

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

**PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,994,923**

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Patent No. 10,994,923

Petition for *Inter Partes* Review

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

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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
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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

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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
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I. INTRODUCTION

Petitioner requests *inter partes* review and cancellation of claims 1-16 of U.S. Patent No. 10,994,923 Patent (“the ’923 Patent”) (EX1001) because the claims recite nothing more than well-known coffee system features combined in ways that would have been obvious to a person of ordinary skill in the art (POSITA).

In 2013, K-fee System GmbH (“K-fee”) began filing claims in the U.S. directed to portion capsules with “identifiers” such as gearwheels and machine-readable imprints inside the capsule membrane. EX1050, 29, 173. These claims were rejected by the USPTO, and abandoned by K-fee. *Id.*, 239-250. At that time, K-fee’s applications had nothing to do with Nespresso’s coffee systems. But in 2014, Nespresso launched the Vertuo System. EX1051. Years later, K-fee began filing continuation applications attempting to reverse engineer patent coverage over Nespresso’s Vertuo System. As a result, K-fee’s new claims are untethered from its original priority filings and unpatentable in view of the prior art, including Nespresso’s own patent publications.

To distract from the fact that its claim limitations are all found in the prior art, K-fee filed Information Disclosure Statements (“IDSs”) with hundreds of prior art references—even those with little relevance to the allegedly patentable features. EX1002, 51-79. K-fee’s barrage of prior art led the ’923 Patent Examiner to request clarification on the relevance of the references:

[T]he cloaking of a clearly relevant reference in a long list of references may not comply with applicants' duty to disclose, see Penn Yan Boats, Inc. v. Sea Lark Boats, Inc., 359 F. Supp. 948, aff'd 479 F.3d 1338. . . . With regard to the numerous IDS submissions, applicants are invited to indicate the relevance of the submissions to the claims. . . . Without claim listings the examiner is unable to determine how the claims in the reports relate to the claims under examination.

Id., 611-612.¹ K-fee never provided guidance on the relevance of its voluminous IDS references, and the '923 Patent issued. But the '923 Patent would never have issued had this Examiner utilized Yoakim, Jarisch and Rapparini, as combined in this Petition.

The '923 Patent purports to invent the use of barcodes to determine whether a coffee capsule is suitable for a particular machine, where a capsule includes a barcode located on the bottom side of its flange, and has grooves and ribs on the capsule wall. However, this combination is contemplated nowhere in K-fee's priority documents. EX1001, claims 1-16. Accordingly, such claims are unpatentable over the prior art as presented in this Petition. Nespresso respectfully

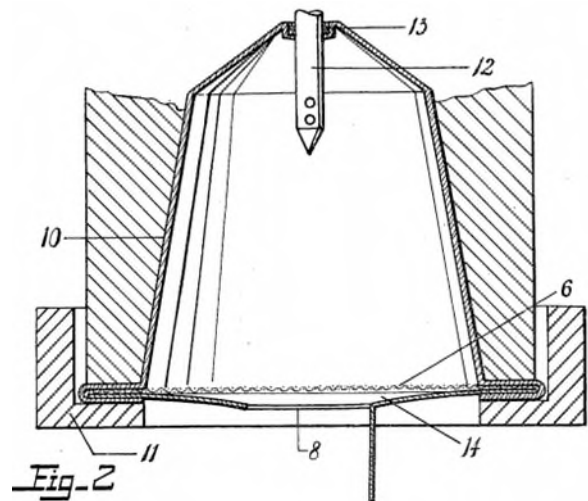
¹ All emphasis in this Petition is added.

requests institution and cancellation of K-fee's claims.

II. TECHNOLOGY BACKGROUND

The process of coffee extraction has been known for centuries (EX1003, ¶¶53-54), and single-portion coffee offerings began to emerge in the 1960s. *Id.* ¶¶55-56. Single-serve beverage systems by Keurig, Nespresso, and others were widely available by 2010. *Id.* ¶57. The operation and components of these systems are well-known. *Id.* ¶¶58-59. They include a brewing chamber to place the single-serve capsule, and needles to pierce the capsule to allow for water injection using a water pump and heater, which extracts beverage into a cup for drinking. *Id.*

An example from 1979 is shown (right) using an aluminum capsule (10) including a bottom portion that is pierced by a needle (12) to inject high-pressure hot water, which exits through membrane (8) that perforates under



pressure. EX1018, 2:17-31, FIG2; EX1003, ¶60. By 2000, such systems were computer controlled to manipulate sensors, valves, and water pumps to optimize the brewing process. EX1019, 2:21-3:11, FIG1, FIG4A; EX1003, ¶¶61-63.

Single-serve capsules must be removed after brewing to allow the use of a subsequent capsule. Used-capsule containers, such as the drawer (32) (right), have long been utilized to avoid touching hot, wet capsules after brewing. EX1003, ¶¶64-65; EX1020, 3:4-10, FIG3.

Likewise, machine features, such as that shown in blue (right), have long been known to position capsules (10) and automatically eject into waste containers. EX1003, ¶¶66-71; EX1009, [0053]-[0054], FIG7; EX1020, 5:15-31; EX1021, 3:6-8, 24-31, 47-56, 4:39-43; EX1022, [0049]-[0051], FIG8; EX1023, [0042]-[0047], [0008]-[0015], FIG7.

A. Capsule Components and Manufacturing

Capsule design evolved to allow for different beverage sizes, and to withstand water pressure and temperature, with good barrier

properties to protect the coffee from moisture and oxygen. EX1003, ¶¶72-74; EX1018, 1:5-12; EX1015, [0014]-[0015]. Aluminum, manufactured by deep-

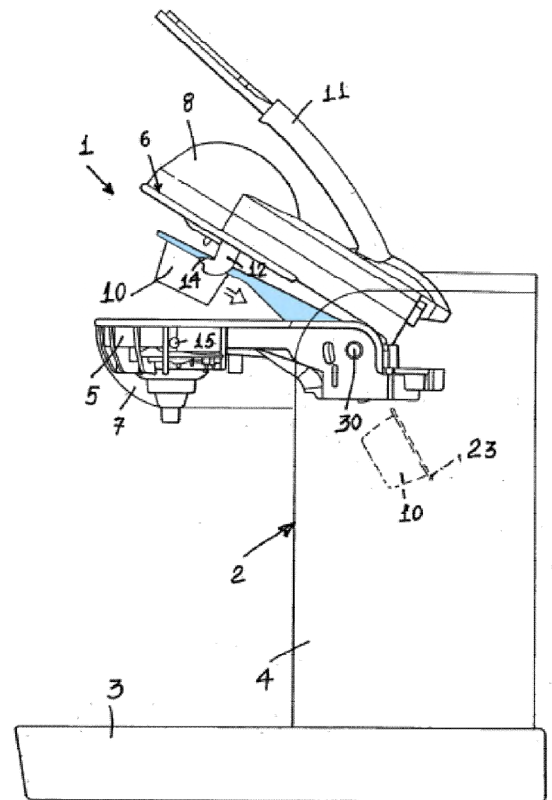
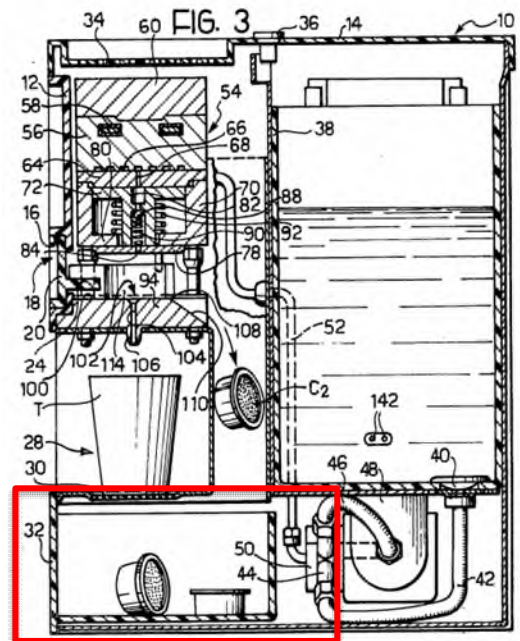


FIG. 7

drawing², has long been a common capsule material because of its exceptional barrier properties. EX1003, ¶¶75-76; EX1024, [0005]; EX1025, 1:7-23; EX1044, [0044]-[0045]. Aluminum is also electrically conductive. EX1044, [0044]-[0045].

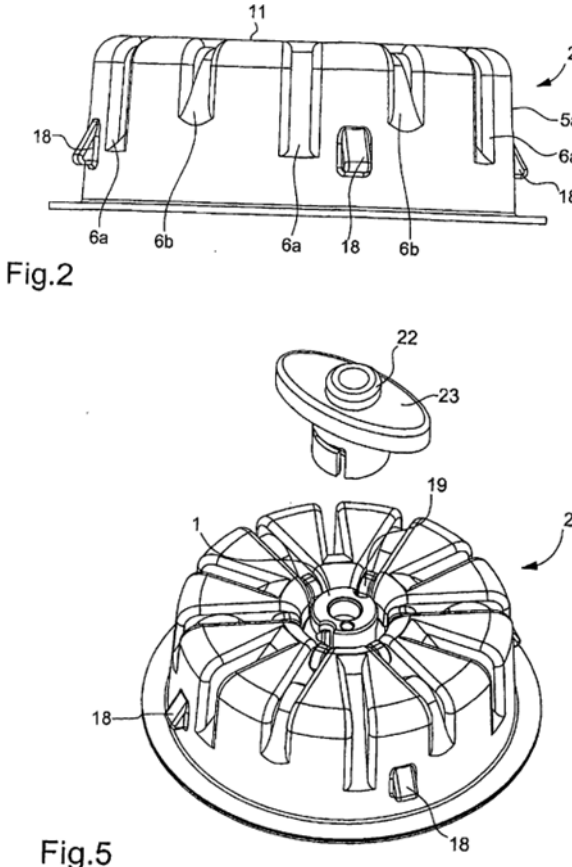
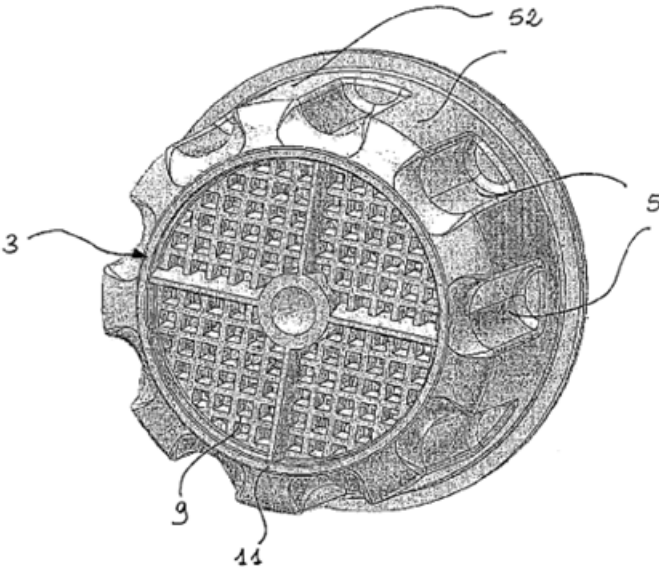
POSITAs knew to use barrier layers in multi-ply coffee packaging to increase freshness and prevent moisture or aroma from escaping. EX1003, ¶83; EX1055, 205 (“Today, the most commonly used materials are the inexpensive and easy-to-manage flexible polymer-aluminum multiply laminates, which ensure an efficient barrier due to the presence of a central layer of aluminum foil.”); EX1056, 246.

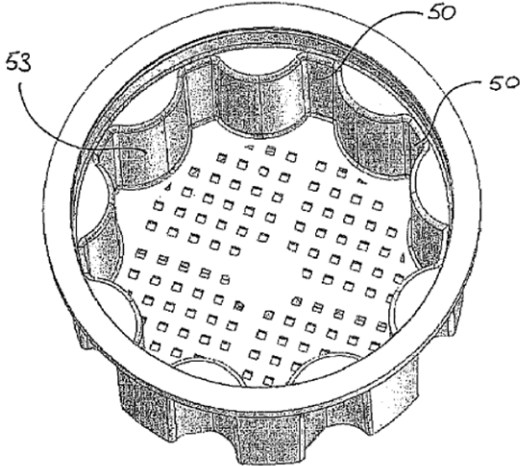
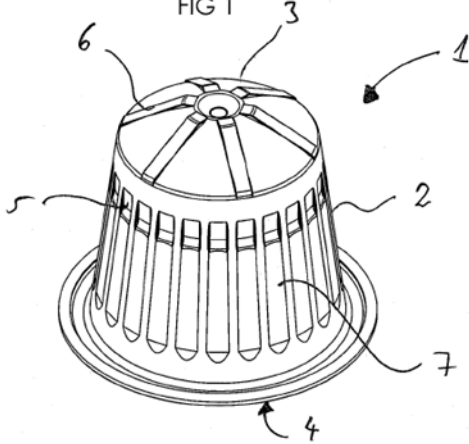
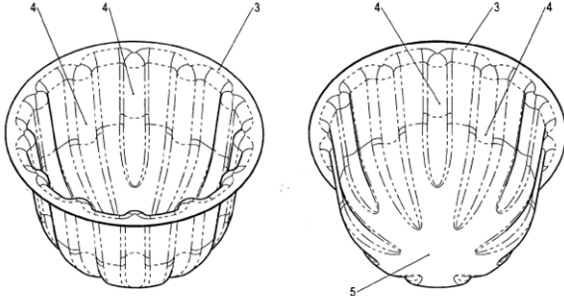
To extend shelf life, it was also known to package coffee using inert gasses, such as nitrogen, and to pressurize the contents. EX1003, ¶84; EX1056, 248, EX1055, 208 (“[P]ressurization allows the shelf life of coffee to be extended for up to 18 months. . . . Pressurization consists of creating a pressure inside the package that is higher than atmospheric.”); EX1024, [0005]. Internal pressure inside the sealed capsule also can occur if the coffee outgasses CO₂ over time. EX1003, ¶85; EX1056, 249-250. It is known that the capsule’s foil membrane will bow outwardly when the pressure inside the container is higher than atmospheric pressure. EX1003,

² Deep-drawing involves shaping a sheet of aluminum with a die. EX1003, ¶¶77-79; EX1026, 323; EX1027; EX1028, [0004]. Thermoforming can be used for plastic. EX1003, ¶¶80-82; EX1029, 383-426.

Because single-serve capsules typically endure pressure, temperature and physical stresses during brewing, and must withstand the forces of a user’s hand grasping the capsule, it became common to use grooves or ribs to stiffen the capsule body wall, and to influence liquid flow through the capsule during extraction. EX1003, ¶¶87-89; EX1030, 1:14-21 (disclosing a ribbed area in a thin wall thermoformed plastic cup for stiffening); EX1031, 1:27-37 (disclosing longitudinal ribs and grooves provided in the sidewall for axial strength); EX1032, 5:9-25 (disclosing grooves in the coffee cartridge for structural stability). In other instances, grooves and ribs have been used for purely ornamental purposes. EX1003, ¶87. The pervasiveness of capsule structures incorporating such grooves and ribs is shown below. EX1003, ¶¶90-95.

