

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NESPRESSO USA, INC.
Petitioner

v.

K-FEE SYSTEM GMBH
Patent Owner

IPR2023-00485

U.S. Patent No. 11,230,430

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

	Page
I. K-fee Failed to Meet its Priority Burden.....	1
A. FIGS16-18 Do Not Disclose A Barcode on the Bottom of the Flange	1
B. EX1047 Embodiments are Not “Linked” to Support the Claimed Invention	2
1. K-fee’s Cited Language Teaches Nothing About Linking Embodiments	2
2. Element 2.4.2 is Not a “Common” Identifier	3
3. There is No “Common Brewing Chamber”	4
4. Obviousness is Insufficient	7
C. EX1047 Fails to Depict an “Annular Convexity”	8
II. The Claims are Obvious Over Yoakim/Jarisch/Rossi	9
A. Yoakim Discloses “Free of a Filter”	9
1. Express Negative Statements Are Not Required	10
2. Yoakim Discloses Optional Filters and in Locations Other Than the Cavity	10
3. K-fee’s Citations Confirm Yoakim Discloses An Optional Filter	12
4. Petitioner’s “Free of a Filter” Argument Remains the Same	13
B. Yoakim and Rossi Combined Render “Pump Control” Obvious	14
1. Yoakim Discloses Pump Control Based on a Detected Identifier	14
2. Rossi Discloses Controlling Activation Only Upon Identifier Detection and Operability Determination	15
3. K-fee’s “Validation Element” Arguments Fail	16
4. K-fee’s “Pump” Challenges Ignore the Petition’s Combination	17

C.	Yoakim Discloses A Side Wall Including Indentations.....	18
1.	Yoakim Discloses Indentations On the Side Wall.....	19
2.	A Capsule with Side Wall Indentations is Obvious.....	20
III.	A POSITA Would Have Combined Yoakim and Jarisch	21
A.	Jarisch is Intended to be Combined With Centrifugal Systems.....	21
B.	Yoakim Benefits From Jarisch’s Code Location	22
C.	“Substantial Reconstruction” is Not Required.....	23
D.	Jarisch’s “Bitcode” Does Not Teach Away From Yoakim’s “Barcode”	26
E.	K-fee Misrepresents the Jarisch Prosecution History	27
IV.	Howle is Not a POSITA	27

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	Page(s)
<i>Allied Erecting and Dismantling Co. v. Genesis Attachments, LLC</i> , 825 F.3d 1373 (Fed. Cir. 2016)	24
<i>Apple, Inc v. Andrea Elecs. Corp.</i> , 949 F.3d 697 (Fed. Cir. 2020)	13
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Patent No. 11,230,430

Petitioner’s Reply

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1001	U.S. Patent No. 11,230,430	'430 Patent
1002	Prosecution History of U.S. Patent No. 11,230,430	'430 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
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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
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1042	US Patent Pub. 2009/0205747	Lillard
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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	Excerpt from Prosecution History of U.S. Appl. No. 16/438,818	'818 Appl.
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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
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1061	Excerpt from Appl. No. 16/538,752: Nov. 3, 2020 Notice of Allowance	752 Appl. Notice of Allowance
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1069	ITC Hearing Transcript, June 16, 2015, Case No. 377-TA-929 (EX1060 from IPR2022-01574)	Howle ITC Tr.
1070	Declaration of Lawrence Howle from IPR2022-01574 (US 11,254,491)	'491 Patent Howle Declaration

I. K-fee Failed to Meet its Priority Burden

The Board determined that K-fee did not show written description support for the challenged claims in the Second German Application (EX1047). Paper 9 (“Decision”), 14-18. K-fee’s Patent Owner Response (“POR”) fails to answer any of the Board’s questions.

As set forth below, (i) FIG16-18 do not disclose a barcode on the bottom of the flange, (ii) EX1047 lacks any “blaze marks” linking disparate embodiments, and (iii) there is no “annular convexity.”¹ Moreover, K-fee conceded that claims 5 and 7-10 lack priority because it never rebutted that EX1047 fails to disclose “a capsule including indentations in the side wall” in connection with the other claimed features. Petition (“Pet.”), 44.

A. FIGS16-18 Do Not Disclose A Barcode on the Bottom of the Flange

K-fee argues that FIG16 element 2.4.2 discloses a barcode on the “bottom side of the flange.” POR, 38, 45. The “toothed ring” element 2.4.2 is a “form-fitting and/or friction-fitting means and/or a detection means 2.4.2” EX1047, 41:19-24. It is not a barcode, and *it is not on the bottom of the flange*.

