

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NESPRESSO USA, INC.,
Petitioner,

v.

K-FEE SYSTEM GMBH,
Patent Owner.

Case IPR2024-00257
U.S. Patent No. 11,548,722

PATENT OWNER PRELIMINARY RESPONSE

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LIST OF EXHIBITS

Exhibit	Description
Ex. 2001	EP 08171069 Application (filed Sept. 12, 2008)
Ex. 2002	U.S. Patent No. 9,545,121 (issued Jan. 17, 2017)
Ex. 2003	U.S. Patent No. 9,545,121 (issued Jan. 17, 2017), Response to June 6, 2016 Office Action (dated September 7, 2016)
Ex. 2004	WO 2008/148646A1 (issued Dec. 11, 2008) (“Yoakim I”)
Ex. 2005	U.S. Patent No. 10,800,600 (issued Oct. 13, 2020), File History (“’600 File History”)
Ex. 2006	WO 2008/148601A1 (issued Dec. 11, 2008) (“Yoakim ’601”)
Ex. 2007	Nestlé Nespresso SA, <i>The Nespresso History: From a Simple Idea To a Unique Brand Experience</i> (May 2016), https://nestle-nespresso.com/sites/site.prod.nestle-nespresso.com/files/Nespresso%20-%20History%20Factsheet(1).pdf
Ex. 2008	Nespresso, <i>Nespresso Pixie Instruction Manual</i> , https://www.nespresso.com/shared_res/manuals/pixie/2010/www_Pixie_Z2_NESPRESSO(EN_HE).pdf
Ex. 2009	United States Patent and Trademark Office, <i>CPC – Cooperative Patent Classification A 47J</i> , https://www.uspto.gov/web/patents/classification/cpc/html/cpc-A47J.html#A47J31/44
Ex. 2010	United States Patent and Trademark Office, <i>CPC – Cooperative Patent Classification A 23F</i> , https://www.uspto.gov/web/patents/classification/cpc/html/cpc-A23F.html#A23F5/26
Ex. 2011	<i>Nespresso USA, Inc. v. K-fee System GmbH</i> , IPR2023-00485, Transcript of Deposition of Michael J. Jobin (Nov. 28, 2023)
Ex. 2012	U.S. Patent Appl. Pub. No. 2009/0007792 (Pub. Date Jan. 8, 2009)

Exhibit	Description
Ex. 2013	U.S. Patent Appl. Pub. No. 2008/0302252 (Pub. Date Dec. 11, 2008)
Ex. 2014	WO2008100597A1 (issued Aug. 21, 2008)
Ex. 2015	Bialetti, <i>Moka Express</i> – Bialetti, https://www.bialetti.com/it_en/moka-express.html
Ex. 2016	<i>Nespresso USA, Inc. v. K-fee System GmbH</i> , IPR2022-01574, Transcript of Deposition of Michael J. Jobin (June 22, 2023)
Ex. 2017	EP 08102147 Application (filed Feb. 29, 2008)
Ex. 2018	<i>Nespresso USA, Inc. v. K-fee System GmbH</i> , IPR2022-01574, Paper No. 28, Record of Oral Hearing (PTAB Jan 12, 2024)
Ex. 2019	Declaration of Ian B. Brooks in Support of the Patent Owner’s Preliminary Response under 37 C.F.R. § 42.107 (Mar. 28, 2024)

Patent Owner K-fee System GmbH (“K-fee” or “Patent Owner”) submits this Preliminary Response to the above-captioned Corrected Petition for *Inter Partes* Review of U.S. Patent No. 11,548,722 (“the ’722 Patent”) (“Petition” or “Pet.”).¹

I. Introduction

On its face, Nespresso USA, Inc.’s (“Nespresso” or “Petitioner”) submission fails to provide the Patent Trial and Appeal Board (“Board”) with the basic evidence required to institute any *inter partes* review. If the Board nonetheless institutes trial on the challenged claims, Patent Owner will address in detail in its § 42.120 Response the numerous substantive errors and shortcomings that underlie each of Petitioner’s arguments and its purported evidence. In this paper, however, Patent Owner focuses on several fundamental shortcomings of the Petition under §42.107: in particular, critical substantive deficiencies that result in a failure to demonstrate, as to any of the challenged claims, a reasonable likelihood of success on any asserted ground of invalidity. Because of this clear threshold failure, the Petition should be denied and no *inter partes* review should be instituted under 35 U.S.C. § 314.²

¹ All emphases added, unless otherwise noted.

² The Parties are in litigation where Petitioner’s VertuoLine system meets the claim requirements. Nothing in this Response shall be regarded as a disclaimer of

A. Background

K-fee sells beverage machines and capsules for use in them. K-fee's Verismo machine is recognizable to American consumers through K-fee's marketing/past sales through Starbucks®. In the late 2000's, partly due to securing machines against use with inferior coffee capsules, K-fee conceived various ideas to identify capsules.

Contrary to the Petition, there can be no dispute that Nespresso's Vertuo System takes from K-fee's innovative ideas. After K-fee filed its PCT application in 2011 describing the inventions of Marc Krüger, including improvements to beverage portion capsules, in 2014 Nespresso launched the Vertuo System that falls squarely within K-fee's patents' claims and is the subject of multiple patent disputes between the parties around the world. Having now benefited from K-fee's patented inventions, Nespresso seeks to avoid compensating K-fee for the benefits Nespresso reaped. In this proceeding, Petitioner conjures up a story to suggest wrongdoing on the part of K-fee. But that is a false narrative. K-fee's inventions predate the introduction of the Vertuo System. And as explained herein would not have been obvious in view of Nespresso's two grounds of unpatentability.

claim scope and nothing shall be regarded as a concession that any of the cited references are in fact prior art.

As a threshold matter, Petitioner has failed to demonstrate even a reasonable likelihood of prevailing as to any claim, and the Petition should be denied for at least the following reasons:

- The Petition fails to demonstrate a reasonable likelihood that a person having ordinary skill in the art (“POSITA”) would have combined the teachings of Yoakim with Jarisch 929, Rossi, and Rapparini to arrive at the claimed invention. As an initial matter, the Petition fails to provide rationale or evidence for the combination of discrete and independent teachings of alternative embodiments within the various individual references, particularly Yoakim. This alone justifies denying institution. *Abiomed, Inc. v Maquet Cardiovascular, LLC*, IPR2017-01204, Paper 9, at 8-11 (PTAB Oct. 23, 2017) (denying institution where Petition failed to provide rationale to combine the teachings of the reference’s different embodiments).
- The differences between the various distinct embodiments of Yoakim, Jarisch 929, Rossi, and Rapparini are significant, and the modifications Petitioner argues to make are unnecessary and complex. This too dooms Petitioner’s grounds. *See, e.g., In re Ratti*, 46 C.C.P.A. 976, 981 (CCPA 1959) (rejecting prior art combination because the combination “would require a substantial reconstruction and redesign of the elements shown

[in the prior art] as well as a change in the basic principles under which [the prior art] construction was designed to operate”); *In re Schweickert*, 676 Fed. App’x 988, 995 (Fed. Cir. 2017) (reversing Board’s obviousness determination where proposed modification of prior art is “unnecessary” to prior art system that “already” performs function of proposed additional feature and “would do little more than add unwanted cost and complexity to the system”);

- The Petition fails to demonstrate a reasonable likelihood that Yoakim and Rossi disclose or render obvious “a pump controlled to push water into the portion capsule only upon a determination that the read optically detectable identifier agrees with a stored reference,” as claimed in independent claim 1. This alone, even without the other compelling reasons presented herein, dooms Petitioner’s grounds, which all require demonstrating a reasonably likelihood of prevailing on claim 1; and
- The Petition fails to demonstrate a reasonable likelihood that Yoakim and Rapparini teach or render obvious a plurality of vertically oriented grooves, as claimed in claim 1. This alone, even without the other compelling reasons presented herein, dooms Petitioner’s grounds,

which all require demonstrating a reasonably likelihood of prevailing on claim 1.

For these reasons, as explained in more detail below, the Petition fails to meet the threshold burden of showing a reasonable likelihood of success as to any challenged claim. The very purpose of the § 314 threshold is to avoid the empty, wasteful exercise Petitioner asks this Board to commence. Because the Petition on its face fails to show a reasonable likelihood of success as to any challenged claim, Petitioner's request for a trial should be denied.

B. Overview of the '722 Patent

The '722 Patent claims are generally directed to a beverage system for producing a beverage comprising a portion capsule that includes a base element having a cavity in which a beverage raw material is provided and which is closed by a foil lid sealed to the base element. Ex. 1001 at Abstract, Claims. The portion capsule includes a pump controlled to push water into the portion capsule only upon a determination that the read optically detectable identifier agrees with a stored reference. The portion capsule further includes a base element that has a wall region with radial spaced and vertically oriented drawn grooves and a cavity that has radially spaced and vertically oriented drawn ribs. The '722 Patent has one independent claim (Claim 1) and twenty-three dependent claims (2-24).

The family claims priority to PCT/EP2011/003677 (“the PCT application”), filed July 22, 2011. The PCT application, in turn, claims priority to three German patent applications filed on (1) July 22, 2010 (Ex. 1046); (2) September 2, 2010 (Ex. 1047 or “the second German application”); and (3) February 7, 2011 (Ex. 1045) (collectively, “the German applications”).

During prosecution of the application resulting in the ’722 Patent, Patent Owner made substantial efforts to ensure the Examiner considered Petitioner’s IPR arguments. *See* Ex. 1002. Specifically, Patent Owner submitted a Supplemental Information Disclosure Statement on November 23, 2022, identifying the petition for IPR of related U.S. Patent No. 11,254,491 and noting specifically for the Examiner the grounds relying on the combination of references including Yoakim (Ex. 1004), Jarisch 929 (Ex. 1006), Castellani (Ex. 1009), and Rossi (Ex. 1041). Ex. 1002 at 584-587. Patent Owner specifically “request[ed] the Examiner review the references and documents in Petitioner’s Exhibit List.” *Id.* at 586. Patent Owner also highlighted for the Examiner Petitioner’s arguments regarding Rossi’s alleged pump control. *Id.*

Following the Supplemental IDS submission, the USPTO issued a Corrected Notice of Allowability on December 7, 2022, that was responsive to K-fee’s November 23, 2022, communication to the Patent Office. Ex. 1002 at 583. Patent Owner thus made every effort to ensure that examination of the ’722 Patent

evaluated the references Petitioner now presents to the Board. Further, the examination of the '722 Patent clearly considered the references Petitioner now presents to the Board as if they were just recently discovered and not duly considered by the Examiner. The Petition seeks to undermine Patent Owner's candor before the Office and the Examiner's decision to issue the claims in view of the references now presented. Petitioner irresponsibly suggests that Patent Owner withheld from consideration institution decisions during substantive prosecution. Pet. at 15. This suggestion is absurd because those decisions did not yet exist. The '722 Patent granted on January 10, 2023. Ex. 1001 at 1. The '491 Patent institution decision did not yet exist as it did not come down until *over three months* later on April 14, 2023. Moreover, the IPR petitions for the '430 and '923 Patents *were not even filed until January 24, 2023*, and institution decisions were entered *on September 13, 2023*. Upon receipt of all IPR petitions, inspections of the files of the pending cases in the same family would reveal that Patent Owner made each one available to the Examiner. No relevant conclusion can be drawn in favor of Petitioner from the actual facts that occurred.