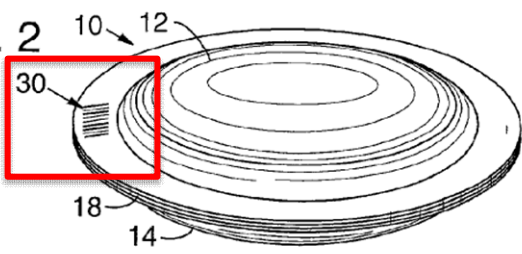
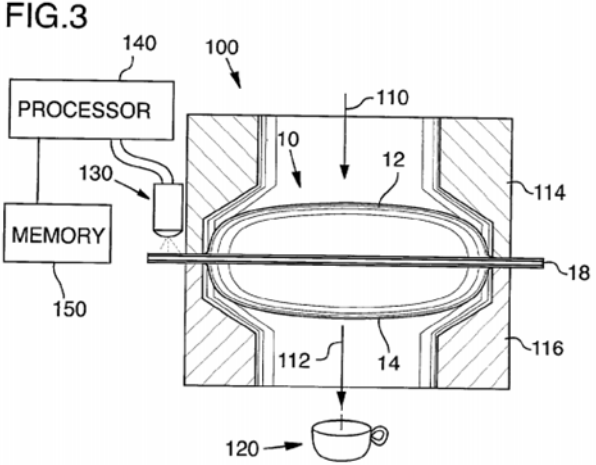
Date	Capsule	Description
2001		“circumferentially spaced flutes which are strategically positioned to enhance resistance to buckling” EX1033, 2:20-25. Grooves and ribs “serve to efficiently direct the brewed beverage downwardly ... with an accompanying beneficial increase in turbulence.” <i>Id.</i> 2:30-35.

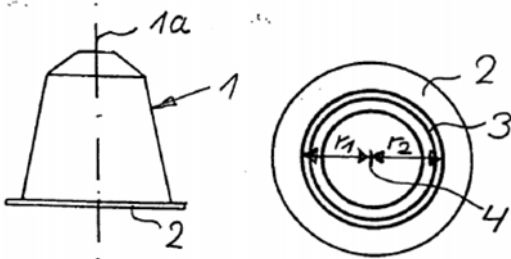
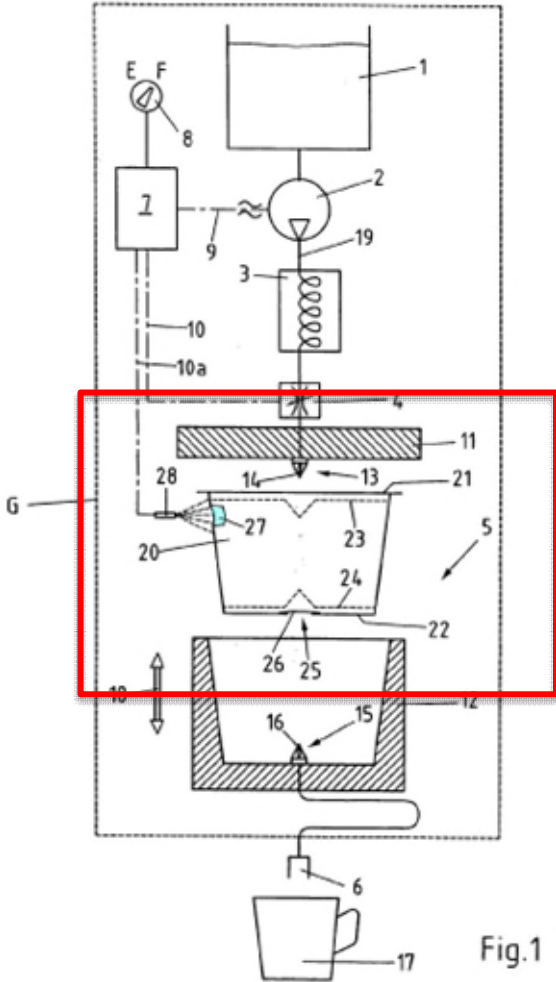
Date	Capsule	Description
2006	 Fig. 2 is a side cross-sectional view of a capsule assembly. It shows a cylindrical capsule (2) with a series of ribs (6a, 6b) extending from its outer wall. A nozzle (18) is positioned at the bottom of the capsule. A central component (11) is visible inside the capsule. A base (5a) is shown at the bottom. Fig. 5 is a top-down view of the capsule assembly, showing the ribs (1) and the nozzle (18) at the center. A central component (19) is also visible.	“A first series of ribs 6a plays a part in reinforcing the capsule 2. . . .A second series of ribs 6b is designed to prevent the nozzle from rotating in the packaging.” EX1011, [0077].
2007	 FIG. 2 is a cross-sectional view of a capsule assembly. It shows a cylindrical capsule (3) with a series of ribs (5) extending from its outer wall. A nozzle (9) is positioned at the bottom of the capsule. A central component (14) is visible inside the capsule. A base (52) is shown at the bottom.	Grooves and ribs on the capsule wall and cavity. EX1034, [0009]. “the internal grooves of the capsule attain optimal flow conditions for the liquid passing through the capsule itself, to the advantage of the quality and repeatability of the end beverage and also of the correct operation of the associated machines...” <i>Id.</i> [0009], [0019], [0020].

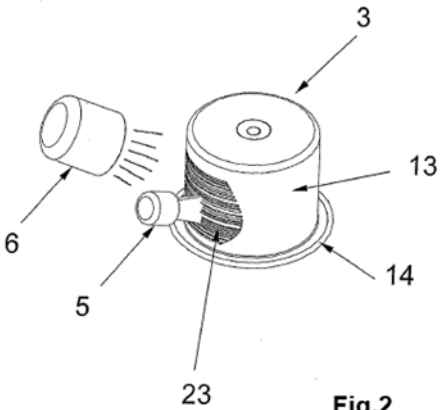
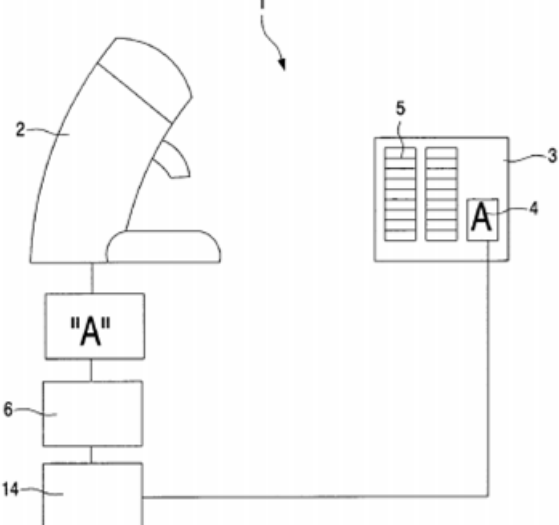
Date	Capsule	Description
	 FIG. 8	
2010	 FIG. 1	The grooves (7) are “side wall <i>stiffening elements</i>.” EX1035, [0027], [0037].
2010	 FIG. 6 FIG. 6 bis	The capsule body has “longitudinal <i>stiffening ribs</i>” that “allow[] the <i>optimization of the stability</i> of the container.” EX1008, [0009].

B. Single-Serve Beverage Capsule Identification Systems

An increase in the number of single-serve capsules and brewing systems led to the development of capsule identification methods used to control the brewing process based on the type of capsule, or otherwise determine whether a particular capsule was suitable or safe for a given machine. EX1003, ¶¶96; EX1015, [0009], [0014]-[0015]. Since the early 1990s, it was known to use optical readers to read barcodes, or other optical codes, off the capsule surface and adjust brewing parameters accordingly. EX1003, ¶¶97-98; EX1036, 4:40-45, 5:1-54, 7:47-8:32. By 2010, using optical codes for capsule identification and machine control was highly developed, as shown below. *Id.* ¶¶99-110.

Pub. Date	Capsule/System	Description
2002	FIG. 2  FIG. 3 	Barcode used to identify the capsule, compare with system memory, and determine “the source of the packet <i>so as to prohibit use of counterfeit products</i>, or packets from unauthorized suppliers.” EX1037, [0037]; <i>see also</i> [0002], [0005], [0006], [0023]. [0028], [0032], [0033].

Pub. Date	Capsule/System	Description
2004	Fig.1 Fig.1a 	Machine identifies capsule based on barcode and blocks operation if it does not match pre-programmed identifier. EX1024, [0014].
2005		Coffee identification system with a barcode positioned on the capsule so the system can control extraction parameters, including the water pump. EX1039, [0019].

Pub. Date	Capsule/System	Description
2005	 Fig.2	System reads capsule barcode to “determine the origin of the containers used,” “encrypt/decrypt, analyze, compare, approve/reject and store information read on [the capsule]” and “<i>selectively start or not start a cycle of operations.</i>” EX1040, 2:3-19.
2007	 Fig.1	System stores pre-programmed brewing parameters that are selected based on a capsule barcode. EX1038, [0005]-[0006], [0011]-[0012], [0025]-[0028].

Pub. Date	Capsule/System	Description
2009	FIG. 4 <pre> graph TD 110[Select an appropriate container] --> 120[Place the selected container in the dispensing area] 120 --> 130{Any bar code indicia} 130 -- No --> 200[Lock dispensing machine] 130 -- Yes --> 140[Locate bar code indicia] 140 --> 150[Scan bar code indicia] 150 --> 160[Evaluate bar code indicia] 160 --> 170{Is the selected container appropriate?} 170 -- No --> 200 170 -- Yes --> 180[Dispense appropriate beverage and quantity] 180 --> 190[Track quantity and type of beverage dispensed] 190 --> End[End] 200 --> 210[Alert the customer] 210 --> End </pre>	System checks coffee barcode and either locks machine or brews beverage based on barcode result. EX1042, [0054]-[0055].
2010	FIG.1	System reads barcodes on the capsule and “compares the signal from the recognising means for the [barcodes] with pre-stored data in order to allow the machine to proceed to activation only if it recognizes the [barcodes].” EX1041, 9.

C. Code Placement and Positioning

POSITAs also understood how to position optical codes on capsules to ensure proper alignment with the reader and avoid obstruction of the code during reading. EX1003, ¶¶111-112. For example, POSITAs understood that positioning an optical code away from the liquid inlet and outlet would increase readability of the code by shielding it from liquid and loose coffee grinds. EX1003; ¶113. Panesar disclosed the benefits of positioning the barcode away from the liquid injection areas to avoid soiling or tearing the barcode. EX1003, ¶114; EX1010, 2:29-3:12, 19:22-20:13.

Similarly, it was also known that positioning the code on the underside of the rim provided the advantage of increasing the readability of the code in the system. For example, Jarisch and Jarisch 929 disclosed a capsule with an optical code located on the underside of the flange—away from the membrane and injection site—to avoid soiling during the extraction process and thus improve the reliability of code reading. EX1003, ¶¶115-117; EX1005, [0014], [0022]; EX1006, [0017]-[0018].

Thus, providing an optical code around the bottom perimeter of the capsule flange was known at the time of the alleged invention. EX1003, ¶118.

III. '923 PATENT

A. Overview

The '923 Patent discloses a single-serve beverage system that can identify capsules to determine whether the capsule is suitable for use with the machine.

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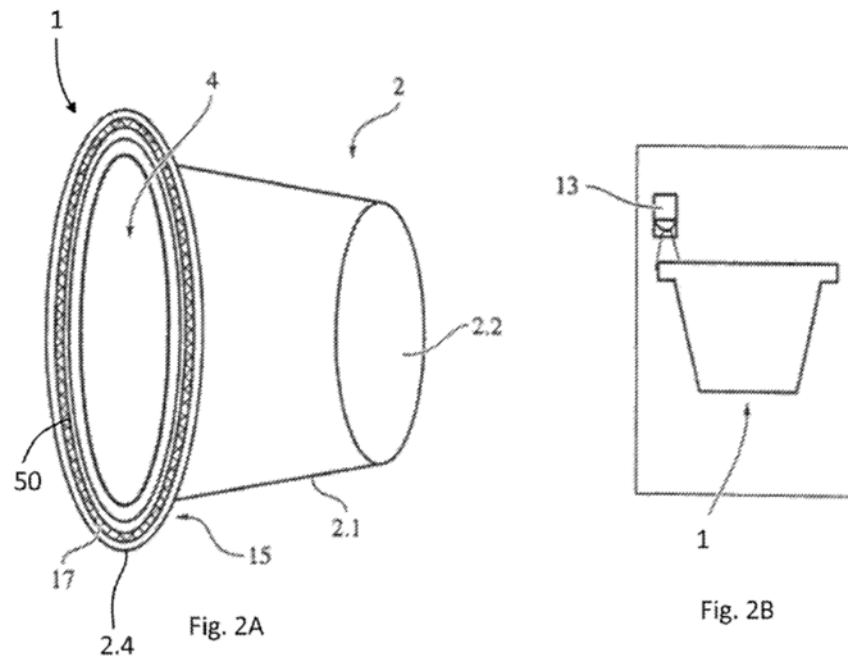
EX1001, 1:6-7, 1:22-24, 3:20-27; EX1003, ¶¶119-120. According to the '923 Patent, there is a problem that certain capsules may end up being used in a different manufacturer's brewing system, even though such a capsule is not designed for that system. EX1003, ¶120; EX1001, 1:16-21. An object of the '923 Patent invention is to solve this problem by creating a capsule that is only suitable for a specific coffee machine. *Id.* 1:22-24. The '923 Patent attempts to solve this problem by providing an "identifier" on the capsule that allows a brewing system to identify whether or not a capsule is suitable for use. EX1003, ¶121; EX1001, 1:28-34, 1:60-65.

The capsule comprises a base element with a cavity that contains raw beverage material, *e.g.*, ground coffee, and a lid that seals the material within the base element. EX1001, 1:11-14; EX1003, ¶119. The base element further comprises a wall region, bottom, and circumferential flange. EX1001, abstract; EX1003, ¶119. The '923 Patent acknowledges these capsules were commonplace and often similar to each other. EX1001, 1:15-17; EX1003, ¶119. The '923 Patent also describes grooves on the capsule body to reinforce the capsule wall, or to assist with capsule identification. EX1001, 4:29-32, 12:12-15; 1003, ¶124.

The specification describes using sensors or detectors to (i) recognize an "identifier" (*e.g.*, a barcode, recesses and bulges, electrically conductive sections, etc.), and (ii) impact whether and how the machine operates. EX1001, 2:8-14, 2:26-34, 2:46-49, 3:1-6, 3:7-11, 8:47-48, 8:61-65, 9:21-25; EX1003, ¶¶121-122. This

includes adjusting brewing parameters such as temperature, pressure and volume based on the detected code. EX1001, 3:20-27.