¹ Other Examiner priority determinations should not receive deference. *Sony Corp. Ent. Am. LLC v. Aplix IP Holdings Corp.*, IPR2015-00533, Paper 32, 18 (June 20, 2016); POR, 35.

K-fee never addresses EX1047 and the '430 Patent's explicit statement that ***element 2.4.2 is on the “outer region” or “outer circumference” of the flange, not the bottom of the flange.*** EX1047, 41:17-27, 35:9-11, FIG18 (flange's outer edge interacts with pinion 24); EX1001, 10:22-24. K-fee argues that FIG17 depicts the capsule from below (depicting 2.4.2 below the brewing chamber 27), but this does not indicate that 2.4.2 is on the bottom of the flange. POR, 45; Decision, 15, n. 11.

B. EX1047 Embodiments are Not “Linked” to Support the Claimed Invention

“A patent owner cannot show written description support by picking and choosing claim elements from different embodiments that are never linked together in the specification.” *Flash-Control LLC v. Intel Corp.*, 2021 WL 2944592, *4 (Fed. Cir. 2021).

1. K-fee's Cited Language Teaches Nothing About Linking Embodiments

K-fee argues that it can combine a barcode with FIG16-18, but K-fee's cited passages in EX1047 never guide a POSITA to the claimed invention. POR, 39-41. The statement, “[w]hat has been said in relation to the identifier applies to all of the other examples,” explains that the description of machine operation after reading an identifier would apply to the other identifier examples—not that multiple embodiments would be swapped interchangeably. EX1047, 37:14-27, 37:38-38:6;

Decision, 16-17. This was Howle's primary support for intermixing embodiments, undermining his opinion. EX1066, 168:3-18, 169:6-18.

Nor do multiple-dependent claims provide any "blaze marks" to a POSITA because they result in a "complex web of combinations." Decision, 17. K-fee provided "no combination of claims in [EX1047] that would lead [a POSITA] to place a barcode on the underside of the flange in the claimed beverage systems." *Id.*

2. Element 2.4.2 is Not a "Common" Identifier

K-fee argues that element 2.4.2 of FIG16 discloses a barcode on the "bottom side of the flange" because EX1047 teaches swapping any identifier into the location of 2.4.2. POR, 58-59. Not only is 2.4.2 not on the bottom of the flange, it is not a generic identifier location across the embodiments.

All embodiments confirm 2.4.2 is a form of toothed ring or gearwheel. EX1047, 34:27-30, 41:22-27. Even "different embodiments" of 2.4.2 are still only directed to a toothed ring. *Id.*, 41:37-42:5. EX1047 is clear that the 2.4.2 "detection means" is the sensing of the *shape of the toothed ring* with a sensor. *Id.*, 34:27-35:17, 43:11-19. Other identifiers are never linked to 2.4.2, and are instead labeled with their own distinct numbers, such as barcode (17) sensed by detector (13). *Id.*, 44, 38:25-26; EX1066, 150:3-19. When used in other locations "detection means" is not associated with 2.4.2, and is not described as an identifier located on a capsule at all. Rather it is a *sensor* in the machine. EX1047, 31:29-31, 37:30-35, 38:34-38.

It is also illogical that 2.4.2 would be a generic identifier location, such as for a barcode, because the machine would not operate correctly. Decision, 15-16. Retaining arms (30) interact with the toothed ring 2.4.2, and if the toothed ring is not present, the arms will not retain the capsule and it will fall into the waste basket, or could not be inserted. EX1047, 42:5-12. Howle never addresses this.

No language suggests combining the embodiment of FIG2 with FIG16, replacing or combining a barcode with the toothed ring 2.4.2, or moving 2.4.2 to the bottom of the flange. Accordingly, EX1047 is devoid of any linkage to achieve the claimed invention.

3. There is No “Common Brewing Chamber”

K-fee argues that FIG2's barcode can be applied to FIGS16-18 because “only a single brewing chamber is illustrated.” *See, e.g.*, POR, 41, 57-58, n.8. But no language ties the disclosure referencing FIG2 to FIGS16-17, and EX1047 explicitly shows **multiple distinct** types of brewing chambers. Jobin explained that although brewing chambers were well known, the actual configuration and implementation of different brewing chambers is by no means uniform. EX2019, 26:8-27:5.²

² Howle had no opinion whether a “common” brewing chamber existed in related disclosures. EX1067, 84:19-85:3.