II. Petitioner Has Not Demonstrated a Reasonable Likelihood that at Least One Claim of the '722 Patent Is Unpatentable

A. Petitioner's Motivations To Combine Fail (All Grounds)

Petitioner argues that a POSITA would have combined multiple independent embodiments within Yoakim together with Jarisch '929, Rossi, and Rapparini, thus

rendering the inventions of the '722 Patent obvious. Pet. at 36-43. Not so. Petitioner's arguments fail to make even a prima facie showing of motivation to combine the references.

1. Petitioner's Arguments To Combine Embodiments within Yoakim Lack any Necessary Rationale

Petitioner seeks to combine several different embodiments within Yoakim to cover K-fee's claims. *See, e.g.*, Pet. at 44-47, 51-54, 57-58, and 71. But there is an absence of any rationale in the Petition to support such generic unexplained combination (*see generally* Petition), and as a result the Petition should fail. *Abiomed*, IPR2017-01204, Paper 9, at 8-11 (denying institution where Petition failed to provide rationale to combine the teachings of the reference's different embodiments). A close review of Yoakim reveals that the proposed combination is not supportable and is arrived at only through hindsight of K-fee's claims.

a. Yoakim has a long history of distinct inventions that the Petition fails to address.

Yoakim reveals a complex ancestral lineage to nearly one dozen application filings spanning from June 2007 to May 2010. Indeed, on its face Yoakim identifies numerous priority and continuation-in-part applications, which add new material not found in prior applications. Ex. 1004 at 1. Yoakim aggregates (without interrelating) the various discrete embodiments from among those filings, and groups them based upon, *inter alia*, the nature of the valve arrangement for brewing, the nature of

whether the capsules are part of a set of different volume capsules, whether the system employs a sensing device for selectively controlling the machine based on the different volume of capsules in the set, and the nature of the intended beverage. Thus, while Yoakim is a single reference, it lacks any teaching that would suggest combining the various discrete embodiments in the way Petitioner seeks.

Moreover, despite all of these disparate teachings, nowhere has Petitioner explained *if* or *how* the different respective embodiments are taught as interchangeable with each other or otherwise provided sufficient rationale to combine the different teachings of those embodiments. The reality is there is no basis, in Yoakim or otherwise, for combining the different embodiments of Yoakim in the way Petitioner seeks.

It is black letter law that regardless of whether an obviousness argument “is based on combining disclosures from multiple references, combining multiple embodiments from a single reference, or selecting from large lists of elements in a single reference,” Petitioner *must* direct [the Board] to “a motivation to make the combination and a reasonable expectation that such a combination would be successful, otherwise a skilled artisan would not arrive at the claimed combination.” *In re Stepan*, 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2017); *Lumenis BE Ltd. v. BTL Healthcare Techs. A.S.*, IPR2021-01280, Paper 8 at 20 (PTAB Mar. 9, 2022) (“Given that Petitioner’s obviousness assertions rely on combining the teachings

from multiple embodiments, Petitioner was **required** to provide **some** explanation of how those teachings fit together to teach or suggest a method employing all of the steps recited in the claims.”).

Petitioner’s failure to even **mention** a motivation to combine the various embodiments of Yoakim is a fatal omission that cannot be cured. *Amazon.com, Inc. v. Almondnet, Inc.*, IPR2022-01455, Paper 12 at 18 (PTAB Apr. 6, 2023); *Intel Corp. v. Tela Innovations, Inc.*, IPR2019-01521, Paper 65 at 25 (PTAB Mar. 9, 2021) (FWD finding claims not unpatentable where Petitioner failed to “explain why a POSITA would have combined the elements disclosed in the separate embodiments described in [the reference]”); *Hewlett Packard Enterprise Co. v. Intellectual Ventures II LLC*, IPR2022-00115, Paper 9 at 15 (PTAB Mar. 29, 2022); *Abiomed*, IPR2017-01204, Paper 9 at 11; *Google LLC v. AGIS Software Dev., LLC*, IPR2018-01086, Paper 10 at 19 (PTAB Dec. 4, 2018); *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“A patent composed of several elements is not proved obvious by merely demonstrating that each of its elements was, independently, known in the prior art.”). The defect in the Petition regarding the combination of the various different embodiments of Yoakim is exacerbated by the fact that the various different embodiments are **not** intended to be combined.

Instead of showing why or how a POSITA would have combined the distinct alternative embodiments within Yoakim, Petitioner provides various lengthy strings

of citations to Yoakim without identifying that those paragraphs pertain to different embodiments, and without explaining the if, why, or how the alternative embodiments could be combined. *See, e.g.*, Pet. at 44-46, 51-53, 57 (relying on a combination of Yoakim's embodiments of Figs. 1, 4, 6, 23, 26-27, 61 for independent claim 1). "It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art." *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 448 (Fed. Cir. 1986).

b. Yoakim's different embodiments are not interchangeable and Petitioner ignores this fact.

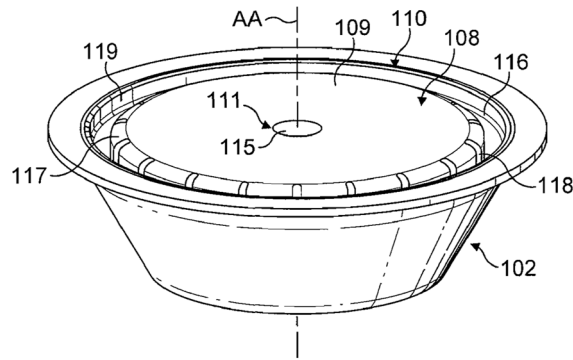
As mentioned above, Petitioner draws from several different embodiments of Yoakim, and ignores that the different embodiments are each specific to particular requirements for multiple different systems. These differences are reflected across Yoakim's embodiments, yet the Petition offers no reasoning for their combinations. The explanation for Petitioner's failure is clear—a POSITA would *not* have combined the very different designs presented in each of the distinct embodiments disclosed in Yoakim.

As an initial matter, the Petition fails to offer any evidence or argument to support why and how the "plate valve" system for capsule sets of Fig. 61 of Yoakim and the "no valve" system for single volume capsules of Fig. 4 of Yoakim would

have been combined to achieve K-fee's claims. *See* Pet. at 51-53 (jumping between different embodiments), 59 (same). Figure 4 of Yoakim has no valve that would provide a seal, and the injection assembly is shown always permitting a lateral gap. On this basis alone, it depicts another brewing module that is different and unlike the ones found in Figures 35 and 61. *See* Ex. 1004 at [0181], Fig. 4; *compare id.* at Figure 4, [0187] ("FIG. 4 shows a more sophisticated system of the invention.") *with* Figures 35, 61, [0426] ("a beverage preparation device, as illustrated in FIGS. 32 and 33"), [0512] ("In the embodiment of FIGS. 61 and 62...."), [0061]-[0064] (showing Figures 32-35 illustrate different views of the same embodiment). This is fatal to the Petition.

Moreover, there are significant differences in the Yoakim embodiments that the Petition fails to explain. For example, there are differences found in the brewing device and capsules. *Compare* Ex. 1004 at Figs. 35, 38 *with id.* at Figs. 61, 62. For example, Petitioner has not addressed the teachings that Yoakim Figs. 35 and 38 employ a specific capsule (depicted in Figs. 28-31) with a peripheral collecting recess 116 surrounding the tubular inlet portion 113, and positioned inwardly and below the peripheral rim 104, to receive coffee that exits the outlet openings 118. The capsule is loaded into a capsule holder of a machine having a single size, and that is not configured to receive multiple different volume capsules. *See* Ex. 1004 at Figs. 33-35, [0062]-[0065]. Despite Petitioner's reliance on Yoakim's other

embodiment depicted in Figs. 61 and 62, Petitioner has not addressed that the capsules of Figs. 61 and 62 do not explicitly show any such collecting recess, and the capsule holder is configured to receive capsules in a set of different volumes.



Ex. 1004 at Fig. 29.

Moreover, Petitioner has not addressed an even more compelling distinction in that the system of Fig. 35 (below) employs a specific valve assembly for that type of capsule (Figs. 28-31 type of capsule) which Yoakim depicts and describes as a water injection subassembly 129 shown in Fig. 36 (as having a peripheral collection recess 116) and described in paragraphs [0429] and [0434]-[0440].

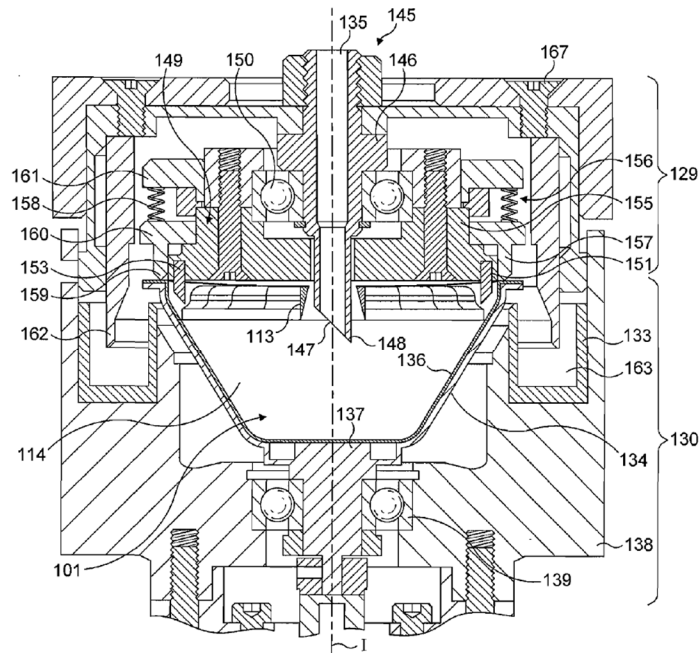


FIG. 35

Ex. 1004 at Fig. 35.

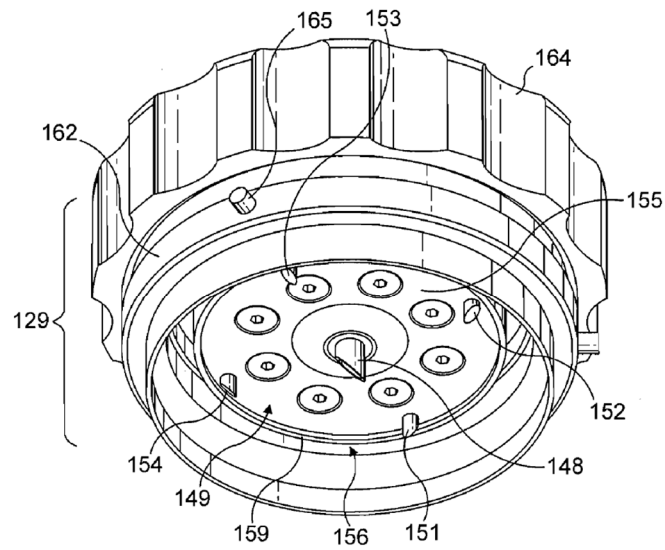


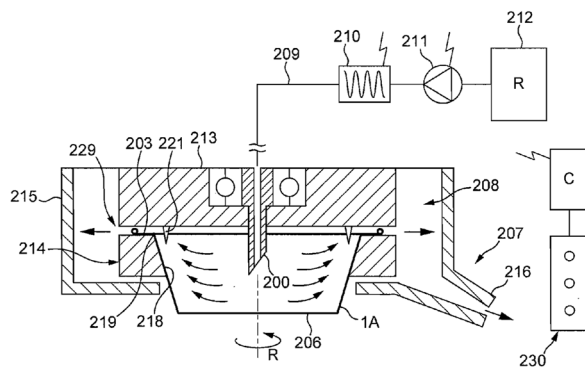
FIG. 36

Id. at Fig. 36.

