *Id.* ¶ 8. We reproduce below Figure 6 bis of Rapparini.

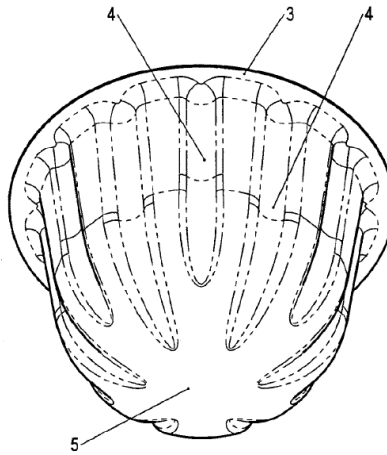


FIG. 6 bis

Figure 6 bis illustrates a 3D view of Rapparini’s container, including annular rim 3 and longitudinal stiffening ribs 4 having variable lengths along the surface of the body of the container. Ex. 1008 ¶¶ 9–10. In particular, “long and short ribs are alternated along the surface of the body,” with “long ribs extending at least partially in the bottom region of the container alternated to short ribs extending only along the side region of the container.” *Id.* ¶ 11.

II. ANALYSIS

A. *Legal Standards*

Section 103(a) forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of 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) when available, evidence such as commercial success, long felt but unsolved needs, and failure of others.⁹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); see *KSR Int’l Co.*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.”). The Supreme Court in *Graham* explained that these factual inquiries promote “uniformity and definiteness,” for “[w]hat is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context.” 383 U.S. at 18.

The Supreme Court made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR Int’l Co.*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. To support this conclusion, however, it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness additionally requires that a person of ordinary skill at the time of the invention “would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.” *Id.*

⁹ The parties do not direct us to any objective evidence of non-obviousness at this stage of the proceeding.

“[O]bviousness must be determined in light of *all the facts*, and . . . a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine” teachings from multiple references. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (emphasis added); *see also PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1196 (Fed. Cir. 2014) (“The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact.”). As a factfinder, we also must be aware “of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR Int’l Co.*, 550 U.S. at 421.

For institution, “[t]he ‘reasonable likelihood’ standard is a somewhat flexible standard that allows the Board room to exercise judgment.” Patent Trial and Appeal Board Consolidated Trial Practice Guide 53 (Nov. 2019), *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

B. Level of Ordinary Skill in the Art

The level of 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). “This reference point prevents . . . factfinders from using their own insight or, worse yet, hindsight, to gauge obviousness.” *Id.* Factors pertinent to a determination of the level of ordinary skill in the art include: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of workers active in the field. *Env’t Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–97 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or

more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Okajima*, 261 F.3d at 1355.

Petitioner contends that a person of ordinary skill in the art would have had “a bachelor’s degree in engineering plus five years of experience in design of mechanical beverage systems, or similar products, and experience with sensors for recognizing an identifier.” Pet. 16 (referencing Ex. 1003 ¶ 40; IPR2022-01574, Paper 12, 15).

Patent Owner does not dispute Petitioner’s characterization of the level of ordinary skill in the art of the ’910 patent.

For purposes of this Decision, based on the prior art, the sophistication of the technology at issue, and Mr. Jobin’s Declaration testimony, we adopt Petitioner’s unopposed definition of the level of ordinary skill. The ’901 patent, as well as the prior art of record, includes systems that use identifiers on a capsule to control the operation of a beverage machine. *See, e.g.*, Ex. 1001, 1:28–34 (“[T]he present invention . . . has an identifier, which allows to individualize the respective portion capsule.”); Ex. 1004 ¶ 25 (discussing the system’s “identification means”); Ex. 1006 ¶ 1 (“The present invention relates in particular to coding supports adapted to store information related to a capsule, capsules associated with/for embedding coding supports, reading and processing arrangements for reading and using such information for preparing a beverage.”); Ex. 1041, code (57) (“The process for controlling the operation of an edible-product making machine [includes] . . . recogni[zing] an

identifying element”). *Cf. Nespresso USA, Inc. v. K-Fee Sys. GmbH*, IPR2022-01574, Paper 29, 19–20 (PTAB April 10, 2024) (finding, for a related patent claiming similar subject matter, that the level of ordinary skill in the art is “is a bachelor’s degree in engineering plus five years of experience in design of mechanical beverage systems, or similar products, as well as experience with sensors for recognizing an identifier”).

C. Claim Construction

We construe each 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, claim terms are generally given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc) (“We have frequently stated that the words of a claim ‘are generally given their ordinary and customary meaning.’” (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996))).

Petitioner contends that it “applies, for purposes of this Petition, the apparent interpretations that [Patent Owner] offered in its infringement contentions.” Pet. 16 (referencing Ex. 1049). Petitioner then provides certain examples. *Id.* at 16–20. Petitioner concludes “that for this proceeding, no claim terms require formal construction.” *Id.* at 20 (referencing Ex. 1003 ¶¶ 153–156).

Patent Owner does not address claim construction.

We agree with Petitioner that, for the purposes of this Decision, we need not expressly construe any claim terms to resolve the parties’ disputes. *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)). To the extent that the scope of any particular claim term requires discussion, however, we provide it in our assessment of the challenges.

D. Priority date for the ’910 patent

“A petitioner in an inter partes review may request to cancel as unpatentable 1 or more claims of a patent . . . only on the basis of *prior art* consisting of patents or printed publications.” 35 U.S.C. § 311(b) (emphasis added). Petitioner contends that “[t]he earliest possible priority date for the ’910 [p]atent is the date of its [Patent Cooperation Treaty] application filed on July 22, 2011” Pet. 25. Patent Owner does not dispute this contention at this stage of the proceeding. Applying this date to the asserted references, all qualify as prior art. *See* Pet. 21–25 (describing the asserted references, including how each qualifies as prior art).

E. Ground 1: Claims 1–8 as unpatentable over Yoakim, Jarisch ’929, Rossi, and Rapparini

Petitioner contends that the combination of Yoakim, Jarisch ’929, Rossi, and Rapparini teaches or suggests each limitation of claims 1–8. Pet. 21, 37–80. We first address Petitioner’s reasons for combining the teachings of Yoakim, Jarisch ’929, Rossi, and Rapparini, then the challenged claims under Ground 1.

1. Motivation for combining Yoakim, Jarisch '929, Rossi, and Rapparini

We first analyze Petitioner's reasons for combining the teachings of Yoakim, Jarisch '929, Rossi, and Rapparini to arrive at the subject matter of the claims challenged in Ground 1.

a) Petitioner's contentions

Petitioner contends that Yoakim, Jarisch '929, Rossi, and Rapparini are "analogous art in the field of portion capsule beverage extraction, each disclosing an invention that may be applied in automatic coffee/expresso machines." Pet. 37 (referencing Ex. 1004 ¶¶ 2, 3; Ex. 1006 ¶¶ 1, 2; Ex. 1008 ¶ 1; Ex. 1041, 3; Ex. 1003 ¶ 220); *cf. In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) ("References within the statutory terms of 35 U.S.C. § 102 qualify as prior art for an obviousness determination only when analogous to the claimed invention."). Patent Owner does not dispute this contention at this stage of the proceeding.

