

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NESPRESSO USA, INC.
Petitioner

v.

K-FEE SYSTEM GMBH
Patent Owner

IPR2023-00502

U.S. Patent No. 10,994,923

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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<i>Nuvo Pharm. (Ire.) Des. Act. Co. v. Dr. Reddy's Labs.</i> , 923 F.3d 1368 (Fed. Cir. 2019)	4
<i>Rembrandt Diagnostics, LP v. Alere, Inc.</i> , 76 F.4th 1376 (Fed. Cir. 2023)	11
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<i>In re Stempel</i> , 241 F.2d 755 (1957 CCPA)	2
<i>In re Stryker</i> , 58 CCPA 797 (1971)	3
<i>Studiengesellschaft Kohle, MBH v. Shell Oil Co.</i> , 112 F.3d 1561 (Fed. Cir. 1997)	1, 4
<i>In re Tanczyn</i> , 347 F.2d 830 (CCPA 1965)	2
<i>W. Digital Techs., Inc. v. Viasat, Inc.</i> , IPR2022-01171, 2023 WL 8632391 (Dec. 13, 2023)	11
Other Authorities	
MPEP 715.02	2
MPEP 2173.05(i)	7

PETITIONER'S EXHIBIT LIST

No.	Reference	Referred To As
1001	U.S. Patent No. 10,994,923	'923 Patent
1002	Prosecution History of U.S. Patent No. 10,994,923	'923 Patent File History
1003	Declaration of Michael Jobin	Jobin Decl.
1004	U.S. Patent Pub. US2010/0239734A1	Yoakim
1005	U.S. Patent Pub. US2013/0064937A1	Jarisch
1006	U.S. Patent Pub. US2013/0064929A1	Jarisch 929
1007	PCT Pub. WO2010/026053A1	Denisart
1008	U.S. Patent Pub. US2012/0269933A1	Rapparini
1009	U.S. Patent Pub. 2008/0105131	Castellani
1010	PCT Pub. WO2005/079638A1	Panesar
1011	U.S. Patent Pub. 2006/0233921	Mock
1012	National Coffee Association	NCA
1013	U.S. Patent Pub. 2002/0078831	Cai
1014	U.S. Patent No. 726,793	Bezzera
1015	U.S. Patent Pub. 2009/0007793	Glucksman
1016	U.S. Patent No. 3,387,553	Tavera
1017	U.S. Patent No. 3,631,793	Bednartz
1018	U.S. Patent No. 4,136,202	Favre
1019	U.S. Patent No. 6,142,063	Beaulieu

1020	U.S. Patent No. 4,389,925	Piana
1021	U.S. Patent No. 6,655,260	Lazaris
1022	U.S. Patent Pub. 2006/0230941	Ryser
1023	U.S. Patent Pub. 2009/0249961	Cheng
1024	U.S. Patent Pub. 2004/0089158	Mahlich
1025	PCT Pub. WO 2010/034663	Ozanne
1026	ASM Handbook, Volume 14B: Metalworking: Sheet Forming, S.L. Semiatin, editor.	ASM Handbook
1027	https://www.italcoat.com/flexible-aluminium-markets/coffee/	Italcoat
1028	EU Patent App. EP2145759A1	Geerts
1029	Penix J.A. (1991) Thermoforming of Plastic Film and Sheet. In: Berins M.L. (eds) SPI Plastics Engineering Handbook of the Society of the Plastics Industry, Inc.	Penix
1030	U.S. Patent No. 3,437,253	Davis
1031	U.S. Patent No. 5,261,558	Claydon
1032	U.S. Patent No. 5,243,164	Erickson
1033	U.S. Patent No. 6,645,537	Sweeney
1034	EU Patent App. EP1849718A1	Rubino
1035	PCT Pub. WO2010/041179A2	Mariller
1036	EU Patent App. EP0455337B1	Bentley
1037	U.S. Patent Pub. 2002/0048621A1	Boyd
1038	U.S. Patent Pub. 2007/0203587A1	Erlandsson

1039	U.S. Patent Pub. 2005/0150391A1	Schifferle
1040	PCT Pub. WO2005/044067A1	Ruchonnet
1041	PCT Pub. WO2010/099806A1	Rossi
1042	US Patent Pub. 2009/0205747	Lillard
1043	U.S. Patent Pub. 2010/0078480A1	Aker
1044	U.S. Patent Pub. 2013/0099597	Perentes
1045	Official English translation of German application No. 102011010534.4	February 2011 Application
1046	Official English translation German application No. 102010031988.0	July 2010 Application
1047	Official English translation German application No. 102010044251.8	September 2010 Application
1048	<i>K-Fee System GmbH v. Nespresso USA, Inc. et al.</i> , Case No. 2:22-cv-00525	Complaint
1049	<i>K-Fee System GmbH v. Nespresso USA, Inc. et al.</i> , Case No. 2:22-cv-00525 – Supplemental Disclosure of Infringement Contentions (July 11, 2022)	Infringement Contentions
1050	Excerpt from Prosecution History of U.S. Appl. No. 13/744,623	'623 Appl.
1051	https://nestle-nespresso.com/our_products/product	Nespresso Vertuo System
1052	<i>K-Fee System GmbH v. Nespresso USA, Inc. et al.</i> , Case No. 2:21-cv-3402; Dkt. 111.	Claim Construction Order
1053	Intentionally Omitted	Intentionally Omitted
1054	<i>K-Fee System GmbH v. Nespresso USA, Inc. et al.</i> , Case No. 2:21-cv-3402; Dkt. 211.	Summary Judgment Order