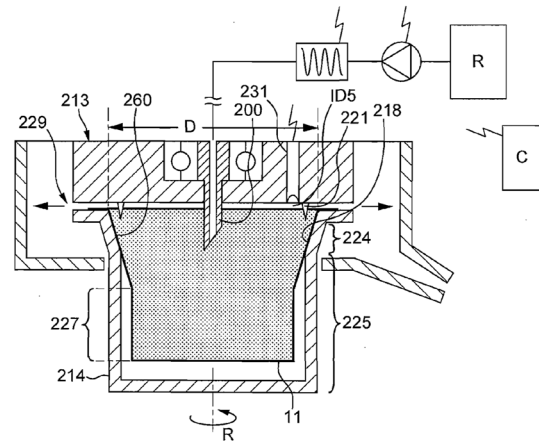
It is the V-shaped surface 159 (depicted in Figures 35 and 36) that Petitioner relies upon as teaching the claimed seal arrangement. *See* Pet. at 64-70. However, that seal, as used in the water injection subassembly of Fig. 36, dates back to February 29, 2008 where it is described in combination with the capsules depicted in Figs. 28-31. *See* Ex. 2017 (EP08102147) at Figs. 5-14. The disc-shaped engaging wall 155 is fixed vertically in place during brewing with a bottom surface that is juxtaposed inwardly with the peripheral rim 104. This “inwardly” arrangement of the disc-shaped engaging wall 155 is necessary to allow the coffee to escape from above the collecting recess in order to apply pressure to the V-shaped surface 159. *See* Ex. 1004 at [0435]-[0436]. During brewing, the only movement of an element within the water injection subassembly is the raising of the V-shaped surface 159 for allowing coffee to escape. The V-shaped element 159, which is an integrated component of the Fig. 36 assembly, is designed to be lifted by the pressure of coffee that escapes from the annular recess (and Petitioner has not explained where there is any real estate to accommodate the sensing device 231 of Fig. 61 or how the sensing device would be positioned to avoid “unbalance”).

In contrast, the system of Figs. 61 and 62 (below) (as with the system of Figs. 54 (below) and 55) is configured to employ an alternative type of valve assembly. That valve requires that there be a plate-like interface assembly 213 that extends over the capsule flange. The interface itself forms a seal with the capsule rim during

initial brewing. Because it is suspended from a spring axially above it, the entire interface assembly 213 is vertically translatable during brewing. In this manner, pressure build-up from centrifugation during brewing results in the interface assembly 213 wholly raising to form a radial gap for brewed coffee to escape. This valve has its origin in an application by Petitioner's affiliate (and real party-in-interest ("RPI")) dating to or about December 9, 2008. *See* Exs. 2001 (EP 08171069), 2002 at Cover (30), Figs. 4-6 (citing EP 08171069 for priority).



Ex. 1004 at FIG. 54



Ex. 1004 at FIG. 62

In fact, the difference is of such a nature that Petitioner's affiliate and RPI distinguished this over its own Yoakim I to obtain U.S. Patent No. 9,545,121. *See* Exs. 2003 at 3-6 (distinguishing over differences in valve engagement); 2002 at Figs. 4-6 (illustrating similar structure to Yoakim's Figures 32-36 in Figs. 4-6); 2004 ("Yoakim I") at Figs. 7-19. Specifically, as shown from the excerpts below, in prosecuting the pending application that resulted in U.S. Patent No. 9,545,121,

Petitioner's affiliate and RPI distinguished "Yoakim I" based, in part, on the valve configuration, contending it would not have been obvious to achieve the pending claims because Yoakim I "does not even suggest a plate" structure as found in, e.g., Ex. 1004 Figures 54 and 62 above.

The secondary reference *Yoakim I* teaches an annular engaging portion 57 that comprises a pressing surface 59 applying a closing force on the peripheral rim 4 of the capsule to be able to restrict the flow of liquid. See *Yoakim I*, page 14, second full paragraph. Increased pressure of liquid on the internal surface of the pressing surface 59 can lift the pressing surface 59 to create a small passage for the liquid. See *Yoakim I*, page 17, first full paragraph. Nevertheless, *Yoakim I* does not even suggest a plate that is pressed to engage the pressing surface portion with the force-setting portion.

Therefore, *Baecchi* and *Yoakim I* alone or in combination fail to disclose or suggest applying a resilient load from a resilient member onto the plate to engage the pressing surface portion with the force-setting portion, the annular raising portion being rigid to resist compression by the pressing surface portion applying a closure force thereto; and forcing the valve to open by the pressing surface portion of the valve being pushed against the resilient member by the centrifuged liquid that is moving away from the annular raising portion for creating a flow restriction gap while the annular raising portion remaining of a relatively constant dimension to restrict the centrifuged liquid flowpath through the restriction gap as required by the present claims.

Ex. 2003 at 5; *see also id.* at 3.

Additionally, the Petition has not explained that the use of the complex spring arrangement of Yoakim Fig. 35 would or could have been modified for use in the system of Figs. 54, 55, 61, and 62 to accommodate a multi-capsule set with different capsule volumes. In fact, the Petition is absolutely silent as to the obstacles that a skilled person would have faced in seeking to implement such a spring biased valve

into a system intended for brewing multiple different capsule volumes. 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 of the Figs. 54, 55, 61, and 62 embodiments, 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 occasioned by the different capsules in a set.

The valve structure in Yoakim I (Ex. 2004) at Fig. 10 is similar to the valve structure at Figure 35 of Yoakim, while the structure of Yoakim's Figs. 54, 55, 61 and 62 exhibit a similar plate structure to that found in the '121 Patent's (Ex. 2002) Figures 5-7. Thus, even the patentee of Yoakim would not contend that combining these embodiments would have been obvious and Petitioner should not be allowed to argue otherwise here.

But even looking past the prior disparagement of the combinations argued here, the Petition has not explained how or why the use of the complex spring arrangement of Yoakim Fig. 35 would or could have been modified for use in the system of Figs. 54, 55, 61, and 62 to accommodate a multi-capsule set with different capsule volumes. *See generally* Pet.

Moreover, an examination of Fig. 61 reveals that there is no need whatsoever for the seal of Fig. 35, because the interface assembly seals already at the peripheral

flange using the capsule flange surface. Thus, a second seal would introduce an unnecessary redundancy, would add complexity to the system of Figs. 61 and 62, and would alter the principle of operation of the Figs. 61 and 62 interface assembly. *In re Schweickert*, 676 Fed. App'x at 995.

Petitioner is plucking one element of a complex subassembly 129 and relocating it to a different interface assembly that already performs the sealing function by the interface assembly engaging with the peripheral flange. This would require a substantial reconfiguration of Fig. 61, and Petitioner has not explained how such modification could be made. The design of the valve in FIG. 35 requires that the spring pushes against a fixed counter-force portion to keep the valve closed. It is seen that during brewing the engaging wall 155 and the perforators remain fixed in position relative to the capsule. Not only does Fig. 61 not have a fixed counter-force portion, it does not have a fixed surface to act as the counter-force portion since the entire interface assembly moves up and down to create the seal. But the Petition has pointed to no teaching and has offered no explanation as to the modifications needed to address the varying backpressures that the valve would encounter from the various different volume capsules in a capsule set.

Nor has the Petition addressed the fact that the different valve systems of Fig. 35 and 61 came about at different times in response to different needs and were intended to be used for different purposes (e.g., capsules having a peripheral

collection recess 116 vs. capsules not having a collection recess and being part of a different volume set). The Petition ignores that the valve systems of Fig. 35 and 61 each have specific and unique sub-assemblies for deriving the valve functions. The Petition has not presented evidence or rationale to explain why a person of skill in the art would isolate the individual features like the spring and V-shaped member from the valve of Fig. 35 and somehow incorporate it into the valve embodiment of Fig. 61/62 that already has a sealing arrangement in its interface assembly 213 that extends over and seals the capsule flange.

Additionally, the perforators in Fig. 35 also move up and down, and due to their taper provide variable outlet opening sizes as the interface assembly moves upward. This in turn would influence pressure of fluid as it exits. Petitioner has not addressed the ability to use the structure of Fig. 61 to provide the radial laminar flow whereas in Fig. 35 the small opening and V-shaped surface would cause the fluid to spray outwardly in many directions. In view of at least the above, Petitioner has failed to offer any evidence or argument to support why and how the system of Fig. 35 and the system of Fig. 61 would have been combined. *See generally* Pet.

In summary, the Petition fails to present any explanation as to how or why a POSITA would have blended the divergent teachings of Yoakim's distinct embodiments that utilize different features that were tailored for specific capsules, valve arrangements, the nature of whether the capsules are part of a set of different

volume capsules, and whether the system employs a sensing device for selectively controlling the machine based on the different volume of capsules in the set, and the nature of the intended beverage.

2. Petitioner's Arguments To Combine Yoakim and Jarisch 929 Are Unpersuasive

The Petition's reasons for combining Yoakim with Jarisch 929 are flawed.

a. The Petition lacks motivation to place a code on the bottom of Yoakim's flange.

Petitioner suggests that Jarisch 929's placing of the code on the bottom of the flange would result in the reading of such code being more reliable. Pet. at 37-38. As an additional matter, Petitioner has not explained the principle of operation of Jarisch 929. Petitioner has not addressed the apparent requirement in Jarisch 929 that the code be read by a stationary sensor while the rim of the capsule is rotated relative to the sensor. *See* Ex. 1006 at [0066], Fig. 5. Nor has Petitioner addressed how or why a POSITA would alter the embodiment of Figs. 61 and 62 of Yoakim in which the sensing device spins and is mechanically coupled with the capsule, and there is no relative movement disclosed between a code and a sensor.

Additionally, Petitioner does not explain why such teachings in Jarisch 929 would have motivated a POSITA to modify Yoakim to relocate the code to the flange bottom given that it has not been shown that Yoakim would have experienced the alleged problem under the embodiments of Figs. 61-62. Indeed,

there is no reason to believe that Yoakim's placement of a "barcode" on the top of the membrane would suffer from readability issues, given that Yoakim's device reads the "barcode" before brewing when a capsule would not yet be soiled by beverage residues. Ex. 1004 at [0525], [0526]. Moreover, as illustrated below, the barcode (ID4 in the yellow region) is inboard of the tapered outlet perforators 221 (annotated in red) so when the capsule is spinning, the centrifugal forces acting on the fluid would drive the fluid out of the holes created by the perforator and in a direction radially away (annotated in green) from the sensor and the barcode—not towards it. *See id.* at Figs. 61, 62, [0507].