Petitioner contends that Jarisch '929 expressly teaches using its invention in a brewing system like that disclosed in Exhibit 1007, which is, in turn, similar to Yoakim's system, suggesting combining Jarisch '929's teachings with Yoakim's teachings. Pet. 37–38. Also, Petitioner contends that Jarisch '929 expressly teaches "positioning an optical code 'on the rim of the capsule, in particular, on the bottom of the rim of the capsule which is opposed to the lid or foil of the capsule.'" *Id.* at 37 (referencing Ex. 1006 ¶ 37). Petitioner adds that "Jarisch 929 explains that its proposed code positioning is desirable because it 'is less prone to damages caused by the processing module and in particular by the pyramidal plate, and to ingredients projections.'" *Id.* (referencing Ex. 1006 ¶¶ 17, 63, 64). Petitioner adds that "[a]s a consequence, the amount of coded information

and the reliability of the readings are both improved.” *Id.* (quoting Ex. 1006 ¶ 17). Petitioner also adds that Jarisch ’929 “explains that repeating the code is desirable because ‘upon a 360-degree rotation of the capsule, the same sequence can be detected or read more than one time,’ which improves reliability of reading of the code.” *Id.* at 38–39. Petitioner concludes that a person having ordinary skill in the art would have been motivated to position Jarisch ’929’s repeated optical code on the bottom of the capsule flange for this reason. *Id.* at 39 (referencing Ex. 1003 ¶ 226).

Petitioner contends that a person having ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of Jarisch ’929’s optical code on the bottom of a portion capsule’s rim with Yoakim’s teachings to arrive at the claimed invention. Pet. 39. Petitioner contends that “Jarisch 929 expressly discloses how to modify a brewing chamber like Yoakim’s to position an optical reader to read a code positioned on the bottom of the capsule flange.” *Id.* (referencing Ex. 1003 ¶ 227). Petitioner explains that “Jarisch 929 discloses placing the light source at the bottom of the capsule support chamber, *i.e.*, the centrifugal cell 3, and configuring the capsule support chamber to be a light conductive material such that a light source will reach the bottom of the capsule flange.” *Id.* (referencing Ex. 1006 ¶ 106; Ex. 1003 ¶ 227); *see also id.* at 40 (depicting an annotated version of Jarisch ’929’s Figure 5, showing the movement of light through the capsule support chamber). Petitioner adds that Jarisch ’929 “discloses how to structure the code as a repeat pattern . . . on the bottom of a flange” of a portion capsule. *Id.* at 40 (referencing Ex. 1006 ¶¶ 51, 57–60, 90–106, Fig. 2; Ex. 1003 ¶ 228).

Petitioner also contends that a person having ordinary skill in the art would have been motivated to include Rossi’s capsule recognition process in

the Yoakim/Jarisch '929 system “for the predictable benefit of ‘providing a safe and simple system and process for ensuring that an appropriate [capsule] is used’ in the system.” Pet. 40 (referencing Ex. 1041, 5; Ex. 1003 ¶ 229). Petitioner contends that Yoakim discloses using a piston pump to generate higher pressure water and discloses using high temperature water. *Id.* at 40–41 (referencing Ex. 1004 ¶¶ 188, 199, 369, 428, 506). Petitioner contends that a person having ordinary skill in the art would have had reason to “look to Rossi to address ‘the use of high pressure, high temperature water, which poses a potential health hazard if the machine is not used correctly or malfunctions.’” *Id.* at 41 (referencing Ex. 1041, 5; Ex. 1003 ¶ 230); *see also id.* at 42 (“Rossi’s system includes information about the proper capsule and operating conditions that ‘helps to prevent [] safety hazard[s],’ and prevents ‘re-use’ of capsules that can cause ‘incorrect functioning of the machine and the associated health hazard.’” (referencing Ex. 1041, 7)).

Petitioner adds that a person having ordinary skill in the art would have also been motivated to combine Rossi’s teachings of its capsule recognition process with the combined teachings of Yoakim and Jarisch '929 “for the predictable benefit of greater specificity and accuracy of brewing conditions, and increased safety in the machine from preventing operation with unsuitable capsules.” Pet. 41 (referencing Ex. 1003 ¶ 231); *see id.* (explaining that Rossi discloses that an incorrect capsule could cause a beverage machine to malfunction and that Rossi’s validation step avoids inferior product quality and ensures the machine functions properly). Petitioner concludes that a person having ordinary skill in the art would have understood “that Rossi provides motivation for using an optical code to ensure the capsule is suitable for use with the machine, and only initiates the

brewing process upon such a determination.” *Id.* (referencing Ex. 1003 ¶¶ 230–231); *see id.* at 43 (“[A person having ordinary skill in the art] would have been motivated to use Rossi’s safety features with Yoakim to improve safety, ensure proper functioning of the machine, and avoid inferior quality beverage.” (referencing Ex. 1003 ¶ 233)).

Petitioner also contends that a person having ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of Yoakim, Jarisch ’929, and Rossi as Petitioner proposes. Pet. 42–43. Petitioner contends that Rossi discloses that its system is intended for use with a beverage system using capsules. *Id.* at 42 (referencing Ex. 1041, 3). Petitioner adds that Rossi discloses that its identification system uses barcodes or optically measured identifiers. *Id.* Petitioner adds that Rossi “explains how to recognize a capsule, by comparing the read code ‘with pre-stored data in order to allow the machine to proceed to activation only if it’ recognizes the capsule.” *Id.*

With respect to combining the teachings of Rapparini, Petitioner contends that Rapparini discloses the “widely known technique” of using longitudinal grooves in the body of [a] capsule wall and corresponding ribs in the inner cavity, [to] increase stability of the capsule.” Pet. 43 (referencing Ex. 1008 ¶ 9, Fig. 6 bis). Petitioner adds that a person having ordinary skill in the art “would have recognized that using longitudinal grooves and ribs to stiffen a thin-walled capsule would lead to greater stability.” *Id.* (referencing Ex. 1003 ¶¶ 234–235). Petitioner contends that this increased stability would have motivated the used of the grooves and ribs in a portion capsule. *Id.*

Petitioner contends that a person having ordinary skill in the art would have had a reasonable expectation of success in combining the teaching of

Rapparini’s grooves and ribs with the capsules disclosed in Yoakim and Jarisch ’929. Pet. 43. Petitioner contends that the capsules for the three references are similar in shape. *Id.* (referencing Ex. 1003 ¶ 237); *see also id.* (providing a depiction of capsules from the three references). Petitioner adds that “Yoakim already contemplates a capsule using a textured body, such that Rapparini’s grooves could easily be incorporated, as Yoakim explains that they can be used to engage the capsule in the centrifugal brewing system.” *Id.* (referencing Ex. 1004 ¶ 215; Ex. 1003 ¶ 236).

Petitioner also contends that a person having ordinary skill in the art would have had a reasonable expectation of success “because Rapparini’s capsule is manufactured using a thermoforming process similar to Yoakim’s deep-drawing process.” Pet. 44 (referencing Ex. 1004 ¶ 215; Ex. 1003 ¶ 238).

b) Patent Owner’s responsive arguments and our analysis

We now turn to Patent Owner’s responsive arguments and our analysis of those arguments.

i. Combining embodiments in Yoakim

First, Patent Owner argues that Petitioner combines elements from different embodiments in Yoakim without providing a rationale for combining the teachings. Prelim. Resp. 6–19. Patent Owner argues that Yoakim “reveals a complex ancestral lineage to nearly one dozen application filings spanning from June 2007 to May 2010,” that “aggregates (without interrelating) . . . discrete embodiments from among those filings.” *Id.* at 6. Patent Owner argues that “[t]here are at least five alternative embodiments within Yoakim, each incompatible with the others.” *Id.* at 9. Patent Owner argues that “[t]he Petition ignores the various distinct embodiments of Yoakim and fails on the most fundamental level to show

why or how those embodiments would be modified to 1) work with each other, 2) to work with Jarisch [’929], and 3) to work with Rossi.” *Id.*

