I. BACKGROUND

A. Procedural History


The notice of investigation named eleven respondents: Solofill LLC of Houston, Texas ("Solofill"); DongGuan Hai Rui Precision Mould Co., Ltd., of Dong Guan City, China ("DongGuan"); Eko Brands, LLC, of Woodinville, Washington ("Eko Brands"); Evermuch Technology Co., Ltd., of Hong Kong ("Evermuch Technology"); Ever Much Company Ltd. of Shenzhen, China ("Evermuch Company"); Melitta USA, Inc., of North Clearwater, Florida ("Melitta"); LBP Mfg. Inc. of Cicero, Illinois ("LBP Mfg."); LBP Packaging (Shenzhen) Co. Ltd. of Shenzhen, China ("LBP Pkg."); Spark Innovators, Corp. of Fairfield, New Jersey ("Spark"); B. Marlboros International Ltd. (HK) of Hong Kong ("B. Marlboros"); and Amazon.com, Inc. of Seattle, Washington ("Amazon"). Id. at 53445. The Office of Unfair Import Investigations ("OUII") was also named as a party to the investigation. Id.

The Commission terminated the investigation with respect to LBP Mfg. and LBP Pkg. based on the entry of a consent order, Order No. 10 (Nov. 19, 2014), not reviewed, Notice (Dec. 18, 2014); terminated the investigation with respect to Spark and B. Marlboros based on the entry of a consent order, Order No. 12 (Dec. 16, 2014), reviewed and modified, Notice (Jan. 13, 2015); terminated the investigation with respect to Melitta based on the entry of a consent order, Order No. 14 (Feb. 26, 2015), not reviewed, Notice (Mar. 27, 2015); and terminated the investigation with respect to Amazon based on a settlement agreement, Order No. 16 (Mar. 18, 2015) not reviewed, Notice (Apr. 13, 2015). The Commission also found Eko Brands, Evermuch Technology, and Evermuch Company in default for failing to respond to the complaint, the notice of investigation, and an order to show cause why they should not be found in default. Order No. 19 (Apr. 22, 2015), not reviewed, Notice (May 18, 2015). Accordingly, Solofill and DongGuan are the only respondents actively participating in the investigation.
The presiding ALJ conducted a hearing on June 15-16, 2015. On September 4, 2015, he issued the final initial determination ("ID") presently before the Commission. The ID found no violation of section 337. The ID found that Solofill and DongGuan (collectively, "Respondents") are not liable for induced or contributory infringement because they did not have pre-suit knowledge of the '320 patent. ID at 63-68. The ID did find, however, that Respondents' accused products, when combined with a Keurig single-serve brewing machine, directly infringe claims 5-7, 18, and 20 ("the asserted claims") of the '320 patent. Id. at 45-61. The ID also found that Respondents had not shown that the asserted claims were invalid by clear and convincing evidence. Id. at 73-94. Finally, the ID found that ARM had shown that it satisfied the technical prong of the domestic industry requirement with respect to claim 5, and that it satisfied the economic prong of the domestic industry requirement. Id. at 101-16.

On September 21, 2015, ARM and Respondents filed petitions for Commission review. On September 29, 2015, ARM and Respondents filed replies to each other's petitions, and OUII filed a joint reply to both petitions.

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2 Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond (Sept. 4, 2015).


On November 9, 2015, the Commission determined to review the ID in part. 80 Fed. Reg. 70834-35 (Nov. 16, 2015). The scope of Commission review encompassed: (1) the ID’s findings on the construction, infringement, and satisfaction of the technical prong of the domestic industry requirement for the limitation “a needle-like structure, disposed below the base”; (2) the ID’s findings on induced and contributory infringement; (3) the ID’s findings that the asserted claims are not invalid for a lack of written description, as anticipated by U.S. Patent No. 6,079,315 (“Beaulieu”), as anticipated by the prior art described in the specification of the ’320 patent (“the Admitted Prior Art,” or “APA”), and as obvious; and (4) the ID’s findings that ARM satisfied the economic prong of the domestic industry requirement. Id. The Commission also solicited briefing from the parties on the issue of whether pre-suit knowledge is required for indirect infringement, and solicited briefing on remedy, bonding, and the public interest from the parties and the public. Id. at 70835. On November 20, 2015, ARM, Respondents, and OUII filed briefs in response to the Commission’s notice of review, and on December 1, 2015, they filed replies to each other’s briefs.

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B. The Asserted Patent

The '320 patent issued from an application filed by complainant Adrian Rivera on July 13, 2007. CX-0005 ('320 patent). The patent generally describes an adaptor to enable single-serve brewing machines to brew coffee from pods. *Id.* at col. 1, ll. 6-10. The patent explains that two types of single-serve brewers exist in the prior art: brewers that use cup-shaped cartridges, and brewers that use disc-shaped pods. *Id.* at col. 1, ll. 11-21. Cup-shaped cartridge brewers are not compatible with pods, so the '320 patent describes a device that adapts a cup-shaped cartridge brewer to brew coffee from pods. *Id.* at col. 1, ll. 6-10, 39-50, 60-62.

As discussed above, ARM asserts claims 5-7, 18, and 20 against Respondents. These claims read as follows:

5. A beverage brewer, comprising:
   a brewing chamber;
   a container, disposed within the brewing chamber and adapted to hold brewing material while brewed by a beverage brewer, the container comprising:
   a receptacle configured to receive the brewing material; and
   a cover;
   wherein the receptacle includes
   a base, having an interior surface and an exterior surface, wherein at least a portion of the base is disposed a predetermined distance above a bottom surface of the brewing chamber, and
   at least one sidewall extending upwardly from the interior surface of the base,
   wherein the receptacle has at least one passageway that provides fluid flow from an interior of the receptacle to an exterior of the receptacle;
   wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening, and

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to Review in Part a Final Initial Determination Finding No Violation of Section 337; Schedule for Briefing on the Issues Under Review and on Remedy, the Public Interest, and Bonding (Nov. 20, 2015) (“OUII Comm’n Reply Br.”).
wherein the container is adapted to accept input fluid through
the opening and to provide a corresponding outflow of
fluid through the passageway;
an inlet port, adapted to provide the input fluid to the container;
and
a needle-like structure, disposed below the base;
wherein the predetermined distance is selected such that a tip of
the needle-like structure does not penetrate the exterior
surface of the base.

6. The beverage brewer of claim 5, wherein at least one
passageway of the at least one passageway is disposed in the
base.

7. The beverage brewer of claim 5, wherein the receptacle also
includes at least one extension that raises the at least a portion
of the base the predetermined distance above the bottom
surface of the brewing chamber.

18. A beverage brewer including a brewing chamber configured to
receive a brewing cartridge, an inlet port adapted to provide
an input fluid, and a needle-like structure fixed in a bottom of
the brewing chamber and adapted to puncture a shell of the
brewing cartridge to carry an outflow of brewed beverage
from the brewing cartridge and arranged to avoid puncturing
filtering material containing brewing material disposed inside
the shell, the improvement comprising:
a container configured to replace the brewing cartridge, the
container positionable within the brewing chamber and
adapted to hold brewing material while brewed by the
beverage brewer, the container including:
a receptacle configured to receive and support the brewing
material, and
a cover;
wherein the receptacle includes:
a passageway providing fluid communication between an
interior of the receptacle and the brewing chamber,
a base, having an interior surface and an exterior surface
and configured to avoid contact with the needle-like
structure, and
at least one sidewall extending upwardly from the interior
surface of the base and configured to avoid contact with
the needle-like structure;
wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening, and wherein the container is adapted to accept the input fluid from the inlet port through the opening and to provide a corresponding outflow of fluid through the passageway.

20. The beverage brewer of claim 18, wherein the receptacle also includes at least one extension that raises the base a predetermined distance above a lower surface of the brewing chamber.

C. The Accused Products

DongGuan manufactures, and Solofill imports and sells, reusable beverage brewing capsules. ID at 13. Respondents' accused products are best understood in the context of the prior art single-serve brewers. A prior art cup-shaped cartridge brewer, such as the Keurig brewer, is designed to brew a single beverage from a single cup-shaped cartridge, such as the K-Cup. CX-0005 (’320 patent) at col. 1, ll. 22-25. The cup-shaped cartridge is purchased as a sealed plastic cartridge containing a cone-shaped filter filled with ground coffee (or other dry beverage medium). Id. at col. 1, ll. 27-30. A user brews a beverage by inserting the cartridge into the brewing chamber of the brewer. RX-1085C (Howle DWS) at Q/A 10. The upper needle of the brewer then punctures the top of the cartridge and injects hot water into the cartridge to brew a beverage. Id. The lower needle of the brewer punctures the bottom of the cartridge (but not the cone-shaped filter), which dispenses the brewed beverage (but not the coffee grounds) into a vessel below. Id. The cartridges are typically disposed of after a single use. Id.

Respondents' products are designed to replace the prior art disposable cup-shaped cartridge with a reusable capsule version. The accused products consist of a plastic beverage capsule with an integrated filter medium. Resp. IPHB at 6. Whereas the disposable cup-shaped cartridges are purchased pre-filled with ground coffee, the accused products must be manually
filled with coffee by the user for each beverage brew. CX-261C (K2 Instructions); CX-262C (K3 Instructions). After the capsule is filled with coffee, it is inserted into the brewing chamber of a Keurig brewer to brew a beverage. Id. The capsule is shaped in such a way as to avoid the upper and lower needles of the brewer. CX-0003 (Phillips DWS) at Q/A 220-21, 245. Once brewing is complete, the used coffee grounds are discarded, but the capsule itself may be reused. CX-261C (K2 Instructions); CX-262C (K3 Instructions). These reusable capsules are less expensive to use and result in less waste than the prior art cup-shaped cartridges. Resp. IPHB at 6.

ARM accuses two of Respondents’ models of reusable beverage brewing capsules: the K2 and K3 ("the accused products").

Although the K2 and K3 products have a different shape, filter material, and hinge, they both function as described above. ARM accuses the K2 product of infringing claims 5-7, 18 and 20 of the ’320 patent, and accuses the K3 product of infringing claims 5, 7, 18 and 20 of the ’320
D. The Alleged Domestic Industry Products

The alleged domestic industry products are the combination of ARM's reusable beverage brewing capsules with a Keurig machine. ID at 101. ARM has three such capsules: EZ-Cup, Eco-Fill, and Eco-Fill Deluxe. Id.
These products are also reusable beverage capsules designed to replace the K-Cup style cartridges in cup-shaped cartridge brewers. The Eco-Fill and Eco-Fill Deluxe have an integrated filter medium, whereas the EZ-Cup uses a disposable paper filter. ARM IPHB at 6. These products are very similar to the accused products, and Respondents argue that the Eco-Fill is a copy of the K2 product, and that the Eco-Fill Deluxe is a copy of the K3 Product. Resp. IPHB at 6-8. ARM contends that each of its products, when combined with Keurig brewer, satisfies the technical prong of the domestic industry requirement with respect to claims 5, 10, and 18 of the ’320 patent. ARM IPHB at 101.

II. ANALYSIS

The Commission determines to make the findings, conclusions, and supporting analysis set forth below. Any findings, conclusions, and supporting analysis by the ALJ that are not inconsistent with our analysis and conclusions below are adopted by the Commission.

A. “A Needle-Like Structure, Disposed Below the Base”

We have determined to modify the ID’s construction of this limitation. Under our modified construction, we find that ARM has shown that the accused products and the alleged domestic industry articles satisfy this limitation.

1. Claim Construction

The first step of a patent infringement analysis is “determining the meaning and scope of the patent claims asserted to be infringed.” Markman v. Westview Instrs., Inc., 52 F.3d 967, 976 (Fed. Cir. 1995). Claim 5, as well as dependent claims 6 and 7, includes the limitation “a needle-like structure, disposed below the base.” CX-0005 (’320 patent) at col. 9, ln. 20. The ID construed this limitation to mean a “needle-like structure disposed below at least a portion of the base.” ID at 36. The ID reasoned that a person of ordinary skill in the art would have understood that “the base” of the limitation refers to “the portion of the base that is disposed a
predetermined distance above the brewing chamber.” Id. (citing claim 5 at CX-0005, col. 9, ll. 2-5 and col. 9, ll. 21-23, and CX-0003 (Phillips WS) at Q/A 270).