1055	Food Packaging and Shelf Life: A Practical Guide (2009), Chapter 11 – “Packaging and the Shelf Life of Coffee”	Food Packaging
1056	Illy, Andrea, and Rinantonio Viani, eds. <i>Espresso coffee: the science of quality</i> . Academic Press, 2005.	Espresso Coffee
1057	Excerpt from Appl. No. 16/538,752: Nov. 8, 2019 Office Action Rejection	752 Appl. First Rejection
1058	Excerpt from Appl. No. 16/538,752: Jan. 23, 2020 Response to Office Action	752 Appl. First Response
1059	Excerpt from Appl. No. 16/538,752: Apr. 28, 2020 Office Action Rejection	752 Appl. Second Rejection
1060	Excerpt from Appl. No. 16/538,752: Jul. 27, 2020 Response to Office Action	752 Appl. Second Response
1061	Excerpt from Appl. No. 16/538,752: Nov. 3, 2020 Notice of Allowance	752 Appl. Notice of Allowance
1062	Excerpt from Appl. No. 16/860,441: Jul. 13, 2020 Office Action Rejection	441 Appl. First Rejection
1063	Excerpt from Appl. No. 16/860,441: Oct. 13, 2020 Response to Office Action	441 Appl. Response
1064	Excerpt from Appl. No. 16/860,441: Nov. 12, 2020 Notice of Allowance	441 Appl. Notice of Allowance
1065	Email authorizing reply and sur-reply	2023-07-10 Trials Email

1066	Transcript of deposition of Laurens Howle taken September 13, 2023 (Corrected EX1058 from IPR2022-01574)	Howle Depo. Tr. I
1067	Transcript of deposition of Laurens Howle taken February 22, 2024	Howle Depo. Tr. II
1068	Transcript of Trial Testimony of Laurens Howle taken June 6-7, 2018, Case No. 2:15-cv-00522 (W.D. Wash.) (EX1059 from IPR2022-01574)	Howle W.D. Wash. Trial Tr.
1069	ITC Hearing Transcript, June 16, 2015, Case No. 377-TA-929 (EX1060 from IPR2022-01574)	Howle ITC Tr.
1070	Declaration of Laurens Howle from IPR2022-01574	491 Patent Howle Decl.
1071	Declaration of Laurens Howle from IPR2023-00485	430 Patent Howle Decl.
1072	Transcript of deposition of Michael J. Jobin taken June 22, 2023 (EX2012 from IPR2022-01574)	Jobin Depo. Tr.

Recognizing that the Petition establishes a lack of priority, and obviousness of all claims, K-fee's Patent Owner Response ("POR") takes facially inconsistent positions and relies on deficient evidence, such as a threadbare declaration from inventor Marc Krüger. K-fee's purported expert, Howle, challenges obviousness by arguing (without evidence) that moving a barcode detector below the capsule flange required extraordinary skills beyond that of a person of skill in the art ("POSITA"). But when arguing priority, Howle claims a POSITA would have readily understood how to move such a detector below the flange. Howle is not a POSITA and K-fee's unsupported, inconsistent positions are belied by Jobin and the prior art.

I. The '923 Patent Lacks Priority

K-fee fails to argue—let alone present evidence—that the '923 claims are supported by any single priority document. Thus, K-fee cannot claim the benefit of any German application. Institution Decision ("Decision"), 11; *Studiengesellschaft Kohle, MBH v. Shell Oil Co.*, 112 F.3d 1561, 1564 (Fed. Cir. 1997).

A. K-fee Cannot Swear Behind Jarisch

"[A]bsent Patent Owner demonstrating entitlement to the benefit of the filing date of the priority application filed July 22, 2011, Jarisch could not be sworn behind." Decision, 12, n. 8. "Once Petitioner identifies a prior art reference with an effective filing date prior to that of the challenged patent, the burden of production to show entitlement to the benefit of the filing date of an earlier filed application

shifts to Patent Owner.” Decision, 10; *In re NTP*, 654 F.3d 1268, 1276 (Fed. Cir. 2011). Despite the Board's request, K-fee made no attempt to demonstrate entitlement to the July 22, 2011 application, and cannot “swear behind” Jarisch.

1. *Stempel* Does Not Support K-fee's Failure to Show Conception of the Full Claimed Invention

Even if K-fee had demonstrated priority to the July 22, 2011 application, Jarisch remains prior art. By misapplying *In re Stempel*, 241 F.2d 755, 759 (1957 CCPA), K-fee contends that it can “swear behind” Jarisch by showing possession of “at least as much of the subject matter as relied upon by Petitioner from the Jarisch reference.” POR, 11-14. K-fee is mistaken. Decision, 12-14.

Unlike this case, *Stempel* addressed whether a reference disclosing a species can be used against a generic claim when the applicant had prior possession of that species. *Id.*, 757. *Stempel* was “never intended . . . to authorize the overcoming of references by affidavits showing that the applicant had invented, prior to the reference date, a part, some parts, or even a combination of parts . . . where the part or parts are not within the scope of the claims being sought,” as K-fee attempts here. *In re Tanczyn*, 347 F.2d 830, 833 (CCPA 1965). Rather, the affidavit must establish “possession ***of either the whole invention claimed, or something falling within the claim***, in the sense that the claim as a whole reads on it.” *Id.*; MPEP 715.02.

2. K-fee Fails to Invoke *Spiller* and *Stryker*

K-fee contends that *In re Spiller*, 500 F.2d 1170, 1178 (CCPA 1974) and *In re Stryker*, 58 CCPA 797, 799 (1971) permit it to antedate Jarisch based on an “obviousness” analysis. POR, 13, 17. But, as the Board correctly noted (Decision, 14, n.9), *Spiller* and *Stryker* require that the “differences between the *claimed invention* and the *reference disclosure* are so small as to render the claims obvious over the reference.” *Stryker*, 58 CCPA at 799. K-fee makes no such showing, and only argues “[t]he species that is disclosed by the first German application and Mr. Krüger’s declaration would have at least rendered the specific elements of the species disclosed by Jarisch—a code under the flange of a capsule—obvious from the perspective of a [POSITA].” POR, 17. But K-fee does not argue that missing features in its claims—such as “the cavity including radially spaced and vertically oriented ribs”—would have been *obvious over Jarisch*. Neither *Spiller* nor *Stryker* apply.

B. K-fee Fails to Establish Prior Conception

K-fee argues that it can swear behind Jarisch simply because Krüger identifies the three German applications. POR, 15.¹ Krüger’s declaration is insufficient.