We have considered Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. We determine, on the current record, that Petitioner does not improperly combine features from different embodiments. Instead, it appears that the Petition presents common features across different capsules, selecting the images that best illustrate Petitioner’s contentions. *See, e.g.*, Pet. 47 (showing Figures 6 and 27 to illustrate a base element), 51 (showing Figures 6, 26, and 27 to illustrate a flange), 61 (showing holes pierced by multiple chamfered mandrels). Also, to the extent that Petitioner does rely on different portion capsule embodiments, we view, on the current record, the combination of features from different portion capsules as a “predictable variation” that does not “require a leap of inventiveness.” *See Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009). For example, Yoakim describes its capsule in general terms. *See, e.g.*, Ex. 1004 ¶¶ 14–16, 19 (describing general features of its “enclosure” or “capsule”). Yoakim then presents different capsule arrangements that have in common these general features. *See, e.g., id.* at Figs 6, 7, 23, 26, 27, 29. Often, a capsule is depicted conceptually, with a certain feature emphasized. *See, e.g.*, Fig. 6 (depicting the relationship between the upper edge 72, sidewall 76, and bottom wall 77), Fig. 7 (showing water inlet 73 and pierced outlets 74), Fig. 29 (showing features for lid 108). That is, it appears that Yoakim’s different figures emphasize specific features of its capsule that may be used in other capsules.

Patent Owner argues that Petitioner does not address how Yoakim’s different machines work with different capsules. Prelim. Resp. 10–14; *see*

id. at 10–12 (discussing the characteristics of the machine depicted in Yoakim’s Figures 35 and 38); *id.* at 13–14 (contrasting the characteristics of the machine depicted in Yoakim’s Figure 35 with the machines depicted in Yoakim’s Figures 54 and 55 and 61 and 62). Patent Owner also argues that an affiliate of Petitioner’s distinguished the systems of Figures 61 and 62 (and Figures 54 and 55) over a related Yoakim reference (“Yoakim I”) and a similar structure as depicted in Yoakim’s Figure 35. *Id.* at 14–16.

Patent Owner also argues that “the Petition has not explained how or why the use of the complex spring arrangement of Yoakim Fig[ure] 35 would or could have been modified for use in the system of Fig[ures] 54, 55, 61, and 62 to accommodate a multi-capsule set with different capsule volumes.” Prelim. Resp. 17. Patent Owner argues that

Due to the different back pressures alone, which would have been experienced when brewing beverages from among the respective different volume capsules of the capsule set, it has not been explained how a spring having a single spring constant would have accommodated the different backpressures without ongoing spring adjustment or other significant modifications from capsule to capsule.

Id. at 18. Patent Owner adds that the machine of Figure 61 does not need the seal of the machine of Figure 35. *Id.* at 18–19; *see also id.* at 19–20 (discussing other distinctions between the machines of Figures 35 and 61).

We have considered Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. We determine that Patent Owner’s arguments directed to the differences between the machines of Figures 35, 54, and 61, are inapposite—the claims of the ’910 patent are directed to a portion capsule, not a brewing system. Petitioner’s reliance on certain

machines are, again, used to illustrate features that are common to the portion capsules of Yoakim. For example, Petitioner relies on the depiction in Figure 35 to illustrate that a portion capsule cover provides a sealing area and that the chamfered mandrels pierce the capsule laterally offset from the central longitudinal axis. *See* Pet. 63–65. Similarly, Petitioner presents the machine of Figure 4 to illustrate chamfered mandrels that pierce the capsule laterally offset from the central longitudinal axis. *Id.* at 66.

Patent Owner’s reliance on distinguishing arguments over Yoakim I in the prosecution of a patent owed by Petitioner’s affiliate is unavailing on the current record. Those arguments were presented in the context of a beverage machine. Ex. 2003, 3–6. Patent Owner does not explain why any differences between Yoakim’s machines depicted in Figures 35, 54, and 61, in and of themselves, indicate that Petitioner’s reliance on these figures is improper in this proceeding. Importantly, in that regard, the challenged claims are directed to a portion capsule, not a machine. Patent Owner stops short of explaining how or why any allegedly distinguishing arguments made by Petitioner’s affiliate apply to any issue surrounding the specified portion capsule. In other words, even if we were to accept that Petitioner’s affiliate presented arguments to the Office that differ in some respects from those advanced here by Petitioner, Patent Owner does not explain why prosecution history estoppel, or any other principle of preclusion, applies to any argument presented in the Petition.

With respect to the spring arrangement of Figure 35, as we discuss above, we determine, on the current record, that Petitioner uses this configuration to illustrate how a capsule includes a cover that is dimensioned and configured to provide a sealing area that is configured to bear against a seal, and not that the portion capsule must work in the machine of Figure 35.

See Pet. 63–65. We understand that the claims recite “the cover being dimensioned and configured to provide a sealing area that is configured to bear against a seal of the *specific coffee machine*.” Ex. 1001, 13:22–24, 14:44–46 (emphasis added). We do not read the claims, on the preliminary record, to require a particular machine, just that the cover is dimensioned and configured to operate in a machine. In that way, the machine of Figure 35 is exemplary.

Our determinations here are based on the current record and the parties may explore these preliminary determinations in greater detail at trial.

ii. Combining Yoakim and Jarisch ’929

Next, Patent Owner argues that Petitioner does not address that the machine of Yoakim’s Figure 61 reads a code on a stationary capsule, and Jarisch ’929’s system reads a code on the capsule as it spins. Prelim. Resp. 20, 29. Patent Owner argues that Petitioner does not adequately demonstrate that the machine of Yoakim’s Figure 61 would experience the problem alleged by Petitioner—the soiling of the top of a capsule by beverage residue, such that there would be a benefit of putting the code on the bottom rim of the capsule. *Id.* at 20–22.

Patent Owner also argues that there is insufficient space on the rim of Yoakim’s capsules to include Jarisch ’929’s code. Prelim. Resp. 22–23.

We have considered Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. Petitioner provides a reason to position a code on the bottom side of the rim of a capsule, taken directly from Jarisch ’929. *See* Pet. 38 (referencing Ex. 1006 ¶¶ 17, 63, 64); *see also* Ex. 1006 ¶¶ 17 (“These locations are particularly advantageous since they

. . . [are] less prone to damages caused by the processing module and in particular by the pyramidal plate, and to ingredients projections. As a consequence, the amount of coded information and the reliability of the readings are both improved.”); *cf. KSR Int’l Co.*, 550 U.S. at 418 (stating that, to facilitate the analysis of an obviousness position, the proponent should provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). On the current record, Patent Owner’s attorney argument does not identify sufficiently a deficiency in Petitioner’s reasoning.

We also do not agree, on the current record, that Petitioner’s position is deficient for not accounting for Jarisch ’929 reading its code as the capsule spins or that Yoakim’s rim is not sufficiently sized for Jarisch ’929’s code. These arguments are based on bodily incorporating features from Jarisch ’929 into the capsule of Yoakim, and specifically, incorporation of components of Jarisch ’929’s machine, rather than considering how a person having ordinary skill in the art would understand the teachings apply to a portion capsule. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“[The] test for obviousness,” however, “is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”).

Patent Owner argues that the differences in capsule holders of Jarisch ’929 and Yoakim would have discouraged placing Jarish ’929’s code on Yoakim’s capsule. Prelim. Resp. 25–30. Patent Owner argues that Yoakim discloses that its capsules should have a snug fit. *Id.* at 25–26, 29–30. Patent Owner argues that, in contrast, Jarisch ’929 teaches a gap between its capsule and the holder. *See id.* at 27–28 (pointing to a “Gap”

illustrated in Jarisch '929's Figure 4). Patent Owner argues that "[g]iven all the differences between Yoakim and Jarisch 929," a person having ordinary skill in the art would not have modified Yoakim with Jarisch '929's teachings, "[e]specially since the snug fit in Yoakim performs a safety function." *Id.* at 28.