K-fee's patent is directed to ***specific*** brewing chamber configurations, so that each may operate with the capsule uniquely made for it. Indeed, it is “an object of the present invention to provide a portion capsule which is suitable ***just for a quite specific coffee machine.***” EX1047, 30:17-19. Capsules that are not suitable for ***that respective*** coffee machine cannot be introduced, or drop through the insertion shaft. *Id.*, 31:24-29.

K-fee argues that EX1047 references “the” brewing chamber, but ignores other contrary language. EX1047 is clear that the invention is for “a specific coffee machine” to identify the capsule in “its brewing chamber.” *Id.*, 33:22-30, 34:21-24. Consistent with this, ***different brewing chambers are numbered differently, depicted differently, and operate differently.***

EX1047 clearly discloses at least two differently numbered, differently configured brewing chambers (shown below). *Id.*, 44, FIGS1-3, FIGS16-17. Howle agreed that these are different embodiments. EX1066, 152:24-153:10.

FIG1- Brewing Chamber 12	FIG16- Brewing Chamber 27
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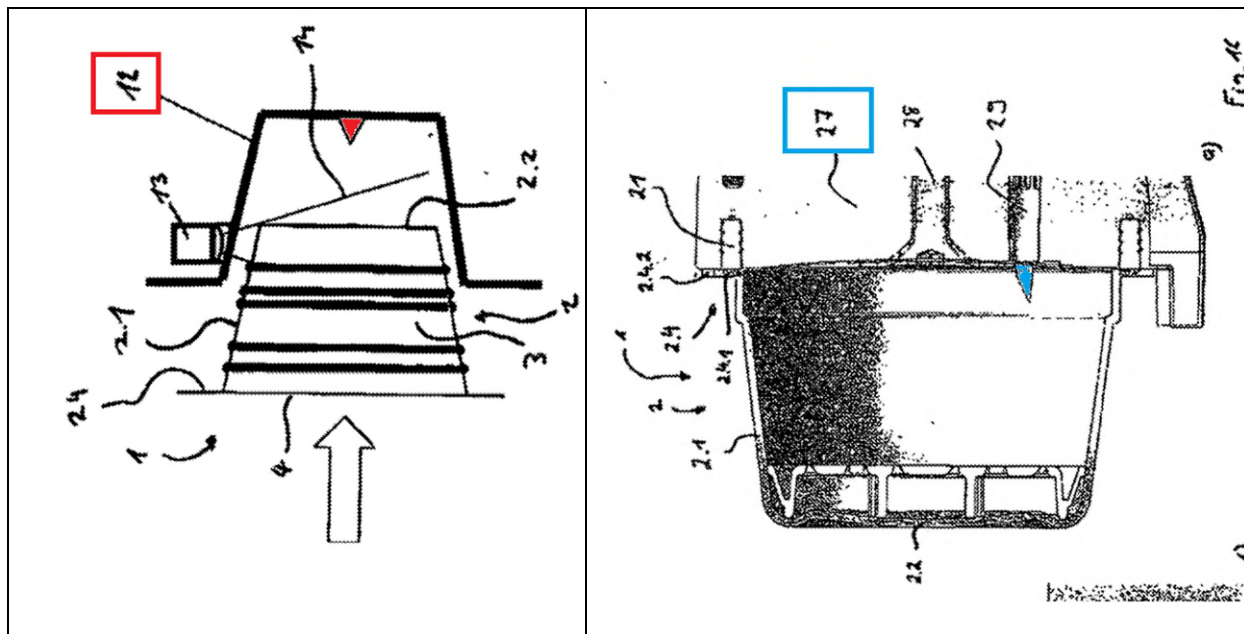
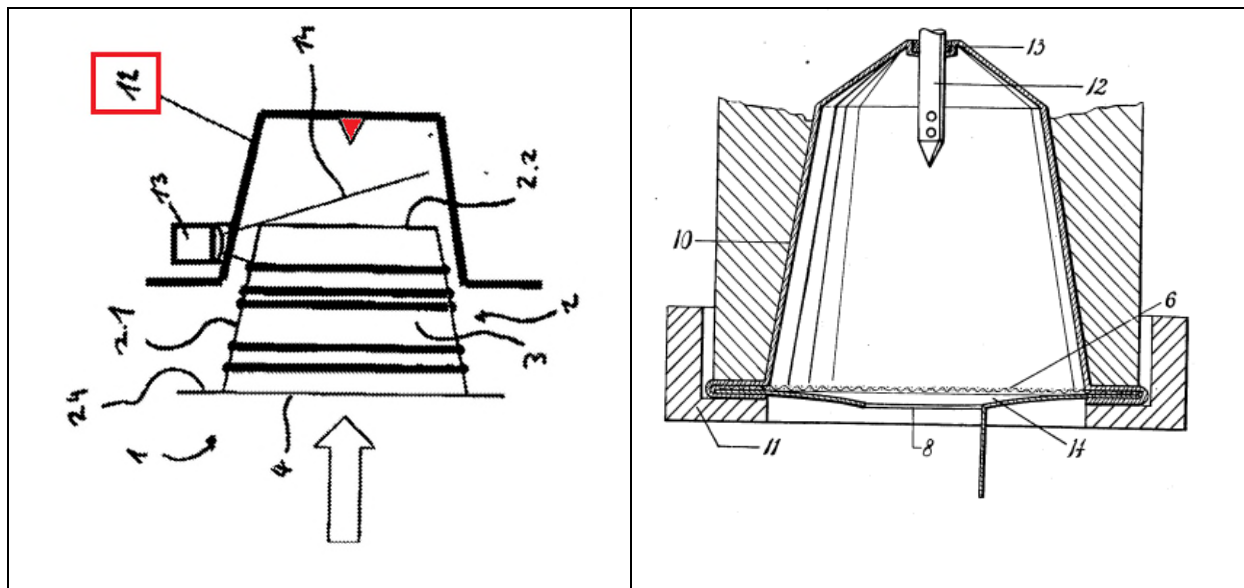