The '923 Patent purports to disclose a capsule with a barcode (50) placed on the top surface of the capsule flange (17) (below). Although it states that “the barcode alternatively can be attached to the base element’s edge region being averted from the membrane,” it does not provide reason to do so, especially in view of the location of detection (13) shown in FIG2B. EX1001, 8:54-56; EX1003, ¶123.



The '923 Patent further discloses that the capsule may include grooves (32) to improve stability and “prevent the portion capsule from deformation and buckling, in particular.” EX1001, 4:29-32, 12:12-15; EX1003, ¶124.

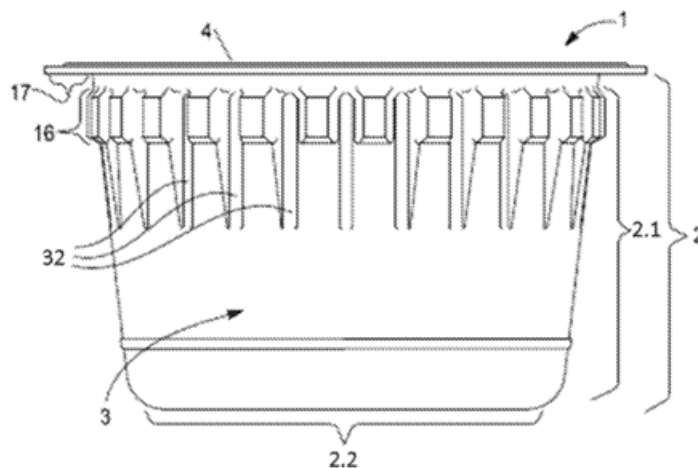


Fig. 19

B. Prosecution History

U.S. Patent Application No. 16/438,818 was filed on June 12, 2019. It claims priority to numerous continuations, and to PCT/EP2011/003677, filed on July 22, 2011, which improperly claims priority to three foreign applications discussed below in Section VIII.D. EX1001; EX1003, ¶¶126-127.

The application was originally filed with nine claims directed to a single-serve capsule with basic structural features, and an identifier to individualize the respective single-serve capsule, wherein the identifier is a barcode on the bottom side of the flange, facing away from the membrane. EX1002, 26; EX1003, ¶128. On the same day, K-fee filed an Information Disclosure Statements (IDS) containing over 600

references. EX1002, 51; EX1003, ¶128. K-fee filed another IDS on October 29, 2019 containing nearly 60 additional references. EX1002, 86; EX1003, ¶128.

In the first Office Action on April 30, 2020, the Examiner noted K-fee's lengthy IDS, stating that K-fee's "cloaking of clearly relevant references in a long list of references may not comply with applicants' duty to disclose, see *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359, F.Supp. 948, aff'd 479 F.3d 1338." EX1002, 611. The Examiner stated that "[t]here is no duty for the Examiner to consider these references to a greater extent than those ordinarily looked at during a regular search by the Examiner. Accordingly, the Examiner has considered these references in the same manner as references encountered during a normal search of Office search files." *Id.* The Examiner further noted that "[w]ith regard to the numerous IDS submissions, applicants are invited to indicate the relevance of the submissions to the claims. Particularly with regard to the various examination and opposition reports which were submitted. Without claim listings the Examiner is unable to determine how the claims in the reports relate to the claims under examination."³ *Id.* at 611-12. EX1003, ¶129.

The Examiner issued drawing and specification objections over certain

³ K-fee never provided the requested clarification regarding the references during the prosecution of this application.

claimed features, including the location of the barcode on the area of the capsule's peripheral region facing away from the membrane. *Id.* 612-614. EX1003, ¶130.

The Examiner also rejected claims 1 and 2 under §103 as obvious over WO 2005/044067 to Ruchonnet (“Ruchonnet”). EX1002, 617. The Examiner stated that Ruchonnet discloses a single serve capsule capable of making a beverage, the capsule having an identifier which makes it possible to individualize the respective single-serve capsule, characterized in that the identifier is a barcode which is provided on that side of the peripheral region directed away from the membrane. *Id.* EX1003, ¶131.

The Examiner also rejected Claim 3 as obvious over Ruchonnet in view of WO 2011/000723 to Bucher (“Bucher”). The Examiner noted that Claim 3 differs from Ruchonnet in the capsule having an insert element with an identifier. EX1002, 617. The Examiner relied on Bucher disclosing a single serve capsule having an insert with an identifier, which makes it possible to individualize the respective single-serve capsule. *Id.* at 617-18. EX1003, ¶132.

The Examiner rejected claims 4-8 as obvious over US 2002/0020659 to Sweeney (“Sweeney”). EX1002, 618-620. The Examiner noted that Sweeney discloses a frustoconical shaped-single serve capsule capable of making a beverage where the wall region or outer circumference of a flange has a plurality of channels (flutes) under the flange (claim 4), which serve as an identifier (claim 5) and have a

gear-wheel-like contour (claim 6). *Id.*, 618. EX1003, ¶133.

On July 17, 2020, K-fee’s representative initiated an Examiner interview “to discuss the claims in general and particularly the placement of the barcode on the peripheral region ... of the basic element prior to the submission of an amendment.” EX1002, 661; EX1003, ¶134.

In response to the Office Action, on July 28, 2020, the Applicant amended independent claims 1 and 9, canceled claims 2-8, and added new claims 10-24. For example, the Applicant added the following features to the claims:

- The capsule’s base element is made of metal;
- The capsule’s cavity is free of a filter;
- The capsule’s cavity includes radially spaced and vertically oriented ribs;
- The capsule is closed by a metal cover;
- The capsule’s base element includes radially spaced and vertically oriented grooves that are free from extending entirely to the bottom region; and
- The capsule’s barcode is on the bottom of the peripheral region directed away from the cover.

EX1002, 665. EX1003, ¶135. K-fee’s newly added claims included features such as, for example, a “border” around the capsule’s peripheral region (new claim 10),

grooves that extend into the border (new claim 11), grooves that do not extend all the way into the peripheral region (new claim 12), a wall region with an electrically conductive section (new claim 13), comparison of the capsule's identifier to a stored reference in a coffee machine (new claim 14). EX1002, 666-669. EX1003, ¶136.

In response to the Examiner's specification objections regarding the lack of antecedent basis for the barcode location on the bottom of the flange, the Applicant cited DE 10 2010 031 988.0, dated July 22, 2010, for priority for the barcode location. EX1002, 672-73. However, the Applicant never provided any priority disclosure from that document regarding vertical ribs and grooves as claimed. *Id.* EX1003, ¶137.

In response to the prior art rejections, the Applicant argued that Ruchonnet failed to disclose "the identifier is a barcode provided on the bottom side of the peripheral region which is directed away from the cover." EX1002, 674. The Applicant also argued that Ruchonnet failed to disclose (i) the base element made of metal, (ii) the cavity is free of a filter, and (iii) the capsule includes radially spaced and vertically oriented grooves and ribs, *inter alia*. *Id.* 674-675. EX1003, ¶138.

On July 28, 2020, September 9, 2020, and October 14, 2020, K-fee filed additional IDSs, which included 140 references. EX1002, 744, 999, 1922. EX1003, ¶139.

On November 4, 2020, the Examiner proceeded to issue a Notice of

Allowance (which included an examiner amendment to replace “peripheral region” with “flange”). The Examiner stated the following reason for allowance:

Ruchonnet discloses a single serve capsule capable of making a beverage, having a basic element with a cavity, in which a raw beverage material is provided. The capsule has a peripheral region which is provided the basic element, and the cavity being closed by a membrane which is fastened on the peripheral region of the basic element. The capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, characterized in that the identifier is a barcode which is provided on that sidewall of the basic element which is directed away from the membrane. ***Ruchonnet does not teach or reasonably disclose the capsule has an identifier that is a barcode provided on a bottom of the flange which is directed away from the cover.***

EX1002, 1941; EX1003, ¶140.

Accordingly, the sole reason that the Examiner articulated for the allowance was based on Ruchonnet’s failure to disclose a capsule with “an identifier that is a barcode provided on a bottom of the flange which is directed away from the cover.” However, neither the Applicant nor the Examiner ever stated that Sweeney fails to disclose radially spaced and vertically oriented ribs, or that any other reference other than Ruchonnet failed to disclose the claimed barcode positioning. EX1003, ¶141. The Examiner further failed to cite Jarisch despite the Office having already acknowledged that it was “well established to place barcodes . . . on the bottom side

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of the flange.” EX1059, 18.

IV. SECTION 325(d) PROVIDES NO BASIS FOR DISCRETIONARY DENIAL

The Board employs a two-part test to determine whether discretionary denial under §325(d) is warranted. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential). The Board first determines “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office[.]” *Id.*, 8. If either condition of this first part is satisfied, the Board then determines “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.” *Id.* In assessing this second part, the Board considers non-limiting factors (c), (e), and (f) of *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential). *Advanced Bionics*, IPR2019-01469, 8.

Although Petitioner previously filed IPRs on patents related to the ’923 Patent (IPR2021-01221, -01222, -01223), which were denied institution based on §325(d), the same result should not occur here. Those IPRs emphasized Examiner error based on improper priority afforded by the Examiner to K-fee’s patent claims, with which the PTAB disagreed and found that the Office did **not** afford K-fee priority to its foreign filings. *See, e.g.*, IPR2021-01221, Paper 11, 12-13 (PTAB May 6, 2022)

(“[T]he only clear finding by the examiner in the record is that the examiner considered, ***but was not persuaded***, that the pending claims were entitled to priority of the German applications.”). The PTAB also found other arguments regarding Examiner error insufficiently developed. *Id.* 24. Here, the Petitioner provides more developed and robust explanation of Examiner error, including disclosure of the specific limitation that the Office found was the reason for allowance for these specific claims. Thus, although the PTAB did not previously reach the merits of the combinations presented in the prior IPRs on related patents, it should do so here.

A. *Advanced Bionics* Part 1

The Ground in this Petition relies on Yoakim, Jarisch, and Rapparini. These references were cited among IDSs containing over 700 references. EX1002, 51. The Examiner never asserted any rejection using references in the Grounds of this Petition.

The Board has previously held that IDS citation was sufficient under Part 1 of the *Advanced Bionics* framework to require analysis of Part 2. *See, e.g.*, IPR2021-01221, Paper 9, 12-13 (PTAB January 18, 2022). Notwithstanding, as detailed below, Part 2 of the *Advanced Bionics* framework does not support §325(d) denial because the Examiner materially erred in allowing the ’923 Patent claims.

B. *Advanced Bionics* Part 2

During prosecution, the Examiner committed errors “material to the

patentability of the challenged claims” by “misapprehending or overlooking specific teachings in the relevant prior art” that, had they been properly considered, would have led the Examiner to conclude that the challenged claims are not patentable. *Advanced Bionics*, IPR2019-01469, 8 n.9, 21.

1. Factor (c) (extent to which the art was evaluated during prosecution)

The Examiner indicated that he considered over 700 references cited in the IDSs, which includes references used in this Petition. However, the Examiner cautioned K-fee that “*cloaking of a clearly relevant reference in a long list of references may not comply with applicants’ duty to disclose[.]*” EX1002, 611. The Examiner further stated “[t]here is no duty for the Examiner to consider these references to a greater extent than those ordinarily looked at during a regular search by the Examiner. Accordingly, the Examiner has considered these references in the same manner as references encountered during a normal search of Office search files.” *Id.*

The Examiner did not utilize **any** of these references in a rejection during prosecution of the ’923 Patent. *See Lyft, Inc., v. Rideshare Displays, Inc.*, IPR2021-01602, Paper 7, at 14-15 (PTAB April 11, 2022) (“[W]hether a reference was the basis for a rejection is probative of whether the Examiner misapprehended or overlooked a specific teaching contained in the reference.”); *Philip Morris Prods., S.A., v. Rai Strategic Holdings, Inc.*, IPR2020-00921, Paper 13, at 46-47 (PTAB

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Aug., 5, 2021) (finding no basis for discretionary denial under 325(d) where the applicant similarly buried the relevant art in a lengthy IDS and the applicant did not respond to the Examiner's request to point the Examiner to particular references warranting attention). Practical considerations demonstrate that K-fee's prosecution tactics limited the Examiner's ability to properly evaluate the relevant disclosures in the Petition art. K-fee identified so many references in IDSs throughout prosecution that they span six full pages of the published patent. This practice of "bury[ing] PTO examiners with a deluge of prior art references[.]" which taxes an Examiner's time resources, "impairs patent quality." *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1289-90 (Fed. Cir. 2011).

Prior Panels have found such practices indicative of Examiner error under *Advanced Bionics. Sharkninja Operating LLC v. iRobot Corp.*, IPR2020-00733, Paper 11, 42-43 (PTAB Oct. 6, 2020) ("We discern that the likeliest explanation, on this record, for the Examiner's failure to discuss Kim is that the Examiner simply overlooked Kim's pertinence to the claims, perhaps because it was one reference among 1577 included in an IDS. Accordingly, we determine that "the Examiner erred in the evaluation of the prior art . . . [and] overlooked specific teachings in the relevant prior art. . . .").

Although the Office considered Jarisch during examination of Appl. No. 16,860,441 ("the '441 Application") and the '752 Application, it has never disagreed

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on record with the relevance of Jarisch's disclosure to K-fee's claim limitation of a code on the bottom of the capsule flange. Nor has K-fee ever provided the Office with substantive explanation as to how or why Jarisch does not disclose this feature. Accordingly, the Office's prior treatment of Jarisch supports its relevance to the '923 Patent claims and the Examiner's error here.

During the '441 Application examination, the Examiner reiterated that Jarisch discloses that it was "well established" to place optical codes "on the bottom side of the flange of a portion capsule. . . ." EX1062, 15. Although Applicant argued that the claims were "allowable for at least their inclusion of the limitation relating to the barcode located on the bottom side of the flange," ***Applicant never provided any argument as to why this limitation was not disclosed or rendered obvious by Jarisch.*** EX1063, 16-17. Applicant also amended the claims to include (i) an "electrically conductive section," (ii) "vertically oriented" grooves and ribs on the capsule body, (iii) the capsule being free of a filter, and (iv) the base element made of metal. *Id.*, 2. Importantly, Applicant argued that these limitations "further differentiate from the references relied upon by the Examiner." *Id.*, 16-17. The Examiner later allowed the claims. EX1064.

During the '752 Application examination, the Examiner relied upon Jarisch to disclose the same feature. EX1057, 8. Applicant first responded by amending its claims to recite additional limitations including use of multiple capsules with

multiple codes. EX1058, 2-3. K-fee did not dispute Jarisch's teaching and instead only disputed whether it was prior art. *Id.*, 10. ***After the Examiner repeated this rejection, K-fee never argued how or why Jarisch fails to disclose the claimed feature***, but merely argued that the claims were "allowable for at least their inclusion of the limitation relating to the barcode being located on a bottom side of the circumferential flange. . . ." EX1060, 20-21. K-fee also further amended the claims to include use of a capsule (i) having a plurality of vertically oriented grooves, and (ii) free of a filter. *Id.*, 2-3. The Examiner then allowed the claims. The Office never stated on record that Jarisch failed to disclose the claimed feature.