We have considered Patent Owner's arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner's position for purposes of instituting trial. We do not agree, on the current record, that the differences between Jarisch '929's and Yoakim's holders would have discouraged Petitioner's proposed modification. Petitioner's proposed modification is directed to locating a code on the bottom rim of a capsule. Again, Patent Owner seems to be relying on bodily incorporation of aspects of Jarisch '929's system into the proposed modified capsule of Yoakim, without accounting adequately for what the combined teachings of the references would have suggested to a person of ordinary skill in the art, who is not an automaton. *KSR Int'l Co.*, 550 U.S. at 418.

Patent Owner also argues that an affiliate of Petitioner's argued against the proposed modification during the prosecution of Jarisch (Ex. 1005), an application related to Jarisch '929. *Id.* at 23–25. We determine, on the current record, that Patent Owner's reliance of the prosecution history of Jarisch (Ex. 1005) is unavailing. The passages upon which Patent Owner relies mere states that the references asserted by the examiner fail to disclose or suggest placing a code on the bottom. *See* Ex. 2005, 6–9. Such statements do not support a finding that a person having ordinary skill in the art, *armed with Jarisch '929's teachings of a code on the bottom side of a capsule's rim*, would not have placed a code on the bottom of Yoakim's capsule's rim.

Patent Owner adds that there would not have been a reasonable expectation of success for the proposed modification, as Yoakim would have required “extensive modifications.” Prelim. Resp. 30–35. Based on our review of the preliminary record, we do not agree. Petitioner demonstrates that Jarisch ’929 is directed to a beverage system that includes an optical code on the bottom of a beverage capsule. *See* Pet. 37. Petitioner further demonstrates that Jarisch ’929 expressly discloses an exemplary way to read the optical code. *Id.* at 39–40.

In any event, Patent Owner’s reasonable expectation of success focuses on the wrong inquiry. “The reasonable expectation of success requirement refers to the likelihood of success in combining references to meet the limitations of the claimed invention.” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). The claimed invention is not directed to reading the code. Instead, the claim is directed to a portion capsule with an individualized identifier on the bottom of the capsule’s flange, with the identifier having certain qualities. Petitioner sufficiently demonstrates, on the current record, that a person having ordinary skill in the art would have had a reasonable expectation of success in including an identifier on the bottom of the flange of a portion capsule as taught by Jarisch ’929. *See* Pet. 38 (“Jarisch 929 explicitly teaches positioning an optical code ‘on the rim of the capsule, in particular, on the bottom of the rim of the capsule which is opposed to the lid or foil of the capsule.’” (quoting Ex. 1006 ¶ 37); Ex. 1003 ¶ 208 (“Jarisch 929 teaches that the optical identifier code (70) may be disposed on the bottom side of the capsule rim (73), facing away from the membrane.” (citing Ex. 1006 ¶¶ 18, 19, 69, 90; Fig. 4.)).

iii. Combining Yoakim and Jarisch '929 with Rossi

Next, Patent Owner argues that Petitioner's reasons for combining Rossi's teaching of a capsule identification system is deficient because Yoakim already achieves a safety function by using a capsule and capsule holder with complementary shapes. Prelim. Resp. 37 (referencing Ex. 1004 ¶ 205); *see also* Ex. 1004 ¶ 205 (describing gripping structure 840 on the bottom of an exemplary capsule that serves as a "lock" into which a "key" structure in the capsule holder fits).

We have considered Patent Owner's argument and determine, on the current record, that it does not demonstrate a deficiency in Petitioner's position for purposes of instituting trial. This argument is directed to a single embodiment with gripping structure 840, a feature not relied upon in the Petition for satisfying any claim limitations. And, Petitioner expressly addresses this feature, arguing that this "'gripping structure' only checks for a complementary shape," thus "allow[ing] unsafe brewing of suitably-shaped capsules that otherwise are not designed for the system, or have been improperly re-used." Pet. 43 (referencing Ex. 1003 ¶ 233).

Even if Yoakim discloses one way to ensure compatible capsules are used, such a disclosure does not mean that a person having ordinary skill in the art would not have found it obvious to use a different method known in the art that could be employed with predictable results for capsules that do not employ a gripping structure. *Cf. KSR Int'l Co.*, 550 U.S. at 417 ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill."). Also, Petitioner's rationale for employing Rossi's teachings is broader than safety considerations. The Petition identifies

“greater specificity and accuracy of brewing conditions” as well as increased safety. *See* Pet. 41.

Patent Owner argues that Yoakim does not disclose brewing its beverages using high pressure, in contrast to Rossi’s teachings. Prelim. Resp. 37–39.¹⁰ We determine, however, that Petitioner’s rationale is not so limited. Petitioner identifies “high temperature water” as a concern. Pet. 41. Petitioner also reasons that Rossi’s validation step helps to avoid producing a beverage of inferior quality. *See id.*

c) Conclusion – Motivation to combine

To summarize, we determine, on the current record, that Petitioner has sufficiently demonstrated that a person having ordinary skill in the art would have had a reason to combine the teachings of Yoakim, Jarisch ’929, Rossi, and Rapparini as Petitioner proposes, with a reasonable expectation of success in arriving at the claimed invention. We determine, on the current record, that Petitioner sufficiently provides rational underpinnings for its reasoning. *Cf. KSR Int’l Co.*, 550 U.S. at 418 (stating that, to facilitate the analysis of an obviousness position, the proponent should provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

2. Independent Claim 1

We next turn to analyzing the scope and content of the prior art, and any differences between the prior art and the claimed invention, on a limitation-by-limitation basis.

¹⁰ Patent Owner adds that “Rossi does not disclose a pump at all . . . [a]nd a pump is not inherent in Rossi’s teachings.” Prelim. Resp. 37. We address Patent Owner’s arguments concerning a pump in our analysis of limitation 1.r, below.

a) Preamble

The preamble of claim 1 recites “[a] portion capsule for making a beverage and having an individualization identifier capable of being detected by a sensor/detection system for determining whether the portion capsule is suitable for a specific coffee machine.” Ex. 1001, 12:52–55. Petitioner contends that the combined teachings of Yoakim, Jarisch ’929, and Rossi disclose the subject matter of the preamble. Pet. 45–46 (referencing Ex. 1004 ¶¶ 25, 192, 477, 494–496, 525, Figs. 4, 61; Ex. 1006 ¶¶ 51–55, 106, Fig. 5; Ex. 1041, 4, 5, 9; Ex. 1003 ¶¶ 241–247); *see id.* at 46 (reproducing Ex. 1004, Fig. 61; Ex. 1006, Fig. 5 (as annotated by Petitioner)). Petitioner adds that it “would have been obvious for a [person having ordinary skill in the art] to [combine] Yoakim, Jarisch 929 and Rossi to arrive at the claimed invention.” *Id.* at 47 (referencing Ex. 1003 ¶¶ 248–249).

Upon review of the information in the Petition and corresponding evidence, including Petitioner’s reasons for combining Yoakim, Jarisch ’929, and Rossi, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Yoakim, Jarisch ’929, and Rossi teaches or suggests the subject matter of the preamble. In view of this determination, we need not resolve, at this stage of the proceeding, whether the preamble is limiting.