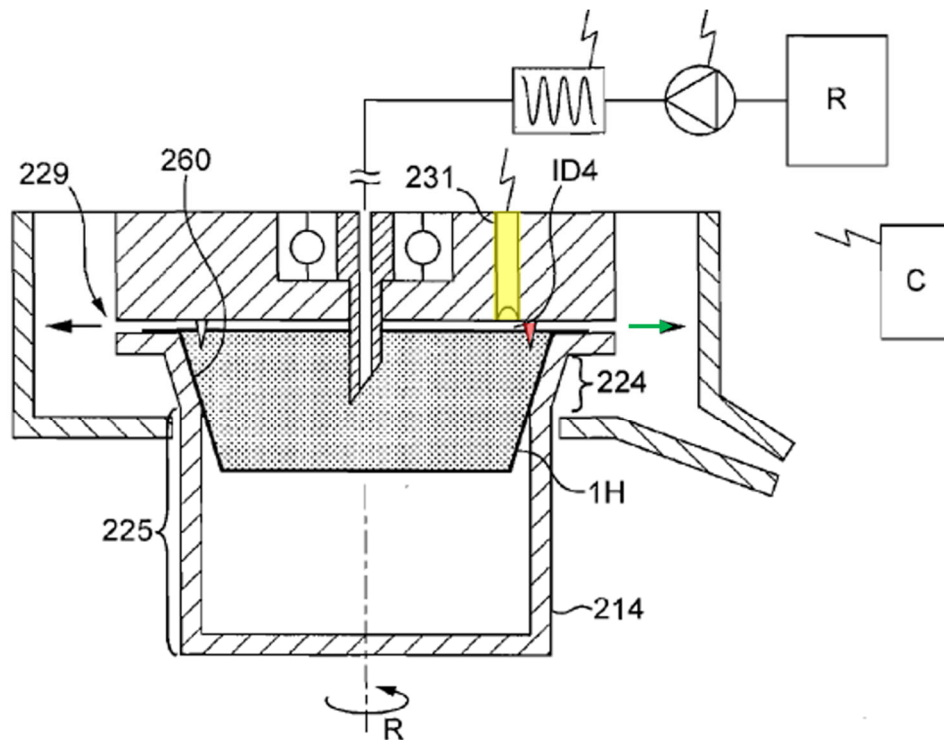


FIG. 61

There is not a showing to suggest the sensor 231 and the code would ever be exposed to the fluids.

Thus, the Petition has not addressed that Yoakim's sensor 231 or barcode would not be soiled and such a modification to Yoakim would be neither necessary nor beneficial. Thus, Petitioner's argument to combine the references for this reason should be rejected. *See, e.g., Pro-Dex, Inc. v. Intelligent Automation Design LLC*, IPR2023-00218, Paper 8 at 23-25 (PTAB Jul. 19, 2023) (denying institution where "Petitioner does not set forth sufficient articulated reasoning with rational underpinnings to supports its argument that it would have been obvious to a person of ordinary skill in the art to modify" one reference to include the functionality from another reference); *Trend Micro, Inc. v. Open Text Inc.*, IPR2023-00692, Paper 8 at 24 (PTAB Nov. 6, 2023) (finding combination insufficient where no explanation given as to how teachings might be beneficial in the system modified).

The teachings of Yoakim and Jarisch 929 are also contrary to the alleged combination, due to the insufficient space on Yoakim's rim to accommodate the code of Jarisch 929. Petitioner's expert contends that "the bottom of the flange of the Yoakim capsules provide adequate space for such a code to be repeated around the entire perimeter." Ex. 1003 at ¶218. But Yoakim teaches an annular portion that extends only "about 2-5 mm." Ex. 1004 at [0414].

In contrast, Jarisch 929 teaches placement of the code at a distance as much as 10 mm from the peripheral edge. Ex. 1006 at [0018] ("The support can also be disposed on the bottom side of the rim of the capsule. Typically, the distance of the

support from the peripheral edge is not more than 10 mm, more preferably not more than 8 mm.”), Fig. 2. Jarisch 929 explains that it is “particularly advantageous” to have “a large area for the symbols to be disposed.” *Id.* at [0017]; *see also id.* at [0063]. The need for a larger area for the code was thus seemingly recognized by Jarisch 929 as a solution to the asserted technical challenge of reading elements of a code sequentially. Yoakim lacks such a large area on the annular portion. And the Petition lacks any evidence to reconcile Yoakim’s teaching of an annular portion that extends about 2-5 mm with Jarisch 929’s teaching of a particularly advantageous large rim at least double the size of Yoakim’s. The Petition thus lacks any basis to conclude that Yoakim’s annular portion provides sufficient space. This is especially true when other features such as the toothed structure of Yoakim’s Figure 23 are also added, the effect of which is to further diminish the 2-5mm margin by the teeth 750.

Patent Owner notes that it will be discussed later that the disclosed structure also imposes obstacles upon the POSITA when seeking to combine the Rapparini reference because the grooves in Rapparini intersect with the flange thereby reducing the larger area required for the Jarisch 929 code.

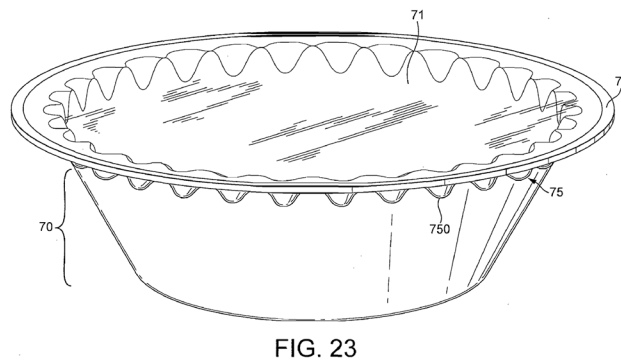
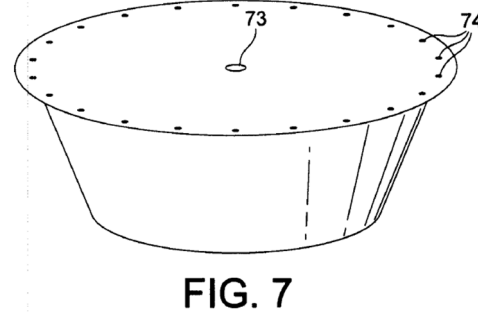
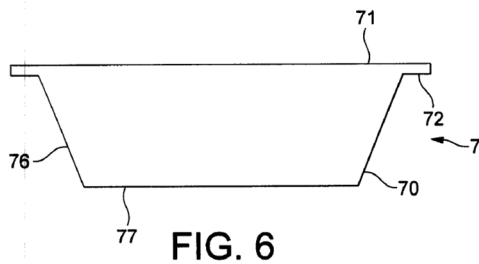
b. Petitioner’s RPI argued against such a modification.

As noted by Petitioner, Yoakim and Jarisch 929 have a common owner, Societe des Produits Nestle S.A. (formerly Nestec SA), an affiliate (and RPI) of

Petitioner, and a common inventor, Alexandre Perentes. Pet. at 36, 89 (listing Petitioner's RPIs). But this association "is merely the jumping-off point in reaching the determination of whether a claimed invention is obvious." *Trend Micro*, IPR2023-00692, Paper 8 at 22. As explained above, other facts undermine the alleged combination. Indeed, there are more reasons to reject Petitioner's attempts at combination of the references. For example, Jarisch 929's priority document was filed May 12, 2010, merely days after Yoakim was filed on May 7, 2010. *Compare* Ex. 1006 at 1 *with* Ex. 1004 at 1. Yet, Jarisch 929 makes no mention of Yoakim in the background or otherwise. Not only that, but Jarish 929 mentions at paragraph [0047] Desinart (WO 2010/026053 (Ex. 1007)) as the system for which the capsule was intended. Amongst the swamp of at least 14 priority claims in Yoakim, there is not a single claim of priority to the applications for Denisart. This suggests the inventors of those references and Petitioner's affiliate (and RPI) did not themselves see any clear relation between the two references.

Tellingly, during prosecution of Jarisch (Ex. 1005), a priority application to Yoakim (WO 2008/148601, Yoakim '601") (Ex. 2006), was cited against Jarisch. To overcome the rejection, Petitioner's affiliate (and RPI) disparaged the combinability of Yoakim '601 stating that "the skilled artisan would not have combined these cited references [including Yoakim '601] to arrive at a capsule comprising a code arranged on a bottom of the flange-like rim." Ex. 2005 at 6.

Yoakim '601 includes the same images Petitioner relies on here to support the opposite conclusion, i.e., placing the code on the bottom of the flange. *See, e.g.*, Ex. 2006 at Figs. 6-7, 23 (below).



See also Ex. 2005 at 8-9.

Petitioner's affiliate (and RPI) continued, stating that the other references (e.g., Jarisch) do not "provide any reason or motivation for the skilled artisan to modify *Yoakim* ['601] alone or in combination with *Boyd* (even if they are combinable) to include the claimed code on a bottom of the flange-like rim of a capsule as required by independent claim 1." Ex. 2005 at 8-9. Moreover, Yoakim (Ex. 1004) is a continuation-in-part of the Yoakim '601 reference and Figure 23 of Yoakim '601 is identical to Figure 23 of Yoakim. Thus, when prosecuting its own

application, Petitioner's affiliate (and RPI) argued that different references describing single-serve coffee capsules were not combinable.

In brief, because Yoakim (Ex. 1004) is a continuation-in-part of the Yoakim '601 reference, and Figure 23 of Yoakim '601 is identical to Figure 23 of Yoakim, Petitioner's prior arguments that Yoakim was not combinable should undermine Petitioner's arguments now to the contrary.

c. The differences in the capsule holders would discourage combining Yoakim and Jarisch.

Yoakim recognized a propensity for "unbalance" that would produce undesired vibrations. *See* Ex. 1004 at [0006], [0479], [0482], [0484], and [0507]. Yoakim sought to address this with a requirement for a "snug" fit between the capsule and the capsule holder. *See id.* at [0479], [0484], [0507]. The Petition fails to address this critical requirement and fails to address where such a "snug" fit could be found in Jarisch 929. Yoakim teaches that the capsule holder "*advantageously* has an interior surface or structure for engaging the capsule with the interior surface or structure configured to offer resistance to torque during rotation or for frictionally engaging or receiving a complimentary surface or structure of the capsule to enable the driving means to rotate the capsule." Ex. 1004 at [0024]; *see also id.* at [0094], [0205], [0216], [0507], [0512], [0517], Figs. 54, 55, 61, 62, 65. Yoakim explains that as a result of this complimentary surface, "the risk of producing vibrations during centrifugation is reduced because all the

capsules of the set are snugly fitted in the device with limited possible relative movement between each capsule and the device during rotation, i.e., capsule holder.” *Id.* at [0479], *see also id.* at [0478], [0484], and [0507]. The snug complementary fit is expressly taught to provide an important “safety function.” *Id.* at [0205]. Yoakim thus teaches, and depicts, the capsule side wall advantageously engaging with the capsule holder.