Accordingly, the USPTO's prior treatment of Jarisch weighs against exercising §325(d) discretion.

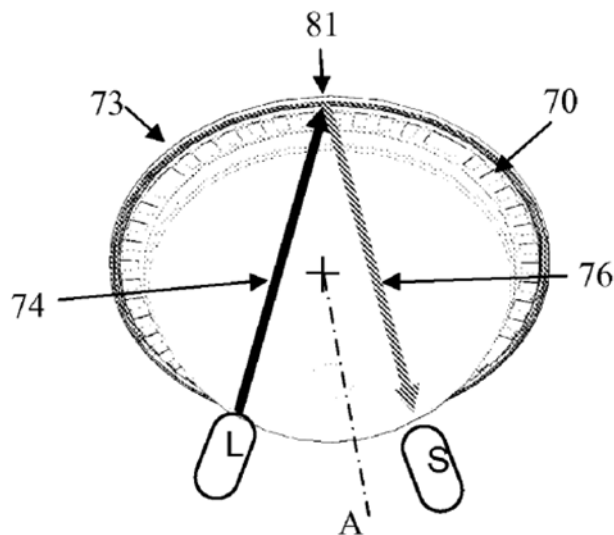
2. Factor (e) (how the examiner erred)

The Examiner materially erred by overlooking the specific prior art disclosures relating to at least the limitations identified in the Reasons for Allowance. The Examiner never discussed Yoakim, Jarisch, or Rapparini in connection with the current claims, and the Grounds in this Petition explicitly negate the Examiner's Reasons for Allowance. The USPTO has previously stated that Jarisch discloses a code on the bottom of the flange, and neither K-fee nor any Examiner have ever stated how or why that finding is incorrect. This Petition cures all of the Examiner's errors and demonstrates why the challenged claims are

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unpatentable.

In the Reasons for Allowance, the Examiner allowed the claims because Ruchonnet “does not teach or reasonably disclose the capsule has an identifier that is a barcode provided on a bottom of the flange with is directed away from the cover.” EX1002, 1941. Although the Examiner was correct that Ruchonnet alone does not teach or suggest the location of the barcode under the flange, that limitation—and all other missing limitations—are disclosed by the prior art combinations detailed in this Petition.

First, the Examiner erred because the allegedly patentable limitation is disclosed by the prior art in this Petition. EX1003, ¶142. Jarisch explicitly discloses placing an optical code on the bottom of the flange, in order to provide a location that 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,” thus improving the reliability of the reading. EX1005, [0022]. The optical code on the bottom of the flange is also plainly shown in Jarisch FIG5:

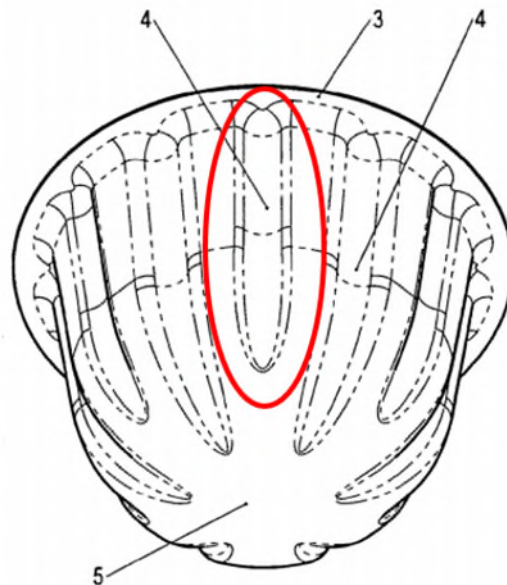


A code under the flange is precisely the limitation that the Examiner argued was missing in the prior art and it is squarely disclosed by Jarisch. EX1003, ¶143. In prosecution of an application related to the '818 Application, the Office has already acknowledged that Jarisch discloses that it was “well established” to place optical codes “on the bottom side of the flange of a portion capsule” which “provides an improved way to identify the capsule within an apparatus. . . .” EX1062, 15. Neither K-fee nor any Examiner have explained how or why Jarisch does not disclose this limitation.

Second, Yoakim (EX1004) also discloses many of the other claim limitations Ruchonnet was lacking. For example, Ruchonnet did not disclose a metal capsule base element, a capsule that is free of a filter, or a capsule with a metal cover. In contrast, Yoakim used in this Petition discloses a coffee brewing system using a

single-serve capsule having a base element made of metal (EX1004 at [0129]), a cavity that is free of a filter (EX1004 at [0288], [0343]), and the cavity being closed by a metal cover (EX1004 at [0128]). Use of Yoakim, which was not utilized by the Examiner, cures additional deficiencies that Ruchonnet possessed. EX1003, ¶144.

Third, unlike the Sweeney reference used by the Examiner (whose flutes extend to the bottom of the capsule) (EX1033 at FIG9), Petitioner has presented the Rapparini reference which includes vertically oriented grooves **that do not extend all the way to the bottom of the capsule** as claimed in all '923 Patent claims. EX1003, ¶145; EX1008, FIG6.



Accordingly, the combination of Yoakim, Jarisch and Rapparini present a new Ground of unpatentability that overcomes the Examiner's material errors. EX1003, ¶146.

Thus, based on these references, supported by the testimony of Michael Jobin, “reasonable minds cannot disagree that the Office erred in a manner material to patentability in its treatment of the art by failing to reject the claims ... over the references cited in Petitioner’s challenges.” *Apple, Inc. v. Omni MedSci, Inc.*, IPR2020-00029, Paper 7, 55 (PTAB Apr. 22, 2020). Jarisch should not form the basis of a discretionary denial because it unequivocally teaches or renders obvious the limitation in question and demonstrates material error. *See also Apple, Inc. v. Koss Corp.*, IPR2021-00381, Paper 15, 29 (PTAB Jul. 2, 2021) (finding examiner error when previously-considered reference disclosed the claimed feature).

Because the prior art combinations in the Petition explicitly negate the Reasons for Allowance, the Examiner materially erred by misapprehending or overlooking their respective disclosures. EX1003, ¶¶143-145; *3Shape A/S and 3Shape Inc., v. Align Tech., Inc.*, IPR2021-01323, Paper 16, 12 (PTAB Jan. 31, 2022) (finding petitioner demonstrated the Examiner materially erred by overlooking the combined teachings of prior art, which did not have the deficiencies noted in the Examiner’s Reasons for Allowance); *Viken Detection Corp. v. Am. Sci. and Eng. Inc.*, IPR2021-01585, Paper 11, 13-14 (PTAB May 5, 2022) (“Because Seppi indisputably discloses the very limitations that led to allowance of the claims, we find that the Examiner erred by overlooking those key disclosures in Seppi.”). Thus, Factor (e) weighs against discretionary denial.

3. Factor (f) (extent to which additional evidence and facts presented in the petition warrant reconsideration)

This Petition presents, along with the relied upon art, the declaration of Michael Jobin (EX1003), which concludes that the Examiner erred by allowing these specific claims (EX1003, ¶¶140-146), explains why Patent Owner is not entitled to claim priority to its foreign applications (*Id.*, Section VI), and explains how the teachings of the art render the challenged claims obvious (*Id.*, Section VII). Importantly, the expert testimony also explains why it would have been obvious to a POSITA to combine the Yoakim system with the code location of Jarisch, and why it would have been obvious based on Rapparini to provide grooves and ribs on the capsule body. EX1003, Section VII.B.1, VII.B.1.i. Thus, Factor (f) weighs against discretionary denial.

The prior art renders the Challenged Claims unpatentable as obvious, and the strength of the Petition alone supports the Board not exercising its discretion under § 325(d). *Lite-On Tech. Corp. v. Sensor Elec. Tech., Inc.*, IPR2022-00780, Paper 11, 32 (PTAB Oct. 28, 2022) (“Based on the strength of Petitioner’s challenge, we find that the Petition sufficiently demonstrates that the Examiner erred in overlooking the relevant disclosures of Shur.”). A full reading and analysis of the Grounds presented in this Petition as supported by Michael Jobin’s declaration demonstrates the strength of this Petition and the unpatentability of the Challenged Claims.

4. Section 325(d) Discretionary Denial Would Be Inappropriate.

Balancing of the relevant *Becton* factors demonstrates that §325(d) discretionary denial does not apply here. Factor (c) weighs against denial because the Examiner did not use in a rejection of these claim limitations any of the references or combinations raised in this Petition. The USPTO's prior acknowledgement of Jarisch's disclosure supports its relevance to the claims. Factor (e) weighs against denial because the Examiner clearly erred in allowing the claims over the art cited in this Petition. Yoakim, Jarisch, and Rapparini explicitly disclose the claimed features as interpreted by K-fee, including the exact features that the Examiner identified in the Reasons for Allowance. EX1003, ¶¶143-145. Factor (f) weighs against denial because this Petition presents new evidence and expert analysis regarding the claimed features, the lack of priority to foreign applications, as well as motivations for their combination, that were not considered by the Examiner. EX1003, Section VI, VII. Accordingly, the Board should decline to exercise its discretion under §325(d) in view of the Examiner's error.

V. PERSON OF ORDINARY SKILL IN THE ART

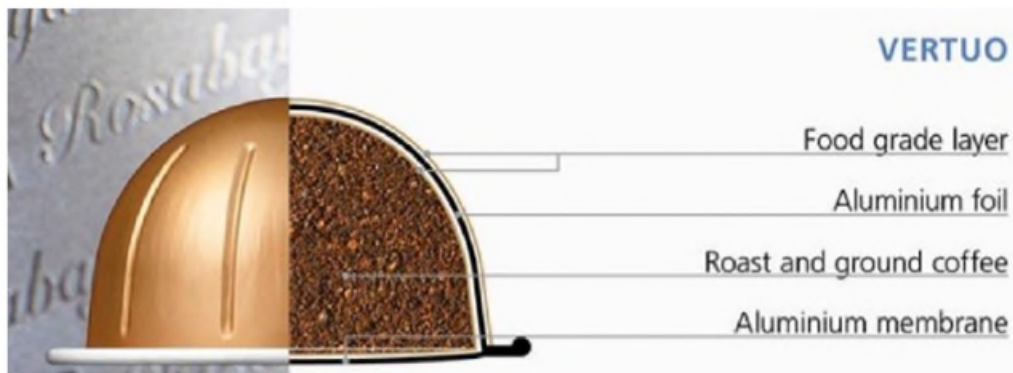
For purposes of this Petition only, a person of ordinary skill in the art relevant to the '923 Patent would have a bachelor's degree in engineering plus five years of experience in design of mechanical beverage systems, or similar products. EX1003, ¶40.

VI. CLAIM CONSTRUCTION

Claims in *inter partes* review are construed in accordance with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). The Board only needs to construe terms that are subject to a legitimate dispute. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). The PTO has recognized that constructions proposed by parties before the PTAB and a district court may differ because parties may dispute different issues in each forum. 83 Fed. Reg. 51340 at 51351, 51353.

For purposes of this IPR, Petitioner applies the apparent interpretations that Patent Owner offered in District Court for all claim terms throughout this Petition. *See* EX1049. *See also Dish Network L.L.C. v. TQ Delta LLC*, IPR2016-01470, Paper 14, 6-7 (Feb. 9, 2017), Paper 1, 11 (July 20, 2016) (accepting Patent Owner’s court construction in IPR without Petitioner acquiescing in that construction). EX1003, ¶¶148-150.

For example, in its infringement contentions, K-Fee asserts that the below product in the shape of a continuous dome is a “single-serve capsule” including a “base element” that has a “wall” (as distinct from a “bottom region”) with “radially spaced and vertically oriented grooves”:



EX1049, 3-6

Petitioner submits that, for this proceeding, no claim terms require formal construction. Although Judge Wu previously construed the term “barcode” in this patent family, which is currently on appeal to the Federal Circuit, Petitioner submits that the Grounds of the current Petition are not impacted by this construction and prevail under either party’s construction. EX1052; EX1003, ¶148.

Judge Wu also construed the term “wall region with an electrically conductive section,” to have its plain and ordinary meaning, which was consistent with Nespresso’s arguments. EX1052, 16; EX1003, ¶148. The arguments in this Petition apply K-fee’s apparent interpretation of this construction, to which Petitioner does not necessarily acquiesce.

VII. PETITION GROUNDS

Ground	Claims	Statutory Basis
1	1-16	35 U.S.C. §103: US 2010/0239734 to Yoakim in view of US 2013/0064937 to Jarisch in further view of US 2012/0269933 to Rapparini

VIII. PRIOR ART

All elements of the '923 Patent—including the purportedly novel features of the claimed code location—were known and obvious before the applicable priority date of the '923 Patent. EX1003, ¶172.

A. Yoakim

Yoakim (filed May 7, 2010) is prior art at least under pre-AIA 35 U.S.C. §102(e). EX1003, ¶173. Yoakim discloses a centrifugal beverage brewing system with a single-serve portion capsule, brewing device, and method for preparing a liquid beverage, *e.g.*, coffee. EX1004, [0014]; EX1003, ¶174. This brewing device operates on a centrifuge principle by rotating the capsule, and includes a water heater, pump, barcode reader, and a control unit. EX1004, [180], [182]; EX1003, ¶174. Yoakim's system uses a capsule with a flange that is sealed with a membrane lid. EX1004, [0128]-[0129], [0197], [0414]; EX1003, ¶176. The device pierces the membrane with needles, allowing for capsule rotation, injection of water, and a path for coffee to exit the capsule. EX1004, [0186]-[0187]; EX1003, ¶175.

The object of Yoakim is to improve control of brewing parameters to provide a high quality, customized beverage brewing experience. EX1004, [0010]-[0011]; EX1003, ¶177. Yoakim achieved this through a capsule recognition system that uses an identifier to automatically adjust various brewing parameters, including rotational speed and liquid volume. EX1004, [0192], [0477]; EX1003, ¶177. The brewing

parameters are recognized through association with an identifier, which can include an optical code such as a barcode that is identified by an optical reader. EX1004, [0496], [0525], FIG61-62; EX1003, ¶177.

B. Jarisch

Jarisch (filed May 12, 2011) is prior art under at least pre-AIA 35 U.S.C. §102(e) to Patent Owner's PCT filing date, which is the earliest date the '923 Patent claims are possibly entitled to (see Section VIII.D). EX1003, ¶178. Jarisch discloses an improved way to position an optical code on a capsule, in order to improve readability and retrieval of information about the capsule. EX1005, [0002]-[0003], [0014]-[0015]; EX1003, ¶179. Jarisch further discloses using identification of the optical code to recognize the type of capsule. *Id.*, [0014]-[0015], [0099]; EX1003, ¶179.