Respondents contend that the ID’s construction misinterprets the antecedent basis of “the base.” Id. at 17-18. They argue that the ID erroneously found that “the base” refers to “at least a portion of the base,” when the ID should have found that “the base” refers to the previously recited “a base” limitation. Id. ARM and OUII argue that the ID’s construction is correct for the reasons stated in the ID. ARM Pet. Reply at 10-11; OUII Pet. Reply at 10-11.

We find that the ID’s construction is erroneous because it misapplies the principle of antecedent basis. It is well-settled that when a claim uses the definite article “the” or “said” to describe a term, the descriptor “refers to an earlier use of that term in the claim.” Intamin Ltd v. Magnetar Techs. Corp., 483 F.3d 1328, 1333 (Fed. Cir. 2007). Here, the relevant language of claim 5 requires:

a base, having an interior surface and an exterior surface, wherein at least a portion of the base is disposed a predetermined distance above a bottom surface of the brewing chamber

a needle-like structure, disposed below the base;

CX-0005 (’320 patent) at col. 9, ll. 2-5, 20. The use of “the base” plainly refers to the previously recited “a base.” Had the patentee intended to limit its “needle-like structure” with respect to only a portion of the base, he would have used the limitation “the at least a portion of the base,” as he did elsewhere in the patent. See CX-0005 (’320 patent) at col. 9, ll. 28-29 (reciting the limitation “the at least a portion of the base”).

Respondents contend that “a needle-like structure, disposed below the base” should be construed to mean “a needle-like structure, disposed below the entire base.” Resp. Pet. at 17 (emphasis added). Although we agree that “the base” refers to the previously recited “base” in
general, there is no intrinsic or extrinsic evidence that the needle-like structure must be disposed below the entire base. Rather, the specification describes a needle-like structure that passes through portions of the base by traveling through passageways or openings. See CX-0005 ('320 patent) at col. 4, ll. 17-23 (describing that “a passageway 120 is formed in the base” and the passageway is “configured to receive the needle-like structure”); col. 5, ll. 42-54 (describing that “base 306” has an “opening 324” to accommodate the upward extension of the needle). The specification also describes a base with different heights, including a raised portion that is located above the portion of the base with the passageway or opening. See id. at col. 5, ll. 45-48 (“The base 306 has an annular raised portion 314 extending upwardly from a lower surface 316 of the base and an opening 324 formed in a portion of the base that is not raised”). Accordingly, we reject Respondents’ proposed construction for being contrary to the intrinsic evidence.

We find that the term “a needle-like structure, disposed below the base” needs no construction, and should be given its plain and ordinary meaning. Although claims are read in view of the specification, a construction “may depart from the plain and ordinary meaning of claim terms based on the specification in only two instances: lexicography and disavowal.” Hill-Rom Servs., Inc. v. Stryker Corp., 755 F.3d 1367, 1371 (Fed. Cir. 2014). There is no evidence here that the patentee acted as a lexicographer or disclaimed scope with respect to this term. Similarly, there is no extrinsic evidence that this term has a special meaning in a relevant field of art. Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc).

Although ARM did purport to provide expert testimony on the meaning of this term, that testimony provides no evidence that the limitation has a special meaning to those of ordinary skill in the art, but rather construes the term based solely on a textual analysis of other limitations in the claim. See CX-0003 (Phillips DWS) at Q/A 270 (testifying that the limitation should mean “needle-like structure disposed below at least a portion of the base” based solely on other limitations in the claim). That testimony is also contrary to the plain language of the claim for the same reason as discussed above with respect to the ID’s construction, and we therefore
Accordingly, we modify the ID’s construction, and determine that the limitation needs no construction and should be accorded its plain and ordinary meaning. By its plain language, the term requires that the “needle-like structure” be disposed below some portion of the base, but does not require that the “needle-like structure” be disposed below the entirety of the base.

2. Infringement

The second and final step of a patent infringement analysis is “comparing the properly construed claims to the device accused of infringing.” Markman, 52 F.3d at 976. We thus turn to whether ARM has shown that Respondents’ products practice the limitation “a needle-like structure, disposed below the base” under our modified construction. The first issue is what constitutes “the base.” The ID found that the base of the K2 includes the bottom nub and the area surrounding the bottom nub, and that the base of the K3 includes the bottom surface and the two slots in the bottom surface. ID at 48. Respondents failed to contest either finding.8 We therefore affirm the ID’s findings with respect to what constitutes the base in the accused products.

The next issue is whether ARM showed that the needle-like structure is “disposed below” the base of the accused products. ARM presented evidence that the Keurig brewer needle is disposed below the portion of the base surrounding the nub in the K2. CX-0003 (Phillips DWS) at Q/A 220 (“the needle-like structure is below the region of the base surrounding the nub on the bottom of the K2”); see also id. at Q/A 221 (depicting an annotated photo of CPX-0005 (K2
discount the testimony. See Phillips, 415 F.3d at 1318 (“a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and prosecution history”) (internal citation omitted).

8 Although Respondents argued before the ALJ that a different structure constitutes “the base,” they abandoned that argument by failing to include it in their petition for review. See 19 C.F.R. § 210.43(b)(2) (“any argument not relied on in a petition for review will be deemed to have been abandoned and may be disregarded by the Commission”).
ARM also presented evidence that the Keurig brewer needle is disposed below the portion of the base located within the two slots of the K3. *Id.* at Q/A 245 ("the needle-like structure is below the two regions or slots of the base when the K3 is inserted in the brewing chamber"). Respondents do not contest that the Keurig brewer’s needle is disposed below a portion of the base of each of the accused products. *See* Resp. Pet. at 26-27 (admitting that their non-infringement argument is contingent upon the Commission adopting Respondents’ proposed construction).

Based on this evidence, we find that ARM has shown that the accused products satisfy this limitation. The unrebutted evidence shows that the needle of the Keurig brewer is disposed below a portion of the base of the K2 and K3 products. We find that the existence of a needle below a portion of the base literally satisfies the limitation “a needle-like structure, disposed below the base.”

3. **Technical Prong**

In order to show a violation of section 337, a complainant must also satisfy the technical prong of the domestic industry requirement, which requires “a comparison of domestic products
to the asserted claims.” *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1307 (Fed. Cir. 2010). We must determine whether ARM has shown that its domestic industry products practice the limitation “a needle-like structure, disposed below the base” under our modified construction. The first issue is again what constitutes “the base.” The ID found that the base of the EZ-Cup includes the annular rim at the bottom and a spring-biased platform, the base of the Eco-Fill includes the bottom nub and the area surrounding the bottom nub, and that the base of the Eco-Fill Deluxe includes the bottom surface and the two slots in the bottom surface. ID at 104 (citing CX-0003 (Phillips DWS at 119-20, 169; CPX-0001 (EZ-Cup Physical Exhibit); CPX-0002 (Eco-Fill Physical Exhibit); CPX-0003 (Eco-Fill Deluxe Physical Exhibit)).
Respondents failed to contest these findings. We therefore affirm the ID’s findings with respect to what constitutes the base in the domestic industry products.

The next issue is whether ARM showed that the needle-like structure is “disposed below” the base of the domestic industry products. ARM presented evidence that the Keurig brewer needle is disposed below the spring-biased platform portion of the base of the EZ-Cup product, is disposed below the portion of the base surrounding the nub on the bottom of the Eco-Fill product, and is disposed below the portion of the base inside the slots of the Eco-Fill Deluxe product. CX-0003 (Phillips WS) at Q/A 125 and 175). Respondents do not contest that these products satisfy this claim limitation. See Resp. Pet. (failing to challenge any finding on whether ARM satisfies the technical prong of the domestic industry requirement).

Based on this evidence, we find that ARM has shown that the EZ-Cup, Eco-Fill, and

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9 Although Respondents argued before the ALJ that different structures constitute “the base,” they abandoned that argument by failing to include it in their petition for review. See 19 C.F.R. § 210.43(b)(2) (“any argument not relied on in a petition for review will be deemed to have been abandoned and may be disregarded by the Commission”).

-16-
EcoFill Deluxe products satisfy this limitation for the purposes of the technical prong of the domestic industry requirement. The unrebutted evidence shows that the needle of the Keurig brewer is disposed below a portion of the base of the EZ-Cup, Eco-Fill, and Eco-Fill Deluxe. As we found above with respect to infringement, we find that the existence of a needle below a portion of the base literally satisfies the limitation "a needle-like structure, disposed below the base."

B. Indirect Infringement

We have determined to reverse the ID’s finding that Respondents are not liable for induced and contributory infringement because they lacked pre-suit knowledge of the '320 patent. We did not review the ID’s remaining findings on induced and contributory infringement. Accordingly, we find that ARM has shown every element of induced and contributory infringement.

1. Background

The ID found that ARM failed to prove that Respondents were liable for induced or contributory infringement because ARM did not show that Respondents had pre-suit knowledge of the '320 patent. ID at 63-64, 67. The ID relied upon a previous Commission opinion which found that pre-suit knowledge was required for contributory infringement. Id. (citing Certain Video Game Systems and Wireless Controllers and Components Thereof, U.S.I.T.C. Inv. No. 337-TA-770, Comm’n Op. at 32) (Oct. 28, 2013) (public version) (“Video Game Systems’’). The ID did, however, find that ARM showed that the accused products directly infringed when combined with a Keurig brewer and that the accused products had no substantial noninfringing uses. Id. at 63, 66. ARM petitioned for review of the ID’s finding that Respondents are not liable for induced or contributory infringement because of their lack of pre-suit knowledge, and Respondents and OUII opposed. ARM Pet. at 7-14; Resp. Pet. Reply at 2-11; OUII Pet. Reply at
Subsequent to the ID and the parties’ petitions and responses, the Commission issued an opinion in a different investigation finding that pre-suit knowledge of the patent is not required for contributory infringement. *See Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm’n Op. at 39-43 (Oct. 14, 2015) (public version Oct. 30, 2015) ("Television Sets"). There, we clarified that, to the extent that *Video Games* is viewed as inconsistent with *Television Sets*, *Television Sets* governs. *Id.* at 43.

We sought briefing from the parties on the impact of *Television Sets* on this investigation. 80 Fed. Reg. 70835. ARM and OULI argue that, because *Television Sets* eliminated the only ground upon which the ID found that Respondents were not liable for induced and contributory infringement, *Television Sets* compels the Commission to find Respondents liable for induced and contributory infringement. ARM Comm’n Br. at 2-3; OULI Comm’n Br. at 5-11. Respondents contend that, despite *Television Sets*, they are not liable for induced or contributory infringement because they have a good-faith belief that they do not infringe the ’320 patent, and are additionally not liable for contributory infringement because the accused products have substantial non-infringing uses. Resp. Comm’n Br. at 2-7; Resp. Comm’n Reply Br. at 1-6.

2. Good Faith Belief of Noninfringement

A respondent is liable for induced infringement if the respondent “actively induces infringement of a patent.” 35 U.S.C. § 271(b). Such active inducement requires that the respondent have both knowledge of the patent and knowledge that the induced acts constitute infringement. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S.Ct. 1920, 1926 (2015) (“liability for inducing infringement attaches only if the defendant knew of the patent and that ‘the induced acts constitute patent infringement’”) (quoting *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S.Ct. 2060, 2068 (2011)). Similar to induced infringement, “contributory infringement requires
knowledge of the patent in suit and knowledge of patent infringement.” *Cominil*, 135 S.Ct. at 1926.

In *Television Sets*, we found that the service of a section 337 complaint provides knowledge of the asserted patents. *Television Sets* at 41. Here, ARM served Respondents with its original and amended complaints, which allege that Respondents infringe the ’320 patent. Original Complaint (Aug. 4, 2014); Amended Complaint (Aug. 14, 2014). Respondents admit that the service of these complaints gave them knowledge of the ’320 patent. Respondents’ Response to the Amended Complaint and Notice of Investigation (Sept. 30, 2014) at ¶ 46, 50, 53, 57, 60, 64, 67, 71; RX-1084C (Vu DWS) at Q/A 26. Accordingly, we find that ARM’s complaints satisfy the “knowledge of the patent requirement” for both induced and contributory infringement.