FIG16 depicts a chamber that pierces the capsule's membrane and injects water into it. EX1047, 41:27-35. The chamber includes a seal configured for the toothed ring to avoid leakage around its outer circumference. *Id.* Holding arms (30) retain the toothed ring 2.4.2, or else the capsule will drop into the container. Thus, the capsule for the FIGS16-18 embodiment shown is adapted for that particular brewing chamber.

In contrast, FIGS1-3 depict a chamber piercing the capsule from its base. These types of chambers are well-known in the art to inject liquid through the rear of the capsule, allowing liquid to exit the membrane that tears under pressure. Pet. 4; EX1018, FIG2, 2:17-31.

EX1047, FIG1	EX1018, FIG2
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Moreover, EX1047 is clear when its embodiments are intended to reference one another. For example, FIG4 is directed to “the embodiment according to figure 1” (EX1047, 39:5-9, referencing a barcode). FIG5 is “an alternative to the embodiment according to figure 3.” *Id.*, 39:11-12. FIG7 “shows the embodiment according to figure 6.” *Id.*, 39:29-30. ***Nothing links FIG2 and FIGS16-18.***

Thus, the capsule is specific to the brewing chamber. While brewing chambers were well known at the time, they were not all the same. The drawings, text, and expert testimony make clear that EX1047 does not disclose only one brewing chamber.

4. Obviousness is Insufficient

At best, K-fee's arguments amount to a position that it would be obvious to arrive at the '430 claims. Howle reiterates possible modifications to EX1047 embodiments that a POSITA “could” do. Howle argues that the “detector could be

moved depending on the placement of the identifier” or that “different identifiers that could be used with the portion capsule.” EX2017, ¶¶72-74, 92, 94, 96-98. But “pointing to an ‘amalgam of disclosures’ from which an artisan could have created the claimed invention does not satisfy [written description].” *Flash-Control*, 2021 WL 2944582, at *3; *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (rejecting obviousness for written description).³

C. EX1047 Fails to Depict an “Annular Convexity”

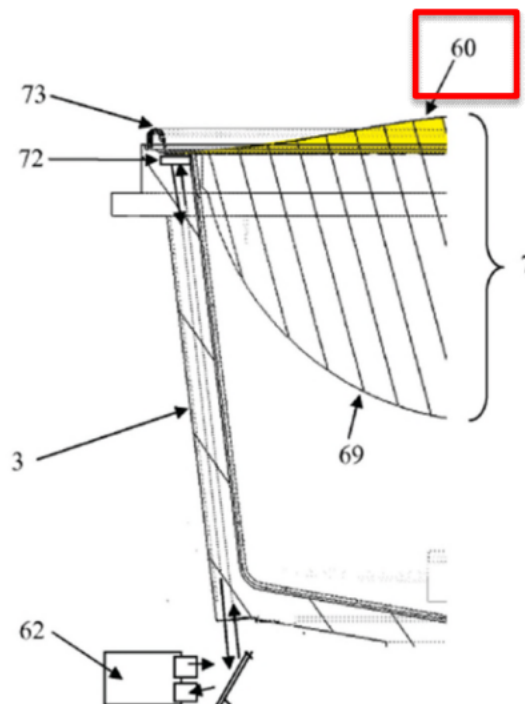
A POSITA viewing FIG16 in the context of EX1047 would understand it to disclose the depth and inner circumference of the capsule rim, *not* an “annular convexity” or “bowed cover.” Pet. 42-44; POR, 54-55. Jobin agrees. EX1003, ¶¶158-159; EX2018, 189:12-191:5. Howle acknowledged that FIG16 depicts shading, which suggests a 3D drawing of the capsule. EX1066, 169:23-170:3.