Jarisch discloses that its capsule code reading may be used by a centrifugal brewing system, such as Denisart (EX1007), which includes many similar features to Yoakim, including a capsule holder, a liquid supply, a water heater and pump, and computer processor with a control unit. EX1005, [0035]; EX1003, ¶179. Like Yoakim, Denisart discloses a system controlled based on reading the capsule's code. EX1007, 5:19-24; EX1003, ¶179.

Jarisch discloses an element the Examiner argued was missing from the prior art, namely a code on the bottom of the capsule flange. EX.1003, ¶180; *supra*

Section III.B Jarisch discloses clear advantages of positioning the optical code on the bottom of the capsule flange in order to provide a location that 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,” thus improving the reliability of reading.” EX1005, [0022]; EX1003, ¶¶180-181.

C. Rapparini

Rapparini (filed October 19, 2010) is prior art under pre-AIA 35 U.S.C. §102(e) to Patent Owner’s PCT filing date. EX1003, ¶182.

Rapparini discloses a portion capsule that holds substances for preparing beverages, *e.g.*, coffee.

EX1008, [0007]-[0008]; EX1003, ¶182.

Rapparini’s capsule (right) comprises an annular rim (3) and a cup-shaped body with a series of longitudinal stiffening ribs (4) that extend from the flange toward the bottom region of the capsule.

EX1008, [0009]-[0011]; EX1003, ¶183.

Rapparini improves upon existing containers by including longitudinal grooves and ribs of varying lengths along the inner and outer surface of the capsule body, which allow for optimization of system stability and rigidity. EX1008,

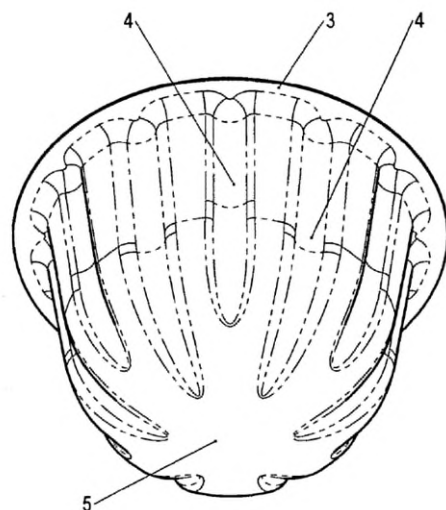


FIG. 6 bis

Patent No. 10,994,923

Petition for *Inter Partes* Review

[0009]-[0011], FIG6, FIG6bis; EX1003, ¶183. Rapparini discloses that its invention is applicable to containers made of several kinds of materials, and across varying shapes. Ex. 1008 at [0067]. Rapparini further discloses that the containers can be employed in domestic automatic espresso machines. EX1003, ¶¶184-185.

D. Patent Owner’s Foreign Priority Documents Do Not Provide Written Support for the Claims

The earliest possible priority date for the ’923 Patent is the date of its PCT application filed on July 22, 2011—not its foreign applications.³ The Board has already found that the Office determined Patent Owner should not receive priority to its foreign applications. IPR2021-1221, Paper No. 11 at 12-13 (PTAB May 11, 2022). The same applies here. Thus, claims 1-16 are unpatentable, as shown in Ground 1.

The ’923 Patent incorrectly claims priority to three foreign applications, shown below:

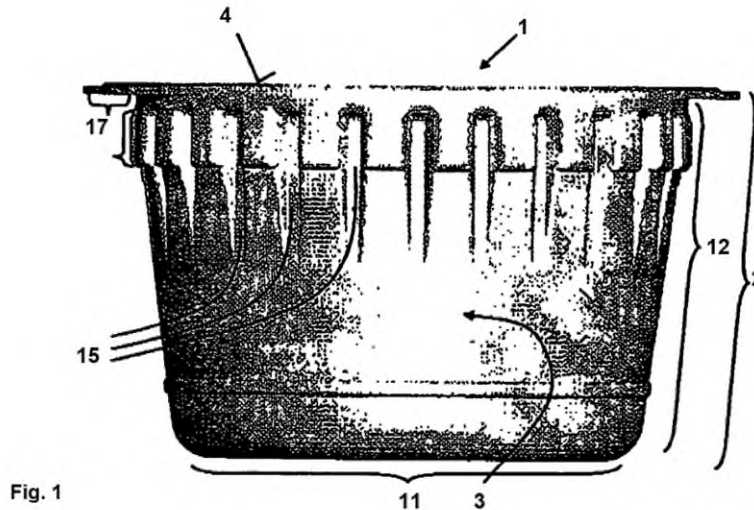
Application	Filed	Focus
102011010534.4 (EX1045)	2/7/2011	Mechanical improvements to the capsule/cavity wall

³ Petitioner does not concede that the July 22, 2011 PCT or any later continuations provide written description support for the claims, and reserves all rights to challenge such support.

102010031988.0 (EX1046)	7/22/2010	Identifiers/preventing unauthorized use
102010044251.8 (EX1047)	9/2/2010	Identifiers/preventing unauthorized use

No single foreign application discloses each and every feature of the '923 Patent claims—in particular, a capsule with vertical grooves and ribs on the wall and cavity, combined with a barcode located on the bottom side of the capsule flange, which is required by every claim of the '923 Patent. EX1003, ¶¶151, 153. Because Patent Owner cannot combine multiple discrete applications for written description support, it cannot establish priority from any of those applications. *Studiengesellschaft Kohle MBH v. Shell Oil Co.*, 112 F.3d 1561, 1562 (Fed. Cir. 1997) (“[A]n applicant cannot combine multiple prior applications to obtain an earlier filing date for an individual claim. . . .”).

The February 2011 Application is the only priority application disclosing vertical grooves and ribs on the exterior and interior of the capsule body wall, but does not disclose a barcode at all, let alone one located on the bottom side of the capsule flange. Nor does it disclose comparison of the barcode with a stored reference, or a capsule made of metal. EX1045, 1:25-32, 2:6-12, 2:14-17, 2:26-3:2; EX1003, ¶¶155-157. The figure below disclosing grooves and ribs is not found in any other claimed foreign priority document:

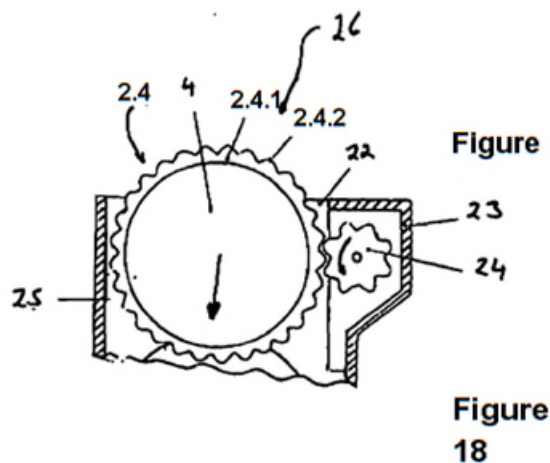


EX1045

The July 2010 Application, by contrast, only discloses a barcode located on the capsule flange, but does not disclose a capsule with (i) a wall region with radially spaced and vertically oriented grooves, (ii) a cavity with radially spaced or vertically oriented ribs, or (iii) grooves that are free from extending entirely to the bottom region. EX1046, 7, ¶3; EX1003 ¶¶158-159. No disclosure satisfies the requirement of vertical grooves and ribs as claimed. EX1001, 12:2-6; EX1003, ¶¶160-163. The July 2010 Application also fails to disclose many other elements of the '923 Patent claims, such as generation of turbulence in the cavity by the grooves. EX1003, ¶164.

Similarly, the September 2010 Application only discloses a barcode located on the capsule flange and does not disclose a capsule with (i) a wall region with radially spaced and vertically oriented grooves, (ii) a cavity with radially spaced or vertically oriented ribs, or (iii) grooves that are free from extending entirely to the bottom region. EX1003, ¶165; EX1047, generally.

For similar reasons as for the July 2010 Application, the September 2010 Application does not disclose the required elements. *Id.* ¶¶165-166. It instead discloses gear-like capsule rims located on the flange of the capsule (2.4.2), as depicted below, which are not vertical grooves or ribs on the capsule body or cavity as claimed in the '923 Patent. EX1001, 12:2-6; EX1003, ¶¶167-169; EX1047, FIG16-18. Nor does the September 2010 Application disclose inducing turbulent flow inside the capsule during brewing. *Id.*, ¶169.



EX1047

Because none of the three foreign applications disclose any embodiments satisfying each and every claim limitation of the '923 Patent, it is not entitled to any foreign priority date.⁴ EX1003, ¶170. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008).

⁴ Patent Owner has previously attempted to argue that a 1957 CCPA case—

IX. CLAIMS 1-16 ARE UNPATENTABLE UNDER §103

A. Ground 1: Claims 1-16 Would Have Been Obvious Over Yoakim in view of Jarisch in further view of Rapparini

1. Motivation to Combine

As discussed in detail below, Yoakim discloses all elements of claims 1-16 except for (1) the code location on the bottom of the capsule flange; and (2) the grooves and ribs of the capsule body. EX1003, ¶187. However, a POSITA would have been motivated to combine the single-serve brewing system, capsule, and concepts of Yoakim, with the code location of Jarisch, and the grooves and ribs of Rapparini to arrive at the '923 Patent claims. *Id.*

Yoakim, Jarisch, and Rapparini are all analogous art in the field of portion capsule beverage extraction, each disclosing an invention that may be applied in automatic coffee/espresso machines. EX1003, ¶¶188, 197; EX1004, [0002]-[0003]; EX1005, [0001]-[0002]; EX1008, [0067]. Yoakim and Jarisch both improve the optimization of beverage parameters in a single-serve brewing system, and use

In re Stempel, 241 F.2d 755 (CCPA 1957)—and its progeny, allow it circumvent written description requirements to antedate a reference. However, this argument should be rejected. *See, e.g., Plexxikon Inc. v. Novartis Pharm. Corp.*, 525 F.Supp.3d 1104, 1112-15 (N.D. Cal. 2021); *ISCO Int'l, Inc. v. Conductus, Inc.*, 279 F.Supp.2d 489, 512 n.3 (D. Del. 2003); *In re Tanczyn*, 347 F.2d 830 (CCPA 1965).

optical codes read by the machine to achieve this. EX1003, ¶188; EX1004, [0010]-[0011], [0025], [0494]-[0496]; EX1005, [0004], [0016]. Rapparini further improves the portion capsule brewing process by increasing the strength and stability of the wall of the capsule body like those used in Yoakim and Jarisch. EX1003, ¶¶198-200; EX1008, [0009], [0067].

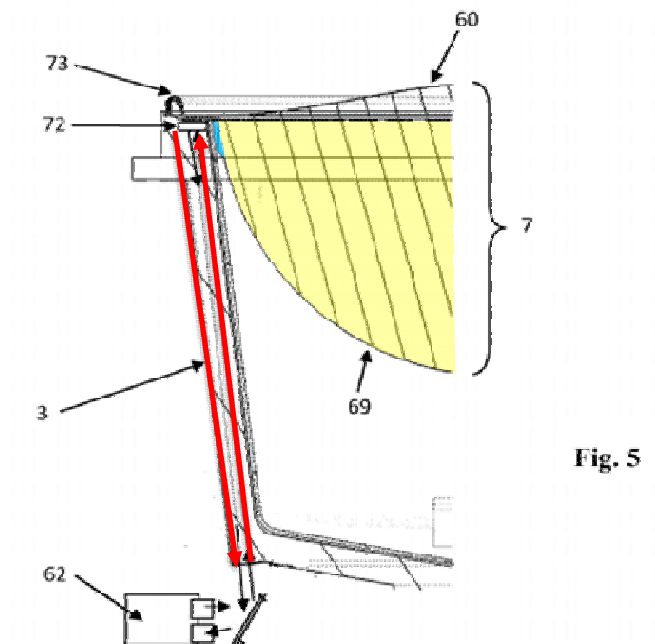
Furthermore, Yoakim and Jarisch share a common applicant—Nestec SA—and a common inventor. EX1003, ¶189. In fact, Jarisch expressly discloses it is intended to be used with a centrifugal-style brewing system like the one in WO 2010/026053 to Denisart (EX1007), which shares two common inventors with Yoakim. *Id.*; EX1005, [0034]-[0035].

Denisart (another Nestec SA patent) is expressly disclosed as part of the Jarisch system and is similar to the Yoakim system, both systems including (1) support for the capsule body; (2) elements to pierce the capsule in its center to inject fluids; (3) elements to pierce the capsule along the periphery to allow liquid to exit under centrifugal forces; and (4) compatibility with code readers to identify the capsule and adjust brewing parameters. EX1003, ¶¶190-191; EX1007, FIG1. Jarisch is explicitly intended to be used with centrifugal brewing systems like Yoakim. *Id.*

Jarisch also discloses motivations for a POSITA to combine the brewing and barcode reading system of Yoakim with the code location of Jarisch on the bottom flange of the capsule, *i.e.*, facing away from the membrane. EX1003, ¶192. Jarisch

explicitly teaches positioning an optical code “on the bottom of the rim of the capsule which is opposed to the lid of the capsule.” EX1005, [0022]. Jarisch explains that its proposed code positioning is desirable 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 as if partly or totally hidden or soiled by beverage residues or otherwise (e.g., coffee particles). As a result, the reading is made more reliable.” *Id.*, [0022]; EX1003, ¶192. Accordingly, a POSITA would be motivated to use Jarisch’s optical code location on the bottom of the flange. EX1003, ¶193.

A POSITA would also have an expectation of success when combining Yoakim and Jarisch, as Jarisch expressly discloses how to modify a brewing chamber like the one in Yoakim to better position an optical reader to allow it to read a code positioned on the bottom of the capsule flange, facing away from the membrane. EX1003, ¶194. Specifically, Jarisch discloses placing the light source at the bottom of the capsule support chamber, *i.e.*, the centrifugal cell 3, and configuring the capsule support chamber to be a light conductive material such that a light source will reach the bottom of the capsule flange. EX1005, [0082]-[0084]; EX1003, ¶194. Jarisch further discloses mirrors to better position the optical light source and sensor. The Jarisch optical reader configuration is depicted below with the light path (red) from detector (62) to capsule rim (73).



A POSITA would therefore find it obvious to combine Yoakim and Jarisch to achieve the express benefits of the code location of Jarisch. EX1003, ¶195.

A POSITA would further find it obvious to combine the portion capsule and brewing systems of Yoakim and Jarisch with the longitudinal ribs and grooves of Rapparini for the predictable benefit of greater stability of the capsule body wall. EX1003, ¶196.