¹ Krüger offers no meaningful testimony other than identifying the German applications and their filing dates. EX2001. His declaration is merely an attempt to

1. Krüger's Declaration Lacks Corroboration

Beyond the patent filings, EX2001 is devoid of corroboration. Krüger states he was developing single-serve capsules in 2009, without any support for the content or date. EX2001, ¶10. Krüger claims he discussed invention details with his attorney—including self-serving characterizations of the embodiments (¶¶13-16, 20-21), but offers no evidence of the content or dates of such discussions. *Id.*, ¶¶12, 17, 19.

“The testimony of an inventor often is a self-serving, after-the-fact attempt to state what should have been part of his or her patent application[.]” *Bell & Howell Doc. Mgmt. v. Altek Sys.*, 132 F.3d 701, 706 (Fed. Cir. 1997). EX2001 is dated over a decade after filing the German applications, two years after suing Nespresso (EX1048), and three months after Institution. Krüger's litigation bias to preserve validity, combined with no corroboration, confirms the Board should afford his declaration no weight. “[I]nventor testimony cannot establish written description support where none exists[.]” *Nuvo Pharm. (Ire.) Des. Act. Co. v. Dr. Reddy's Labs.*, 923 F.3d 1368, 1381 (Fed. Cir. 2019).

circumvent the rule requiring written description in a single document. *Studiengesellschaft Kohle*, 112 F.3d at 1564.

2. Krüger's Declaration Fails to Satisfy Priority Standards

Nowhere across the three cited documents does EX2001 disclose *the complete and operative invention* of the '923 claims. It is not enough that K-fee contends "the elements are present across all three German applications" (POR, 18) because they are never tied to a complete invention.

To antedate a reference, "an inventor must have formed in his or her mind 'a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.'" *Mahurkar v. C.R. Bard*, 79 F.3d 1572, 1577 (Fed. Cir. 1996). The '923 claims require, *inter alia*, a single-serve capsule including (i) an identifier that is a barcode provided on the bottom of the flange, and (ii) vertically oriented grooves on the wall region. K-fee only argues that EX1045 discloses vertical grooves, *but does not dispute* that it lacks disclosure of any barcode identifier, let alone one on the bottom of the flange. POR, 18.

K-fee never explains how the vertical grooves are linked in any way to the other '923 claim requirements including a barcode below the flange. For example:

- EX1045 explains that the vertical grooves serve as an identifier (EX1045, 22:26-29), but K-fee points to no explanation that the inventor had conceived of a capsule utilizing *both* a barcode identifier and groove identifier, let alone how such a configuration would operate.

- EX1045 teaches that the groove configuration includes a shoulder (16, in FIG1) with “an enlarged diameter” that would impede reading a code on the bottom of the capsule flange. EX1045, 30:27-30.
- The grooved capsule in EX1045 includes a filter in the cavity, which the '923 claims prohibit. EX1045, 27:20-26, 29:1-16, 29:30-32.

Accordingly, K-fee's attempt to antedate Jarisch fails because it never presented evidence that Krüger possessed the “complete and operative invention.” *Burroughs Wellcome v. Barr Lab'ys*, 40 F.3d 1223, 1229-1232 (Fed. Cir. 1994) (“For conception, we look not to whether one skilled in the art ***could have*** thought of the invention, but whether the alleged inventors actually had in their minds the required definite and permanent idea.”).

II. The Claims are Obvious Over Yoakim/Jarisch/Rapparini

K-fee never disputes that Yoakim, Jarisch and Rapparini disclose the majority of claim limitations. Rather, K-fee only disputes “free of a filter,” “grooves,” and “turbulence.” The Petition established that these limitations are disclosed and/or rendered obvious.

A. Yoakim Discloses “Free of a Filter”

The '923 claims recite the negative limitation, “a cavity that is free of a filter.” The Petition correctly explains that Yoakim discloses that filters inside the cavity are optional/alternative embodiments, and capsules like FIG54 lack a filter in the

cavity. Pet. 50. K-fee's arguments misinterpret Yoakim's teachings and Jobin's testimony, and confirm that a filter in the cavity is optional.

1. Express Negative Statements Are Not Required

K-fee faults Petitioner for not showing “any express statement that Yoakim’s capsule lacks a filter.” POR, 21. But that is not the law—disclosure of alternative, optional features satisfies a negative limitation. *Inphi Corp. v. Netlist, Inc.*, 805 F.3d 1350, 1355-56 (Fed. Cir. 2015); *Ex Parte McCormick et al.*, 2021 WL 5411155, at *2 (PTAB Nov. 17, 2021) (optional feature satisfies negative limitation); MPEP 2173.05(i) (“If alternative elements are *positively recited* in the specification, they may be explicitly excluded in the claims.”).

Moreover, the '923 Patent has the *same level of disclosure* as Yoakim. EX1001, 1:50-52 (“*Additionally the cavity could contain one or several built-in elements, such as, for example a filter. . . .*”); EX1071, ¶79 (arguing that EX1047 discloses this limitation by—“[t]he raw material and, ***if appropriate***, inserts, in this case a filter, are provided in this basic element”). The '923 Patent disclosure (and EX1047) is devoid of any express statement that its capsules lack a filter, further confirming K-fee's approach is incorrect. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1570 (Fed. Cir. 1997) (affirming invalidity when the challenged “patent itself does not disclose the level of detail that [the patentee] would have us require of the prior art”).

2. Yoakim Discloses Optional Filters and in Locations Other Than the Cavity

K-fee argues that the filter in [0171] is *in addition* to other filters in the cavity. POR, 21-22. But [0171] discloses “a series of slits” provided “in the lid” “for the brewed liquid” to exit. It indicates “[a]n additional filtering layer can be used to filter the liquid depending on the size of the outlets.”

This filter is not “in addition” to another filter in the cavity. The premade slits do not even necessarily filter anything ([0171]), and also are located in the external *lid* of the capsule, which Howle agrees is not *in the cavity*. EX1067, 45:11-16, 49:19-50:5; EX1070, ¶116 (describing collecting recess as “external to the cavity”). ***Thus, there is no filter in [0171] in the cavity other than the filtering layer that optionally “can be used” in the capsule.*** Jobin confirms that a POSITA understands the filter in [0171] to be optional, not in addition to another filter in the cavity. EX2019, 57:19-58:5, 60:4-15, 63:10-20, 64:1-11.