Patent Owner does not dispute Petitioner’s contentions with respect to the subject matter of the preamble at this stage of the proceeding.

b) Base element limitations (limitations 1.a and 1.b)

Claim 1 also recites

[1.a] a base element with a cavity, in which a raw beverage material is provided, the base element is deep drawn, made of

metal, and [1.b] has an open upper end portion, a closed bottom, and a wall that extends from the open upper end portion to the closed bottom, the wall is rotationally symmetrical about a central longitudinal axis of the base element, the wall includes an outside surface and an inside surface that faces the raw beverage material, the base element has a first height that is defined between the open upper end portion and the closed bottom.

Ex. 1001, 12:57–67.

Petitioner contends that “Yoakim discloses a capsule with a base element (70, 102) having a cavity that may be filled with raw beverage materials such as ‘ground coffee powder [and] soluble coffee.’” Pet. 47 (referencing Ex. 1004 ¶¶ 125, 180, 197, 198, 414, Figs. 6, 7, 26, 27; Ex. 1003 ¶¶ 250–251). Petitioner adds that Yoakim discloses that “the body and/or lid can be deep drawn from thin metal such as aluminium alloy or a complex of plastic and aluminium alloy” *Id.* (referencing Ex. 1004 ¶¶ 180, 197, 215, 355, 414, 461; Ex. 1003 ¶ 252).

Petitioner contends that Yoakim discloses a portion capsule with the characteristics of limitation 1.b. Pet. 48–50 (referencing Ex. 1004 ¶¶ 129, 197, 308, 414, 473, Figs. 6, 7, 26, 27; Ex. 1003 ¶¶ 256–257); *see also id.* (providing annotated images of Yoakim’s Figures 26, 27, 28 indicating the open upper end, bottom and first height of the base unit and illustrating the recited wall arrangement and rotational symmetry).

Petitioner also contends that Jarisch ’929 discloses a capsule with a first height defined between the open end portion and closed bottom. Pet. 49 (referencing Ex. 1006, Fig. 5; Ex. 1003 ¶¶ 262–263, and providing an annotated version of Jarisch ’929’s Fig. 5, indicating the first height).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this

stage of the proceeding, that Yoakim teaches or suggests the base element limitations recited in claim 1. Patent Owner does not dispute Petitioner's contentions with respect to this limitation at this stage of the proceeding.

c) Flange and identifier limitations (limitations 1.c and 1.d)

Claim 1 also recites “[1.c] a flange extending outwardly from the wall at the open upper end portion of the base element, the flange having a top side and an opposing bottom side, [1.d] [where] the individualization identifier is located on the bottom side of the flange” Ex. 1001, 13:1–5.

Petitioner contends that Yoakim discloses a capsule with a circumferential flange, such as rim 72 and rim 104, depicted in Figures 6 and Figures 26 and 27, respectively, configured as recited in limitation 1.c. Pet. 51 (referencing Ex. 1004 ¶¶ 197, 414, Figs. 6, 26, 27; Ex. 1003 ¶¶ 272–274); *see id.*

(reproducing Figures 6, 26, and 27 of Yoakim and identifying the top and bottom sides of rim 72 and open upper end of base element 70 for Fig. 6).

Petitioner contends that Yoakim uses an identification system with identifiers that include printed optical detectable codes, such as barcodes. Pet. 52 (referencing Ex. 1004 ¶¶ 477, 496, 525, 526; Ex. 1003 ¶¶ 277–279).

Petitioner further contends that Jarisch '929 discloses an identifier on the bottom side of a flange of a portion capsule. *Id.* (referencing Ex. 1006 ¶¶ 37, 63, 64; Ex. 1003 ¶¶ 281–282); *see id.* at 53 (reproducing Jarisch '929's Fig. 4, showing an identifier on the bottom of a portion capsule flange), 53–54 (indicating that Jarisch '929 discloses an identifier on the bottom of a flange consistent with Patent Owner's infringement contentions in the parallel litigation).

Petitioner contends that a person having ordinary skill in the art would have applied Jarisch '929's teaching of a code on the bottom of the flange to improve reliability in reading the code, as Petitioner argued in its motivation

to combine the teachings of Jarisch '929 and Yoakim. Pet. 53 (referencing Ex. 1003 ¶ 284 and cross referencing the Petition section discussing motivation to combine Yoakim and Jarisch '929).

Upon review of the information in the Petition and corresponding evidence, including Petitioner's reasoning for combining the teachings of Jarisch '929 and Yoakim, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Yoakim and Jarisch '929 teaches or suggests the flange and identifier limitations as recited in claim 1.¹¹ Patent Owner does not dispute Petitioner's contentions with respect to this limitation at this stage of the proceeding.

d) Vertical grooves limitations (limitations 1.e–1.g)

Claim 1 also recites

[1.e] a plurality of vertically oriented grooves arranged on the outside surface of the wall, [1.f] the plurality of vertically oriented grooves each have a radiused top end and a radiused bottom end and are spaced a distance between the flange and the closed bottom, [1.g] the plurality [of] vertically oriented grooves cover 20% to 80% of the wall between the flange and the closed bottom.

Ex. 1001, 13:6–12. Petitioner contends that Rapparini discloses a structure with vertically oriented grooves in the outside surface of the wall. Pet. 56;

¹¹ Petitioner provides alternative contentions “[t]o the extent ‘identifier’ is construed as a ‘feature that individualizes the portion capsule’ and ‘individualization’ is construed as ‘to determine whether the portion capsule is suitable for use with the beverage machine such that the use of unsuitable capsules is prevented.’” Pet. 54–55. Because we do not construe the term “identifier” this way at this stage of the proceeding, we do not analyze Petitioner's alternative contentions. We note, however, that these contentions are part of the trial record and may be considered on the complete trial record.

see also id. (reproducing an annotated version of Rapparini’s Figure 6 bis, showing grooves in the wall region, with one groove shown within a red oval). Petitioner contends that “Rapparini’s grooves each have a radiused top end and a radiused bottom end (F[igure]6bis).” *Id.* at 57 (referencing Ex. 1003 ¶¶ 298–299) (emphasis omitted); *see id.* (providing an annotated version of Rapparini’s Figure 6 bis, indicating the radiused top and bottom ends of a groove).

Petitioner contends that Rapparini’s “grooves are spaced a distance between the flange and the closed bottom” and “cover 20-80% of the wall between the flange and closed bottom.” Pet. 57–58 (referencing Ex. 1008 ¶¶ 9–11; Ex. 1003 ¶¶ 301–302); *see id.* at 57 (providing an annotated version of Rapparini’s Figure 6, indicating within a red rectangle the orientation of a groove extending only along the side region of the container), 58 (providing an annotated version of Rapparini’s Figure 6bis, illustrating the wall coverage of the grooves).

Petitioner adds that a person having ordinary skill in the art would have used the groove structure from Rapparini in Yoakim’s portion capsule for structural stability or as a design choice. Pet. 59 (referencing Ex. 1003 ¶¶ 296, 303–304).

Patent Owner repeats its argument that Petitioner fails to provide a reason to combine different embodiments from Yoakim. Prelim. Resp. 59. Specifically, Patent Owner criticizes Petitioner’s reliance on Yoakim’s embodiment depicted in Figure 23. *Id.* at 59–62.

We have reviewed Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. On the current record, we determine that Patent Owner reads too much into Petitioner’s citation to

Yoakim’s Figure 23. We do not read the Petition to say that a person having ordinary skill in the art would have started with the capsule of Figure 23 and then add the grooves and ribs as taught by Rapparini. Instead, we read Petitioner’s reference to the image of Figure 23 to indicate Yoakim contemplates that a portion capsule can have drawn structures. *See* Pet. 56 (“Yoakim discloses a capsule with a deep-drawn toothed structure.”); *see also id.* at 43 (“Yoakim already contemplates a capsule using a textured body.” (referencing Ex. 1004 ¶ 215, which discusses Figure 23)); Ex. 1003 ¶¶ 236 (quoting Ex. 1004 ¶ 215), 290–292 (discussing Ex. 1004, Fig. 23).