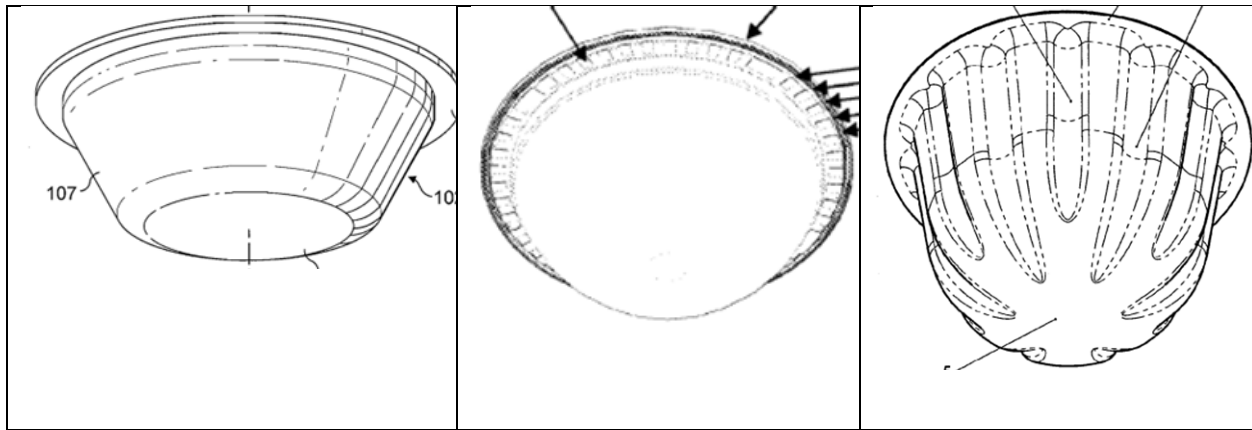
Rapparini discloses longitudinal grooves in the body of the capsule wall and corresponding ribs in the inner cavity, thus increasing stability of the capsule. This was a widely known technique in the art by 2010, so a POSITA would have recognized that using longitudinal grooves and ribs to stiffen a thin-walled capsule would lead to greater stability. EX1003, ¶¶198-199. Rapparini further provides

express motivation to use its capsule configuration by stating “[t]he presence of ribs having different lengths on the body of the container allows the optimization of the stability of the container. The modulation of the length of the ribs along the surface of the container allows improving the stability and rigidity of the system.” EX1008, [0009]; EX1003, ¶199.

Rapparini further states its invention can be applied to other capsule materials (which includes metal), in addition to other dimensions, and can be employed for use in automated espresso machines (like the systems of Yoakim and Jarisch). EX1008, [0067]; EX1003, ¶200. A POSITA would have been motivated to use Rapparini’s configuration because Rapparini “guarantees stability of the structure of filtering and permeable containers,” and a POSITA would find it obvious to apply this to impermeable structures as well. EX1008, [0007]; EX1003, ¶200.

A POSITA would also have an expectation of success when combining Rapparini’s grooves and ribs and the capsules disclosed in Yoakim and Jarisch. As depicted below, all systems disclose similarly-shaped capsules. EX1003, ¶201.

Yoakim	Jarisch	Rapparini
--------	---------	-----------



Furthermore, Yoakim already contemplates a capsule using a textured body, such as the grooves and ribs disclosed by Rapparini, which Yoakim explains can be used to engage the capsule in the centrifugal brewing system. EX1004, [0215] (“The toothed structure comprises a series of teeth which is positioned below the edge or rim 72 of the body of the capsule. The teeth are placed along the whole periphery of the body of the capsule It should be noticed that the teeth could be replaced by other equivalent structures such as series of elements in relief and/or hollow. For example, slits, pins or small needles can be envisaged.”); EX1003, ¶200.

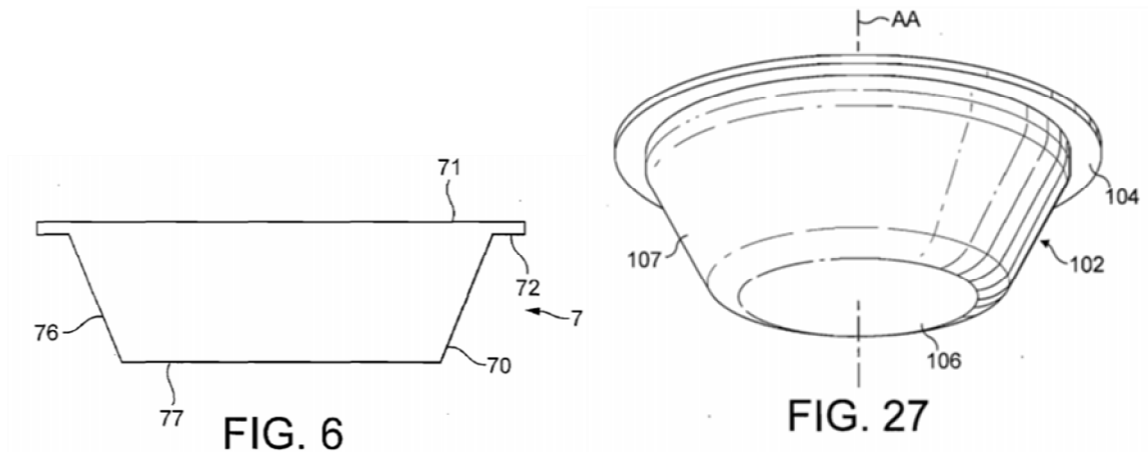
Finally, a POSITA would expect success because Rapparini’s capsule is manufactured using a thermoforming process similar to Yoakim’s deep-drawing process. EX1004, [0215] (“For example, it can be moulded by injection of plastic or deep drawn in aluminium.”); EX1003, ¶202.

It would therefore be obvious to a POSITA to combine the brewing/capsule system of Yoakim with the code location of Jarisch and the ribs and grooves of Rapparini. EX1003, ¶¶203-204.

2. Claim 1⁵

**a) “Single-serve capsule for making a beverage, having”
(Preamble, Claim 1)**

Yoakim discloses “a single-serve capsule for making a beverage, having,” according to K-fee’s apparent interpretation. Yoakim discloses a single-serve capsule containing a food substance for making a beverage. EX1004, [0002], [0180]; EX1003, ¶¶206-207. Yoakim discloses exemplary capsules and their details, which are described and shown in FIGS6-7 and FIGS26-27. EX1004, [0414], [0197], [0219]; EX1003, ¶¶208-209.



b) “a base element made of metal” (Claim [1.a])

Yoakim discloses a base element of the capsule is made of a metal such as aluminum. EX1004, [0129] (“The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium or plastic.”); [0215], [0461] (“The capsule is gastight by choosing materials for the walls, e.g., aluminium and/or

⁵ See Claims Appendix for claim language.

suitable plastics, which have gas barrier properties.”), [0197], [0414]; EX1003, ¶¶210-212.

c) “with a cavity that is free of a filter” (Claim [1.b])

To the extent the ’923 Patent describes and enables “free of a filter,” Yoakim discloses a portion capsule with a cavity that does not include a filter, and expressly confirms that a filter is optional. EX1004, [0171] (“An additional filtering layer can be used to filter the liquid depending on the size of the outlets.”), [0343] (disclosing optional filter embodiment), [0288], [0461]; EX1003, ¶¶213-214. As depicted in FIG54 and FIG42, Yoakim expressly discloses embodiments using portion capsules that do not have a filter. EX1004, FIG42, FIG54; EX1003, ¶¶215-216.

d) “and in which a raw beverage material is provided” (Claim [1.c])

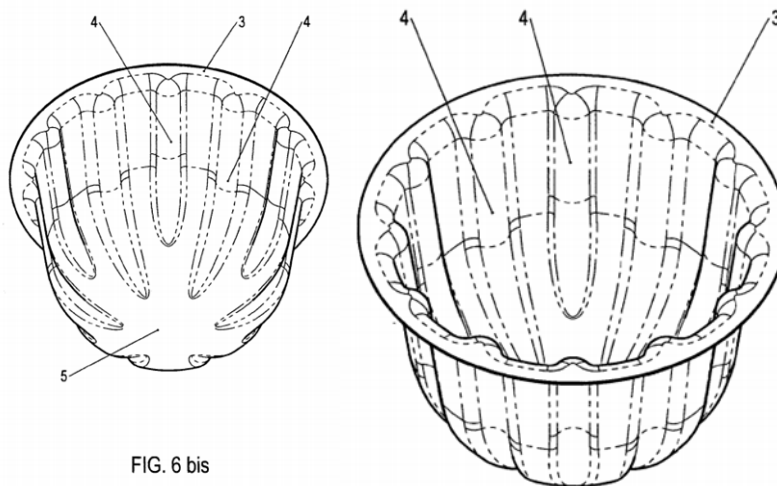
Yoakim discloses a portion capsule with a base element having a cavity that may be filled with various raw beverage materials such as coffee. EX1004, [0198] (“The capsule contains a substance chosen among the list consisting of ground coffee, soluble coffee, tea [etc.]. . . .”); [0125]; EX1003, ¶¶217-218.

e) “the cavity including radially spaced and vertically oriented ribs” (Claim [1.d])

Rapparini discloses this feature according to K-fee’s apparent interpretation. Rapparini discloses ribs providing an optimized capsule structure that is stiffer and more stable. EX1008, [0009] (“[T]he body of the container with *longitudinal*

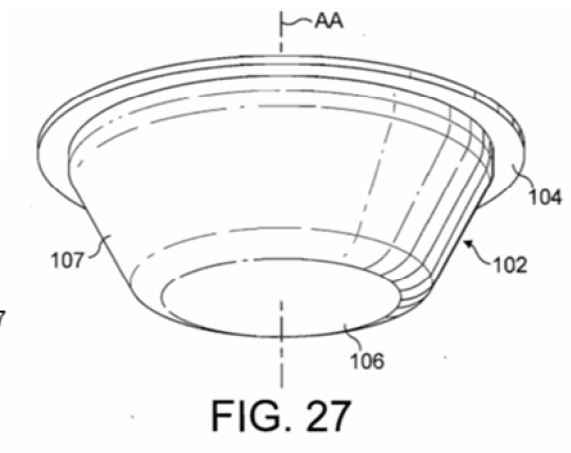
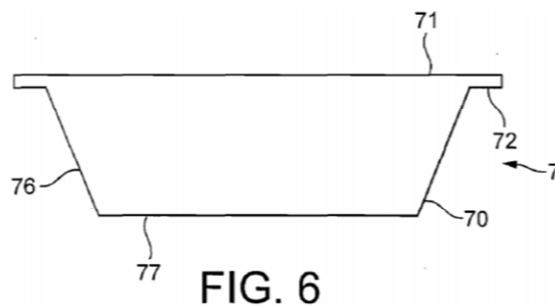
stiffening ribs wherein the length of the ribs is variable along the surface of the

body.”), [0007], [0053]-[0054]; EX1003, ¶¶220-221. Under K-Fee’s apparent construction, Rapparini’s ribs are “vertically oriented” and radially spaced on the inside of the cavity as shown below. *Id.* ¶222. As explained above in Section IX.A.1, a POSITA would have been motivated to combine the single-serve brewing system, capsule, and concepts of Yoakim, with the code location of Jarisch, and the grooves and ribs of Rapparini to obtain the claimed single-serve capsule. EX1003, ¶¶223-224.



f) “the capsule having a flange which is provided on the base element” (Claim [1.e])

Yoakim discloses a capsule with a cup-shaped body, with a flange that is provided on, and extends from, the base element, according to K-fee’s apparent interpretation. EX1004, [0129], [0197], [0414]; EX1003, ¶¶225-226. This is shown in FIG6-7 (item 72) and 26-27 (item 104). EX1003, ¶¶226-228.



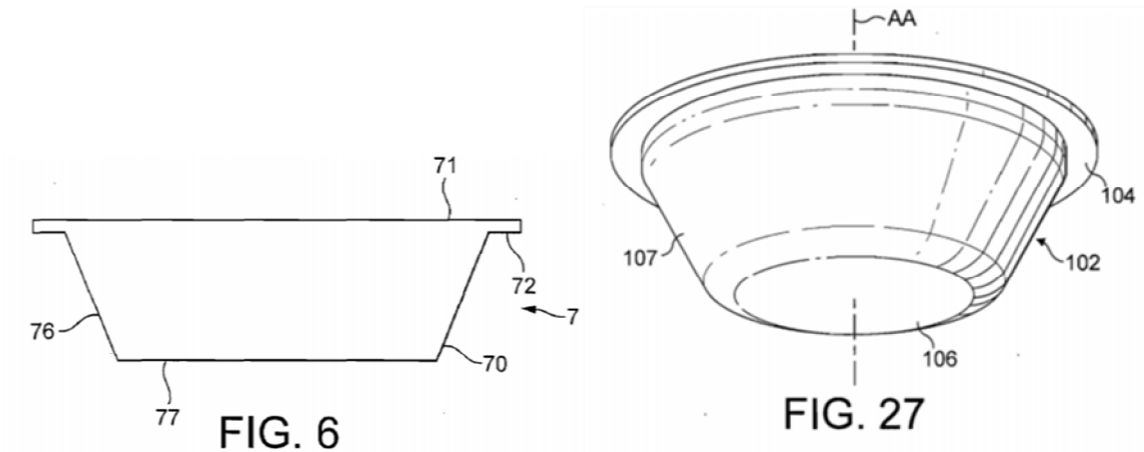
- g) **“and the cavity being closed by a metal cover, which is fastened on a top side of the flange” (Claim [1.f])**

Yoakim discloses a portion capsule with a base element having a cavity that is closed by a “sealing foil 103 [] sealed onto a peripheral rim 104 of the body.” EX1004, [0129]; *see also* [0414], [0128]; EX1003, ¶¶229-230. The cover is fastened to a top side of the flange. EX1003, ¶225. This cover is made out of metal comprising aluminum. EX1004, [0197]; EX1003, ¶¶231-232.

- h) **“the base element comprises a wall region extending between the flange and a bottom region of the base element” (Claim [1.g])**

To the extent this term can be understood, Yoakim discloses a base element with a wall region extending between the flange and the bottom region of the base element. Specifically, Yoakim discloses a cup-shaped portion capsule having a wall region. EX1004, [0197] (“In FIG. 6, the capsule 7 comprises a cup-shaped body 70 with upwardly oriented sidewall 76 and a bottom wall 77. The sidewall forms a portion of cone which promotes the collection of the brewed liquid internally. The

body terminates by an upper edge 72 raising outwards onto which is sealed a lid 71.”), [0414], FIGS6-7, FIGS26-27; EX1003, ¶¶233-234.



- i) **“the wall region includes radially spaced and vertically oriented grooves that are free from extending entirely to the bottom region” (Claim [1.h])**

To the extent this term can be understood, Rapparini discloses radially spaced and “vertically oriented” grooves on the wall region. See Claim element [1.d]. Rapparini explains these grooves (4), which are located on the outer wall region of base element, may have varying lengths, including short ribs “extending only along the side region of the container.” EX1008, [0011]; EX1003, ¶¶235. A POSITA would further understand that Rapparini discloses this feature because, on a thin-walled structure, the ribs on the inside wall of the capsule body would form grooves on the outer wall of that body. EX1003, ¶¶236. As can be seen in FIG6bis, the grooves are free from extending entirely to the bottom region, as interpreted by K-fee. EX1003, ¶237.