Next, K-fee argues that FIG54 does not disclose a capsule lacking a filter in the cavity, and is instead a “schematic” view that discloses capsules that are “the same as those in the rest of Yoakim’s teachings and thus exhibit the same filter.” POR, 25. But, there is no *single capsule embodiment* in Yoakim or “the same filter” across embodiments. Moreover, Yoakim [0503] describes the details of FIG51-55, and confirms there is no filter in the cavity. It explains that the capsules of FIG51-

55 have “a body 202 having a cup shape with a free rim 203 extending outwardly and a top upper wall 204” that is connected to the free rim of the body. The upper wall, which is the outer lid or membrane of the capsule, “*can be* a perforable membrane, a porous wall or a combination thereof.” EX1004, [0503]. Thus, even if a porous wall was included—which [0503] confirms is optional—such porous wall constitutes the lid/membrane 204 in FIG54 and is *not in the capsule cavity* as required by the claims.² EX1067, 49:19-50:5. Nor does a pierced membrane constitute a filter in the cavity. *Id.*, 65:23-66:4. Accordingly, K-fee incorrectly reads FIG54.

Finally, K-fee argues that a filter in Yoakim is necessary. POR, 22. But K-fee ignores that Yoakim discloses many different ways to brew a beverage ***without*** a filter in the capsule cavity. For example, Yoakim confirms that the *machine* could provide the filter instead of the capsule. EX1004, [0271], [0255]. Additionally, filtering can be provided by the membrane or lid, which is not in the cavity. *Id.*, [0171], [210], [502]. And despite criticizing Yoakim for needing a filter to brew a beverage, Howle could not explain how the '923 *Patent* would brew a beverage

² FIG54's description as a “schematic” is irrelevant—other Yoakim examples depict detailed views lacking filters in the cavity. FIG16 depicted a “cross sectional” view showing no filter in the cavity. EX1004, [0045].

without a filter, nor could he articulate *any advantages* to this trivial limitation. EX1067, 66:13-68:12.

3. K-fee's Citations Confirm Yoakim Discloses An Optional Filter

K-fee highlights numerous Yoakim paragraphs that *confirm* the Petition's arguments—that Yoakim discloses that a filter in the cavity is *optional*, and several embodiments *lack a filter in the cavity*. Pet. 50. For example, K-fee cites [0271] (POR, 22-23), which confirms that the *brewing device* could provide the filter *instead of* the capsule. EX1004, [0271] (“*In another mode, the filter could be part of the device. . . .*”); [0255] (same). K-fee cites [0461], which explicitly states that a filter is “*optional*.” EX1004, [0461]. In cited embodiments where liquid exits the capsule sidewall, “[t]he capsule *may comprise* a filter” in the cavity. *Id.*, [0288], [0300].

Thus, K-fee's Yoakim citations demonstrate that a filter ***could be*** present in (1) the machine/device, (2) the capsule membrane, (3) the capsule wall, or (4) the cavity. Yoakim never requires a filter, let alone one in the cavity of the capsule. Viewing Yoakim as a whole, and all of the embodiments K-fee cites, further supports Petitioner's position that ***a filter is optional*** in Yoakim's capsules (just like it is optional in the '923 Patent and EX1047), and numerous embodiments lack a filter in the cavity.

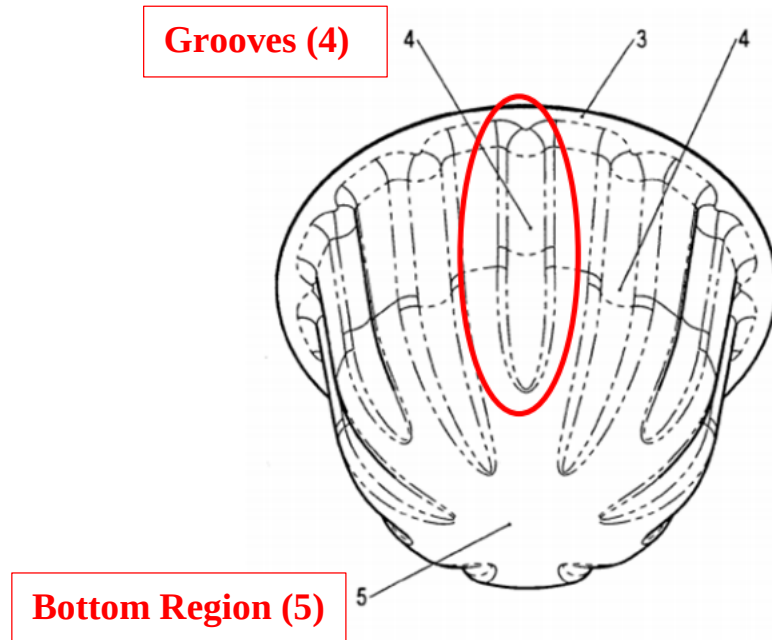
4. Petitioner's "Free of a Filter" Argument Remains the Same

K-fee mis-states Federal Circuit law by suggesting Petitioner cannot reference other disclosures of Yoakim, including those cited by K-fee. POR, 27. *Rembrandt Diagnostics v. Alere, Inc.*, 76 F.4th 1376, 1384 (Fed. Cir. 2023), states that “the introduction of new evidence in the course of the trial is to be expected in [IPR] trial proceedings” and is permissible “as long as the opposing party is given notice of the evidence and an opportunity to respond to it.” Petitioner’s obviousness theory remains the same—Yoakim discloses capsules where no filter is disclosed in the cavity, and that a filter in the cavity is an optional/alternative feature (Pet. 50). *Apple, Inc v. Andrea Elecs. Corp.*, 949 F.3d 697, 706 (Fed. Cir. 2020) (finding abuse of discretion to exclude examples from same prior art for same legal argument). All of Petitioner’s arguments are (1) consistent with the Petition and (2) responsive to K-fee’s POR. *Caterpillar Inc. v. Wirtgen Am., Inc.*, IPR2022-01264, 2024 WL 230734, *22 (Jan. 22, 2024); *W. Digital Techs., Inc. v. Viasat, Inc.*, IPR2022-01171, 2023 WL 8632391, *9 (Dec. 13, 2023) (“Petitioner’s reply argument ‘properly expands on and is a fair extension of its previously raised ... argument’ that the combination ... teaches [the] claim element[.]”).