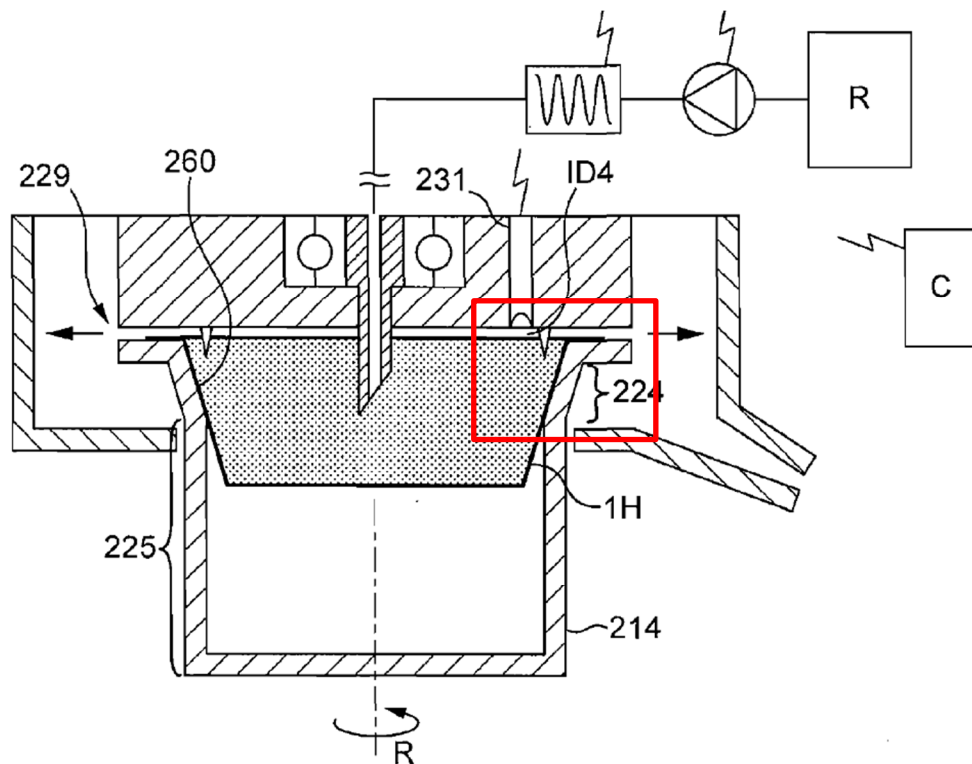
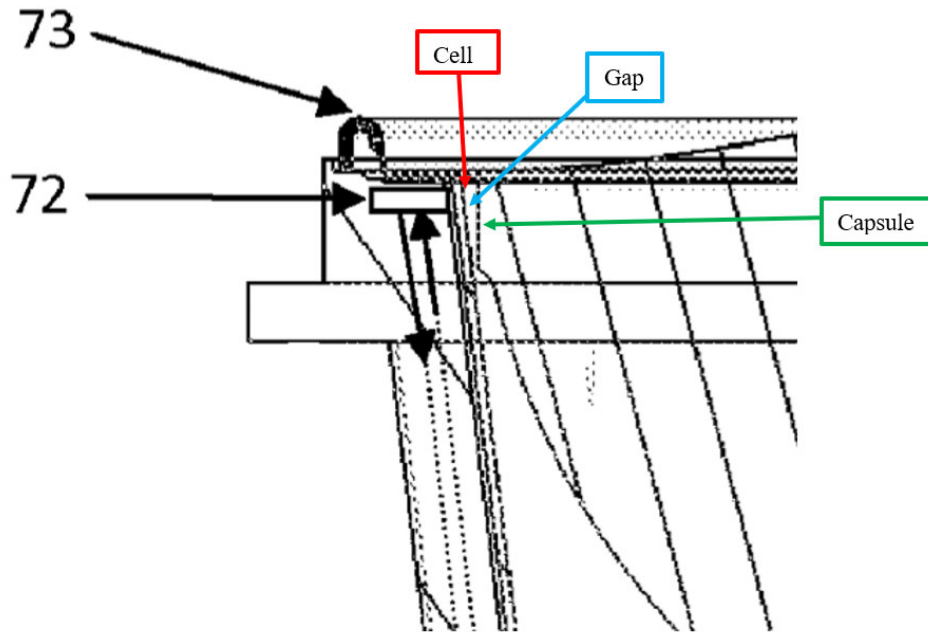


FIG. 61

In contrast, Jarisch 929's capsule does not engage with the interior of cell 3. As can be seen in Figure 5 of Jarisch 929 (zoomed in below), there is a deliberate gap between the capsule and the cell.



Petitioner's images obscure this gap with a blue line. As mentioned earlier, Jarisch 929 teaches that "the capsule of the invention" is designed for use in the system of "WO2010/026053" (Denisart, Ex. 1007). Ex. 1006 at [0047], [0048]. That reference indicates no unbalance problem sought to be avoided. In contrast, Yoakim describes various other systems with capsules designed for those systems and makes no mention of Denisart or its system at all. Ex. 1004 at [0002], Figs. 1-65. Yoakim and Jarisch 929 thus teach different systems and capsules for those systems. The Petition simply does not address and even seeks to obscure (with its blue line) what the effect would be due to the presence of this gap, particularly as to the "unbalance" problem identified in paragraphs [0006] and [0507] of Yoakim. This further demonstrates the challenges that discourage incorporation of the teachings from

Jarisch 929 into Yoakim and the unlikelihood that a POSITA would be motivated to incorporate the teachings from Jarisch 929.

Yoakim specifically emphasizes the “snug” fit between the capsule and the capsule holder as a solution to unbalance and vibrations. Denisart is silent as to unbalance and vibrations. Jarisch 929 pointed to Denisart instead of Yoakim even though they were filed days apart and had the same inventors and assignee. Yet the Petition has not reconciled that the capsule/capsule holder relationship of Jarisch 929 would not have satisfied the snug fit critical requirement of Yoakim, and thus there is no explanation why a POSITA would have been motivated to use the capsule of Jarisch 929 in the Yoakim system.

Given all the differences between Yoakim and Jarisch 929, it is hard to see why a POSITA would have modified Yoakim in view of Jarisch 929. Especially since the snug fit performs a safety function, the POSITA would have been discouraged from modifying Yoakim in view of the Jarisch 929 embodiment, which has a gap and incompatible capsules. Indeed, Petitioner has not demonstrated how (or why) Yoakim and Jarisch 929 could be combined without a substantial reconstruction and redesign of elements within the skill level of a POSITA. “An obviousness determination requires finding that a person of ordinary skill in the art would have been motivated to combine or modify the teachings in the prior art ***and would have had a reasonable expectation of success in doing so.***” *Regents of*

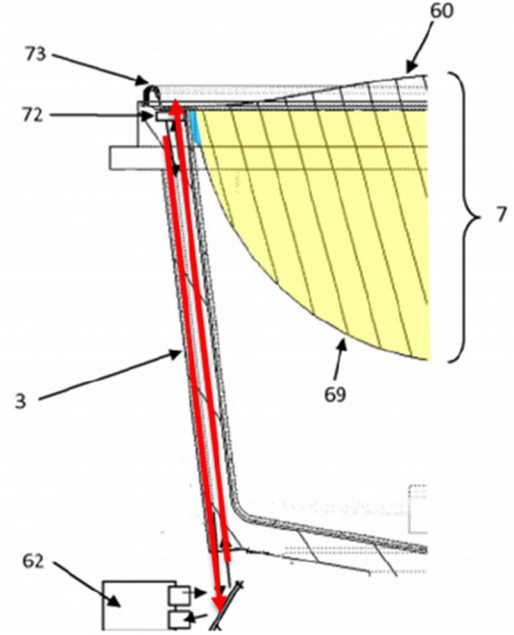
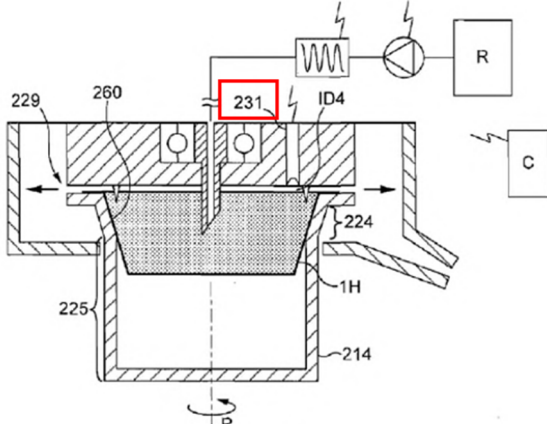
University of California v. Broad Institute, Inc., 903 F.3d 1286, 1291 (Fed. Cir. 2018). Here, as Petitioner explains, “[t]he Jarisch 929 optical reader configuration is depicted below [in the annotated Figure 5] in order to read the code on the capsule (yellow) with the light path (red) shown from detector (62) to capsule rim (73).” Pet. at 38. However, the “sensor/detector (231) [] enabled to identify and read a barcode” as described in Yoakim is positioned to read a code on the *opposite* side of the capsule. Pet. at 51; *see also* Ex. 1004 at [0525], Figs. 61, 62.

Moreover, Jarisch 929 tries to distinguish itself from prior art systems by asserting that it has a configuration to read a code sequentially as the code is rotated relative to the detector. Ex. 1006 at [0016], Figs. 3, 5. In contrast, Petitioner points to the embodiment of Figs. 61 & 62 of Yoakim in which a barcode (among other means) seemingly is read while it is in a fixed position relative to the sensing device 231. Given these diverging approaches, Petitioner has not explained how or why a skilled person would modify Yoakim with Jarisch 929, which would require (among other things) a complete reconfiguration of the multiple combined embodiments of Yoakim.

Recall from Section II.A.2 that a POSITA would have been discouraged from combining Jarisch 929 and Yoakim because of the potential “unbalance” described by Yoakim at paragraph [0507] that requires the snug fit. However, assuming *arguendo*, a POSITA could have moved, and would have moved the system shown

in Jarisch 929 into Figs. 61 and 62 in Yoakim, a POSITA would not have then sought to combine the annular V-shaped valve structure of Yoakim Figs. 35 & 36. This is because the resulting valve arrangement would resemble the valve system of Figs. 54 and 55, and there would have been no further need for the annular V-shaped valve arrangement of Figs. 35 & 36 of Yoakim. Petitioner has not reconciled any of these teachings and its proposed combination is nothing more than hindsight analysis.

Table 1 – Comparison of Sensor Placement in Jarisch 929 and Yoakim

Jarisch 929	Yoakim
 Pet. at 39 (citing Ex. 1006, Fig. 5).	 FIG. 61 Ex. 1004 at Fig. 61.

Not only would there be no motivation to make such a combination, the Petition fails to show that a POSITA would have had a reasonable expectation of success in moving the sensor to the bottom of Yoakim's brewing device. For example, unlike the cell 3 in Jarisch 929 which has a straight chamber made of transparent material

For the sensor/detector to pass light bidirectionally through this flared region, Yoakim would require extensive modifications, including mirroring or index-of-refraction matching within the flared structure. This would have been particularly challenging given the fact that the barcode of Yoakim would be read while the capsule holder is rotated from a capsule that is not required to be snugly fit. The use of Jarisch 929's transparent material would also have contributed to undesired refraction from anisotropy in the material, Fresnel effects, internal reflection,

transmission loss along the wall of the holder, and other impairment to the light available for detection. Petitioner asserts Jarisch 929 teaches use of a single external mirror to better position the detector; however, Petitioner ignores how complex an optics assembly needs to be for the accommodation of fully encapsulated optical elements within the wall structure of the capsule holder **and** to accommodate the flared wall structure of the Yoakim capsule holder necessary for assuring a snug fit with the accommodation for multiple-sized and multi-volume capsule set embodiments in Yoakim (i.e., Figs. 61 and 62), which require bending of a light beam. The combination of Yoakim and Jarisch 929 would thus require extensive experience with optics and more than ordinary skill.