FIG16 depicts a capsule that is pierced (thus removing hypothetical pressurization), and Howle’s opinion is unsupported by EX1047. EX1066, 170:4-21, 172:3-6, 173:12-18. Moreover, Howle could not explain why the water inlet was shown **below** the alleged “annular convexity” in FIG16 (*id.*, 172:7-25), other than to

³ K-fee argues that an interference somehow supports its priority arguments, but that was never adjudicated, and K-fee never analyzes any similarity to that application. POR, 42, n.6

speculate that the inlet was “behind” the cover, which he later admitted was not disclosed (*id.*, 173:1-18).

Jobin's treatment of Jarisch is not inconsistent. Unlike EX1047, Jarisch is an unshaded cross-section clearly identifying the convex membrane (60):



Pet. 62-63; EX1003, ¶234; EX1005, FIG4; EX2018, 98:1-5; EX2019, 80:14-23.

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

K-fee only disputes “free of a filter,” “pump control,” and “indentations,” but those limitations are disclosed and/or obvious.

A. Yoakim Discloses “Free of a Filter”

The '430 claims recite the negative limitation, “free of a filter that is located inside of the cavity.” Yoakim discloses that filters inside the cavity are

optional/alternative embodiments, and capsules like FIG54 lack a filter in the cavity.

Pet. 62.

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, 10. But disclosure of alternative, optional features satisfies a negative limitation. *Inphi Corp. v. Netlist Inc.*, 805 F.3d 1350, 1355 (Fed. Cir. 2015); *Ex Parte McCormick et al.*, 2021 WL 5411155 (PTAB Nov. 17, 2021); MPEP 2173.05(i).

Moreover, the '430 Patent is devoid of any express statement that its capsules lack a filter, and 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. . . .*”); EX2017, ¶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”). *Lockwood*, 107 F.3d at 1570 (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, 10-11. 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 necessarily filter anything ([0171]), and 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.”*** 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, 63:3-20, 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 disclosing capsules that are “the same as those in the rest of Yoakim’s teachings and thus exhibit the same filter.” POR, 13. But, there is no *single capsule embodiment* in Yoakim or “the same filter” across embodiments. Moreover, [0503] describes the details of FIGS51-55, and confirms there is no filter in the cavity. It explains that the capsules of FIGS51-55 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.⁴ EX1067, 49:19-50:5. Nor does a pierced membrane constitute a filter in the cavity. EX1067, 65:23-66:4.

K-fee argues that a filter in Yoakim is necessary (POR, 10-11), but ignores that Yoakim discloses many different ways to brew a beverage ***without*** a filter in the cavity. Yoakim confirms that the *machine* could provide the filter instead of the capsule (EX1004, [0271], [0255]), or that filtering can be provided by the membrane or lid, which is not in the cavity (*Id.*, [0171], [210], [502]). Despite criticizing Yoakim for needing a filter, Howle could not explain how the '430 *Patent* would brew a beverage 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 which *confirm* Yoakim discloses that a filter in the cavity is *optional*, and several embodiments *lack a filter in the cavity*. POR, 11-12; Pet. 62. K-fee cites [0271], which confirms that the

⁴ FIG54's description as a "schematic" is irrelevant. FIG16 depicts a "cross sectional view" showing no filter in the cavity. EX1004, [0045].

brewing device could 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*. 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*** 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 capsule cavity.

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

K-fee mis-states the law by suggesting Petitioner cannot reference other disclosures of Yoakim, including those K-fee cited. POR, 14. *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 with no filter in the cavity, and a cavity filter is an optional/alternative feature (Pet. 62). *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).

B. Yoakim and Rossi Combined Render “Pump Control” Obvious

“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Yoakim discloses pump control and K-fee ***never challenges*** that Rossi's identification element satisfies the claimed “determinations.” Accordingly, ***the combined teachings*** of Yoakim and Rossi render the “pump control” limitations obvious. Pet. 49-50, 71-73, 77-80; Decision, 30-31.