ARM and OUII also contend that Respondents knew that their acts constituted infringement based on ARM’s complaints, which include allegations explaining how Respondents induce infringement and provide claim charts explaining such infringement. ARM Comm’n Br. at 2-3; OUII Comm’n Br. at 7-11. ARM’s complaints specifically allege that Respondents “induce purchasers of the accused Solofill K2 and K3 to infringe the ’320 patent at least by providing instructions such as those on their packaging indicating that the Solofill K2 and K3 are to be used with single serve brewers such as the Keurig.” ARM original complaint at ¶ 46; ARM amended complaint at ¶ 46. The complaints also allege that Respondents “contributorily infringe the ’320 patent” because “[t]he accused Solofill K2 and K3 are material parts (i.e., brewing capsules) of the inventions claimed in the ’320 patent,” and that Respondents “know, at least as of the filing of this complaint, that the accused Solofill products are especially made or especially adapted for use in infringement of the ’320 patent, and are not a staple article
or commodity of commerce suitable for substantial noninfringing use.” ARM original complaint at ¶ 47; ARM amended complaint at ¶ 47. The complaints also contain claim charts showing how the accused products infringe on a limitation-by-limitation basis. ARM original complaint at Ex. 6; ARM amended complaint at Ex. 6. The infringement allegations set forth in the claim charts are substantially similar to the ID’s ultimate infringement findings. Moreover, despite being made aware of their infringement through the claim charts, Respondents continued to sell products with specific instructions to combine their products with a Keurig brewer, which created an infringing combination. CX-261C (K2 Instructions); CX-262 (K3 Instructions); CX-267C (purchase orders).

Respondents’ only defense to ARM’s indirect infringement allegations is their assertion that they did not know that their induced acts constituted patent infringement because they had a good-faith belief that their products did not induce infringement of the ‘320 patent. Resp. Comm’n Br. at 3-5. Respondents’ only evidence in support of that defense is the testimony of Solofill’s president, Robert Vu, who stated that the accused products “do not have a passageway as described in [‘]320 patent” and that “the needle like structure is not disposed below the base of the products.” RX-1084C (Vu DWS) at Q/A 28. Mr. Vu did not further elaborate on those noninfringement defenses. Id. He was also directed not to divulge attorney-client privileged communications concerning his belief that the accused products did not infringe. Id.

We find that Respondents’ evidence is not sufficient to show that they had a good-faith belief that they did not infringe the ’320 patent. Although Commil suggests that a good-faith belief of noninfringement protects against a claim of indirect infringement, such a belief must be reasonable. Commil, 135 S.Ct. at 1928 (stating that a defendant is not liable for induced infringement “if the defendant reads the patent’s claims differently, and that reading is
reasonable”). That holding is consistent with Federal Circuit precedent, which holds that an accused infringer may defeat a claim of induced infringement by presenting evidence, such as legal opinions, justifying why it reasonably believes that it did not intend to infringe. See DSU Med. Corp. v. JMS Co., Ltd., 471 F.3d 1293, 1307 (Fed. Cir. 2006) (holding that the accused infringer showed that it lacked the intent to induce infringement because it obtained multiple legal opinions that its products did not infringe).

Here, Respondents have failed to show that their noninfringement belief is reasonable and in good-faith. Respondents do not, for example, provide evidence to explain what legal and factual basis supports Mr. Vu’s belief that the accused products do not induce infringement. Respondents also do not explain whether Mr. Vu has the appropriate level of legal and factual knowledge to reasonably assess whether the accused products infringe. Instead, Respondents’ evidence is nothing more than a conclusory assertion by an executive that their products do not practice two limitations of the asserted claims. Because Mr. Vu failed to explain his conclusion that the asserted claims do not practice two limitations, we cannot assess whether his conclusion was reasonable or in good-faith. Accordingly, we find that Respondents have failed to show that they had a good-faith belief of noninfringement.

In conclusion, ARM presented evidence that Respondents knew that their induced acts constituted infringement, and Respondents failed to establish their only defense. Accordingly, we find that ARM has shown that Respondents had knowledge of the ’320 patent and knowledge that their induced acts constituted infringement.

10 Additionally, Mr. Vu’s explanation does not apply to all of the asserted claims. Claims 18 and 20 do not require “needle-like structure, disposed below the base,” so the absence of such a structure is no defense to the infringement of those claims. Respondents abandoned their “passageway” defense by failing to petition for review of the ID’s finding that the accused products satisfy the “passageway” limitation.
3. Substantial Noninfringing Uses

To establish liability for contributory infringement, ARM must show that the accused products are “not a staple article or commodity of commerce suitable for substantial noninfringing use.” 35 U.S.C. § 271(c). Although Respondents contend that the accused products have a substantial noninfringing use as a tea infuser, ARM presented evidence that the accused products’ packaging instructs the user to use the product with a Keurig brewer, and provides no alternative uses. CX-0003 (Phillips DWS) at Q/A 297; CX-261C (K2 Instructions); CX-262C (K3 Instructions). ARM also presented expert testimony that the accused products would not be effective as tea infusers because there is no way to retrieve them from a tea cup or pot once a desired level of brew is reached. Id. at Q/A 298. Additionally, ARM presented expert testimony that the accused products would not be effective as tea infusers because they do not securely close and have relatively few pores through which to brew tea. Id.

In response to ARM’s allegations, Respondents repeat their position that the accused products have a substantial noninfringing use as a tea infuser for mugs and teapots. Resp. Comm’n Br. at 5-7. They cite as evidence the accused products’ packaging, which states that the products “work[] great with loose leaf tea.” CX-261C (K2 Instructions); CX-262C (K3 Instructions). They also cite expert testimony that the accused products can be used as tea infusers, and argue that their expert testimony is more credible than ARM’s because Respondents’ expert actually tested the accused products. RX-1085C (Howle DWS) at Q/A 33, 162-63. Finally, Respondents cite Mr. Vu’s testimony that customers told him that they used the accused products as a tea infuser. RX-1084C (Vu DWS) at 22-23.

The ID weighed the evidence, and found that the accused products had no substantial noninfringing uses. ID at 66. The ID found that, because the product packaging instructs users to use the product with a Keurig brewer, the phrase “work[] great with loose leaf tea” refers to
the infringing use of brewing tea in a Keurig brewer, and not a non-infringing use as a stand-alone tea infuser in a mug or teapot. Id. The ID also credited ARM's expert testimony that the accused products are not suitable to be used as stand-alone tea infusers due their size and shape. Id. We see no error in the ID's analysis, and affirm the ID's finding that the accused products lack substantial noninfringing uses.

Respondents also contend that ARM's evidence is insufficient because it only shows that the accused products are not “effective” as tea infusers, which in their view is not sufficient to show that the products lack substantial noninfringing uses. However, “[n]on-infringing uses are substantial when they are not unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.” Toshiba Corp. v. Imation Corp., 681 F.3d 1358, 1362 (Fed. Cir. 2012) (quoting Vita-Mix Corp. v. Basic Holding, Inc., 581 F.3d 1317, 1327 (Fed. Cir. 2009)). There is no relevant legal distinction between a device that is not “effective” for use as a tea infuser and a device that is “impractical” for use as a tea infuser. In any event, we find that ARM provided sufficient evidence demonstrating that the accused products lacked appropriate features for a standalone tea infuser and were thus impractical for such use.

Finally, Respondents contend that the ID improperly placed the burden of showing substantial noninfringing uses on Respondents, instead of properly requiring ARM to show a lack of substantial noninfringing uses. Resp. Pet. at 48. The only evidence Respondents assert to support their contention, however, is the ID’s statement that the use of the accused products as a tea infuser “does not meet the requirement for a substantial noninfringing use.” Id. (citing ID at 66). This statement simply reflects the ID’s finding that the packaging’s statement that the accused products “work[] great with loose leaf tea” refers to an infringing use of brewing tea in a Keurig brewer, which, by its very definition, does not meet “the requirement for a substantial
noninfringing use.” ID at 66. Accordingly, the ID did not improperly place the burden of proof on Respondents.

4. Conclusion

For the reasons discussed above, we find that ARM has shown that Respondents knew of the ’320 patent, that their induced acts were infringing, and that their accused products lacked substantial noninfringing uses. We therefore find that ARM has shown every element required for induced and contributory infringement.

C. Invalidity

We have determined to reverse the ID’s finding that the asserted claims are not invalid for a lack of written description, and that claims 5 and 6 are not invalid as anticipated by Beaulieu. We have determined to affirm under modified reasoning the ID’s findings that Beaulieu does not anticipate the remaining asserted claims, that the Admitted Prior Art (APA) does not anticipate claims 18 and 20, and that the asserted claims are not invalid as obvious.

1. Lack of Written Description

We reverse the ID’s finding that the asserted claims have adequate written description, and instead find that Respondents have shown by clear and convincing evidence that all of the asserted claims are invalid for a lack of written description.

a. Background

A patent must contain a specification which “shall contain a written description of the invention . . .” 35 U.S.C. § 112, first paragraph. Whether this “written description”

\[1\] Commissioner Kieff does not join the Commission opinion with respect to its finding and associated analysis that Respondents have shown by clear and convincing evidence the asserted claims are invalid for a lack of written description under 35 U.S.C. § 112, first paragraph. See infra Separate Opinion Dissenting-in-Part of Commissioner Kieff.

\[2\] Paragraph 1 of 35 U.S.C. § 112 was replaced with newly designated § 112(a) by § 3(b) of the America Invents Act (“AIA”), and is effective for “any patent application that is filed on or
requirement is satisfied depends on “whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). Because patents are presumed valid, “the accused must show that the claims lack a written description by clear and convincing evidence.” *Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1351 (Fed. Cir. 2011); *see also* 35 U.S.C. § 282.

At issue is whether the ’320 patent specification sufficiently describes the invention of the asserted claims. On July 13, 2007, Adrian Rivera filed a patent application describing and claiming a “pod adaptor assembly” and a “brewing chamber for a beverage pod.” RX-1002 (’320 patent file history) at SOLO929000834-63. On May 13, 2014, nearly seven years later and after numerous amendments to the specification and claims, the ’320 patent issued with claims covering a brewer with “a container . . . adapted to hold brewing material.” RX-1001 (’320 patent). Accordingly, the relevant inquiry is whether the originally filed patent application’s description of pod adaptors and pod brewing chambers reasonably conveyed to a person of ordinary skill in the art that Mr. Rivera was in possession of a general “container . . . adapted to hold brewing material” in 2007.

The ID found that the originally filed specification of the ’320 patent contains sufficient written description under 35 U.S.C. § 112. ID at 93. The ID reasoned that Mr. Rivera was in possession of the claimed invention as a whole in 2007 because a person of ordinary skill in the art would have understood that a “pod” does “include a container with a separate filter after” September 16, 2012. Pub.L. No.112—29, § 4, 125 Stat. at 296–97. Because the application resulting in the patent at issue in this case was filed before that date, we refer to the pre-AIA version of § 112.
containing coffee or an integrated filter” based on the following sentence of the ’320 patent’s specification:

[T]he term “pod” is a broad term and shall have its ordinary meaning and shall include, but not be limited to, a package formed of water permeable material and containing an amount of ground coffee or other beverage therein.

Id. at 93-94 (quoting CX-0005 (’320 patent) at col. 1, ln. 66-col. 2, ln. 3).

Respondents contend that the originally filed patent application’s narrow description of a pod adaptor does not convey possession of a capsule with an integrated filter, so ARM’s subsequently amended claims for “a container . . . adapted to hold brewing material” encompassing such capsules are invalid for a lack of written description. Resp. Pet. at 29, 33-34.