In sum, the Petition fails to demonstrate that a POSITA would have had the requisite experience to utilize those teachings with a reasonable expectation of success. In fact, it would take extraordinary skill to derive a complicated reconfiguration to achieve the combination (if achievable at all) for at least the reasons presented above. *See Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985) (“The invention must be evaluated not through the eyes of the inventor, who may have been of exceptional skill, but as by one of ‘ordinary skill.’”); *In re Universal Elecs., Inc.*, 2023 WL 3335536, at *4 (Fed. Cir. May 10, 2023). Given all of this, Yoakim and Jarisch 929 would lead a POSITA **away** from combining these two references in the manner Mr. Jobin claims.

Here, the complicated optics assembly required in a harsh brewing environment required more than a conclusory assessment that the POSITA could have combined Jarisch 929 and Yoakim. The analysis requires an explanation of how such combination would have been made within the skills of the POSITA. *See generally PersonalWeb Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994-95 (Fed. Cir. 2017) (“But that reasoning seems to say no more than that a skilled artisan, once presented with the two references, would have understood that they *could be* combined. And that is not enough: it does not imply a motivation to pick out those two references and combine them to arrive at the claimed invention.”) (emphasis in original). But the Petition lacks any such facts.

Because the combination of Jarisch 929 and Yoakim would have required a significant redesign of the elements, including the unnecessary moving of the location of the sensor or detector (ostensibly directly into a flow path of the brewed coffee), insufficient space on Yoakim’s annular portion, and other significant differences, a POSITA would not have been motivated to combine the teachings of the two references. *See, e.g., In re Ratti*, 46 C.C.P.A. at 981. In addition, it cannot be forgotten that the Petition has not explained why or how the embodiments of Figs. 35 and 38 of Yoakim would have been modified to take into account the distinct valve arrangement of Figs. 54, 55, 61, and 62. The embodiment of Figs. 54, 55, 61, and 62 have their own unique sealing arrangement that co-acted with the upper

surface of the flange and had no need for the annular V-shaped element of Figs. 35 and 38. *Ex parte Saiki*, Appeal No. 2000-0373, Ser. No. 08/450,245, 2002 WL 32102452, at *3 (B.P.A.I. Jan. 17, 2002) (overruling rejection where no indication in the art that POSITA would have appreciated a problem to be solved and unclear how POSITA would arrive at the claimed invention from the art's teachings); *Ex parte Salerno*, Appeal No. 2011-004947, Ser. No. 12/359,805, 2013 WL 5603478, at *2 (B.P.A.I. Sept. 23, 2013) (rejecting Examiner rejection that insufficiently explained why modification would have been made absent hindsight).

Finally, Petitioner has not addressed the complicated reconfiguration of subassemblies and parts that would be necessary to make the three-way combination of Jarisch 929 with the multiple different embodiments of Yoakim. Petitioner's mantra that the teachings do not need to be bodily incorporated is not an unrestricted license to combine multiple embodiments within a reference and then combine those embodiments with two, three or more references just because they may be in a similar field. As explained above, even without bodily incorporation there must be a motivation to achieve the combinations. On the present facts, that argument fails because, not only did Petitioner disregard its burden to supply rationale for the combinations, there are so many pointers discouraging the combinations sought, and any such combinations would have required a POSITA

to make significant reconfigurations of the different embodiments to introduce a feature that would be redundant to a feature already present.

3. Petitioner’s Arguments To Combine Yoakim and Jarisch 929 with Rossi Are Unpersuasive

If the Petition’s shortcomings regarding the combination of Yoakim and Jarisch 929 were not enough, in seeking to combine Yoakim and Jarisch 929 with Rossi, the Petition argues that this would have been obvious for the benefit of providing safety “for ensuring that an appropriate capsule is used.” Pet. at 39. But Yoakim already expressly recognizes a need for a safety function, achieving that need specifically by the complementary shape of the capsule holder. Ex. 1004 at [0205] (“a safety function for ensuring that only capsules adapted to the system can be used and brewed successfully”). Petitioner thus again argues for another unnecessary and redundant feature to be added to Yoakim. Petitioner’s argument here too should be rejected. *See, e.g., Pro-Dex*, IPR2023-00218, Paper 8 at 24-26; *Trend Micro*, IPR2023-00692, Paper 8 at 24.

Petitioner also suggests that the safety features of Rossi would be necessary in Yoakim due to Yoakim’s teaching of pressure. Pet. at 39-40. But the Petition fails to identify any teaching in Yoakim of high pressures that are the concern in Rossi. Indeed, Yoakim differentiates its methods from “known methods using brewing water pressurized by a pump.” Ex. 1004 at [0124]; *see also id.* at [0009] (“the effect of centrifugal forces to brew coffee or other food substances *presents*

many advantages compared to normal type brewing methods using high pressure pumps.”), [0010].³

Throughout Yoakim, use of a pressure pumps is disparaged. More particularly, Yoakim teaches “[t]he method of *the invention* comprises an operation wherein hot water is introduced into the capsule at *substantially no pressure*,” or alternatively, “using a *low pressure* pump.” *Id.* at [0132], [0133], [0186], (“water is pushed by the effect of gravity”), [0209] (“water can be injected at low pressure Due to high speed rotational movement, the centrifugal forces exert themselves uniformly on the mass of substance. Consequently, the water distribution is also more uniform compared to usual methods using a pressure pump to exert pressure on and through the bed of substance.”), [0413] (“Water can be introduced at relatively low pressure or a pressure close to gravity.”), [0428] (“a pressure of between 0 and 2 bar above atmospheric pressure can be envisaged at the water inlet of the module”). So, in contrast to the high pressures taught in Rossi, it has not been indicated if or how Yoakim presents the same safety concerns—

³ For frame of reference and showing such contrast, in 2011 Petitioner offered the Pixie espresso making machine and marketed it as having 19 bar pressure. Ex. 2007 at 3; Ex. 2008 at 13 (describing specification “Pmax 19 bar”).

thus there would be no motivation to use Rossi's teachings to improve safety as Petitioner suggests.

Moreover, to the extent it may be urged that Yoakim realizes a potential user safety issue due to pressure, that issue is not attributable by Yoakim to pressure from a pump. Rather, it is a result of the centrifugation process itself that may cause safety issues. Specifically, Yoakim says any rapid expulsion of hot beverage is influenced by two key parameters: rotational speed and backpressure exerted on the centrifuged liquid by valving (Yoakim at [0521]). The Petition ignores this and fails to explain why a skilled person would not have sought to control rotational speed and backpressure when seeking to address safety issues. The identification by Petitioner of controlling a pump to push water is guided solely by hindsight.

As to Yoakim's teachings relating to "espresso," the Petition seems to ignore that the teachings are directed to beverage size by using specific capsules of a capsule set—not the method for making the beverage or any pump pressure involved. *See, e.g.*, Ex. 1004 at [0471], [0476], [0526] ("in particular coffees, of different volumes (e.g., risetto, espresso, lungo, americano, etc.)"). cursory mentions of "espresso" do not overcome the necessary conclusion from Yoakim as a whole—that Yoakim is not the type that Rossi's teachings seek to improve.

Yoakim thus teaches away from any danger that could be caused by a high-pressure pump system.

As discussed, there should not be a safety problem in Yoakim from use of improper capsules, because Yoakim already teaches using a complementary snug fit which is applicable to all embodiments to ensure proper capsules are used. *See* Ex. 1004 at [0205], [0479], [0484], [0507]. Nevertheless, to the extent that there remains another safety problem, they would be due to the high pressures resulting from centrifugation at well beyond 10,000 rpm, not hot water delivery by a pump through an unauthorized capsule, *see* Ex. 1004 at [0442]. Petitioner has not explained why a POSITA would not have looked to address that safety problem by controlling valve operation, motor operation, heater operation, or any combination thereof, as these are what gives rise to any high pressures in Yoakim. Absent hindsight, there is no basis to conclude that any safety problem would motivate looking to Rossi's methods.

Moreover, as explained in more detail below, Rossi does not disclose a pump at all. And a pump is not inherent in Rossi's teachings. Indeed, there are many ways to supply water under pressure without a pump. *See, e.g.*, Ex. 2012 at Abstract, [0073], Fig. 10; Ex. 2013 at Abstract, [0009], [0010], [0033], [0067], Fig. 2A; Ex. 2014 at Abstract, Figs. 1, 2; Ex. 2015 at 1. Even Yoakim describes a pump is not necessary to supply water into a capsule, because other means such as vaporization and gravity are sufficient. *See, e.g.*, Ex. 1004 at [0132] (explaining water can be fed using aspiration or vaporization), [0427] (explaining tap water can be used).

Therefore, this combination thus does not suggest a beverage system as K-fee claims.

Petitioner's grounds thus fail on this basis alone.⁴

B. Yoakim and Rossi Fail to Teach Or Render Obvious a “pump controlled to push water into the portion capsule only upon a determination that the read optically detectable identifier agrees with a stored reference” (All Claims)

Claim element [1.g] requires “a pump controlled to push water into the portion capsule only upon a determination that the read optically detectable identifier agrees with a stored reference.” According to Petitioner, this element is taught by Yoakim and Rossi. This is incorrect.

Starting with Yoakim, Petitioner contends that Yoakim discloses a pump controlled to push water into the portion capsule and that the pump is controlled based on detection of the identifier by the sensor/detector. Pet. at 54. But Yoakim lacks any express teaching for a pump that is controlled to push water into the portion capsule “*only upon*” the identification of a stored reference. At best, the only inherent disclosure of Yoakim might arguably be the pump controls when to stop filling water. This is apparent from the citations relied upon by Petitioner. *See* Pet. at 54 (citing Ex. 1004 at [0180] stating that “[a] fluid transport means such as a low

⁴ The combination with Rapparini also fails for the reasons explained below regarding elements [1.i]-[1.j]. *See infra* Section II.C.

pressure pump 6 can be provided in the water circuit to transport water from the reservoir to the module,” and at [0477] stating that “[t]he capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting the brewing parameters accordingly The 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.*”). The Petition comes up short here because there is an absence of a teaching in Yoakim of a pump controlled to push water into the portion capsule *only upon* a determination that the identification means agrees with a stored reference. This is made evident by the fact that the Petition relies up Rossi for its teaching of activating of a cycle of production.

The Petition’s shortcomings are even more glaring when considering that Yoakim actively teaches away from “a pump controlled to push water into the portion capsule *only upon* a determination” that the identifier agrees with a stored reference. In fact, a pump is not even an essential component of Yoakim as Yoakim teaches that “[w]ater can be brought by a hot water feed mechanism using a principle of aspiration or vaporization.” *See* Ex. 1004 at [0132]. Further, Yoakim teaches, “water can also be taken directly from a domestic water supply via a water plug

connection.” *Id.* at [0427]. Yoakim also teaches water can be “poured into” the capsule, confirming a pump would not be required. *Id.* at [0209].