1. Yoakim Discloses Pump Control Based on a Detected Identifier

Yoakim discloses using “an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly.” Pet. 72, 77; EX1004, [0477]. Based on the detected identification means, Yoakim's machine adjusts parameters such as “***volume of liquid*** fed in the capsule,” by “***controlling . . . the pump . . .***” *Id.* K-fee ***never addresses*** [0477].

K-fee ignores the Petition and argues that Yoakim could utilize “aspiration” or “vaporization.” POR, 17; Pet. 61, 71-72. K-fee cites [0521] and [523] (POR, 17), but omits [0522], which confirms Petitioner's reading of Yoakim's pump control.

Accordingly, Yoakim discloses pump control based on detection of capsule identification means. Pet. 61-62, 71-72; EX1004, [0180], [0477], [0025], [0192].⁵⁶

2. Rossi Discloses Controlling Activation Only Upon Identifier Detection and Operability Determination

Rossi discloses using a barcode to ensure that only safe capsules are used, and activates the beverage production cycle only if the barcode successfully compares to a stored reference. Pet. 72, 77-80. It would have been obvious to modify Yoakim's system with Rossi's teachings to activate Yoakim's pump only after the claimed identifier detection and determinations. Pet. 49-50 ("A POSITA would have further been motivated to combine the portion capsule *and brewing systems of Yoakim* and Jarisch *with the machine activation control of Rossi*. . . ."), 61 (mapping only Yoakim for pump), 72 ("Rossi discloses not operating the machine unless there is a

⁵ Contrary to POR, 17, Yoakim's flow rate control is another example of pump control. EX1066, 160:7-13; EX1003, ¶228.

⁶ K-fee argues, without explanation, that Yoakim has a capsule-shape safeguard. POR, 16. But Howle admitted that Yoakim's "gripping structure" would allow unsafe brewing of unsuitable capsules with compatible shapes. EX1066, 165:21-24, 166:25-167:15. A POSITA would have been motivated to use Rossi's additional safety features. Pet. 49-50.

determination that the barcode agrees with a stored reference.”). K-fee's analysis of Rossi in isolation ignores the Petition. Decision, 30-31.

3. K-fee's “Validation Element” Arguments Fail

K-fee never disputes that Rossi's identification element satisfies limitations [1.o] and [7.p]. K-fee never disputes that Rossi's system **will not activate** until the identification element is detected and compared to a stored reference. Pet. 78-79 (“Thus, the production process cannot be activated unless the first step has been completed.”); EX1041, 7 (“The use of an identification element and recognition means . . . helps to prevent the safety hazard associated with inappropriate operating conditions.”). Howle agrees. EX1066, 176:9-19.

Instead, K-fee argues that “Rossi *also* discloses a validation element[,]” and “[h]aving two elements read at two separate steps does not render obvious a single identifier read in a single step.” POR, 18-19. This violates Federal Circuit law and the claim language, and is inconsistent with Howle's testimony.

K-fee Forces Bodily Incorporation: The Petition does not seek bodily incorporation of both Rossi's identification and validation element. Pet. 49-50, 72, 77-80. Rather, “Petitioner's position [is] that Yoakim discloses a barcode and that Rossi teaches or suggests that such a barcode can be used to allow activation of the machine (including the pump) only when the barcode on the capsule is recognized.” Decision, 31; *Intel Corp. v. PACT XPP Schweiz AG*, 2023 WL 2198649, *3 (Fed.

Cir. 2023) (rejecting bodily incorporation). Rossi's identification element alone renders the '430 Patent obvious. Pet. 77-80. Rossi's validation element, **also** a disclosure of the "determination" limitations, is not required. *Id.*

"Comprising" Claims Do Not Preclude a Second Identifier: Regardless, Rossi's "validation element" falls within the '430 open-ended "comprising" claims. They do not prohibit comparison of additional elements to operate, so long as the pump is only controlled to push water **after** the required determinations. *Vivid Techs., Inc. v. Am. Sci & Eng'g.*, 200 F.3d 795, 811 (Fed. Cir. 1999) (reversing summary judgment where the court erroneously ruled that, because the accused detector considered *additional* factors, it could not infringe a claim that only recited use of one factor); *Solvay S.A. v. Honeywell, Int'l, Inc.*, 742 F.3d 998, 1005 (Fed. Cir. 2014) ("comprising" claim could be met by a process performing additional steps); *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1350 (Fed. Cir. 2003) (same).