They also argue that the ID erred by finding that the specification’s generic definition of “pod” disclosed a container with an integrated filter. Id. at 34-35. ARM and OUII argue that the ID properly found that that the asserted claims are not invalid for a lack of written description. ARM Pet. Reply at 23-26; OUII Pet. Reply at 13-14.

b. Analysis

We find that the originally filed specification would not have reasonably conveyed to a person of ordinary skill in the art that the inventor was in possession of an invention encompassing any container adapted in any way to hold brewing material as of the patent application’s filing date.

i. Specification

The written description requirement compels the originally filed patent application to demonstrate the patentee’s possession of the full scope of the claimed invention. See LizardTech, Inc. v. Earth Resource Mapping, Inc., 424 F.3d 1336, 1345 (Fed. Cir. 2005) (invalidating a claim because “the specification failed to demonstrate that the patentee possessed
the full scope of the invention”). Thus, a patentee cannot support a broad claim based on a narrow specification, because “a broad claim is invalid when the entirety of the specification clearly indicates that the invention is of a much narrower scope.” PIN/NIP, Inc. v. Platte Chem. Co., 304 F.3d 1235 (Fed. Cir. 2002) (quoting Cooper Cameron Corp. v. Kvaerner Oilfield Prods., Inc., 291 F.3d 1317, 1323 (Fed. Cir. 2002)).

Here, the originally filed patent application’s specification narrowly describes a pod adaptor device. RX-1002 ('320 patent file history) at SOLO929000834-63. The specification’s “Background of the Invention” section describes two main types of single serve beverage brewers: brewers that brew beverages from pods, and brewers that brew beverages from cup-shaped cartridges. Id. at SOLO929000838. Pods are “small, flattened disk-shaped filter packages of beverage extract,”13 and a cup-shaped cartridge is “a container having a cone-shaped permeable filter packet containing a dry beverage medium such as ground coffee.” Id. The specification states that a problem with the cup-shaped cartridge brewer is that it cannot brew coffee from pods, so “there is a need for an apparatus and method for modifying single serve beverage brewers configured for cup-shaped cartridges so that they can also be used to brew beverages from pods.” Id. at SOLO929000838-39. Moreover, “[t]he use of multiple machines can be costly, inconvenient and cause inefficient use of counter space.” Id. at SOLO929000839. Accordingly, the specification describes that “this invention . . . relates to an adaptor assembly configured to effect operative compatibility between a single serve beverage brewer and beverage pods.” Id. at SOLO929000838; see also id. at SOLO929000851 (“A pod adaptor assembly for use in combination with a single serve beverage brewer is provided”).

The “Summary of the Invention” section of the specification discloses four embodiments,

13 See also id. at SOLO929000839 (describing pods as “typically somewhat flattened disc shaped filter paper packets containing coffee”).
three of which describe a “pod adaptor assembly” and one of which describes a “brewing chamber for a beverage pod.” *Id.* at SOLO929000840-41. Later, the “Detailed Description of the Preferred Embodiments” section discloses five embodiments, four of which describe a “pod adaptor assembly” and one of which describes a “pod brewing chamber.” *Id.* at SOLO929000842-48. The original specification had eighteen claims, of which twelve covered a “pod adaptor assembly” and six covered a “brewing chamber for a beverage pod.” *Id.* at SOLO929000849-50.

ii. Issued Claims

Although the originally filed specification and claims are directed entirely to pod adaptors and pod brewing chambers, the issued claims of the ’320 patent contain no reference to a pod, pod adaptor, or pod brewing chamber. RX-1001 (’320 patent) at col. 8, ln. 21-col. 11, ln. 18. Mr. Rivera amended the claims eight times, including an instance in which all pending claims were canceled and new claims were submitted. RX-1002 (’320 patent file history). By the time the ’320 patent issued, all of its claims were directed to a beverage brewer with “a container . . . adapted to hold brewing material.” *Id.* at col. 8, ln. 21-col. 11, ln. 18.

The ID adopted ARM’s argument that the limitation “to hold brewing material” has its plain and ordinary meaning, and does not require a pod. *Id.* at 31-34. Accordingly, the ID finds that the asserted claims are not limited to a pod, and encompass any container adapted in any manner to hold brewing material. *Id.* at 33-34.

iii. Comparison of the Specification and Issued Claims

We find that the asserted claims are invalid for a lack of written description because the narrow disclosure in the specification does not demonstrate possession of broad claims to an invention encompassing “a container . . . adapted to hold brewing material” to a person of ordinary skill in the art at the time of filing. A narrow specification limits claim breadth. *Gentry*
Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1480 (Fed. Cir. 1998) ("claims may be no broader than the supporting disclosure, and therefore . . . a narrow disclosure will limit claim breadth"); PIN/NIP, 304 F.3d at 1248 ("a broad claim is invalid when the entirety of the specification clearly indicates that the invention is of a much narrower scope."). Here, the specification narrowly describes the invention of a device for modifying a cup-shaped beverage brewer to brew beverages from pods. The "Field of Invention" states that the "invention" relates to "an adaptor assembly configured to effect operative compatibility between a single serve beverage brewer and beverage pods." RX-1001 ('320 patent) at col. 1, ll. 6-10. This invention is intended to solve the "need for an apparatus and method for modifying single serve beverage brewers configured for cup-shaped cartridges so that they can also be used to brew beverages from pods." Id. at col. 1, ll. 46-50. All of the disclosed embodiments describe a "pod adaptor assembly" or an improved "brewing chamber" for a pod adaptor assembly. Id. at col. 2, ln. 16 – col. 8, ln. 7. Nothing in the '320 patent specification discloses an invention that is anything other than a pod adaptor assembly or pod brewing chamber. Accordingly, we find that the specification narrowly describes a pod adaptor assembly, and does not support the claims' broad recitation of "a container . . . adapted to hold brewing material."

The facts of this case are analogous to other situations in which the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") has invalidated broad claims as unsupported by a narrow specification. In Gentry Gallery, the Federal Circuit invalidated broad claims covering a sofa with controls because the patent specification described a sofa with controls located only on the center console and did not disclose controls located anywhere else. 134 F.3d at 1479-80. Similarly, in Tronzo, the Court held that a specification describing only a conical hip socket did not support claims broadly covering hip sockets. Tronzo v. Biomet, Inc., 156 F.3d 1154, 1159-60
Likewise, in *ICU Medical*, the Court held that a specification describing a medical valve with a spike did not support claims broadly covering medical valves. *ICU Medical, Inc. v. Alaris Medical Systems, Inc.*, 558 F.3d 1368, 1378-79 (Fed. Cir. 2009). Under the reasoning of these cases, we find that '320 patent specification’s description of a “pod adaptor assembly” and “brewing chamber for a beverage pod” does not support claims broadly covering “a container . . . adapted to hold brewing material.”

The facts here are closely analogous to those in *Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332 (Fed. Cir. 2013). There, the original specification of the patent-in-suit described an intervertebral implant with peripheral grooves, but the claims covered an intervertebral implant with openings. *Id.* at 1341-43. Every example of the specification described an implant with grooves, and an expert testified that the difference between the peripheral grooves of the specification and the openings of the accused products presented significant design choices not addressed in the patent. *Id.* at 1342-43. The court affirmed the jury’s finding that the claims were invalid because the jury had substantial evidence to find that the disclosure of peripheral grooves would not have conveyed to a person of ordinary skill in the art that the inventor had possession of an implant “that could use any sort of opening located anywhere.” *Id.* at 1342.

Here, similar to *Synthes*, every example of the '320 patent specification describes a pod adaptor assembly or pod brewing chamber. Additionally, expert testimony shows that the

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14 See also *LizardTech*, 424 F.3d at 1344 (holding that a specification describing the creation of a certain transform through a particular method did not support a claim broadly covering the creation of the transform through any method); *PIN/NIP*, 304 F.3d at 1248 (holding that a specification describing a mixture of two chemicals did not support a claim covering applying the two chemicals); *Anascape, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333, 1340 (Fed. Cir. 2010) (holding that a specification describing a single input device providing six degrees of freedom did not support claims covering multiple input devices providing six degrees of freedom).
difference between the pod adaptor assembly of the specification and the brewing capsules of the accused products presented significant design choices not addressed in the patent. RX-1085 (Howle DWS) at Q/A 240-41 (testifying that the pod adaptor assembly of the '320 patent would not function if a pod was not used, because the brewing material would fall into the beverage); Phillips, Tr. 272:25-273:3 and 273:7-12 (testifying that, although the '320 patent does not disclose a filter, a separate filter is required if a pod is not used); CX-0003 (Phillips DWS) at Q/A 84, 87 (testifying that a pod and an integrated filter are different design choices for solving the problem of brewing coffee). Thus, similar to the Court's holding in Synthes that the specification's disclosure of a groove located on the periphery did not support a claim for any sort of opening located anywhere, we find that the '320 patent specification's disclosure of a pod adaptor assembly does not support a claim for any sort of container adapted in any manner to hold brewing material.

Additionally, the only instance in which the originally filed specification refers to a "container" is in describing prior art cup-shaped cartridges. RX-1002 ('320 patent file history) at SOLO929000838 (describing the cartridges as "configured in the form of a container having a cone-shaped permeable filter packet containing a dry beverage medium such as coffee"). The written description requirement, however, cannot be satisfied through a description of prior art. See Anascape, Ltd. v. Nintendo of Am. Inc., 601 F.3d 1333, 1336-37 (Fed. Cir. 2010) (holding that the patentee could not rely upon a portion of the specification to satisfy the written description requirement because "this is not a description of the [patent-in-suit’s] invention; it is a description of prior art . . . ."); Tronzo v. Biomet, Inc., 156 F.3d at 1159-60 (holding that the patentee could not rely upon a portion of the specification to satisfy the written description requirement because the "disclosure served the narrow purpose of reviewing the prior art and did
not describe the invention”). Moreover, because the very purpose of the ’320 patent is to replace the prior art container with a “pod adaptor assembly,” the specification does not convey to a person of ordinary skill in the art that Mr. Rivera was in possession of the invention of a “container . . . adapted to hold brewing material.”

We reject ARM’s arguments that the asserted claims have not been shown to lack adequate written description. ARM argues that Respondents’ evidence cannot be clear and convincing because their expert testimony on the issue consisted primarily of one answer. ARM Pet. Reply at 23-24. There is not, however, a specific quantity of expert testimony required to show that a claim is invalid for a lack of written description. Moreover, Respondents appropriately focused on the patent specification rather than expert testimony, because “a patent can be held invalid for failure to meet the written description requirement, based solely on the language of the patent specification.” Univ. of Rochester v. G.D. Searle & Co., Inc., 358 F.3d 916, 927 (Fed. Cir. 2004).

ARM further argues that the ’320 specification is not limited to a pod adaptor because it does disclose brewing coffee without a separate pod. ARM Pet. Reply at 24. First, ARM argues that a person of ordinary skill in the art would understand that “a container adapted to hold brewing material would need some sort of filtration.” Id. This argument, however, acknowledges that the ’320 patent does not actually disclose a container with such filtration. At best, ARM argues that a person of ordinary skill in the art would find a pod-less “container . . . adapted to hold brewing material” obvious, which does not satisfy the written description requirement. See ICU Med., 558 F.3d at 1379 (“it is not enough that it would have been obvious to a person of ordinary skill in the art”); Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997) (holding that it is not sufficient for “the disclosure, when combined with the
knowledge of the art, would lead one to speculate as to modifications that the inventor might have envisioned but failed to disclose.

ARM also argues that the '320 patent explains that the “pod” and filter are separate structures because the “pod” is a “package formed of a water permeable material.” ARM Pet. Reply at 24. ARM, however, admits that the “water permeable material” is a filter, so the '320 patent plainly states that the filter is a part of the pod. See id. (“The water permeable material would be a filter”). And even if ARM were correct, it is unclear how the existence of a separate pod and filter would show that the specification supports a claim for “a container . . . adapted to hold brewing material.”

ARM additionally argues that a person of ordinary skill in the art would understand that figures 1A, 2, and 3B of the '320 patent disclose a filter, and would understand that the filter could be a paper filter or an integrated filter. ARM Pet. Reply at 24. ARM’s own expert, however, explicitly testified that none of these figures disclose a filter. Phillips, Tr. 266:16-24 (admitting that FIG. 1A does not disclose a filter); Phillips, Tr. 267:3-13 (admitting that FIG. 2 does not disclose a filter); Phillips, Tr. 269:14-20 and 269:25-270:4 (admitting that FIG. 3B does not disclose a filter). Furthermore, the written description requirement necessitates that the specification adequately support the claimed “container . . . adapted to hold brewing material,” Ariad, 598 F.3d at 135, and ARM does not explain why the presence of a filter supports the claimed “a container . . . adapted to hold brewing material.”