Similarly, Patent Owner argues that Yoakim does not indicate that the machine disclosed in Yoakim’s Figure 61 could be modified to accept the capsule of Figure 23. Again, we do not read the Petition to use the toothed surface of the embodiment of Figure 23. Also, claim 1 is directed to a portion capsule and not the machine in which it is used. As such, Patent Owner’s implication that the resulting portion capsule must work in the machine of Figure 61 imposes a requirement that we determine, on the preliminary record, does not appear in the claims.

Next, Patent Owner argues that a code would not fit on the bottom of the flange of the embodiment of Figure 23, because the toothed structure goes into the flange. Prelim. Resp. 62–64. Patent Owner criticizes the Petition for not explaining how the teachings of Rapparini would have been combined with Yoakim. *Id.* Again, we do not read the Petition to use the toothed surface of the embodiment of Figure 23. Also, Petitioner expressly contends that a person having ordinary skill in the art would have used Rapparini’s vertical grooves covering between 20 and 80 percent of the wall in Yoakim’s capsule. Pet. 43, 59; *see id.* at 44 (“A [person having ordinary skill in the art] would also have an expectation of success when combining

Rapparini’s grooves and ribs and the capsules disclosed in Yoakim.”). Mr. Jobin explains that “Yoakim explicitly discloses that its capsule can be made of aluminum, which is known to typically be formed by deep-drawing, and is a similar process to thermoforming (albeit without heat) that involves using a die to punch a sheet of aluminum into a shaped capsule.” Ex. 1003 ¶ 238 (cited at Pet. 44).

Finally, Patent Owner argues that “because it is clear from Rapparini that the grooves extend *into* the flange, the grooves are *not* ‘spaced a distance between the flange and the closed bottom,’ as recited in” the claims. Prelim. Resp. 64. We have reviewed Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. The Petition cites to an express teaching in Rapparini that certain grooves extend “only along the side region of the container.” Pet. 57 (quoting Ex. 1008 ¶ 11); *see id.* (identifying a rib that is only in the side region); Ex. 1008 ¶ 11 (“The stability of the container is accordingly optimized by providing for example long ribs extending at least partially in the bottom region of the container alternated to short ribs extending only along the side region of the container.”).

Upon review of the information in the Petition and corresponding evidence, including Petitioner’s reasoning for combining the teachings of Rapparini, Jarisch ’929, and Yoakim, and Patent Owner’s counter arguments, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Yoakim, Jarisch ’929, and Rapparini teaches or suggests the vertical grooves limitations as recited in claim 1.

e) Vertical ribs limitation (limitation 1.h)

Claim 1 also recites “[1.h] a plurality of vertically oriented ribs arranged on the inside surface of the wall.” Ex. 1001, 13:13–14. Petitioner contends that Rapparini’s vertically oriented grooves arranged on the outside wall of its container form ribs in the inside surface of the container. Pet. 59 (referencing Ex. 1008 ¶¶ 7–9, 53, 54; Ex. 1003 ¶ 306); *see id.* (reproducing Rapparini’s Fig. 6, depicting ribs as item 4 in the figure).

Upon review of the information in the Petition and corresponding evidence, including Petitioner’s reasoning for combining the teachings of Rapparini, Jarisch ’929, and Yoakim, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Yoakim, Jarisch ’929, and Rapparini teaches or suggests the rib limitation as recited in claim 1. Patent Owner does not dispute Petitioner’s contentions with respect to this limitation at this stage of the proceeding.

f) Barrier sheet limitation (limitation 1.i)

Claim 1 also recites “[1.i] a barrier sheet to prevent moisture or aroma from escaping out of the portion capsule.” Ex. 1001, 13:15–16. Petitioner contends that Yoakim discloses a sealing lid and a capsule body that includes a gas barrier sheet that is “made of polymers, aluminium and/or alloys” and is “fluid tight.” Pet. 59–60 (referencing Ex. 1004 ¶¶ 96, 121, 128, 129, 197; Ex. 1003 ¶ 309).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that Yoakim teaches or suggests the barrier sheet limitation as recited in claim 1. Patent Owner does not dispute Petitioner’s contentions with respect to this limitation at this stage of the proceeding.

g) Cover limitations (limitations 1.j–1.m)

Claim 1 also recites

[1.j] a cover comprising a metal foil that is sealed to the top side of the flange, the cover having a central region and a perimeter, [1.k] the cover is bowed upwardly to a second height at the central region relative to the perimeter, [1.l] the second height of the cover is less than the first height of the base element, [1.m] the cover being dimensioned and configured to provide a sealing area that is configured to bear against a seal of the specific coffee machine, the cover being dimensioned and configured to provide a piercing area that is configured to be pierced by a mandrel of the specific coffee machine, the piercing area being laterally offset from the central longitudinal axis of the base element.

Ex. 1001, 13:17–29. Petitioner contends that Yoakim discloses a metal foil cover, such as aluminum, sealed to the top side of a capsule flange. Pet. 60 (referencing Ex. 1004 ¶¶ 128, 129, 197, 244, 414, Figs. 6, 7, 26, 27; Ex. 1003 ¶¶ 313–316).

Petitioner contends that Yoakim at least renders obvious that its cover is bowed, as it is sealed tight and carbon dioxide is added to fill the void space in the capsule. Pet. 61 (referencing Ex. 1004 ¶¶ 121, 128, 129; Ex. 1003 ¶¶ 317–319). Petitioner contends that a person having ordinary skill in the art “would have understood that a capsule with a foil membrane cover that is sealed fluid tight and filled with an inert gas would obviously bow upwardly under the pressure of the gas or [carbon dioxide] emitted from the ground coffee.” *Id.* (referencing Ex. 1003 ¶¶ 320–321).

Petitioner adds that Jarisch ’929 discloses a portion capsule with a bowed cover. Pet. 61–62 (including an annotated version of Jarisch ’929’s Fig. 5 and highlighting the bowed cover).

Petitioner further contends that Jarisch ’929 discloses and Yoakim renders obvious that the recited second height is less than the first height,

given the bowed cover. Pet. 62–63 (referencing Ex. 1006, Fig. 5; Ex. 1003 ¶¶ 325–329).

Finally, Petitioner contends that Yoakim discloses that its portion capsule has a cover dimensioned and configured to provide a sealing area and a piercing area. Pet. 63–66. Petitioner identifies the configuration of capsules for the machines of Figures 4 and 35 as examples of how Yoakim teaches covers that are dimensioned and configured as claimed. *See id.*

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that Yoakim teaches or suggests the cover limitations as recited in claim 1. Patent Owner does not dispute Petitioner’s contentions with respect to this limitation at this stage of the proceeding.

h) Cavity free from filter limitation (limitation 1.n)

Claim 1 also recites “[1.n] wherein the portion capsule is free of a filter inside of the cavity.” Ex. 1001, 13:30–31. Petitioner contends that Yoakim discloses that is portion capsule may be free from a filter inside the portion capsule cavity. Pet. 67 (referencing Ex. 1004 ¶¶ 171, 255, 288, 300, 343, 461, Figs. 6, 7, 54–60; Ex. 1003 ¶¶ 344–345). Petitioner adds that “[i]t would also have been an obvious design choice to a [person having ordinary skill in the art] to not use a filter in a centrifuge based brewing system in order to simplify the capsule design.” *Id.* (referencing Ex. 1003 ¶¶ 344–345). Mr. Jobin testifies that “Yoakim describes extraction of coffee capsules using methods that do not include a filter, and in fact confirm that the addition of a filter structure is optional.” Ex. 1003 ¶ 344. Mr. Jobin adds that “Yoakim further describes the optional filter embodiment, which is not otherwise present in the Yoakim embodiments that I have discussed.” *Id.* ¶ 345.