Howle agrees—he argues the '430 Patent disclosure involves **combinations** of **multiple identifiers**. EX2017, ¶92 ("[T]he inventor possessed an identifier, such as the barcode, that could be in place of **or in combination with**" the toothed ring identifier.). K-fee never argues that the claims **should be construed** to exclude more than one "determination."

4. K-fee's "Pump" Challenges Ignore the Petition's

Combination

K-fee disputes whether Rossi's beverage cycle activation involves controlling a pump. POR, 20-22. This is irrelevant because the Petition applies Rossi's machine operation teachings to Yoakim's pump control. Pet. 49-50, 78-80. Regardless, Jobin confirmed that in Rossi's teachings of a high-pressure, single-serve capsule system, a pump would be inherent, implied, and at a minimum obvious. Pet. 80; EX2018, 163:16-164:5, 164:21-24, 166:18-167:17. EX2022-2025 are irrelevant because they are not similar to Rossi⁷ and do not undermine what Rossi discloses to a POSITA. Background art further confirms that pump control was well-known. Pet. 4-5, 11; EX1019, 2:54-67, FIG1, FIG4A (item 156); EX1020, FIG3 (item 48).

Thus, Rossi renders obvious not operating Yoakim's pump until a determination that the capsule is operable for use with the machine to increase safety and prevent dangerous conditions. Pet. 80; EX1003, ¶293.

C. Yoakim Discloses A Side Wall Including Indentations

K-fee misconstrues Yoakim and argues that teeth described with FIG23 are not "on the side wall" of the capsule because they are on the capsule's "outer

⁷ The "Moka Pot" (EX2025) is not even a capsule system, which Howle did not know. EX1066, 136:11-14.

surface.” POR, 22-25. But both experts agree the capsule side wall **includes** its outer surface. Regardless, Yoakim renders this limitation obvious.

1. Yoakim Discloses Indentations On the Side Wall

Yoakim teaches a plurality of indentations in the form of a toothed structure around the perimeter of the capsule body (FIG23). Pet. 75-76; EX1004, [0215]. Although K-fee argues Yoakim's teeth are on the “outer surface,” neither K-fee nor Howle ever attempt to argue *what* they contend the “outer surface” to be, or how it could be anything *other than* the outer surface *of the capsule body sidewall*. Yoakim's disclosure, both experts, and basic common sense confirm that the capsule body sidewall has both an outer and inner surface:

- Yoakim explains that toothed indentations in FIG23 are “positioned **below** the edge or rim 72 of the body” and are placed “along the whole periphery **of the body** of the capsule.” EX1004, [0215]. This is the capsule body sidewall. EX1003, ¶277.
- Like the outer surface, Yoakim consistently describes the capsule body's inner surface **as the sidewall**—not a separate structure. EX1004, [0420] (“extending along the internal surface of the side wall of the body”), [0421], [0423].
- Jobin agrees that Yoakim's capsule body sidewall has both an inner and outer surface (EX2019, 70:2-10), and agrees that the teeth are shown

on the sidewall (EX1003, ¶277).⁸

- Howle agrees a capsule body has an inner surface facing the coffee and an outer surface facing the outside air. EX1067, 36:10-19.

Yoakim discloses the claimed side wall including indentations.

2. A Capsule with Side Wall Indentations is Obvious

K-fee argues that Petitioner fails to provide motivation or describe *how* to implement indentations on the sidewall. POR, 24. But a POSITA would have been motivated to provide indentations on the sidewall in order to engage the capsule and rotate for centrifugal extraction. Pet. 76; EX1003, ¶¶280-281; EX1004, [0215]. Indentations were also well-known to advantageously stiffen the body. Pet. 6-8; EX1003, ¶¶87-95. Yoakim explains precisely how to provide indentations in the capsule—by shaping them in injection molding or deep drawing. EX1004, [0215]. Howle agrees a POSITA would have known how to modify a capsule shape. EX1067, 37:9-38:15.

K-fee argues that Jobin “fails to explain what impact this proposed modification would have on . . . placement of a barcode under the flange[,]” but there

⁸ K-fee's deposition quote simply notes that the wall is referred to using different language than the outer surface or engaging structure, **not** that the teeth are located elsewhere on the capsule. POR, 23.

is no impact—the indentations are on the capsule body side wall, while the barcode is located on the capsule flange. POR, 25. Howle's complaints of "optical aberrations" are unsupported by **any evidence**, and contradicted by his own opinion that a barcode on the flange could be physically combined with toothed rings. POR, 25, 47; EX2017, ¶75.