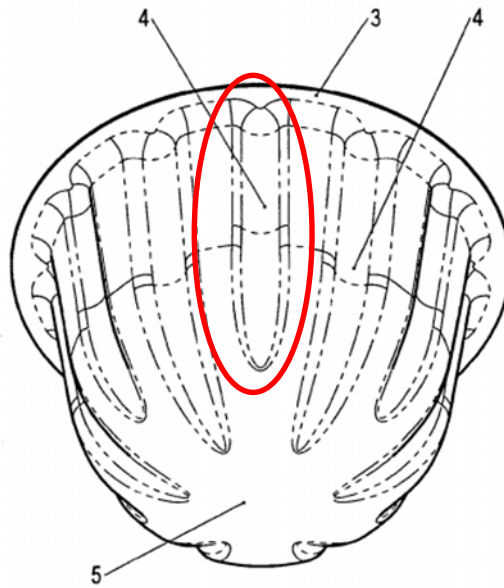


FIG. 6 bis

Additionally, it would have been obvious to a POSITA to configure grooves that do not extend into the bottom region of the capsule as that is one of a limited number configurations available for locating vertical grooves on the body of a capsule wall to provide structural stability. EX1003, ¶¶238-239.

j) “wherein the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule” (Claim [1.i])

According to K-fee’s apparent interpretation, Yoakim discloses this limitation. Yoakim discloses that its brewing system includes an “identification means for identifying the different capsules” that includes “capsule recognition means which are recognized by sensing means connected to the control means of the device to control the preparation parameters accordingly.” EX1004, [0025].

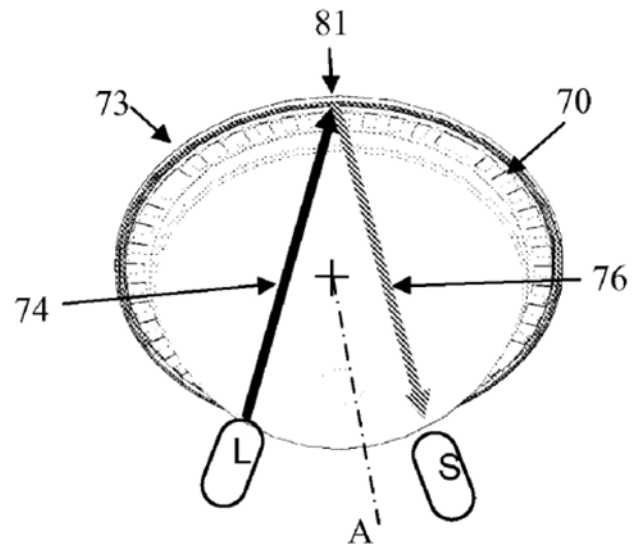
Yoakim further discloses an “identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly.” EX1004, [0477]. Yoakim further discloses that its system can “recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400ml), latte, tea, etc., and to adjust the speed and/or brewing parameters (e.g., water temperature) according [to] the capsule which is inserted in the device.” EX1004, [0192], [0477]; [0525]; EX1003, ¶240. Yoakim further discloses that “[t]he recognition means can be differentiable by a visual code such as a barcode, a colour, a sign, a logo, etc., or by a radio-frequency code (RFID) a magnetic element or by an identifiable shape.”). EX1004, [0496]; EX1003, ¶¶241-242.

**k) “and the identifier is a barcode provided on a bottom side of the flange which is directed away from the metal cover.”
(Claim [1.j])**

Yoakim in combination with Jarisch discloses a barcode on the bottom side of the flange which is directed away from the metal cover, according to K-fee’s apparent interpretation.

Yoakim discloses a brewing system that includes an “identification means” on its capsule to adjust brewing parameters, which helps deliver a wider range of beverages having differentiated characteristics. *Id.*, [0477], [0526]; EX1003, ¶243. Yoakim further discloses that it can read **a barcode** or other visual code on the capsule. *Id.*, [0496]; EX1003, ¶244.

Jarisch discloses a near-identical centrifuge-style brewing system that includes an optical code reader (62) to read a code on the capsule and adjust brewing parameters accordingly. EX1005, [0014]-[0015]; EX1003, ¶245. Jarisch further discloses the code located on the bottom of the flange (shown right), specifying that this



is the optimal location to lower the risk of the code becoming unreadable. EX1005, [0022] (“[T]he code is present on the bottom of the rim of the capsule which is opposed to the lid of the capsule. The bottom of the rim is sufficiently away from the liquid injection and beverage delivery areas so that there is a lower risk for the code to become unreadable[.]”; EX1003, ¶¶246-247. Accordingly, a POSITA would be motivated to place the barcode of Yoakim on the bottom side of the flange facing away from the membrane as disclosed in Jarisch. *Id.*; EX1003, ¶¶247-248; *supra* Section IX.A.1.

3. Claim 2

As shown in FIG27 (right, emphasized in blue), Yoakim further discloses that its capsule includes a base element with a circumferential border adjacent the flange with a larger diameter compared to the diameter of

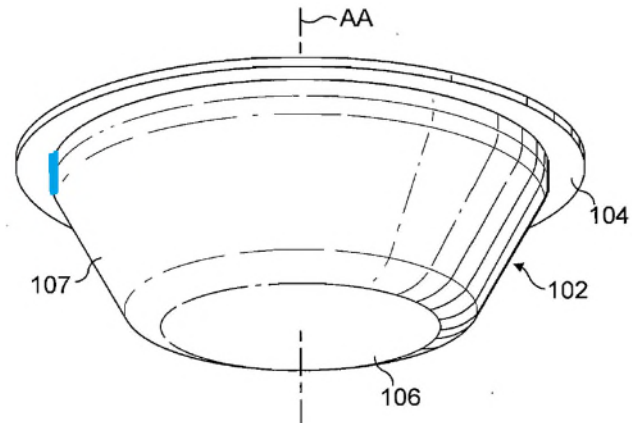


FIG. 27

the wall region. EX1004, FIG27, [0164]; EX1003, ¶¶249-250. Yoakim explains that its flared design “promotes the flow of the centrifuged brewed liquid in the capsule, its collection and its removal from the capsule,” which a POSITA would have been motivated to use for these reasons. EX1004, [0164]; EX1003, ¶¶251-252.

Jarisch also discloses a base element with a circumferential border adjacent the flange, the border having a larger diameter compared to a diameter of the wall region as seen in FIGS4-5 (in blue). EX1003, ¶¶253-254.

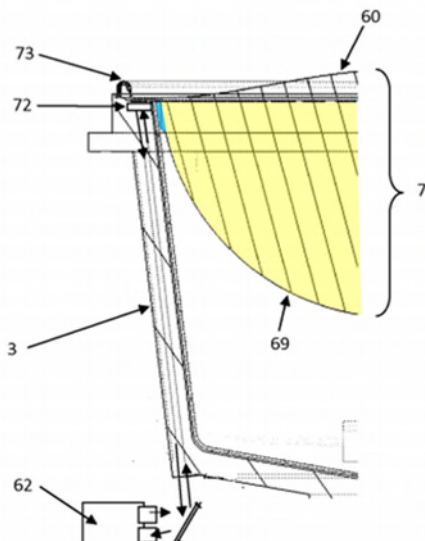


Fig. 5

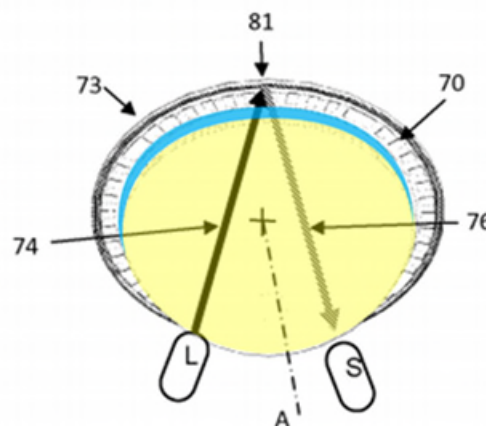


Fig. 4

4. Claim 3

For the same reasons as Element [1.h], Rapparini discloses a capsule with grooves, and Yoakim and Jarisch disclose a capsule with a border. EX1003, ¶¶255-256. Rapparini further discloses the grooves 4 extending into the border of the rim 3 (shown below); EX1003, ¶257.

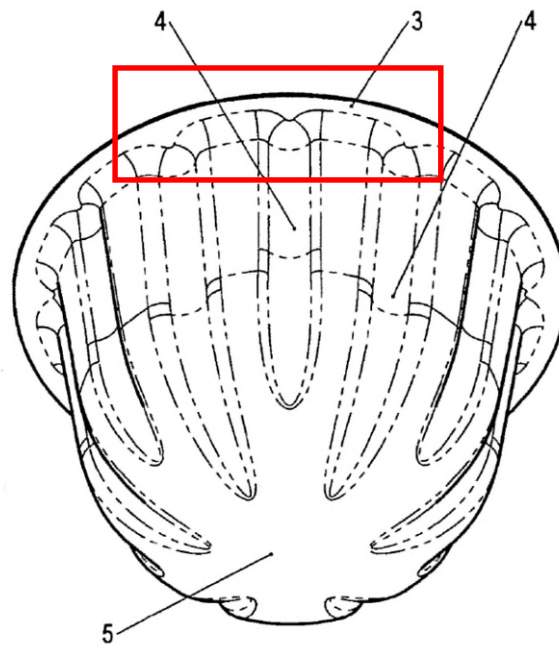


FIG. 6 bis

Additionally, it would have been obvious to a POSITA to extend the grooves into the border of the capsule in order to provide further structural stability to the capsule wall, or as one design choice in a limited number of options of vertical groove length and location. EX1003, ¶¶258-259.

5. Claim 4

As shown in FIG6 bis above and FIG6 below, Rapparini discloses grooves

that extend into the border but that are free from extending all the way to the flange, to the extent this limitation can be understood. EX1003, ¶¶260-261. A POSITA would not consider the grooves of Rapparini to be extending all the way to its flange, which is above the termination of the groove. *Id.*, ¶262.

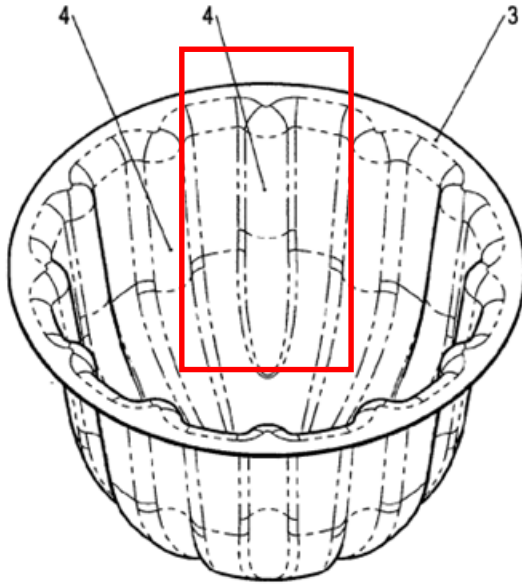


FIG. 6

Further, it would have been an obvious design choice to end the groove on the body of the capsule without extending it all the way to the flange, as this was one of a limited number of options for the placement and length of the groove, and this configuration would simply involve minor modification to the deep drawing die and mold used during capsule manufacturing. EX1003, ¶¶263-264.

6. Claim 5

Yoakim discloses that the wall of the base element may be made of metal. EX1004, [0129]. Yoakim further discloses that the base element can include layers made of polymers or aluminum. *Id.* [0128]-[0129]. Aluminum is known to be an excellent electrical conductor, and it has been acknowledged that an aluminum capsule is electrically conductive. EX1003, ¶¶265-266; EX1024, [0044]-[0045]. Yoakim thus discloses a wall region with an electrically conductive section according to K-fee's apparent interpretation. EX1003, ¶266.

Yoakim further discloses that its recognition means can be "a magnetic element." EX1004, [0496]. It would have been obvious to a POSITA to incorporate a portion of the capsule to include a section of electrically conductive material, such as aluminum as a recognition means. EX1003, ¶267. For example, it would have been obvious to include an electrically conductive section on the capsule to serve as a capsule recognition means as contemplated by the Yoakim system. EX1004, [0496]; EX1003, ¶¶267-268.

7. Claim 6

According to K-fee's apparent interpretation, Yoakim discloses and/or renders obvious the limitation "after the capsule is inserted into a coffee machine, a sensor/detection system of the coffee machine is configured to compare the identifier to a stored reference."

Yoakim discloses a coffee machine that includes a barcode reader (231) to read a barcode on the capsule (ID4) after the brewing head is closed, and thus after the capsule has been inserted into the coffee machine, as shown in FIG61. EX1004, [0525]; EX1003, ¶¶269-271.

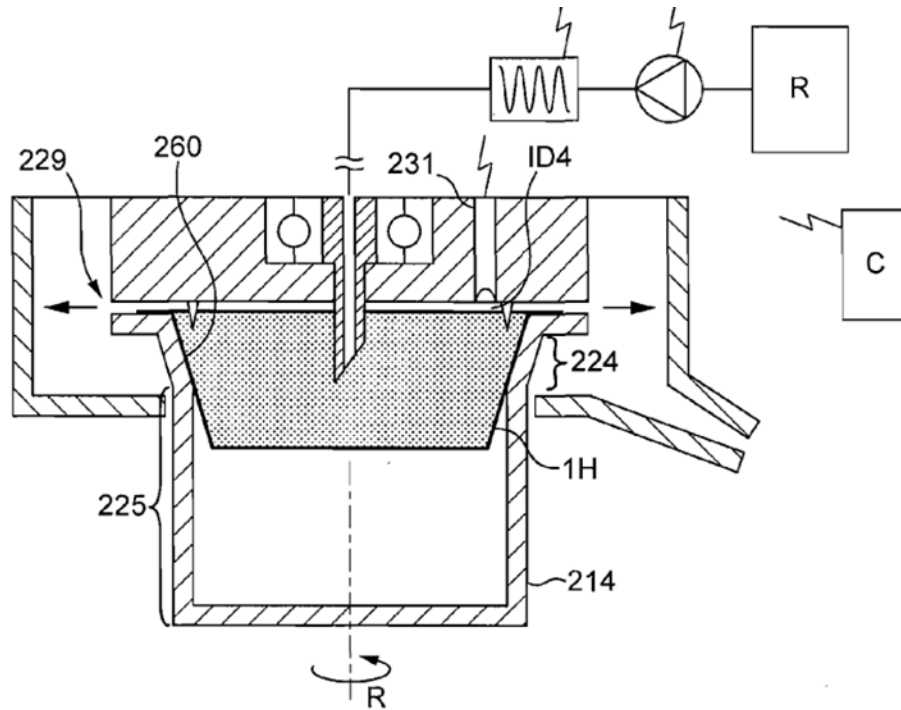


FIG. 61

Yoakim further discloses that its capsule identification allows a barcode to be read and compared to stored references, thus providing a means to adjust the brewing parameters based on that particular capsule. EX1004, [0477] (“The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly.”), [0025]; EX1003, ¶270. Yoakim further explains that “[t]he **identification means**

are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder and/or the pump supplying liquid in the capsule.” EX1004, [0477]; EX1003, ¶270. “**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 the capsule which is inserted in the device. . . . **A recognition system uses a code on the capsule and recognized by the device**, such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof.”” EX1004, [0192]. A POSITA would understand that the device determining that it recognizes the barcode would constitute comparing it to a stored reference, according to K-fee’s apparent interpretation. EX1003, ¶272.