Patent Owner disagrees, arguing that Yoakim discloses a filter in the cavity. Prelim. Resp. 39–43. Patent Owner directs us to disclosures in Yoakim that indicate that the premade outlets are filters. *Id.* at 39–40 (quoting Ex. 1004 ¶¶ 16, 131, 265, 338, 444, and additionally referencing ¶¶ 139, 171, 210, 266, 272, 288, 300, 334, 337, 343, 375, 424, 448, 450, 460, 461, 462, 465, Figs. 28, 29, 39, claims 4, 6). In one specific example, Patent Owner directs us to the capsule shown in Figure 29, which includes openings/outlets 118. In another example, Patent Owner argues that the capsules shown in Figures 41 and 42 have porous walls 180 along the top surface of the cavity.

We have reviewed Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. Even accepting Patent Owner’s argument that the openings (or outlets or slits) in Yoakim’s capsules are filters as that term is used in the claims, we determine that Petitioner has sufficiently demonstrated that certain capsules do not have a filter *inside* the cavity as required by the claims. *See, e.g.*, Ex. 1004, Fig. 7 (showing perforations on the cover (cited at Pet. 67); ¶¶ 300 (“The capsule *may* comprise a filtering means to filter the centrifuged [capsule] the liquid is released from the outlets *at the side wall.*” (emphasis added) (cited at Pet. 67)), 461 (“*Optionally*, the capsule may comprise a filter part 708 delimiting the cavity 709 for the substance and a collecting recess 710 peripherally placed relative to the central cavity. The filter part may, for instance, be an integral part of the *body* 705 or a part which is added in the capsule, e.g., a filter cylinder.” (emphasis added) (cited at Pet. 67)). Also, Yoakim states that, preferably, the capsule contains an internal filter placed at the periphery of the enclosure, such as an internal perforated lid or a

portion of porous material. Ex. 1004 ¶ 271. Yoakim continues that , “[i]n *another mode*, the filter could be part of the device or be formed by the puncturable membrane and piercing members.” *Id.* (emphasis added). That is, in this alternative mode, the capsule would not have the filter internal to the enclosure, but instead the beverage device itself would have the filter. This disclosure supports Petitioner’s overall position that Yoakim discloses, such as in paragraph 171, that a filter inside the cavity is optional. *See* Pet. 67; Ex. 1004 ¶ 171 (“An additional filtering layer can be used to filter the liquid depending on the size of the outlets.”).

To the extent that Patent Owner argues that the porous wall configuration shown in Yoakim’s Figures 41 and 42 is common to all of Yoakim’s capsules, we do not agree. Yoakim expressly states that “the capsule in the system of the invention *may also* comprise . . . porous wall 180.” Ex. 1004 ¶ 451 (emphasis added). Also, Yoakim includes other disclosures of other variations with respect to a filter. *See id.* ¶¶ 171 (indicating that the premade radial outlets retail the solid particles and that an additional filtering layer is optional), 271 (stating that, alternatively to having an internal filter, “the filter could be part of the device or be formed by the puncturable membrane and piercing members”), 461 (describing Figures 45–50 and not including porous wall 180 but optionally including filter part 708).

Patent Owner argues that Petitioner does not cite to any express teaching in Yoakim that its portion capsules do not include a filter inside the cavity. Prelim. Resp. 42–45. This argument appears to be based on Patent Owner’s position that all capsules have some type of opening that serves as a filter. As we discuss above, Petitioner relies on citations in Yoakim that teach that a filter is optional. And, even accepting Patent Owner’s argument

that the openings (or outlets or slits) in Yoakim's capsules are filters as that term is used in the claims, we determine that Petitioner has sufficiently demonstrated that certain capsules do not have a filter *inside* the cavity as required by the claims.

Upon review of the information in the Petition and corresponding evidence, and Patent Owner's counter arguments, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that Yoakim teaches or suggests the cavity without a filter limitation as recited in claim 1.

i) Individualization identifier limitations (limitations 1.o–1.u)

Claim 1 also recites

[1.o] wherein the individualization identifier:

i) comprises at least two areas which differ in their optically detectable reflection properties;

[1.p] ii) includes an optically detectable, machine readable, repeat pattern;

[1.q] iii) encodes information used by the specific coffee machine to individualize the portion capsule so the portion capsule is permitted to be used with the specific coffee machine;

[1.r] iv) encodes information used by the specific coffee machine to activate a pump of the specific coffee machine;

[1.s] v) encodes information used by the specific coffee machine to control a beverage-making process, which includes setting a quantity of hot water, pressure of the hot water, and/or a temperature of the hot water;

[1.t] vi) is further provided on the outside surface of the wall of the base element; and

[1.u] vii) is compared to a stored reference to determine if the portion capsule is suitable for the specific coffee machine.

Ex. 1001, 13:32–53. Petitioner contends that Jarisch '929 discloses that its identifier code has at least two areas with differing reflective properties.

Pet. 67–60 (referencing Ex. 1006 ¶¶ 26, 27, 58, 73, 90, 92–94, 102–105, 111, Fig. 2; Ex. 1003 ¶¶ 348–350).

Next, Petitioner contends that “Jarisch 929 discloses that the individualization identifier includes an optically detectable, machine readable, repeat pattern.” Pet. 69 (referencing Ex. 1006 ¶¶ 25–27); *see id.* (showing Jarisch ’929’s Figure 2, providing a repeat pattern on the bottom of a capsule flange). Petitioner adds that Jarisch ’929 explains that the repeat pattern “ensures a high probability that at least one code is readable.” *Id.* (referencing Ex. 1006 ¶¶ 33, 56, 68, 110; Ex. 1003 ¶¶ 354–356). Petitioner contends that “[i]t would have been obvious for a [person having ordinary skill in the art] to utilize the repeated code of Jarisch 929 to increase reliability of reading the code during rotation.” *Id.* at 70 (referencing Ex. 1003 ¶ 357).

Petitioner contends that Jarisch ’929 discloses that its identifier can be on the surface of the wall of the base element in addition to the flange. Pet. 74 (referencing Ex. 1006 ¶¶ 63, 64, 90–92; Ex. 1003 ¶¶ 369–370). Petitioner adds that a person having ordinary skill in the art would have found it obvious “to utilize an individualization identifier both on the bottom of the flange and on the outside surface of the wall of the base element to provide an alternative location to read the code in order to increase the chances of the code being read.” *Id.* (referencing Ex. 1003 ¶¶ 371–372).

Finally, Petitioner contends that each of Yoakim, Jarisch ’929, and Rossi, individually, renders obvious the encoded information recited in limitations 1.g, 1.r, and 1.s and comparing the encoded information to information stored by the beverage machine (limitation 1.u). Pet. 70–71 (addressing Yoakim), 71–72 (addressing Jarisch ’929), 72–73 (addressing Rossi). Alternatively, Petitioner contends that a person having ordinary skill in the art would have found it obvious to combine the teachings of Yoakim, Jarisch ’929, and Rossi to arrive at the claimed subject matter, for the

reasons discussed in the motivation to combine section of the Petition. *Id.* at 73.