B. Rapparini Discloses and/or Renders Obvious the Claimed Grooves

The Petition explains how FIG6/6bis disclose a capsule with a **bottom region** (5) that has grooves (circled, 4) that **do not** extend entirely to this bottom region, and

that Rapparini's groove length can generally be "variable along the surface of the body." Pet. 51, 53-54; EX1008, [0009], FIG6bis.

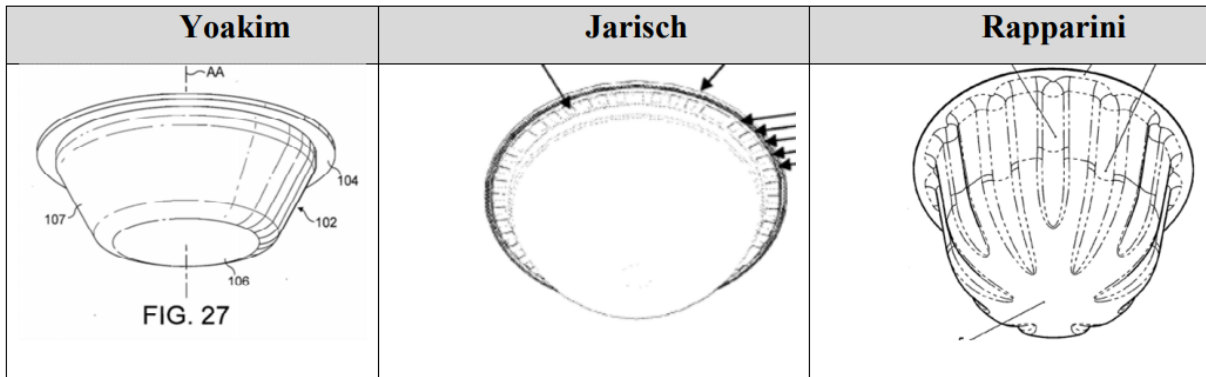


Neither K-fee's POR nor Howle's declaration disputes that Rapparini's FIG6/6bis disclose the limitation "grooves that are free from extending entirely to the bottom region." POR, 27-30; EX2017, ¶¶77-80 (no analysis of FIG6/6bis). Nor does K-fee rebut that it **would have been obvious** to a POSITA.

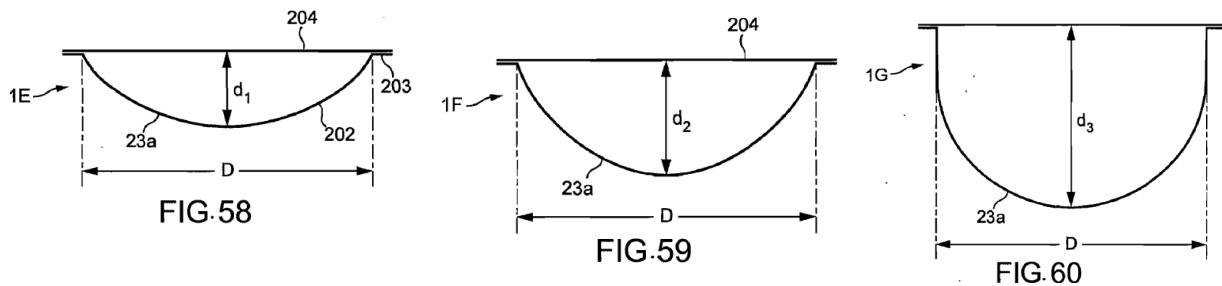
Instead, K-fee focuses on *unmapped* portions of Rapparini and argues that a POSITA would have selected *FIG10 instead of FIG6* to modify Yoakim. K-fee's sole reasoning is that the Petition allegedly relies upon a "flat bottom capsule" in Yoakim and not a "rounded bottom" like Rapparini's FIG6. POR, 27-28. K-fee is wrong.

1. Yoakim Discloses Rounded Bottom Capsules

The Petition relies on combining Rapparini's FIG6 with capsules like those disclosed in Yoakim and Jarisch, which are all similarly-shaped with a **rounded base**:



Pet. 47-48; EX1003, ¶201 (describing FIG27 as having a “rounded base”). Indeed, element 106 of Yoakim’s FIG27 has a convex shape that eclipses the rearward portion of the capsule, depicting a rounded base. Consistent with this, Yoakim confirms its capsules can have a “convex” base (EX1004, [0473], [0463]), and provides additional examples of rounded capsules (FIGS58-60) similar in shape to Jarisch and Rapparini.



2. Rapparini FIG10 is a Moka Pot Insert

K-free ignores that Rapparini's FIG10 is directed to an insert *for the basket of a Moka Pot*, which is differentiated from an automatic espresso machine like Yoakim and Jarisch. EX1008, [0060], [0067]. K-free offers no explanation why a POSITA would look to a Moka Pot basket insert when improving upon Yoakim's capsules in a centrifuge system.³

Even if a POSITA evaluated FIG10, Rapparini explains that the invention is directed to configuring "the length of the ribs [as] *variable* along the surface of the body" including "short ribs extending *only along the side region* of the container" and thus not "entirely to the bottom region." *Id.*, [0009]-[0011], [0052]. Moreover, even considering FIG10, K-free is wrong that a POSITA *must* incorporate that exact configuration into Yoakim. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021) ("It's not necessary to show that a combination is 'the *best* option, only that it be a *suitable* option.'"); *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) (same); *Laitram, LLC v. Ashworth Bros., Inc.*, 2023 WL 3449148, *7-*8 (Fed. Cir. 2023) (vacating nonobviousness when the Board erred by not considering that the art taught various shapes and would have led a POSITA to apply the claimed shape).

³ Howle *could not answer* if a Moka Pot's inserts even constituted a single-serve capsule. EX1068, 136:11-14. Howle's opinions are not credible.