Finally, ARM argues that the specification also discloses a container with an integrated filter in the following passage:

Although the foregoing description of the preferred embodiments of the present invention has shown, described and pointed out the fundamental novel features of the invention, it will be understood that various omissions, substitutions, and changes in the form of
the detail of the invention as illustrated as well as the uses thereof, may be made by those skilled in the art, without departing from the spirit of the invention. Particularly, it will be appreciated that the preferred embodiments of the invention may manifest itself in other shapes and configurations as appropriate for the end use of the article made thereby.

ARM Pet. Reply at 24-25 (citing CX-0005 ('320 patent) at col. 8, ll. 8-18). We find no credible evidence that a person of ordinary skill in the art would consider this boilerplate language to disclose a beverage capsule with an integrated filter.

In conclusion, we find that Respondents have shown that the asserted claims are invalid by clear and convincing evidence. The evidence shows that the specification of the '320 patent would not reasonably convey to a person of ordinary skill in the art that the inventor had in his possession “a container . . . adapted to hold brewing material” in 2007.

2. Anticipation

A patent is invalid as anticipated if “the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent” or “the invention was known or used by others in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. 35 U.S.C. § 102(a) and (b). Such anticipation requires that “a single prior art reference discloses each and every limitation of the claimed invention.” Schering Corp. v. Geneva Pharm., 339 F.3d 1373, 1378 (Fed. Cir. 2003). Such disclosure may appear in the prior art document itself or in other documents incorporated by reference. Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000). Anticipation must be shown by clear and convincing evidence. Orion IP, LLC v.

15 The AIA amended 35 U.S.C. § 102, effective for any patent application with filing date on or after March 18, 2013, Pub. L. No. 112–29. Because the application resulting in the patent at issue in this case were filed before that date, we refer to the pre-AIA version of § 102.

-34-
We reviewed the issue of anticipation by two references: U.S. Patent No. 6,079,315 ("Beaulieu") and the Admitted Prior Art (APA). The APA is material found within the '320 patent specification that the patent applicant admits is prior art. CX-1005 ('320 patent) at col. 3, ll. 52-65, and FIG. 1 (describing a prior art beverage container). Both references predate the priority date of the '320 patent: Beaulieu issued on June 27, 2000, and the '320 patent admits that the APA is prior art. Both references also incorporate by reference the beverage cartridge described in U.S. Patent No. 5,840,189 ("Sylvan," RX-1005), so each reference may be considered together with Sylvan to determine whether the reference anticipates the asserted claims. See Adv. Display Sys., 212 F.3d at 1282 ("Material not explicitly contained in the single, prior art document may still be considered for purposes of anticipation if that material is incorporated by reference into the document."). Respondents contend that Beaulieu anticipates all of the asserted claims and that the APA anticipates claims 18 and 20. Resp. Pet. at 39, 43.

The ID found that Beaulieu and the APA did not anticipate the asserted claims because both references disclose a needle-like structure puncturing the bottom of the cartridge. ID at 79-81. Thus, the ID concluded that neither reference disclosed a needle-like structure disposed below the base so that the base of the container is not pierced by the needle-like structure. Id.

Respondents argue that the ID misinterpreted the asserted claims. They argue that, although the claims state that the base of the "receptacle" cannot be pierced by the needle-like structure, the claims permit the base of the "container" to be pierced. Thus, because Respondents contend that the filter cup is the "receptacle" and the cartridge is the "container," they argue that Beaulieu and the APA still anticipate the asserted claims even if the cartridge is

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16 RX-1004 (Beaulieu) at col. 3, ll. 15-17; CX-1005 ('320 patent) at col. 3, ll. 52-55.
punctured. *Id.* ARM argues that the ALJ correctly found that the punctured cartridge precludes a finding of anticipation. ARM Pet. Reply. at 27-30.

Although the ID correctly found that both Beaulieu and the APA disclose a punctured container, that finding is irrelevant to the determination of whether Beaulieu and the APA anticipate the asserted claims. As pointed out by Respondents, the asserted claims disclose both a “container” and a “receptacle,” but only prohibit piercing the “receptacle.” Thus, because Respondents contend that the “cartridge” constitutes the “container,” Beaulieu and the APA can still anticipate the asserted claims even if the cartridge is pierced. We therefore find that the ID erred by finding no anticipation based on the punctured cartridge. Because the ID does not address whether Beaulieu or the APA satisfies the remaining limitations of the asserted claims, we address each in turn.

**a. Beaulieu -- Claim 5**

We find that Respondents have shown by clear and convincing evidence that Beaulieu anticipates claim 5 because it satisfies each limitation of the claim for the following reasons:

1. **A beverage brewer, comprising:**

   Respondents contend that the limitation “a beverage brewer” is satisfied by Beaulieu’s “beverage brewing system 20.” IPHB at 40 (citing RX-1004 (Beaulieu) at col. 2, ll. 60-61); see also RX-1085C (Howle DWS) at Q/A 119 (testifying that this citation shows that Beaulieu satisfies this claim limitation). ARM and OUIII do not dispute that Beaulieu satisfies this
limitation. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply (making no such argument). Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses "a beverage brewer."

ii. a brewing chamber;

Respondents contend that the limitation "a brewing chamber" is satisfied by Beaulieu's "chamber 36." Resp. IPHB at 40 (citing RX-1004 (Beaulieu) at col. 3, ll. 7-9 (stating that the cartridge holder "includes a chamber 36"); col. 3, ll. 45-47 (stating "chamber 36" receives the cartridge); see also RX-1085C (Howle DWS) at Q/A 120-21 (testifying that these citations show that Beaulieu satisfies this claim limitation). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply (making no such argument). Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses "a brewing chamber."

iii. a container, disposed within the brewing chamber and adapted to hold brewing material while brewed by a beverage brewer,

Respondents contend that the limitation "a container, disposed within the brewing chamber and adapted to hold brewing material while brewed by a beverage brewer" is satisfied by Beaulieu's "punctured cartridge 50," which is disposed within "brewing chamber 36" and adapted to hold brewing material while brewed by "beverage brewing system 20." Resp. IPHB at 42 (citing RX-1004 (Beaulieu) at col. 3, ll. 9-17 ("a beverage cartridge 50 . . . has been inserted into the cartridge holder 28 to brew beverages from extracts (e.g., coffee, tea, powders and concentrates) contained in disposable hermetically sealed cartridges") and FIG. 6A); see also RX-1085C (Howle DWS) at Q/A 122-23 (testifying that these citations show that Beaulieu satisfies this claim limitation). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, and Pet. (making no such argument).
Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses "a container, disposed within the brewing chamber and adapted to hold brewing material while brewed by a beverage brewer."

**iv. the container comprising: a receptacle configured to receive the brewing material;**

Respondents contend that the limitation "the container comprising: a receptacle configured to receive the brewing material" is satisfied by Beaulieu's filter cup (annotated F in FIG. 6A) and shell (annotated S in FIG. 6A), which are configured to receive the brewing material in the filter cup:

Resp. IPHB at 42-43 (citing RX-1004 (Beaulieu) at FIG. 6A (as annotated above)); Resp. Pet. at 39-42.

ARM contends that Beaulieu's filter cup cannot satisfy the "receptacle" limitation of claim 5. First, ARM argues that a person of ordinary skill in the art would understand that the filter cup is not the receptacle because Sylvan refers to the filter cup and the base of the container
as separate elements. ARM IPHB at 57; RPHB at 25-26; Pet. Reply at 27-28. Second, ARM argues that Beaulieu and Sylvan both show that the filter cup is not the container, but that the filter cup is instead held by the container. Id. OUII contends that Respondents’ expert did not give a satisfactory reason why the filter cup, rather than the cartridge housing, is the component that must avoid puncture. OUII IPHB at 43.

The limitation “a receptacle configured to receive the brewing material” is broad, and simply requires a vessel designed to hold brewing material. Beaulieu’s FIG. 6A depicts a filter that functions as a receptacle for holding brewing material. See RX-1004 (Beaulieu) at FIG. 6A. Furthermore, Sylvan states that the filter cup holds brewing material. RX-1005 (Sylvan) at col. 3, ll. 37-40 (stating that “filter element 14” has two chambers, and “[i]n the first chamber 34, an extract 38 of the beverage that is to be made, such as coffee, is stored.”).

ARM also argues that the “container” of claim 5 cannot be satisfied by Beaulieu’s filter cup, because the filter cup does not have all of the limitations of the “container.” ARM Pet. Reply at 28. Respondents, however, contend that the “container” is satisfied by the cartridge shell, and that the filter cup instead satisfies the “receptacle” limitation. Resp. Pet. at 39-42. Accordingly, ARM’s argument does not rebut Respondents’ contention that the “receptacle” is satisfied by the filter cup.

Accordingly, we find that Respondents have shown that Beaulieu satisfies the limitation “the container comprising: a receptacle configured to receive the brewing material.” The evidence clearly and convincingly shows that Beaulieu discloses a cartridge shell that satisfies the “container” limitation and a filter cup that satisfies the “receptacle” limitation. See RX-1004 (Beaulieu) at FIG. 6A and 6B; RX-1005 (Sylvan) at col. 3, ll. 37-47 and ll. 63-67, and at FIG. 5); RX-1085C (Howle DWS) at Q/A 124-25 (testifying that these citations show that Beaulieu
v. [the container comprising:] a cover;

Respondents contend that the limitation “a cover” is satisfied by Beaulieu’s cover (annotated C in Fig. 6A, supra). Resp IPHB at 42-43 (citing RX-1004 (Beaulieu) FIG. 6A (as annotated), supra). Respondents also point out that Sylvan discloses a beverage filter cartridge that has “an impermeable imperforate yieldably pierceable cover 16.” Id. at 42 (quoting RX-1005 (Sylvan) at col. 3:1-2); see also RX-1085C (Howle DWS) at Q/A 126-27 (testifying that these citations shows that Beaulieu satisfies this claim limitation). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply. (making no such argument). Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses “a cover.”

vi. wherein the receptacle includes a base, having an interior and exterior surface, wherein at least a portion of the base is disposed a predetermined distance above a bottom surface of the brewing chamber,

Respondents contend that the limitation “wherein the receptacle includes a base, having an interior and exterior surface, wherein at least a portion of the base is disposed a predetermined distance above a bottom surface of the brewing chamber” is satisfied by the base of Beaulieu’s filter cup. Resp. IPHB at 42-43. They argue that Beaulieu’s filter cup has a base (annotated B) with an interior surface (annotated I in FIG. 6B) and an exterior surface (annotated E), and is located a predetermined distance (annotated D) above “base surface 80” of “chamber 36.”
ARM argues that a person of ordinary skill in the art would understand that "base" in Beaulieu refers to the base of the plastic cartridge, because Sylvan uses "base" to refer to the base of the cartridge. ARM Pet. Reply at 27-28. There is not, however, any evidence in Beaulieu that "base" should be defined by how base is used in Sylvan. "To act as its own lexicographer," a patentee "must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning." Thorner v. Sony Computer Entertainment America LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (internal citation and quotation omitted). Nothing in Beaulieu or Sylvan "clearly sets forth a definition" of "base." Moreover, nothing precludes multiple structures from having bases, so Sylvan’s description of a cartridge base does not preclude the filter cup from also having a base.
ARM also argues that Beaulieu does not satisfy this limitation because the needle punctures the cartridge, and therefore the needle-like structure is not located a predetermined distance below the base of the cartridge. ARM IPHB at 57. ARM’s argument, however, requires that we find that “base” refers to the base of Beaulieu’s cartridge, which we rejected for the reasons discussed above. Moreover, ARM argues that Respondents failed to show a predetermined distance between a needle-like structure and a base, but no such distance is required by this limitation. Accordingly, we find that ARM failed to refute Respondents’ evidence.