For example, Petitioner contends that Yoakim discloses a system that includes an identification means that reads encoded information from an identifier. Pet. 70–71 (referencing Ex. 1004 ¶¶ 6, 468–478, 485–492, 494–496, 503, 504, 521–523, 525; Ex. 1003 ¶ 360–361). Petitioner adds that it would have been obvious for the identification means to determine if the capsule is suitable for the specific coffee machine. *Id.* at 71 (referencing Ex. 1003 ¶ 362). Petitioner contends that Jarisch '929 discloses a system that reads encoded information from a capsule and compares it to stored information to determine the type of capsule used and information about brewing the beverage. *Id.* Petitioner contends that Rossi discloses a system that reads encoded information and compares it with stored information to determine if a capsule is suitable for its machine and does not activate the machine if the information is not confirmed. *Id.* at 72–73 (referencing Ex. 1041, 1–3, 5–7, 9–11; Ex. 1003 ¶¶ 365–366).

Patent Owner disputes that Yoakim, Jarisch '929, and Rossi individually discloses an identifier that encodes information used by the specific coffee machine to activate a pump of the specific coffee machine—limitation 1.r. Patent Owner argues that “Yoakim lacks any express teaching that his identification means activates a pump.” Prelim. Resp. 49. Patent Owner adds that “[a]t best, the only inherent disclosure of Yoakim might arguably be the pump controls when to stop filling water.” *Id.* (identifying Ex. 1004 ¶¶ 25, 28, 192, 218, 477, 521, 522, 523 as the disclosure upon which Petitioner relies).

Patent Owner also argues that “Yoakim teaches supply of water as a result of ‘rotational momentum’—not as a result of the encoded

information.” Prelim. Resp. 50 (referencing Ex. 1004 ¶¶ 22, 212, 521, 522). Patent Owner adds that pump activation from reading the identification means is not inherent from Yoakim’s teachings.” *Id.* at 51. Patent Owner argues that “[t]he Petition does not explain why a pump—as opposed to a valve, centrifugal, motor, heater, or any of the other controllable features in Yoakim—would be controlled only after/upon detection of the identifier.” *Id.*

We have reviewed Patent Owner’s arguments and determine, on the current record, that they do not demonstrate a deficiency in Petitioner’s position for purposes of instituting trial. We determine, on the limited record before us, that Petitioner sufficiently demonstrates that Yoakim renders obvious the subject matter of limitation 1.r. Yoakim expressly discloses that “[t]he identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, *by controlling* the rotational motor driving the capsule holder or/and *the pump supplying liquid in the capsule.*” Ex. 1004 ¶ 477 (emphasis added) (cited at Pet. 70–71). Yoakim also expressly discloses that “[t]he control of the volume of liquid injected in the capsule is carried out by the control means *selectively activating the pump 211* to meter the proper volume of liquid.” *Id.* ¶ 522 (emphasis added) (cited at Pet. 70–71); *see id.* ¶¶ 25 (describing a “control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule”), 218 (“The control unit may control the delivery of the added volume of water so that the volume is added at the same time as the coffee extract is delivered by centrifugation so that the foam that is created on the top of the beverage is not destroyed.”). Based on

these disclosures, we preliminarily determine that Yoakim at least suggests an identifier that encodes information used by the specific coffee machine to activate a pump of the specific coffee machine.

We do not agree with Patent Owner that “rotational momentum” causes the flow of water to a capsule. Yoakim expressly discloses that a low pressure pump delivers water to the capsule inlet in sufficient quantities such that rotational effects are able to provide a consistent flow into the capsule. *See* Ex. 1004 ¶¶ 428 (“[T]he water pump can deliver a water pressure and flow rate sufficient to provide a continuous water flow (i.e., without flow shortage due to the centrifuge pumping effect in the capsule) at the operational centrifugal speeds during centrifugation.”), 477 (disclosing that the identification means is associated with the control means to control the rotational motor *or* the pump (cited at Pet. 63)), 522 (“The control of the volume of liquid injected in the capsule is carried out by the control means selectively activating the pump 211 to meter the proper volume of liquid.” (cited at Pet. 63)). Thus, this disclosure suggests that the pump is activated before experiencing the centrifuge pumping effect from a rotating capsule.

To the extent that Patent Owner argues that the claim requires the pump, and only the pump, to be activated when the identifier is confirmed by comparing the read information to a stored reference (Prelim. Resp. 51), we do not read the claims so narrowly, based on the limited record before us. The claim recites an identifier that “encodes information used by the specific coffee machine to activate a pump of the specific coffee machine.”

Ex. 1001, 13:41–43. The language of this limitation does not appear to exclude the circumstance whereby the encoded information causes other components of the coffee machine to be activated, nor does it appear to require the pump to be the first component to be activated.

Accordingly, on the current record, we determine that Yoakim renders obvious the subject matter of limitation 1.r. Based on this preliminary determination, we need not determine, at this stage of the proceeding, if Jarish '929 or Rossi individually, or combined with Yoakim, renders obvious the subject matter of limitation 1.r. These contentions are part of the trial record, however, and may be considered on the complete trial record as necessary to reach a final written decision.

Upon review of the information in the Petition and corresponding evidence, including Petitioners reasons for combining the teachings of Jarisch '929 and Yoakim and Patent Owner's counter arguments, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Yoakim and Jarisch '929 teaches or suggests an individualization identifier configured as recited in claim 1.

j) Conclusion

Having reviewed the preliminary record, including Petitioner's showing as to how the combined teachings of Yoakim, Jarisch '929, Rossi, and Rapparini, disclose each of the limitations of claim 1, and the reasons for combining the teachings of these references, we determine that the information in the Petition demonstrates a reasonable likelihood that claim 1 is unpatentable under 35 U.S.C. § 103(a) over Yoakim, Jarisch '929, Rossi, and Rapparini.

3. Independent Claim 8

Independent claim 8 recites the same subject matter as claim 1, except claim 8 does not include limitation 1.t. *Compare id.* at 14:5–15:6, *with id.* at 12:52–13:53. Petitioner and Patent Owner group claims 1 and 8 together. Pet. 45–74; Prelim. Resp. 5–65. For the reasons discussed above in our analysis of independent claim 1, we determine that the information in the

Petition demonstrates a reasonable likelihood that claim 8 is unpatentable under 35 U.S.C. § 103(a) over Yoakim, Jarisch '929, Rossi, and Rapparini.

4. *Dependent claims 2–7*

As we discuss above, Petitioner has demonstrated a reasonable likelihood of success in proving that at least claims 1 and 8 of the '910 patent are unpatentable, and we institute on all challenges raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); 37 C.F.R. § 42.108(a) (“When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”).

We have, however, reviewed Petitioner’s contentions and citations to the evidence and determine that Petitioner has made a sufficient showing, on the current record, that dependent claims 2–7, which depend ultimately from independent claim 1, are unpatentable under 35 U.S.C. § 103(a) over Yoakim, Jarisch '929, Rossi, and Rapparini. Patent Owner does not make any arguments directed to these dependent claims, except for the arguments directed to independent claims 1 and 8, which we address above.

III. CONCLUSION

For the above reasons, we determine that the information presented in the Petition shows a reasonable likelihood that at least claim 1 of the '910 patent is unpatentable as obvious over Yoakim, Jarisch '929, Rossi, and Rapparini. Because Petitioner demonstrates that at least one claim of the '910 patent meets the threshold for institution, we institute an *inter partes*

review of all claims as challenged in the Petition. 37 C.F.R. § 42.108(c); *SAS*, 138 S. Ct. at 1359–60.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–8 of the '910 patent is *instituted*; and

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

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Patent 11,554,910 B2

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