3. The Claimed Grooves Would Have Been Obvious

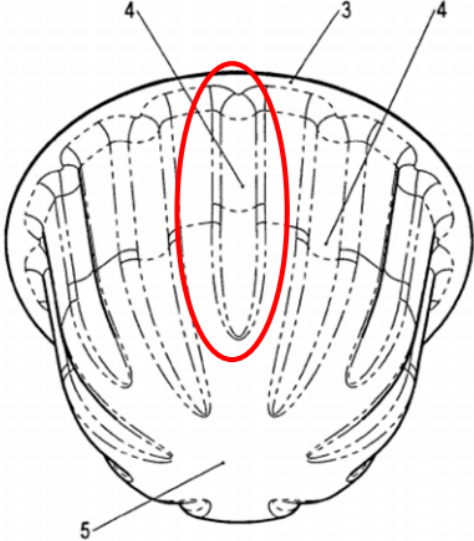
K-fee does not credibly rebut that it would have been **obvious** to utilize grooves that are free from extending entirely to the bottom region. Pet. 46-48, 54; EX1003, ¶¶196-204, 238-239. Rapparini discloses stability through grooves of “variable” length **including grooves that extend only along the sidewall**. EX1008, [0009]-[0011]. The Petition establishes that it was common practice to utilize grooves on a capsule body wall for increasing stability or influencing fluid flow. Pet. 6-8; EX1003, ¶¶87-95. K-fee argues that prior art exclusively teaches grooves that extend entirely to the bottom region (POR, 30-32), but ignores numerous references utilizing grooves that **do not** extend entirely to the bottom region in order to improve stability. EX1035, FIG1, [0027], [0037]; EX1030, 1:14-21, FIG1; EX1031, 1:27-37, FIG1; EX1032, 5:9-25, FIG1; EX1008, [0009]-[0011].

Thus, the Petition confirms there are a limited number of options for groove configurations, all of which were known for improving capsule structural stability. Jobin agrees. EX1003, ¶238. Indeed, Howle confirmed that modifying the shape of a capsule wall was well within the skill of the art. EX1067, 37:23-38:2. K-fee's arguments violate *KSR v. Teleflex*—when “there are a finite number of identified, predictable solutions, a [POSITA] has good reason to pursue the known options within his or her technical grasp.” 550 U.S. 398, 421 (2007); *C.R. Bard, Inc. v. Medline Indus. Inc.*, 2021 WL 3574043, *4-5 (Fed. Cir. 2021) (reversing non-

obviousness where prior art showed two potential locations of a feature, but failed to consider a skilled artisan's creativity and common sense).

Accordingly, K-free's claimed groove configuration was known and obvious.⁴

⁴ Despite not challenging that Rapparini's FIG6/6bis meet the claimed "groove" limitations in its POR, or in Howle's declaration, K-free staged a deposition redirect with leading questions non-responsive to issues raised on cross examination, in order to challenge FIG6 for the first time. EX1067, 97:8-99:17, 105:21-106:2. However, Howle's new opinion of FIG6/6bis is arbitrary, unsupported by Rapparini's disclosure, and directly contradicts K-free's own infringement contentions, where K-free says the accused grooves **do not** extend into the bottom region. EX1049, 8-9:

Infringement Contentions	Rapparini
	

C. Turbulent Flow Was Known and Obvious

K-fee reiterates its unsuccessful Preliminary Response arguments. POR, 33-36; Decision, 25-27. Since Institution, the record has developed to **confirm** the obviousness of “turbulence in the cavity.”

1. Yoakim's Disclosure of Laminar Flow is Irrelevant

K-fee argues that Yoakim teaches laminar flow. POR, 33-34. But Yoakim's discussion of laminar flow involves the flow when the liquid **exits**, not the state of flow within the capsule. EX1004, [0509] (“liquid can also **exit** by making a laminar flow. . . .”) Howle agrees that the claims do not require water to exit the capsule under turbulence. EX1067, 85:16-86:4. The Board also correctly noted that K-fee's discussion of laminar flow in Yoakim's **unmodified** capsule wall did not consider the combination with Rapparini's grooves. Decision, 26.

2. Experimentation is Not Required

K-fee argues that Jobin's opinion is conclusory because it did not involve experimentation or modeling, or an assessment of the “direction, speed, pressure, volume flow, or any of the other parameters which determine whether a flow is laminar or turbulent.” POR, 34-35. But the '923 Patent does not discuss any of these parameters, yet Howle contends turbulent flow is sufficiently disclosed.

EX1001, 4:47-54; EX1067, 86:6-87:9. Nor did Howle conduct any testing to determine whether the '923 Patent's groove configuration would result in turbulent flow under the parameters K-fee identified. EX1067, 89:16-90:11.

The Board noted that Jobin's analysis is not "conclusory" as it is supported, *inter alia*, by prior art references that indicate that grooves in the capsule cavity will achieve the predictable result of influencing water flow for turbulence. Pet. 63; EX1003, ¶¶279-280; EX1033, 2:30-35; EX1034, [0009]. K-fee never rebuts this.

3. Turbulence Would Have Been Obvious

The Petition establishes that it would have been **obvious** for a POSITA to utilize Rapparini's grooves in combination with Yoakim's brewing system to achieve turbulence in the cavity. Pet. 63; EX1003, ¶¶279-280; EX1033, 2:30-35; EX1034, [0009], [0019]-[0020]. ***Howle confirmed that configuring grooves to generate turbulent flow was well within the skill of the art at the time of the invention.*** EX1067, 88:16-25 ("Q: Does the '923 patent explain how to configure the grooves for turbulent versus laminar flow? A: No, it doesn't explain how to do that, *but that would be well within the capabilities of someone who's skilled in the arts[.]*"), 87:20-25. Additionally, K-fee's own patent filings admit that turbulence was already known, and could be achieved easily. EX1045, 21:26-35 ("***more pronounced*** turbulence" ***than the prior art*** that can be achieved "***by straightforward means***"); EX1001, 4:56-59 ("A stronger turbulence ***compared to the one known in***

the state-of-the-art. . .”). The claims do not require any particular level of turbulence. Moreover, the prior art discloses the same benefits the '923 Patent identifies for generating turbulent flow. *Compare* EX1001, (“extraction process . . . can be controlled more precisely and reproducibly”) *with* EX1034, [0009] (“the advantage of the quality and repeatability of the end beverage”); EX1067, 89:1-14.