We find that Respondents have shown that Beaulieu satisfies the limitation “wherein the receptacle includes a base, having an interior and exterior surface, wherein at least a portion of the base is disposed a predetermined distance above a bottom surface of the brewing chamber.” There is no dispute that the filter cup of Beaulieu has a bottom that has an interior and exterior surface, and is some distance above the bottom of the chamber. See RX-1004 (Beaulieu) at Fig. 6B; RX-1085C (Howle DWS) at Q/A 128-31. Moreover, Sylvan discloses a filter with a base. RX-1005 (Sylvan) at col. 2, ll. 30-31 (“The filter may be a triangular prism with a circular base”). Sylvan also discloses that the filter is located a certain distance above the bottom of the brewing chamber. Id. at col. 2, ll. 36-41 (“The filter element may terminate in a reduced apex portion spaced from the bottom of the base . . . .”). The evidence clearly and convincingly shows that Beaulieu discloses a filter cup that has a bottom with exterior and interior surfaces, and is located a predetermined distance above the bottom of the chamber. See RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 30-31 and ll. 36-41; RX-1085C (Howle DWS) at Q/A 128-31 (testifying that FIG. 6B shows that Beaulieu satisfies this claim limitation).
vii. [wherein the receptacle includes] at least one sidewall extending upwardly from the interior surface of the base,

Respondents contend that the limitation “at least one sidewall extending upwardly from the interior surface of the base” is satisfied by the sides (annotation SW in FIG. 6B, supra) of Beaulieu’s filter cup, which extend upwardly from the interior surface of the base. Resp. IPHB at 43 (citing RX-1004 (Beaulieu at FIG. 6B, as annotated above)).

ARM argues that “sidewall” cannot refer to the sides of the filter cup, because the only disclosed sidewall is Sylvan’s description of a sidewall of the cartridge base. ARM IPHB at 58; ARM Resp. at 28. The ID adopted this reasoning. ID at 79 (citing CX-0004C (Phillips RWS) at Q/A 55). A description of a cartridge sidewall, however, does not preclude the filter cup from also having a sidewall. Indeed, Sylvan discloses that the filter cup can be “an inverted hollow cone having a curved wall.” RX-1005 (Sylvan) at col. 5, ll. 5-6.

We find that Respondents have shown that Beaulieu satisfies the limitation “at least one sidewall extending upwardly from the interior surface of the base.” The evidence clearly and convincingly shows that the filter cup of Beaulieu has sides extending up from the base. See RX-1004 (Beaulieu) at FIG. 6B; RX-1085C (Howle DWS) at Q/A 132-33 (testifying that this citation shows that Beaulieu satisfies this claim limitation); RX-1005 (Sylvan) at col. 5, ll. 5-6.

viii. wherein the receptacle has at least one passageway that provides fluid flow from an interior of the receptacle to an exterior of the receptacle;

Respondents contend that the limitation “wherein the receptacle has at least one passageway that provides fluid flow from an interior of the receptacle to an exterior of the receptacle” is satisfied by the pores (annotation P in Fig. 6B, supra) of Beaulieu’s filter cup, which provides fluid flow from the interior (annotation IN) of the filter cup to the exterior (annotation EX) of the filter cup. Resp. IPHB at 43 (citing Fig. 6B, RX-1005 (Sylvan) at col. 3,
ll. 37-47 (disclosing that the beverage cartridge has “a volume for accessing the beverage outflow through the filter 14”), col. 3, ll. 63-67 (disclosing that the “filter element 14” may be made of a “paper of cellulosic and synthetic fibers” such as teabag paper).

ARM does not dispute that Beaulieu satisfies this limitation. See ARM IPHB, RPHB, Pet., and Pet. Reply (making no such argument). The ID, however, finds that Beaulieu’s filter cup did not have a passageway. ID at 79 (citing CX-0004C (Phillips RWS) at Q/A 55). OUII agrees with that finding. OUII Resp. at 16 (citing ID at 79). The only evidence relied upon in the ID, however, makes no mention of the absence of a passageway. See CX-0004C (Phillips RWS) at Q/A 55 (containing no such testimony).

We find that Respondents have shown that Beaulieu discloses the limitation “wherein the receptacle has at least one passageway that provides fluid flow from an interior of the receptacle to an exterior of the receptacle. Under the ID’s construction, “passageway” means “a path, channel, or course by which something passes.” ID at 27. The evidence clearly and convincingly shows that Beaulieu discloses that its filter cup is a porous media that permits the brewed beverage to flow from the filter cup to a vessel. See RX-1004 (Beaulieu) at Fig. 6B; RX-1005 (Sylvan) at col. 3, ll. 37-47 and ll. 63-67; RX-1085C (Howle DWS) at Q/A 134-35 (testifying that these passages show that Beaulieu satisfies this claim limitation). Additionally, Beaulieu discloses a fluid flow path from the interior of the filter cup to the exterior of the filter cup, stating that the top and bottom of the cartridge are punctured “to establish a liquid flow path therethrough during the brewing cycle.” RX-1004 (Beaulieu) at col. 1, ll. 24-25.

ix. wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening,

Respondents contend that the limitation “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening” is satisfied by
Beaulieu’s cover (annotated C in FIG. 6B, supra), which sealingly engages with this top edge (annotated T) of the sidewall, and includes an opening (annotated O). Resp. IPHB at 43 (citing RX-1004 (Beaulieu) at FIG. 6B and RX-1005 (Sylvan) at col. 3, ll. 37-47 and 63-67 (disclosing a “heat sealable” filter), and FIG. 5). ARM contends that Beaulieu does not satisfy this limitation because it describes a cartridge with a solid cover having no opening. ARM IPHB at 59-60; ARM RPHB at 25.

We find that Respondents have shown that Beaulieu discloses a “cover” that “is adapted to sealingly engage with a top edge of the at least one sidewall.” There is no dispute that Beaulieu describes a cover that sealingly engages with the top edge of a sidewall. See RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 63-67; RX-1085C (Howie DWS) at Q/A 136-37. Additionally, Sylvan discloses that both the cover and the filter are heat sealed to the lip of the cartridge, creating a sealing engagement among the cover, filter, and cartridge. See RX-1005 (Sylvan) at col. 3, ll. 33-35 (“the rim 26 of the filter element 14 can be heat sealed as at 32 to a portion of the lip 20 of the base 12, closing the opening 18 to form an imperforate, impermeable cartridge 10.”); id. at col. 3, ll. 49-53 (“cover 16 is permanently joined as at 40 in a hermetically sealed relationship with the lip of the base”); id. at FIG. 5.

We also find that Respondents have shown that Beaulieu discloses “cover including an opening.” Although ARM argues that the Beaulieu discloses a beverage capsule with a solid cover, claim 5 is directed to a combination of a beverage capsule container with a brewer. CX-1005 (‘320 patent) at col. 8, ln. 60-col. 9, ln. 23. Beaulieu discloses that, once the beverage capsule is placed in the brewer, the brewer pierces the beverage capsule’s cover to create an opening. RX-1004 (Beaulieu) at col. 4, ll. 32-35 (disclosing that the brewer “causes a downwardly aperture probe 126 to pierce the top of the cartridge of 50 establishing a flow
inlet”). Similarly, Sylvan discloses that the upper part of the brewer “includes a penetrator or needle 42 which yieldably penetrates cover 16 . . . ” RX-1005 (Sylvan) at col. 4, ll. 21-22 and FIG. 4 (depicting a cartridge with an object penetrated through the cover); see also id. at col. 3, ll. 53-56 (“cover 16 is yieldably pierceable with an instrument such as a tubular needle 42 or other penetrator”). Thus, Beaulieu discloses that, when the brewer and beverage capsule container are combined as claimed, the container has an opening.

Accordingly, we find that Respondents have shown that Beaulieu satisfies the limitation “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening.” The evidence clearly and convincingly shows that Beaulieu discloses a beverage capsule with a cover that is sealed to the top edge of the filter cup and has an opening. RX-1004 (Beaulieu) at col. 4, ll. 32-35, and FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 33-35, 49-56, and 63-67; col. 4, ll. 21-22, and FIG. 4; RX-1085C (Howle DWS) at Q/A 136-37 (testifying that these passages show that Beaulieu satisfies this claim limitation).

x. wherein the container is adapted to accept input fluid through the opening and to provide a corresponding outflow of fluid through the passageway;

Respondents contend that the limitation “wherein the container is adapted to accept input fluid through the opening and to provide a corresponding outflow of fluid through the passageway” is satisfied by Beaulieu’s “punctured cartridge 50,” which is adapted to accept input fluid through the opening (annotated O in FIG. 6B, supra) and to provide corresponding outflow of fluid through the pores (annotated P) of the filter (annotated F). Resp. IPHB at 43 (citing RX-1004 (Beaulieu) at FIG. 6B (as annotated) and col. 4, ll. 32-40 (stating that closing the lid “causes a downwardly projecting apertured probe 126 to pierce the top of the cartridge 50 establishing a flow inlet that provides a liquid (e.g., hot water) to the interior of the cartridge” and also “causes the hollow piercing member 84 to extend through the bore 88 and pierce a
bottom surface of the cartridge, to provide an exit flow path for a brewed beverage”); see also RX-1085C (Howle DWS) at Q/A 138-39 (testifying that these citations show that Beaulieu satisfies this claim limitation). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply. (making no such argument).

We find that Respondents have shown that Beaulieu satisfies the limitation “wherein the container is adapted to accept input fluid through the opening and to provide a corresponding outflow of fluid through the passageway.” There is no dispute that the “punctured cartridge” of Beaulieu is adapted to accept input fluid and to provide a corresponding outflow of fluid through its filter cup. See RX-1004 Beaulieu at FIG. 6B and col. 4, ll. 32-40; RX-1085C (Howle DWS) at Q/A 138-39) (testifying that these citations satisfy this limitation). Additionally, Beaulieu discloses that the top and bottom of the cartridge are punctured “to establish a liquid flow path therethrough during the brewing cycle.” RX-1004 (Beaulieu) at col. 1, ll. 24-25. Furthermore, Sylvan discloses a brewing machine in which “[u]pper part 48 includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54 to coffee extract 38 in filter 14” and “[a] second penetrator or needle 22 is yieldably pushed through the bottom 12b of base 12 to receive the outflow of coffee beverage . . . .” RX-1005 (Sylvan) at col. 4, ll. 21-26; see also id. at col. 2, ll. 17-20 (“Both the cover and base are yieldably pierceable, the cover to accommodate an injection of liquid into the first chamber for combination with the extract to produce a beverage, and the base to accommodate the outflow of the beverage from the second chamber”). Accordingly, the evidence clearly and convincingly shows that Beaulieu discloses a beverage capsule that receives hot water as an input and provides a corresponding outflow of brewed beverage through the pores of its filter cup. See RX-1004 Beaulieu at col. 1, ll. 24-25, col. 4, ll. 32-40, and FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 17-20, and col. 4, ll. 21-
xi. an inlet port, adapted to provide the input fluid to the container;

Respondents contend that the limitation “an inlet port, adapted to provide the input fluid to the container” is satisfied by Beaulieu’s “probe 126,” which is adapted to provide the input fluid to the container of “punctured cartridge 50.” Resp. IPHB at 43 (citing RX-1004 (Beaulieu) at col. 4, ll. 32-34 (stating that closing the lid “causes the apertured probe 126 to pierce the top of the cartridge 50 establishing a flow inlet that provides a liquid (e.g., hot water) to the interior of the cartridge”)); see also RX-1085C (Howle DWS at Q/A 140-41 (testifying that these passages show that Beaulieu satisfies this claim limitation). ARM and OUIII do not dispute that Beaulieu satisfies this limitation. See ARM and OUIII IPHB, RPHB, Pet., and Pet. Reply. (making no such argument).

We find that Respondents have shown that Beaulieu satisfies the limitation “an inlet port, adapted to provide the input fluid to the container.” There is no dispute that the “probe” of Beaulieu is adapted to provide input fluid to the punctured cartridge. See RX-1004 (Beaulieu) at col. 4, ll. 32-34; RX-1085C (Howle DWS) at Q/A 140-41 (testifying that this citation shows that Beaulieu satisfies this limitation). Additionally, Sylvan discloses a brewing machine in which “[u]pper part 48 includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54 to coffee extract 38 in filter 14 . . . .” RX-1005 (Sylvan) at col. 4, ll. 21-23. Accordingly, the evidence clearly and convincingly shows that Beaulieu discloses a probe that functions as an inlet port for providing hot water into the beverage capsule. See RX-1004 (Beaulieu) at col. 4, ll. 32-34; RX-1005 (Sylvan) at col. 4, ll. 21-23; RX-1085C (Howle DWS) at Q/A 140-41.

xii. a needle-like structure, disposed below the base;

Respondents contend that the limitation “a needle-like structure, disposed below the
base” is satisfied by Beaulieu’s piercing member 84, which is disposed below the base of the filter cup. Resp. IPHB at 43-44 (citing RX-1004 (Beaulieu) at FIG. 6B; col. 3, ll. 26-27 (disclosing a “hollow piercing member 84 . . . that is bonded to the periphery of the base opening 82”); id. at col. 3, ll. 32-34 (again disclosing a “hollow piercing member 84”); id. at col. 4, ll. 35-40 (stating that the closing of the lid “causes the hollow piercing member 84 to extend through the bore 88 and pierce a bottom surface of the cartridge”).