There is no link (explicit or inherent) in Yoakim between the reading of the identification means and the initiation of the flow of water. Yoakim teaches that the control means are “capable of operating the device in centrifugation for any of the different capsules.” Ex. 1004 at [0025]. Yoakim also teaches a “water by-pass conduit” in addition to the main water conduit for adding a volume of water to a beverage. *Id.* at [0218]. Indeed, Yoakim explains that this “volume of water may be added ***before, during or after*** the centrifugal brewing operation in the capsule.” *Id.* This teaching demonstrates that the supply of water to the portion capsule does not occur only upon a determination that the read identification means agrees with a stored reference but is instead based on something else, such as the control means acting independently of the identification means. Yoakim further provides that the control means can adjust the brewing conditions, further undermining the Petition. *See id.* at [0192] (stating that “depending on the types of beverage to be brewed, the control unit can be programmed to adjust the optimal centrifugal conditions. For instance, the 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 to the capsule which is inserted in

the device.”). Thus, Yoakim teaches the control means is capable of acting independently from the identification means—directly contradicting the required “only upon” limitation of [1.g].

Tellingly, in teachings ignored by Petitioner, Yoakim teaches that the pump is controlled to push water into the portion capsule as a result of “rotational momentum”—not as a result of reading an optically detectable identifier that agrees with a stored reference. *See, e.g., id.* at [0022] (“liquid introducing means is operatively associated with a pump and injection tube connected to a reservoir for injection of the liquid into the capsule ***under the effect of rotational momentum***”), [0212] (“an injection of water by aspiration under the effect of the rotational momentum”), [0522] (“As known per se, the control of the rotational speed is carried out by the control means selectively activating the rotational motor (not shown) which drives part of the interface assembly 213, the capsule holder 214 and the capsule together in rotation.”). Rotational momentum is one of “two key parameters”—the other being “back pressure”—in “delivering different flow rates” in the “system of the invention.” *Id.* at [0521]. Thus, among the various embodiments of Yoakim, it has not been shown that Yoakim controls its pump according to a reading of the identification means.

What can be interpreted from Yoakim is that the pump is controlled to stop the delivery of liquid into the capsule. But as to the start of water delivery, Yoakim

has substantial teachings to indicate that can result from other means. First, Yoakim does not require a pump. Second, Yoakim teaches the water can be aspirated through rotation of the motor. Third, the brewing could be activated automatically by closing the lid as taught by Schifferle (described in more detail below). The Petition has not pointed to a teaching in Yoakim that definitively says to start pushing water into the capsule upon agreement with a code. From the perspective of Rossi, Rossi likewise only teaches activation of a cycle of production. But that does not demonstrate that pumping would necessarily be the first step of the activation because Rossi does not even teach a pump. The step could just as easily refer to activating a heater, turning on a motor.

A pump controlled to push water into the portion capsule from reading the identification means is not inherent from Yoakim's teachings. Tellingly, Schifferle (Ex. 1039), referenced by the Petition at page 9, teaches a coffee maker where "[a]s soon as the brewing chamber 5 is closed, the pump 2 is operated." Ex. 1039 at [0021]. Yoakim's system could control the pump to push water into the portion capsule in this way. Thus, it is not the case that Yoakim necessarily uses the identification means to control the pump to push water into the portion capsule.

Petitioner's arguments are further undermined by Denisart (Ex. 1007), which Petitioner contends "is similar to the Yoakim system" (Pet. at 36-37), "includes many similar features to Yoakim, including system control based on reading the

capsule's code" (Pet. at 23), and "shares two common inventors with Yoakim" (Pet. at 36). As taught by Denisart, the pump is switched on by a controller "after the user's selection." Ex. 1007 at 27:23-27 ("At the beginning of the beverage preparation cycle, and after the user's selection, the centrifugal pump 7 is switched on by the controller 12 and thus, hot water is pumped from the reservoir 6 to the centrifugal cell 3 through the flow-metering turbine 8."), Fig. 9 (reproduced below).

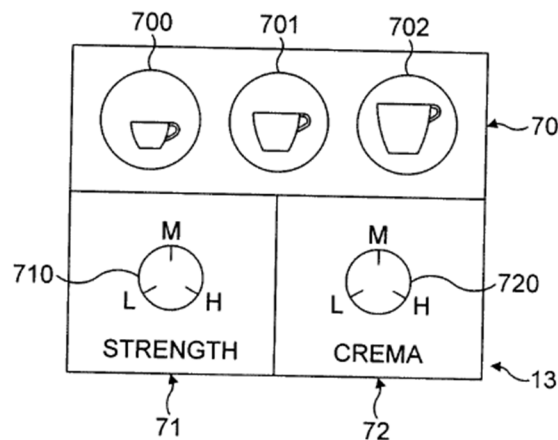


FIG. 9

Thus, as taught by Denisart, it is a manual selection on the user interface that activates the pump.

This is consistent with Mr. Jobin's own experiences. *See* Ex. 1003 at ¶58 ("Consumers typically place the single-serve capsule into a brewing chamber of the machine, close the chamber to seal it, and ***press a button or switch to initiate the extraction process, which causes the machine to mix heated water with coffee grounds inside the capsule to brew coffee.***"), 63 ("Beaulieu [Ex. 1019] explains that

the controller waits for the user to press the brew button”); Ex. 1019 at 3:64-4:5 (“The routine 100 includes a test 102 that determines if the brewing process should begin. This test checks the state of the start brewing signal on the line 52 (FIG. 1). If the signal indicates that a user has not depressed the start brewing button, then the remaining steps of the routine 100 are not executed. However, if the start brewing signal indicates that the user has depressed the start brewing button, test 104 is performed to determine if the water temperature is hot enough for brewing.”). Thus, the Petition fails to show from Yoakim’s teachings a pump that is controlled to push water into the portion capsule “*only upon*” the identification of a stored reference.

Petitioner attempts to ignore Yoakim’s lack of any express teaching and teaching away by arguing that “[i]t would have been obvious to a POSITA reading Yoakim to only utilize the pump to push water into the capsule” after the identifier is compared to a stored reference to allow the system to process optimal brewing parameters because the brewing device would have no information as to how to control the pump to brew the beverage. Pet. at 54-55. But Petitioner’s arguments are a consequence of hindsight from K-fee’s inventions and directly contradicted by Yoakim’s teachings, as well as Schifferle and Denisart.

The Petition further relies on Rossi for this limitation. Pet. at 55-56. Petitioner contends that Rossi discloses only activating a beverage production cycle if the identifier agrees with a stored reference and that the machine’s computer system

includes a checking means to compare the signal from a recognizing means for the identification element and the validation element with pre stored data to allow the machine to proceed only if the identification element is recognized. *Id.* Notably, Petitioner does not allege that Rossi discloses a pump, or even that Rossi discloses control of a pump to push water into a capsule based only upon a determination that the identifier agrees with a reference. This is simply due to the fact, inherently acknowledged by Petitioner's contentions regarding the disclosure of Rossi, that Rossi does not disclose a pump in any way, shape, or form. Petitioner attempts to rectify this glaring absence by alleging that a POSITA would understand Rossi's disclosure "to mean controlling the pump based on the comparison, since the activation cycle involves pumping water" and that it would have been obvious to a POSITA "to only utilize the pump to push water into the capsule" after comparing the identifier to a stored reference. Again, Rossi does not disclose a pump at all. And a pump is not inherent in Rossi's teachings. Indeed, there are many ways to supply water under pressure without a pump. *See, e.g.*, Ex. 2012 at Abstract, [0073], Fig. 10; Ex. 2013 at Abstract, [0009], [0010], [0033], [0067], Fig. 2A; Ex. 2014 at Abstract, Figs. 1, 2; Ex. 2015 at 1.

In fact, Mr. Jobin readily admits during his work on coffee machines design, he worked on a machine that did not use a pump to move fluid from the reservoir to the brew basket. Ex. 2016 at 50:12-25. While Rossi describes "the load element is

generally pierced to allow water to pass through it,” and “[t]he contents of the load element are brewed or dissolved in the water in order to make the edible product,” nowhere does it use the word “pump.” *See* Ex. 1041 at 3. Even Yoakim describes a pump is not necessary to supply water into a capsule, because other means such as vaporization and gravity are sufficient. *See* Ex. 1004 at [0132]; (explaining water can be fed using aspiration or vaporization), [0427] (explaining tap water can be used); *see also* Section II.B.

Given Rossi’s lack of disclosure of a pump, it is not surprising Rossi does not teach the claimed pump controlled to push water into the portion capsule only upon a determination that the identifier agrees with a stored reference.

Moreover, closer analysis of Rossi reveals that it teaches a process that is both unlike the one claimed and is incompatible with the combined teachings of Yoakim/Jarisch 929. Rossi has a three-step safety validation process. Two steps must occur before the activation takes place. These steps are not optional. Without any compelling rationale, Petitioner has selectively omitted consideration of the second step and the effect that a destroyed identifier would have upon the claimed combination. This is improper selective picking and choosing. *See In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965); *see also In re Mercier*, 515 F.2d 1161, 1165-66 (CCPA 1975). Rossi’s third activating step requires, as mandatory, that the first and second steps be performed, namely the reading of the code and destruction of the

validation element. *See* Ex. 1041 at 10 (activation of a cycle requires that identifying element “must be recognized in combination with the validation element as validated.”).

Given that there are three required steps envisioned by Rossi, it was incumbent upon the Petition to explain why the mandatory second validation step could be omitted. Alternatively, if the step was not omitted, it was necessary for the Petition to show how or why Yoakim (and/or Jarisch 929) would have been modified to include the mandatory second validation step of Rossi. In fact, inclusion of any such step of destruction of any of the capsule features before starting the brewing process as Rossi requires would seem to be contrary to the principle of operation of Yoakim (and Jarisch 929). The Petition is also silent as to any teaching in Yoakim and Jarisch 929 that would include any destruction of any validation element of the capsule after reading of the code takes place and before activating the machine in order to realize the step 2 validation. “It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.” *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 448 (Fed. Cir. 1986) (quoting *In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965)).

Next, the Rossi teachings extend only to permitting operation of a machine once the three steps are performed. Specifically, the first step may consist of “unlocking the machine when both the identification element and the unvalidated validation element are recognized.” Ex. 1041 at 9. This step is silent as to any pump control. *See also id.* at 6 (“allowing said edible-product making machine to take further steps only if it also recognizes on said load element a validation element to be validated”), cl. 1.

The second, mandatory step of validating the validation element may consist of “mechanical destruction of the validation element,” which ensures the validation element cannot be re-recognized. *See id.* at 9. This step is also silent as to any pump control.

In the third activation step, the machine “activates a cycle of edible-production production” after it recognizes on the capsule the same identifying element and the validated validation element. Ex. 1041 at 9-10. “The use of an activation step of automatically activating the cycle of edible-product production only when the same identifying element is recognized in combination with the validated validation element ensures that the operating condition actually used are the correct conditions as selected by the machine in the first recognition step” so as to “help[] to prevent the user from making the mistake of inserting into the machine a different load element to the one that was first recognized, for which the operating conditions are

set.” *Id.* at 8. This step is silent as to any pump control. It is apparent that none of the three steps teach activating or controlling a pump to push water into the portion capsule. And even in combination with Yoakim/Jarisch 929, as explained above, “edible-product production” would not necessarily mean that there is control of the pump to push water into a portion capsule only upon detection of an identifier. The Petition ignores all of the numerous and many controllable features that Yoakim/Jarisch 929, including (for example), the activation, de-activation, and regulating of centrifugation and valving, the activation, de-activation, and regulating of a heater, and/or the flow meter.