Accordingly, Yoakim and Rapparini render the “turbulence” limitation obvious.

III. A POSITA Would Have Combined Yoakim and Jarisch

All of K-fee's arguments are belied by the references themselves, the state of the art, and Jobin's testimony. Howle's arguments require bodily incorporation, hyper-complicate a simple modification, and are unsupported by any evidence—further demonstrating he is not a POSITA.

A. Jarisch is Intended to be Combined With Centrifugal Systems Like Yoakim's

K-fee argues that Jarisch fails to mention Yoakim as a reference it is modifying. POR, 38. That is irrelevant. Jarisch's system is intended to be used with a centrifugal brewing system and explicitly cites Denisart (EX1007). Pet. 44; EX1003, ¶¶190-191; EX1005, [0034]-[0035]. K-fee's POR ignores that Yoakim and Denisart depict nearly identical systems, and share two common inventors. In fact, Denisart's FIGS3-6 are *identical* to Yoakim's FIGS37-38 and 28-29 and

disclose the same centrifuge-based brewing configuration. *Compare* EX1007, FIGS3-6 *with* EX1004, FIGS37-38, 28-29. Denisart is even a ***named inventor*** to Yoakim for this common system.

B. Yoakim Benefits From Jarisch's Code Location

K-fee argues that the Petition fails to show how Yoakim would benefit from Jarisch's code location. POR, 36-37. But the Petition explains that Jarisch's code location improves reading reliability because it is "sufficiently away from the liquid injection and beverage delivery areas so that there is a lower risk for the code to become unreadable such if partly or totally hidden or soiled by beverage residues or otherwise." Pet. 44-46, 55-56; EX1005, [0014]-[0015], [0022]; EX1003, ¶¶113, 192-193.

K-fee ignores this motivation and argues that Yoakim's code does not benefit from Jarisch's code location because (i) it is read before brewing, and (ii) would not be soiled with liquid during centrifugal rotation. POR, 36-37. But Jarisch is clear that it is immaterial whether the code is read before or after brewing because ***beverage residue***—i.e., the substance left over in the chamber from ***prior brewings***—causes unreadability. EX1005, [0022]; EX1067, 81:3-13. Howle repeatedly describes the environment in a coffee brewing system as a "harsh" environment, which materials would need protection from. EX2017, ¶¶92, 94.

K-fee is also wrong that the piercing location would not impact code reading. POR, 36-37. Jobin explained that Jarisch's code location is advantageously away from the "piercing elements" (EX1003, ¶192), which were known in the art to tear or distort the barcode on the membrane (Pet. 13; EX1003, ¶¶113-114; EX1010, 19:25-29). Howle admitted that Yoakim's FIG61 depicts the piercing element as located in the same area as the barcode (ID4), which—upon closing—would pierce the membrane in the same location that is meant to be read *after* closing. EX1004, FIG61; EX1067, 94:6-95:9, 96:1-21. Thus, Yoakim benefits from moving the code away from the piercing area.

K-fee's argument that centrifugal brewing would push liquid **away** from the barcode also fails. POR, 36-37. First, K-fee ignores known problems of tearing and residue in the chamber. *Supra*. Second, K-fee ignores that Yoakim utilizes a **flow restriction seal** that is designed to keep fluid from exiting the outlet (229) until a heightened pressure is reached. EX1004, [0507] ("Preferably, the outlet 229 forms a flow restriction . . . [via] restriction valve such as described in above."); [0382], [0385], [0436], FIG35, 38. Thus, the fluid would not exit in the manner K-fee has argued until **after** a sufficient pressure has built up in the chamber.

C. "Substantial Reconstruction" is Not Required

K-fee's argument that the Yoakim/Jarisch combination requires a "substantial reconstruction" of Yoakim is contrary to the law, and is made unnecessarily

complicated by Howle who is not a POSITA and has never designed a beverage machine. POR, 40-43. The combination is simple to a POSITA. EX2019, 32:3-34:2; 108:21-109:5. Jarisch teaches precisely how to move a code in a centrifugal brewing system like Yoakim's to the bottom of the flange and read it by moving the detector to the bottom of the capsule support, and utilizing a light-conductive material so the detector's light source will reach the bottom of the flange. Pet. 45-46; EX1003, ¶¶194-195; EX1005, FIG5, [0082]-[0084].

K-fee argues that Yoakim “engages” the capsule for rotation, while Jarisch does not, but provides no explanation as to **why** this would impact the combination, beyond mere bodily incorporation. POR, 39-40. Jobin testified that a POSITA would design a system to ensure its capsule fits. EX2019, 36:18-37:6. Regardless, Jarisch **does** teach holding the capsule and driving it in rotation, just like Yoakim. EX1005, [0023].

Howle also focuses on a “bend” shown in Yoakim's capsule holder and offers the conclusory argument (without **any** citation to evidence) that attempting to send light through such a bend would require “extensive modifications” and would lead to “undesired refraction . . . Fresnel effects, internal reflection, transmission loss . . . and other impairment[,]” requiring “extraordinary skill.” POR, 42. But this is belied by ample evidence and law:

- K-fee insists that the combination utilize the **same, unmodified,**

physical chamber of Yoakim FIG61 (POR, 41-42), improperly forcing a bodily incorporation of Yoakim and Jarisch. *Allied Erecting and Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (affirming PTAB's rejection of bodily incorporation).

- K-fee never addresses that Jarisch depicts a straight chamber to transmit light, and ignores a POSITA's ordinary creativity to implement this. Pet., 46; EX1005, FIG4. K-fee never argues that Yoakim prohibits a straight chamber like Jarisch's (to render Yoakim inoperable) or that providing a straight chamber in Yoakim is outside a POSITA's skill.
- Howle claims that moving a detector from above the capsule to below the capsule requires **extraordinary** skill (EX2017, ¶92), yet—in direct contradiction—insists a POSITA can readily move the detector from EX1047 in all locations to read a barcode either above, or below, the capsule flange. EX1071, ¶¶72, 74 (“[A] POSITA would have understood that the placement of the detector could be moved depending on the placement of the identifier.”).
- Neither EX1047 nor the '923 Patent describe any of the optical issues related to moving the barcode location that Howle suggests is fatal to modifying Yoakim. If Howle was correct, the '923 Patent would contain a robust disclosure teaching how to configure a barcode reader

to read through the chamber holding the capsule below the flange. To the contrary, Jarisch provides substantially more disclosure than the '923 Patent on how to accomplish moving and reading an optical code. EX1005, [0040]-[0093], [0099]-[0100], FIG4.