ARM and OUII contend that Beaulieu does not satisfy this limitation because its needle pierces the base of the cartridge, which shows that the needle is not located below the base.

ARM IPHB at 57; ARM RPHB at 26; ARM Resp. at 27-29; OUII IPHB at 42-43. As discussed above, ARM argues that the “base” limitation cannot refer to the base of Beaulieu’s filter cup because the incorporated Sylvan reference uses “base” to describe the base of the cartridge, not the base of the filter cup. Id. The ID agreed with ARM and OUII, and found that Beaulieu did not satisfy this limitation because its needle punctured the cartridge. ID at 79.

We find that Respondents have shown that Beaulieu satisfies the limitation “a needle-like structure, disposed below the base.” All of ARM’s and OUII’s arguments, as well as the ID’s findings, require that “base” refer to the bottom of the cartridge. Claim 5, however, states that “base” refers to the bottom of the “receptacle,” and we find that Beaulieu’s filter cup satisfies the “receptacle” limitations for the reasons discussed above. There is no dispute that Beaulieu discloses a needle-like “piercing member” disposed below the filter cup. See FIG. 6B (depicting a cartridge in which the piercing member is located below the bottom of the filter cup).

Additionally, Sylvan discloses that the filter cup is “spaced” above the bottom of the cartridge so that the filter cup remains above the needle-like “piercing element.” RX-1005 (Sylvan) at col. 2, ll. 36-41 (“The filter element may terminate in a reduced apex portion spaced from the bottom of
the base to define an enlarged second chamber for receiving the piercing element in the lower portion of the base without subjecting the filter element to penetration"). Respondents’ expert also testified that a person of ordinary skill in the art would understand that Beaulieu’s needle was located below the filter, because otherwise the needle would puncture the filter cup and have the undesirable effect of causing coffee grounds to fall into the beverage. RX-1085C (Howle DWS) at Q/A 164. Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses a piercing member that is located below the bottom of the filter cup. IRX-1004 (Beaulieu) at col. 3, ll. 26-27 and 32-34; col. 4, ll. 35-40, and FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 36-41; RX-1085C (Howle DWS) at Q/A 142-43, 164 (testifying that these citations show that Beaulieu satisfies this claim limitation).

xiii. wherein the predetermined distance is selected such that a tip of the needle-like structure does not penetrate the exterior surface of the base.

Respondents contend that the limitation “wherein the predetermined distance is selected such that a tip of the needle-like structure does not penetrate the exterior surface of the base” is satisfied by Beaulieu, in which a distance (annotated D in FIG. 6B, supra) is selected such that the tip of piercing member 84 does not penetrate the exterior surface (annotated E) of the base (annotated B) of the filter cup. Resp. IPHB at 44 (citing RX-1004 (Beaulieu) at FIG. 6B; col. 3, ll. 26-27 and 32-34; id. at col. 4, ll. 35-40.

ARM and OUII contend that Beaulieu does not satisfy this limitation because its piercing member penetrates the base of the cartridge. ARM IPHB at 57; ARM RPHB at 26; ARM Resp. at 27-29; OUII IPHB at 42-43. The ID adopted this reasoning, and found that Beaulieu did not satisfy this limitation because its needle punctured the cartridge. ID at 79.

We find that Respondents have shown that Beaulieu satisfies the limitation “wherein the predetermined distance is selected such that a tip of the needle-like structure does not penetrate
the exterior surface of the base.” All of ARM’s and OUII’s arguments, as well as the ID’s findings, require that “base” refer to the bottom of the cartridge. Claim 5, however, states that “base” refers to the bottom of the “receptacle,” and we find that Beaulieu’s filter cup satisfies the “receptacle” limitations for the reasons discussed above. Beaulieu’s FIG. 6B depicts a cartridge in which the piercing member is located below the bottom of the filter cup and does not penetrate the exterior surface of the filter cup. And although Beaulieu describes penetrations of the cartridge, it describes no penetration of the base of filter cup. See RX-1004 (Beaulieu) at col. 4, ll. 32-40. Finally, Sylvan specifically discloses that the bottom of the filter is a predetermined distance above the piercing member because it describes that the filter may be “spaced from the bottom of the [cartridge shell]” such that the brewing system avoids “subjecting the filter element to penetration.” RX-1005 (Sylvan) at col. 2, ll. 36-41; see also id. at col. 3, ll. 45-48 (“There is ample room in the second chamber 36 so that a penetrator 22 which yieldably pierces [the cartridge] will not rupture or otherwise deform the filter 14”). Respondents’ expert also testified that a person of ordinary skill in the art would understand that Beaulieu’s needle did not puncture the filter cup, because such a puncture would have the undesirable effect of causing coffee grounds to fall into the beverage. RX-1085C (Howle DWS) at Q/A 164. Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses a piercing member that is located a sufficient distance below the bottom of the filter cup so that the member does not penetrate the filter cup. See RX-1004 (Beaulieu) at col. 3, ll. 26-27 and 32-34, col. 4, ll. 32-40, and FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 36-41, col. 3, ll. 45-48. RX-1085C (Howle DWS) at Q/A 144-45, 164 (testifying that these citations show that Beaulieu satisfies this claim limitation).
b. Beaulieu -- Claim 6: The beverage brewer of claim 5, wherein at least one passageway of the at least one passageway is disposed in the base.

Respondents contend that the limitation “[t]he beverage brewer of claim 5, wherein at least one passageway of the at least one passageway is disposed in the base” is satisfied by Beaulieu’s filter cup pores, which are disposed throughout the base of the filter cup. Resp. IPHB at 47 (citing RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at 3:37-47 (disclosing that “filter element 14... divide[s] the base into two chambers” and permits “beverage outflow through the filter 14”), 3:63-67 (disclosing that “filter element 14 may be made of a lightweight, two-phase heat sealable paper of cellulosic and synthetic fibers such as the ‘Superseal’ Teabag paper”; FIG. 5). ARM contends that Beaulieu does not satisfy this limitation because it does not disclose a “base” for the same reasons that Beaulieu does not disclose the “base” required by claim 5. ARM IPHB at 60.

We find that Respondents have shown that Beaulieu satisfies the limitation “[t]he beverage brewer of claim 5, wherein at least one passageway of the at least one passageway is disposed in the base.” All of ARM’s arguments require that “base” refer to the bottom of the cartridge. Claim 5, however, states that “base” refers to the bottom of the “receptacle,” and we find that Beaulieu’s filter cup satisfies the “receptacle” limitations for the reasons discussed above. The evidence clearly and convincingly shows that the bottom of Beaulieu’s filter cup contains at least one porous passageway. See RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 37-47 and 63-67, FIG. 5; RX-1085C (Howle DWS) at Q/A 146-47 (testifying that these citations show that Beaulieu satisfies this claim limitation).

c. Beaulieu -- Claim 7: The beverage brewer of claim 5, wherein the receptacle also includes at least one extension that raises the at least a portion of the base the predetermined distance above the bottom surface of the brewing chamber.

Respondents contend that the limitation “[t]he beverage brewer of claim 5, wherein the
receptacle also includes at least one extension that raises the at least a portion of the base the predetermined distance above the bottom surface of the brewing chamber” is satisfied by the annular edge of the sidewall (annotated EXT), which is an extension that raises at least a portion of the base of the filter cup a predetermined distance above the bottom of the brewing chamber.

Resp. IPHB at 47-48 (citing RX-1005 (Sylvan) at FIG. 5 (as annotated)). They also argue that Sylvan discloses that the rim of the filter cup is joined to the lip of the container. Id. at 48 (citing RX-1005 (Sylvan) at col. 3, ll. 33-35 (“the rim 26 of the filter element 14 can be heat sealed as at 32 to a portion of the lip 20 of the base 12”); see also RX-1085C (Howle DWS) at Q/A 148-49 (testifying that these citations show that Beaulieu satisfies this claim limitation).

ARM contends that Beaulieu does not satisfy this limitation for three reasons. First, ARM argues that Beaulieu’s filter cup cannot be the receptacle for the same reasons it argued for claim 5. ARM IPHB at 60. This argument requires that “base” refer to the bottom of the cartridge. Claim 5, however, states that “base” refers to the bottom of the “receptacle,” and we find that Beaulieu’s filter cup satisfies the “receptacle” limitations for the reasons discussed above. Accordingly, we reject this argument because the filter cup constitutes a receptacle.

Second, ARM argues that, even if the filter cup could be the receptacle, there is no extension that raises “the at least a portion of the base the predetermined distance above the bottom surface of the brewing chamber” because the base of the filter cup is on a single plane.
ARM IPHB at 60-61. The claim language, however, requires only that the extension "raise[] the at least a portion of the base the predetermined distance above the bottom surface of the brewing chamber." Raising "at least a portion of the base" includes raising the entirety of the base, and raising the entirety of the base could result in a base located on a single plane. Accordingly, we reject this argument because claim 7 does not require that the receptacle's base have multiple planes, so it is irrelevant that Beaulieu does not disclose a base with multiple planes.

Third, ARM argues that the claim requires that the receptacle include an extension, so, because Respondents argue that "base 12" of the cartridge is the extension, the relevant receptacle must be the cartridge itself and not the filter cup. ARM IPHB at 61. Respondents, however, argue that the extension is "rim 26" of the filter element, and do not argue that the extension is "base 12" of the cartridge. Resp. IPHB at 47-48. Accordingly, we reject this argument because it is premised upon a misinterpretation of Respondents' anticipation argument.

After considering all of the arguments and evidence, we find that Respondents have not shown that Beaulieu discloses "[t]he beverage brewer of claim 5, wherein the receptacle also includes at least one extension that raises the at least a portion of the base the predetermined distance above the bottom surface of the brewing chamber." Respondents contend that Beaulieu's filter cup constitutes the "receptacle" and the edge of that filter cup constitutes "an extension" of that receptacle. Resp. IPHB at 47-48. Respondents do not, however, provide evidence, or even argument, showing that the edge of the filter cup constitutes "an extension." We therefore find that Respondents have not carried their burden of showing that this claim is anticipated by clear and convincing evidence.

d. Beaulieu -- Claim 18

We find that Respondents have not shown by clear and convincing evidence that
Beaulieu anticipates claim 18.

1. A beverage brewer including a brewing chamber configured to receive a brewing cartridge, an inlet port adapted to provide an input fluid, and a needle-like structure fixed in a bottom of the brewing chamber and adapted to puncture a shell of the brewing cartridge to carry an outflow of brewed beverage from the brewing cartridge and arranged to avoid puncturing the filtering material containing brewing material disposed inside the shell, the improvement comprising:

Respondents contend that they do not need not show that Beaulieu discloses the limitations of the preamble because claim 18 is a Jepson claim, and its preamble is impliedly admitted to be prior art. Resp. IPHB at 49 (citing Sjolund v. Musland, 847 F.2d 1573, 1576-77 (Fed. Cir. 1988). While the preamble of a Jepson claim does recite prior art, the preamble is also limiting. Epcos Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1029 (Fed. Cir. 2002) (“the preamble is a limitation in a Jepson-type claim”). Accordingly, to anticipate claim 18, Beaulieu must satisfy all of the limitations of the preamble.