It would also have been obvious to a POSITA to compare the read barcode with the stored reference because otherwise the machine has no basis to identify the capsule or know the meaning of the barcode has ready. EX1003, ¶¶273-274. Likewise, this operation was well-known in the art by 2010. *Id.* ¶273, 93-107; EX1024, [0014]; EX1040, 2; EX1041, 4; EX1042, [0054]-[0055].

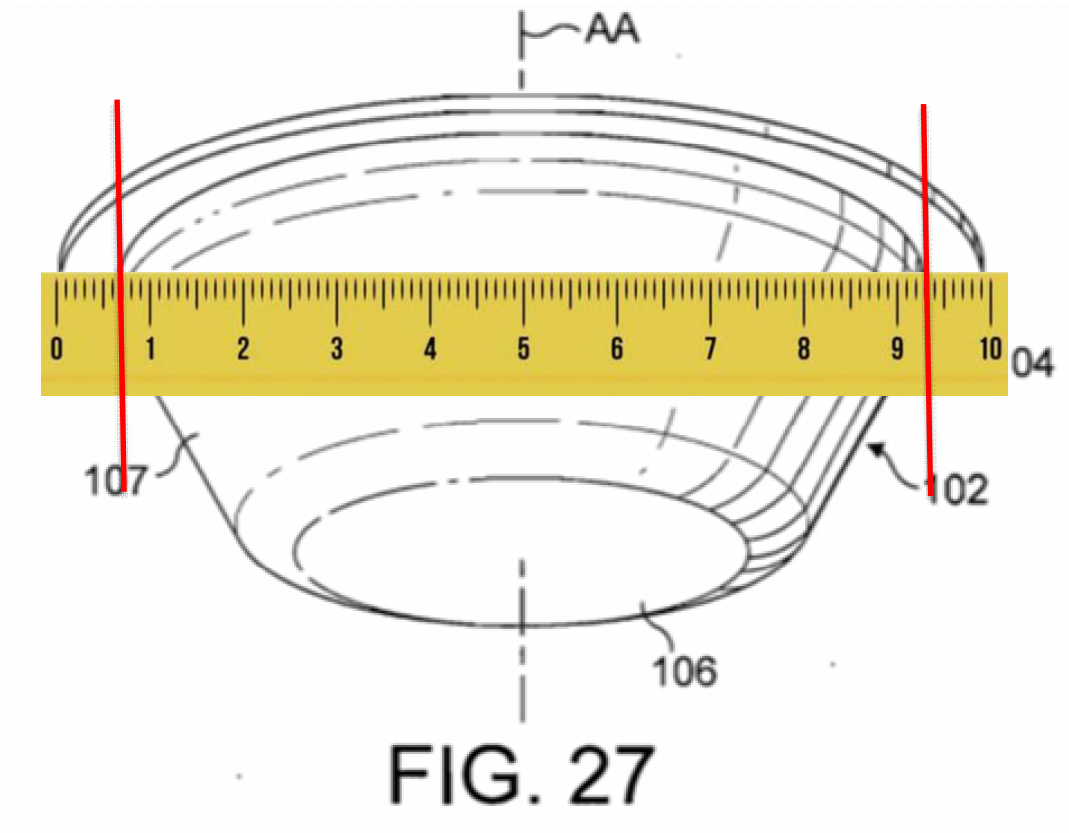
8. Claim 7

Rapparini discloses a cavity with grooves defined between the ribs. *See* [1.d]

A POSITA would have understood that Rapparini's grooves would induce a turbulent flow of the water through the portion capsule. EX1003, ¶¶277-278. For example, Yoakim explains that, while spinning, the fluid is guided and distributed into separate grooves which promotes flow. EX1004, [0218] ("The upper surface of the lid 400 may comprise a water distribution structure such as radial grooves or recesses to promote the flow of water toward the surface of the collecting assembly . . ."); EX1003, ¶277. A POSITA would understand this to mean that the groove in Rapparini would generate turbulence of the water because under pressure and velocity, the grooves or recesses can cause abrupt changes in direction, thus resulting in turbulence and mixing within the capsule. EX1003, ¶278. This concept would also have been obvious, as it was well-known in the art to utilize grooves in the capsule cavity to achieve the predictable result of influencing water flow, such as to further mix beverage contents. EX1003, ¶¶279-280; EX1033, 2:30-35; EX1034, [0009], [0019]-[0020].

9. Claim 8

Yoakim explicitly discloses a capsule where a ratio of the diameter of the side wall to a diameter of the flange is between 0.85-0.89. EX1003, ¶¶281-282. As shown below, the diameter of the side wall of the capsule in FIG27 is approximately 0.86 of the total diameter of the flange. EX1004, FIG27; EX1003, ¶¶282-283.



A POSITA viewing FIGS. 26-27 of Yoakim would have understood that they disclose and/or render obvious a ratio of a diameter of the side wall to a diameter of the flange between 0.85 and 0.89. EX1003, ¶¶283-284.

10. Claim 9

a) 9(preamble)

See Claim 1(preamble). Section IX.A.2.a. EX1003, ¶¶285-286.

b) [9.a]

See Element [1.a]. Section IX.A.2.b. EX1003, ¶287.

c) [9.b]

See Element [1.d]. Section IX.A.2.e. EX1003, ¶288.

d) [9.c]

See Element [1.c]. Section IX.A.2.d. EX1003, ¶289.

e) [9.d]

See Element [1.e]. Section IX.A.2.f. EX1003, ¶290.

f) [9.e]

See Element [1.f]. Section IX.A.2.g. EX1003, ¶291.

g) [9.f]

See Element [1.g]. Section IX.A.2.h. EX1003, ¶292.

h) [9.g]

See Element [1.h]. Section IX.A.2.i. EX1003, ¶293.

i) [9.h]

See Element [1.j]. Section IX.A.2.k. EX1003, ¶294.

j) [9.i]

See Claim 2. Section IX.A.3. EX1003, ¶295.

For these reasons, Yoakim, Jarisch and Rapparini render independent claim 9 obvious. EX1003, ¶296.

11. Claim 10

See Elements [1.a] and [1.b]. Sections IX.A.2.b-c. EX1003, ¶¶297-300.

12. Claim 11

See Claims 3 and 5. Section IX.A.4, IX.A.6. EX1003, ¶¶301-304.

13. Claim 12

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See Element [1.f] and Claim 3. Section IX.A.2.g, IX.A.4. EX1003, ¶¶305-308.

14. Claim 13

See Claim 7. Section IX.A.8. EX1003, ¶¶309-311.

15. Claim 14

See Claim 6. Section IX.A.7. EX1003, ¶¶312-314.

16. Claim 15

See Claim 8. Section IX.A.9. EX1003, ¶¶315-317.

17. Claim 16

See Claim 12. Section IX.A.13 (citing Section IX.A.2.g, IX.A.4). EX1003, ¶¶318-321.

X. SECTION 314 DENIAL UNDER *NHK/FINTIV* IS ALSO INAPPROPRIATE

The *Fintiv* factors weigh against discretionary denial because the district court case is stayed pending resolution of a related Federal Circuit appeal. *K-Fee System GmbH v. Nespresso USA, Inc.*, 2:22-cv-00525-GW (Dkt. 88). This strongly weighs against discretionary denial. *Microsoft Corp. v. Worlds Inc.*, 2021 WL 2460652 (PTAB June 16, 2021) (“It is unlikely that the completion of the appeal process and any trial on obviousness in the Texas Court will occur before a final written decision will be due in this IPR.”); *Unified Patents v. Causam Enterprises, Inc.*, IPR2022-00404, Paper 10 at 3-4 (PTAB July 22, 2022) (finding stay of district court litigation

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pending related proceeding weighs “strongly toward” institution).

Other factors strongly weigh against discretionary denial. No trial date has been set (Factor 2), no *Markman* exchanges have occurred (Factor 3), there is no substantive overlap because the district court action is currently stayed (Factor 4), and the merits of the Petition strongly weigh against denial by clearly showing the unpatentability of the claims, including the limitation the Examiner cited as lacking in the prior art (Factor 6). Thus, the *Fintiv* factors weigh against exercising §314(a) discretion.

XI. MANDATORY NOTICES PURSUANT TO 37 C.F.R. §42.8

A. Real Parties-In-Interest under 37 C.F.R. §42.8(b)(1).

Nestlé USA, Inc., Nestlé Nespresso SA, and Société Des Produits Nestlé SA are real parties-in-interest with Petitioner.

B. Related Matters Under 37 C.F.R. §42.8(b)(2).

The '923 Patent is asserted in *K-Fee System GmbH v. Nespresso USA, Inc. et al.*, Case No. 2:22-cv-00525. This case is currently stayed (Dkt. 88) pending resolution of Federal Circuit Appeal No. 2022-2042.

C. Lead and Back-up Counsel under 37 C.F.R. §42.8(b)(3).

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D. Service Information under 37 C.F.R. §42.8(b)(4).

Please direct all correspondence to lead counsel at the address identified above. Petitioner consents to electronic service on counsel of record.

XII. GROUNDS FOR STANDING

Petitioner certifies that the '923 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review of the '923 Patent. 37 C.F.R. §42.104(a).

XIII. PAYMENT OF FEES

A fee of \$41,500 charged to Deposit Account 130019 was paid with the filing this petition. 37 C.F.R. §§42.15(a), 42.103. Should any further fees be required by the present Petition, the Board is hereby authorized to charge the above-referenced Deposit Account.

XIV. STATEMENT OF PRECISE RELIEF REQUESTED

Petitioner requests IPR and cancellation of claims 1-16 because they are unpatentable under 35 U.S.C. §103 based on the foregoing grounds.

Date: January 24, 2023

Respectfully submitted,

By:/ B. Clayton McCraw /

Patent No. 10,994,923
Petition for *Inter Partes* Review

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Patent No. 10,994,923
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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6 and 42.105, I hereby certify that on January 24, 2023, a copy of the attached PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,994,923, together with all exhibits, and all other papers filed therewith, including a Power of Attorney on behalf of Petitioners, was served via Priority Mail Express on the attorneys of record for the patent owner at the following address:

Attorney of Record for Patent Owner

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Date: January 24, 2023

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Petition for *Inter Partes* Review

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.11

Pursuant 37 C.F.R. § 42.11, the undersigned certifies that this PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,994,923, and accompanying evidence are not being presented for an improper purpose and that all legal contentions, allegations, and denials are warranted and have evidentiary support.

Date: January 24, 2023

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Counsel for Petitioner

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

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,994,923, complies with the type-volume limitation of 37 C.F.R. § 42.24(a). The word count application of the word processing program used to prepare this paper states that the paper contains 11,780/14,000 words, excluding the parts of the paper exempted by 37 C.F.R. §§ 42.24(a)(1).

Date: January 24, 2023

Respectfully submitted,

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CLAIM LISTING APPENDIX

1	Single-serve capsule for making a beverage, having
[1.a]	a base element made of metal
[1.b]	with a cavity that is free of a filter,
[1.c]	and in which a raw beverage material is provided,
[1.d]	the cavity including radially spaced and vertically oriented ribs,
[1.e]	the capsule having a flange which is provided on the base element,
[1.f]	and the cavity being closed by a metal cover, which is fastened on a top side of the flange,
[1.g]	the base element comprises a wall region extending between the flange and a bottom region of the base element,
[1.h]	the wall region includes radially spaced and vertically oriented grooves that are free from extending entirely to the bottom region,
[1.i]	wherein the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, and
[1.j]	the identifier is a barcode provided on a bottom side of the flange which is directed away from the metal cover.
2	The single-serve capsule according to claim 1, wherein the base element comprises a circumferential border adjacent the flange, the border has a larger diameter compared to a diameter of the wall region
3	The single-serve capsule according to claim 2, wherein the grooves extend into the border.
4	The single-serve capsule according to claim 3, wherein the grooves are free from extending all the way to the flange.
5	The single-serve capsule according to claim 1, wherein the wall region has an electrically conductive section.
6	The single-serve capsule according to claim 1, wherein after the capsule is inserted into a coffee machine, a sensor/detection system of the coffee machine is configured to compare the identifier to a stored reference.
7	The single-serve capsule according to claim 1, wherein the cavity has grooves defined between the ribs, and the grooves in the cavity generate turbulence of water in the cavity.
8	The single-serve capsule according to claim 1, wherein a ratio of a diameter of the wall region of the base element that adjoins the flange to a diameter of the flange is between 0.85 and 0.89.
9	Single-serve capsule for making a beverage, comprising:

[9.a]	a base element with a cavity
[9.b]	having radially spaced and vertically oriented ribs
[9.c]	and in which a raw beverage material is provided,
[9.d]	the capsule having a flange that extends from the base element,
[9.e]	the cavity being closed by a cover, which is fastened on a top side of the flange,
[9.f]	the base element comprises a wall region extending between the flange and a bottom region of the base element,
[9.g]	the wall region includes radially spaced and vertically oriented grooves that are free from extending entirely to the bottom region,
[9.h]	wherein the capsule has a barcode provided on a bottom side of the flange that opposes the top surface of the flange to which the cover is fastened, and
[9.i]	wherein the base element comprises a circumferential border adjacent the flange, the border has a larger diameter compared to a diameter of the wall region.
10	The single-serve capsule according to claim 9, wherein the base element is made of metal and the cavity is free of a filter.
11	The single-serve capsule according to claim 9, wherein the wall region has an electrically conductive section and the grooves extend into the border.
12	The single-serve capsule according to claim 9, wherein the cover is made of metal and the grooves extend into the border.
13	The single-serve capsule according to claim 9, wherein the cavity has grooves defined between the ribs, and the grooves in the cavity generate turbulence of water in the cavity.
14	The single-serve capsule according to claim 9, wherein after the capsule is inserted into a coffee machine, a sensor/detection system of the coffee machine is configured to compare the barcode a [sic] stored reference.
15	The single-serve capsule according to claim 9, wherein a ratio of a diameter of the wall region of the base element that adjoins the flange to a diameter of the flange is between 0.85 and 0.89.
16	The single-serve capsule according to claim 10, wherein the cover is made of metal and the grooves extend into the border.