- Howle argues that Yoakim's rotation of the capsule would complicate reading (EX2017, ¶¶91, 95), but ignores that Jarisch's solution is explicitly designed to read through a rotating chamber. EX1005, [0023], [0035].
- Contrary to Howle's opinion (EX2017, ¶90), Jarisch teaches to move its detector to a location that is ostensibly not in the fluid path. Pet. 45-46; EX1005, FIG4.

Accordingly, Howle's conclusory opinions requiring bodily incorporation should be disregarded.

D. Jarisch's "Bitcode" Does Not Teach Away From Yoakim's "Barcode"

Despite the Board's request (Decision, 29), K-fee never provided evidence that Yoakim uses the term "barcode" differently from its ordinary use in the art.⁵

⁵ Howle testified that EX1047 provides disclosure of a barcode by its mere mention of "barcode." EX1067, 75:9-18; 80:12-81:2; 31:4-7.

Moreover, the question is not whether a POSITA is more likely to adopt a barcode or bitcode, but whether a POSITA would have seen a benefit to applying the “barcode” of Yoakim under the flange of the capsule. *Intel Corp.*, 21 F.4th at 800. Jarisch discloses these benefits. EX1005, [0022]. And, contrary to K-fee's argument, Jarisch discloses an improved way to ***position an optical code*** on a capsule rim, and is not limited to bitcodes. Pet. 37; EX1003, ¶179; EX1005, [0014], [0017] (“Preferably, the code is an optical code”), [0087] (applying the invention of an optical code under the flange to color patterns), claims 1, 6. Jobin agrees. EX2019, 84:5-22; 86:2-16; 86:18-87:15.

E. K-fee Misrepresents the Jarisch Prosecution History

Despite the Board's indication that K-fee simply presented “attenuated prosecution arguments that borrow from principles of estoppel” (Decision, 28), K-fee repeated its argument. But K-fee did not analyze the prosecution claims, Examiner's rejection, or any of the references, and failed to provide any evidence of inconsistency.⁶ POR, 38-39.

There is no inconsistency. Prosecution never disparaged combining Yoakim with Jarisch, or any other references. Prosecution simply indicated that the prior art

⁶ K-fee stated in passing that Yoakim FIG23 and Yoakim '601 are the same, but provided no analysis for why that would suggest inconsistency here. POR, 39.

lacked Jarisch's disclosure of a code under the flange. *Using Jarisch in this IPR for its own disclosure and motivation is not inconsistent with Jarisch's patentability over previously-cited art that lacked Jarisch's teachings.* The combination in this IPR is different from the referenced prosecution, and no inconsistent statements were made.

IV. Howle is Not a POSITA

A POSITA requires “five years of experience in design of mechanical beverage systems, or similar products, as well as experience with sensors for recognizing an identifier.” Decision, 8. In 2018, Howle conceded that he *did not* have five years of industry experience in beverage system design. EX1068, 51:15-53:1, 53:15-54:11. This includes any design prior to 2010. EX1066, 49:7-10, 35:17-36:3, 39:21-40:2, 21:22-42:16, 43:6-11. Although Howle purports to have “1,300 hours” designing and analyzing coffee systems in patent litigations, only approximately 100 purportedly relate to design. *Id.*, 49:23-50:8. And this alleged “design” work was largely just freedom-to-operate or infringement analysis. *Id.*, 44:25-45:24. Prior to his litigation expert engagement around 2014, Howle did not research or design beverage systems. EX1069, 385:25-386:6.

In an attempt to rehabilitate Howle, K-fee staged an improper redirect regarding Howle's experience in the medical field. EX1067, 100:1-103:4. Not only does this testimony fail to establish Howle is a POSITA, but it cannot erase his

earlier testimony demonstrating he clearly does not meet the POSITA definition. Moreover, his inability to answer basic questions on K-fee's patents,⁷ his failure to support any of his "optical" opinions with evidence, and his inconsistent positions on obviousness and priority, further demonstrate he is not POSITA and should be given no weight.

In contrast, Jobin has (i) 30 years of experience in product and technology development, (ii) actual hands-on coffee and beverage-system design for companies like Sunbeam, PUR, Mr. Coffee, Margaritaville, Skybar, and others, and (iii) was hired by the USPTO as an expert in coffee capsule technology. EX1003, ¶¶5-30; EX1072, 45:9-23. He even designed a home-based beer dispensing system that utilized cartridge identification technologies. EX1003, ¶24. Jobin also has substantial experience with sensors for recognizing identifiers. EX1003, ¶19; EX1072, 37:12-19, 67:22-70:19. Jobin's testimony should be given more weight.

⁷ EX1067, 55:20-57:20 (inability to answer whether the specification discloses a capsule free of a filter); EX1066, 63:13-64:14, 64:24-65:4, 72:24-73:2, 75:17-76:1 (inability to answer what is a 'repeat pattern' in K-fee's patents), 67:23-71:25 (answering by repeating only his report), 136:11-14 (inability to answer whether a Moka Pot disclosed a single-serve capsule).

Patent No. 10,994,923
Petitioner's Reply

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Patent No. 10,994,923
Petitioner's Reply

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6 and 42.105, I hereby certify that on February 28, 2024, a copy of the attached PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE, was served via electronic mail to Patent Owner's Counsel of Record according to Patent Owner's Mandatory Notices.

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE, complies with the type-volume limitation of 37 C.F.R. § 42.24(c). The word count application of the word processing program used to prepare this paper states that the paper contains 5,587/5,600 words, excluding the parts of the paper exempted by 37 C.F.R. §§ 42.24(a)(1).

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