For example, Yoakim teaches centrifugal rotation, a step of the production cycle, can occur even before water is introduced into the capsule. *See, e.g.*, Ex. 1004 at [0440]. As disclosed in Rossi, “in order to allow the machine to proceed to **activation**,” the machine must “recognise[] the identifying element and the unvalidated validation element.” Ex. 1041 at 11.

In sum, activating a cycle of production according to Rossi will not necessarily (or obviously or inherently) involve activating or controlling a pump to push water to the capsule, and Petitioner’s selection of the pump of Yoakim is based only on impermissible hindsight. That “the activation means 10, connected to the barcode reader 7 through the control unit 9, automatically activate[s] a cycle of production of the edible product” does not necessarily suggest pump control to push

water into the capsule after the claimed determination. *Id.* at 13; *see also id.* at 11, 12. Thus, Rossi's teachings fail to overcome the apparent shortcomings of Yoakim. Again, the Petition is deficient in explaining why a POSITA, in order to avoid rapid expulsion of hot water, would choose a pump (an optional feature) to control instead of a valve, centrifugal motor, heater, or any of the other controllable features.

Petitioner's grounds thus fail on this basis alone.

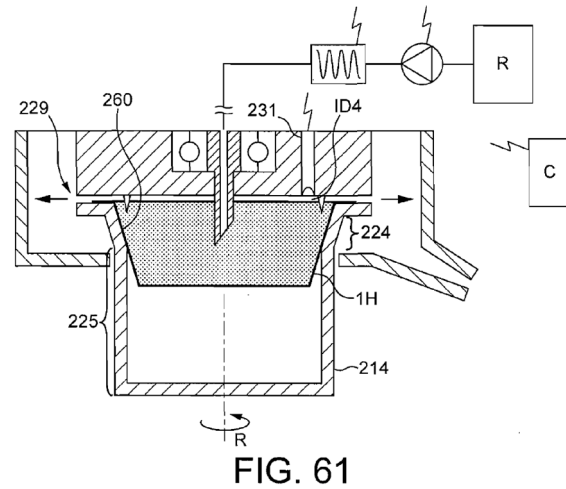
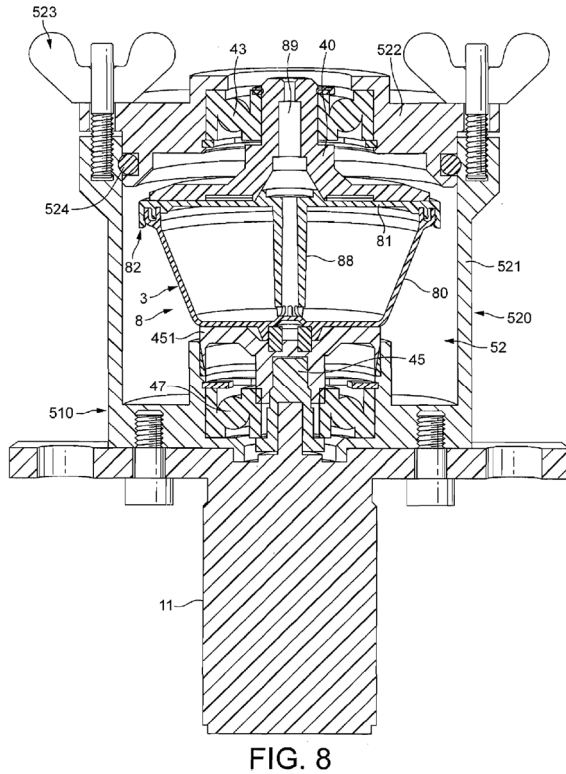
C. Petitioner Cannot Demonstrate That The References Teach Or Render Obvious A Plurality Of Vertically Oriented Grooves As Claimed (All Claims)

Claim elements [1.i]-[1.j] require the portion capsule to have a base element with "radial spaced and vertically oriented drawn grooves" and that "the cavity has radially spaced and vertically oriented drawn ribs." The Petition relies on the teachings of Yoakim and Rapparini for these claim elements (Pet. at 57-58). But the Petition lacks any rationale for such reliance and is thus deficient to establish obviousness.

For example, as explained more above, on the most basic level "Petitioner fails to provide a sufficient rationale to combine the teachings of [Yoakim's] different embodiments." *Abiomed, Inc. v Maquet Cardiovascular, LLC*, IPR2017-01204, Paper 9, at 11 (PTAB Oct. 23, 2017) (denying institution where Petition failed to provide rationale to combine the teachings of the reference's different embodiments). Specifically, with respect to Yoakim alone, for elements [1.i]-[1.j],

the Petition changes course from relying on Yoakim's non-toothed capsule embodiment (i.e., the one illustrated in, e.g., Figures 27 and 61 (*see* Pet. at 44-56)) to relying on the toothed capsule embodiment of Yoakim's Figure 23 (Pet. at 57). But the Petition never establishes that the toothed capsule embodiment is interchangeable with the non-toothed capsule embodiment of Figures 27 and 61. *See* Pet. at 57-58. Yoakim describes the capsule of Figure 27 as "a preferred capsule" (Ex. 1004 at [0414]) and the capsule of Figure 23 as "another capsule of the invention" (*id.* at [0215]). They are thus taught by Yoakim to be different capsules.

Yoakim further teaches that "[t]he device itself that receives the capsule of FIG. 23 comprises a toothed surface of complementary shape." *Id.* at [0216], Fig. 24 (illustrating the device that receives the capsule of FIG. 23). Yoakim expressly provides that "the connecting or engaging structure of FIG. 23 can replace the structure of the capsule of FIGS. 8 and 9 or reciprocally." *Id.* at [0217]. But Yoakim makes no such statement regarding the interchangeability of the capsule holder of the Figure 61 embodiment. Notably, the Figures 8 and 9 embodiments lack the identification means of Figure 61 that the Petition relies upon for other elements. *See id.* at [0521]; *compare* Figure 61 (showing identification means above the capsule) *with* Figure 8 (no identification means depicted).



There is thus no rationale in the Petition or Yoakim for combining the toothed and non-toothed capsule embodiments in the manner the Petition suggests. Each of the capsules of Yoakim are designed to be used in a unique centrifugation system. As explained above, Fig. 23 is designed to be used with the system of Fig. 8. The Petition does not explain why or how one would use the capsule of Fig. 23 with the spring-biased annular seal system of Figs. 35 and 36 (for capsules having a peripheral collection recess 116). Further, Petitioner does not explain why or how one would then use the capsule of Fig. 23 (associated with Fig. 8) and the spring-biased annular seal system of Figs. 35 and 36 with the multi-volume capsule set system of Figs. 61 and 62. Such combination is not contemplated even by Yoakim

given that the water injection subassembly of Figs. 35 and 36 uses an engaging wall 155 that does not extend over the peripheral flange. Moreover, the Petition is silent as to why the skilled person would then use such a capsule in the multi-volume capsule set system of Figs. 61 and 62. The Petition's failure to provide a rationale to combine the teachings of Yoakim's many different embodiments makes the Petition deficient. *See Amazon.com*, IPR2022-01455, Paper 12 at 18; *Intel*, IPR2019-01521, Paper 65 at 25; *Hewlett Packard Enterprise*, IPR2022-00115, Paper 9 at 15; *Abiomed*, IPR2017-01204, Paper 9 at 11; *Google*, IPR2018-01086, Paper 10 at 19.

Moreover, there is a problem of combining the capsule of Yoakim Fig. 23 with the code of Jarisch 929 since the flange of Fig. 23 is not suitable for the code of Jarisch 929 due to its small size; the Petition is deficient in rationalizing the at least four-way combination of Yoakim Fig. 23, Yoakim Fig. 61, Jarisch 929 Fig. 5, and Rapparini.

In addition to Petition's shortcomings in the combination regarding Yoakim alone, the Petition contends that a POSITA also would have been motivated to combine the capsule and concepts of Yoakim's centrifugation system with longitudinal ribs and grooves of Rapparini (as to which suitability for a centrifugation system has not been shown). Pet at 57-58. The Petition does not adequately explain how Yoakim and Rapparini would have been combined to arrive at these claim limitations. Indeed, without any explanation, the Petition leaps from

discussion of the toothed capsule of Yoakim to discussion of Rapparini. Pet. at 57.

“Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination; rather, it requires the additional showing 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.” *Edmund Optics, Inc. v. Semrock, Inc.*, IPR2014-00583, Paper 9 at 13 (PTAB Sept. 19, 2014) (citing *Unigene Labs, Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011)).

The Petition fails to explain why a POSITA would look to Rapparini, which teaches a shaped coffee filter element (Rapparini at [0010]), to supply a structural teaching for an electrically conductive base element, and one particularly made of metal, as claimed in at least claims 14, 15, and 20.

Here, the Petition falls short. The Petition appears to argue elsewhere that because Yoakim teaches a toothed capsule “Rapparini’s grooves could easily be incorporated.” Pet. at 43. But, as explained above, the Petition fails to present a rationale for using Yoakim’s toothed capsule with the other, non-toothed embodiments in Yoakim. Thus, the proffered combination, which relies on

Yoakim's toothed capsule, also lacks adequate rationale and the Petition is deficient on these elements.

The Petition also concludes without providing any analysis or explanation that "it would have been obvious to a POSITA to configure radially spaced and vertically oriented drawn grooves on the body of a capsule wall because it was well-known to do so to provide structural stability" (Pet. at 57). "But that reasoning seems to say no more than that a skilled artisan, once presented with the two references, would have understood that they *could be* combined. And that is not enough: it does not imply a motivation to pick out those two references and combine them to arrive at the claimed invention." *PersonalWeb Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994-95 (Fed. Cir. 2017) (emphasis in original). And, as explained above, the Petition fails to present a rationale for using Yoakim's toothed capsule with the other, non-toothed embodiments in Yoakim. Thus, the proffered combination, which relies on Yoakim's toothed capsule, also lacks adequate rationale and the Petition is deficient on these elements.

Petitioner's grounds thus fail on this basis alone.

III. Conclusion

It is clear even from this preliminary record that Petitioner's asserted challenges suffer from numerous procedural and substantive deficiencies. In light of these deficiencies, the Petition fails to show that there is a reasonable likelihood that

Petitioner will prevail in proving any challenged claim unpatentable. The Petition should, therefore, be denied. Pursuant to 35 U.S.C. § 314, no *Inter Partes* Review should be instituted.

Date: March 28, 2024

Respectfully submitted,

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CERTIFICATION UNDER 37 C.F.R. § 42.24

Under the provisions of 37 C.F.R. § 42.24, the undersigned hereby certifies that the word count for the foregoing Patent Owner Preliminary Response totals 12,683 words, which is less than the 14,000 allowed under 37 C.F.R. § 42.24(a)(1)(i), (b)(1).

Date: March 28, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify, pursuant to 37 C.F.R. § 42.6, that on March 28, 2024, a complete copy of the foregoing document was served upon the following by ELECTRONIC MAIL:

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