Accordingly, Yoakim discloses and/or renders obvious this limitation.

III. A POSITA Would Have Combined Yoakim and Jarisch

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.

A. Jarisch is Intended to be Combined With Centrifugal Systems

K-fee argues that Jarisch fails to mention Yoakim. POR, 25. That is irrelevant. The Petition explains how Jarisch's system is intended for use with centrifugal brewing systems like Yoakim's—such as Denisart (EX1007). Pet. 47; EX1003, ¶¶179-181; EX1005, [0034]-[0035]. K-fee failed to analyze the similarities between Yoakim and Denisart, which 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.

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, 27-28. 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. 35-36, 47-48, 57; EX1005, [0014]-[0015], [0022]; EX1003, ¶¶113, 182-183.

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 during centrifugal rotation. POR, 27-28. 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 insists the inside of a coffee system has a "harsh" environment. EX2017, ¶¶150-151.

K-fee is also wrong that the piercing location would not impact code reading. POR, 27-28. Jobin explained that Jarisch's code location is advantageously away from the "piercing elements" (EX1003, ¶182), which were known in the art to tear or distort the barcode on the membrane (Pet. 12-13; 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. 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, 26-27. 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 combination of Jarisch requires a "substantial reconstruction" of Yoakim is contrary to the law, and is made unnecessarily complicated by Howle. POR, 29-31. 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. 48-49; EX1003, ¶¶184-185; 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 matters, beyond mere bodily incorporation. POR, 28. 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. 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, 31. 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, 30-31), 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).
- K-fee never addresses that Jarisch depicts a straight chamber to transmit light, and ignores a POSITA's ordinary creativity to implement this.

Pet. 48-49; 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, ¶148), 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. *Id.*, ¶¶72, 74.
- Neither EX1047 nor the '430 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 '430 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 '430 Patent on how to accomplish moving and reading an optical code. EX1005, [0040]-[0093], FIG4.
- Howle argues that Yoakim's capsule rotation would complicate reading, but ignores that Jarisch's solution is explicitly designed to read through a rotating chamber. EX1005, [0023], [0035].
- Contrary to Howle's opinion (EX2017, ¶147), Jarisch teaches to move

its detector to a location that is ostensibly not in the fluid path. Pet. 48-49; EX1005, FIG4.

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

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

K-fee never provided evidence that Yoakim uses the term "barcode" differently from its ordinary use in the art.⁹ 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 moving the "barcode" of Yoakim under the capsule flange. *Intel Corp.*, 21 F.4th at 800. Jarisch discloses these benefits. EX1005, [0022]. Jarisch discloses an improved way to ***position an optical code*** on a capsule rim, and is not limited to bitcodes. Pet. 35; EX1003, ¶169; EX1005, [0014], [0017], [0087] (applying the invention to color patterns), claims 1, 6. Jobin agrees. EX2019, 84:5-22; 86:2-16; 86:18-87:15.

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

E. K-fee Misrepresents the Jarisch Prosecution History

K-fee presented “no evidence” of inconsistency. Decision, 32. K-fee did not analyze the prosecution claims, Examiner's rejection, or any of the references.¹⁰ POR, 26.

The prior art 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 lacking Jarisch's teachings.*

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, including prior to 2010. EX1068, 51:15-53:1, 53:15-54:11; 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

¹⁰ K-fee stated in passing that Yoakim FIG23 and Yoakim '601 are the same, but provided no analysis for why that matters.

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,¹¹ his failure to support his "optical" opinions with evidence, and his inconsistent positions on obviousness and priority, further demonstrate he is not POSITA.

Jobin has (i) 30 years of experience in product development, (ii) actual hands-on coffee and beverage-system design, and (iii) was hired by the USPTO as an expert in coffee technology. EX1003, ¶¶5-30; EX2018, 45:9-23. He even designed a beer dispensing system using identification technologies. EX1003, ¶24. Jobin also has substantial experience with sensors recognizing identifiers. EX1003, ¶19; EX2018, 37:12-19, 67:22-70:19. Jobin should be given more weight.

¹¹ EX1067, 55:20-57:20; EX1066, 63:13-64:14, 64:24-65:4, 72:24-73:2, 75:17-76:1, 67:23-71:25, 136:11-14.

Patent No. 11,230,430
Petitioner's Reply

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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 5,597/5,600 words, excluding the parts of the paper exempted by 37 C.F.R. §§ 42.24(a)(1).

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