Respondents argue, in the alternative, that Beaulieu does disclose all of the limitations of the preamble. Specifically, Respondents argue that Beaulieu discloses a beverage brewer (“beverage brewing system 20”) that includes a brewing chamber (“chamber 36”) that is configured to receive a brewing cartridge. Id. at 48-49 (citing RX-1004 (Beaulieu) at col. 2, ll. 60-61; col. 3, ll. 7-9 and 45-47; FIG. 1). They further argue that the brewing system includes an inlet port (“probe 126”), a needle-like structure (“piercing member 84”) fixed in the bottom of the brewing chamber and adapted to puncture the bottom of the shell of the beverage cartridge (brewing cartridge 50) to carry an outflow of brewed beverage, and so arranged that the needle avoids puncturing the filtering material in the shell. Id. at 49 (citing RX-1004 (Beaulieu) at col. 3, ll. 26-27 and 32-34; col. 4, ll. 32-40; FIG. 6B; see also RX-1085C (Howle DWS) at Q/A 154 (testifying that these passages show that Beaulieu satisfies this claim limitation). ARM and OUII
do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply (making no such argument). Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses all of the limitations of the preamble of claim 18.

ii. a container configured to replace the brewing cartridge, the container positionable within the brewing chamber and adapted to hold brewing material while brewed by the beverage brewer,

Respondents contend that the limitation “a container configured to replace the brewing cartridge, the container positionable within the brewing chamber and adapted to hold brewing material while brewed by the beverage brewer” is satisfied by Beaulieu. Resp. IPHB at 49. Specifically, they argue that Beaulieu’s brewing cartridge is “configured to replace the brewing cartridge” if the same disposable beverage cartridge is used for two brewing cycles. Id. They argue that, during the first brewing cycle, the disposable brewing cartridge “is modified” by “being punctured at the top and bottom,” so that during the second brewing cycle, “the new, sealed” brewing cartridge “has been replaced by a modified, punctured” brewing cartridge. Id. They also argue that Beaulieu discloses that the punctured cartridge is a container that is positionable on arms 46 and 48, and that the cartridge is adapted to hold brewing material in its filter during brewing. Id. (citing RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 1-2).

ARM argues that Beaulieu does not satisfy this limitation because Beaulieu does not disclose “a container configured to replace the brewing cartridge.” ARM IPHB at 61. It argues that Beaulieu simply discloses a brewing cartridge, which is not configured to replace a brewing cartridge. ARM IPHB at 61 (citing CX-0004 (Phillips RWS) at Q/A 75, 88).

We find that Respondents have not shown that Beaulieu satisfies this limitation by clear and convincing evidence. Respondents fail to cite any evidence that puncturing a beverage cartridge creates “a container configured to replace the brewing cartridge.” A punctured brewing
cartridge is still a brewing cartridge, not a container configured to “replace” a brewing cartridge. Furthermore, Respondents’ argument requires using a brewing cartridge for two brewing cycles, but Respondents failed to cite any evidence that Beaulieu discloses such a two-cycle use. Accordingly, we find that Beaulieu simply discloses a brewing cartridge, and not “a container configured to replace the brewing cartridge.”

iii. the container including: a receptacle configured to receive and support the brewing material, and

Respondents contend that the limitation “the container including: a receptacle configured to receive and support the brewing material” is satisfied by Beaulieu’s “punctured cartridge 50,” which includes a shell and filter configured to receive and support the brewing material in the filter. Resp. IPHB at 49 (citing RX-1004 (Beaulieu) at FIG. 6B). ARM and OUII do not dispute that Beaulieu satisfies this limitation of claim 18. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that Beaulieu satisfies the limitation by showing that the “punctured cartridge” of Beaulieu has a filter cup that receives and supports the brewing material. See RX-1004 (Beaulieu) at FIG. 6A and 6B; RX-1085C (Howle DWS) at Q/A 157-58. Furthermore, Sylvan discloses that the filter holds brewing material. RX-1005 (Sylvan) at col. 3, ll. 37-40 (“The filter element 14 is configured and dimensioned to divide the base into two chambers 34, 36. In the first chamber 34, an extract 38 of the beverage that is to be made, such as coffee, is stored.”).

Accordingly, we find that Respondents have shown that Beaulieu satisfies the limitation “the container including: a receptacle configured to receive and support the brewing material.” The evidence clearly and convincingly shows that Beaulieu discloses a cartridge shell that satisfies the “container” limitation and a filter cup that satisfies the “receptacle” limitation. See
iv. [the container including] a cover;

Respondents contend that the limitation “a cover” is satisfied by Beaulieu’s cover (annotated C). Resp. IPHB at 49-50 (citing RX-1004 (Beaulieu) at FIG. 6B). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that Beaulieu satisfies the limitation “a cover.” There is no dispute that the top portion of Beaulieu’s FIG. 6A constitutes “a cover.” See RX-1004 (Beaulieu) at FIG. 6B; RX-1085C (Howle DWS) at Q/A 159-60. Additionally, Sylvan discloses that the cartridge has “an impermeable imperforate yieldably pierceable cover.” RX-1005 (Sylvan) at col. 3, ll. 1-2. Accordingly, the evidence clearly and convincingly shows that Beaulieu discloses a cover. RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 1-2; RX-1085C (Howle DWS) at Q/A 159-60 (testifying that these citations disclose this limitation).

v. wherein the receptacle includes: a passageway providing fluid communication between an interior of the receptacle and the brewing chamber,

Respondents contend that the limitation “wherein the receptacle includes: a passageway providing fluid communication between an interior of the receptacle and the brewing chamber” is satisfied by the pores of Beaulieu’s filter, which provide fluid communication between the interior of the filter cup and the brewing chamber. Resp. IPHB at 50 (citing RX-1004 (Beaulieu) at col. 3, ll. 24-36, col. 4, ll. 32-39; RX-1005 (Sylvan) at col. 3, ll. 37-47, col. 3, ll. 63-67); see also RX-1085C (Howle DWS) at Q/A 161-62 (testifying that these passages disclose this limitation).

ARM does not dispute that Beaulieu satisfies this limitation. See ARM IPHB, RPHB,
Pet., and Pet. Reply (making no such argument). The ID, however, finds that Beaulieu’s filter cup did not have a passageway. ID at 79 (citing CX-0004C (Phillips RWS) at Q/A 55). OUII argues that the ID correctly found that the filter cup of Beaulieu does not have a passageway. OUII Resp. at 16 (citing ID at 79). The only evidence relied upon in the ID, however, makes no mention of the absence of a passageway. See CX-0004C (Phillips RWS) at Q/A 55 (containing no such testimony).

We find that Respondents have shown that Beaulieu discloses the limitation “wherein the receptacle includes: a passageway providing fluid communication between an interior of the receptacle and the brewing chamber.” Under the ID’s construction, “passageway” means “a path, channel, or course by which something passes.” ID at 27. The evidence clearly and convincingly shows that Beaulieu discloses that its filter cup is a porous media that permits the brewed beverage to flow from the inside of the filter cup to a vessel outside of the filter cup. See RX-1004 (Beaulieu) at Fig. 6B; RX-1005 (Sylvan) at col. 3, ll. 37-47 and ll. 63-67; RX-1085C (Howle DWS) at Q/A 161-62 (testifying that these passages show that Beaulieu satisfies this claim limitation). Additionally, Beaulieu discloses a fluid flow path from the interior of the filter cup to the exterior of the filter cup by stating that the top and bottom of the cartridge are punctured “to establish a liquid flow path therethrough during the brewing cycle.” RX-1004 (Beaulieu) at col. 1, ll. 24-25.

vi. [wherein the receptacle includes] a base, having an interior surface and an exterior surface and configured to avoid contact with the needle-like structure,

Respondents contend that the limitation “a base, having an interior surface and an exterior surface and configured to avoid contact with the needle-like structure” is satisfied by the bottom (annotated B in FIG. 6B, supra) of Beaulieu’s filter, which has an interior (annotated I) and exterior (annotated E) surfaces and is configured to avoid contact with piercing member 84.
Resp. IPHB at 50 (citing RX-1004 (Beaulieu) at FIG. 6B).

ARM and OUII contend that Beaulieu does not satisfy this limitation because its needle pierces the base of the cartridge, which shows that the needle does contact the base. ARM IPHB at 61-62; ARM RPHB at 26; ARM Resp. at 30; OUII IPHB at 42-43. The ID adopted that reasoning, and found that Beaulieu did not satisfy this limitation because its needle punctured the cartridge. ID at 79.

We find that Respondents have shown that Beaulieu satisfies the limitation “a base, having an interior surface and an exterior surface and configured to avoid contact with the needle-like structure.” All of ARM’s and OUII’s arguments, as well as the ID’s findings, require that “base” refer to the bottom of the cartridge. Claim 18, however, states that “base” refers to the bottom of the “receptacle;” and we find that Beaulieu’s filter cup satisfies the “receptacle” limitations for the reasons discussed above. There is no dispute that the filter cup of Beaulieu has a bottom region with interior and exterior surfaces. See RX-1004 (Beaulieu) at Fig. 6A; RX-1085C (Howie DWS) at Q/A 163-64. Additionally, Sylvan discloses a filter with a base. RX-1005 (Sylvan) at col. 2, ll. 30-31 (“The filter may be a triangular prism with a circular base”).

We also find that Respondents have shown that the filter cup base of Beaulieu avoids contact with the needle-like structure. Figures 6A and 6B of Beaulieu show that the needle-like structure does not contact the filter cup. RX-1004 (Beaulieu) at FIG. 6A and FIG. 6B; RX-1085C (Howle DWS) at Q/A 163-64. Sylvan also discloses that the filter cup is not contacted by any piercing element. RX-1005 (Sylvan) at col. 2, ll. 36-41 (“The filter element may terminate in a reduced apex portion spaced from the bottom of the base to define an enlarged second chamber for receiving the piercing element in the lower portion of the base without subjecting the filter element to penetration”); id. at col. 3, ll. 45-47 (“There is ample room in the second...
chamber 36 so that a penetrator 22 which yieldably pierces base 12 will not rupture or otherwise deform the filter 14’'). Additionally, Respondents’ expert testified that a person of ordinary skill in the art would understand that Beaulieu’s needle was located below the filter, because otherwise the needle would puncture the filter cup and have the undesirable effect of causing coffee grounds to fall into the beverage. RX-1085C (Howle DWS) at Q/A 164. Accordingly, the evidence clearly and convincingly shows that Beaulieu discloses a piercing member that is located below the bottom of the filter cup. RX-1004 (Beaulieu) at col. 3, ll. 26-27 and 32-34; col. 4, ll. 35-40, and FIGS. 6A and 6B; RX-1005 (Sylvan) at col. 2, ll. 36-41, and col. 3, ll. 45-47; RX-1085C (Howle DWS) at Q/A 163-64 (testifying that FIG. 6B discloses this limitation).

vii. [wherein the receptacle includes] at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure,

Respondents contend that the limitation “at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure” is satisfied by the sides (annotated SW in FIG. 6B, supra) of Beaulieu’s filter because the sides are configured to avoid contact with “piercing member 84.” Resp. IPHB at 50 (citing RX-1004 (Beaulieu) at FIG. 6B); see also RX-1085C (Howle DWS) at Q/A 165-66 (testifying that this citation shows that Beaulieu satisfies this limitation). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that Beaulieu discloses a “sidewall extending upwardly from the interior surface of the base.” There is no dispute that the filter element of Beaulieu has sides extending up from the base that constitute a sidewall. See RX-1004 (Beaulieu) at FIG. 6B; RX-1085C (Howle DWS) at Q/A 165-66. Additionally, Sylvan discloses that the filter element can be “an inverted hollow cone having a curved wall.” RX-1005 (Sylvan)
We also find that Respondents have shown that Beaulieu discloses that the sidewall is "configured to avoid contact with the needle-like structure." Figures 6A and 6B of Beaulieu show that the needle-like structure does not contact the filter cup. RX-1004 (Beaulieu) at FIG. 6A and FIG. 6B. Sylvan also discloses that the filter cup is not contacted by any piercing element. RX-1005 (Sylvan) at col. 2, ll. 36-41 ("The filter element may terminate in a reduced apex portion spaced from the bottom of the base to define an enlarged second chamber for receiving the piercing element in the lower portion of the base without subjecting the filter element to penetration"); id. at col. 3, ll. 45-47 ("There is ample room in the second chamber 36 so that a penetrator 22 which yieldably pierces base 12 will not rupture or otherwise deform the filter 14"). Additionally, Respondents' expert testified that a person of ordinary skill in the art would understand that Beaulieu's needle was located below the filter, because otherwise the needle would puncture the filter cup and have the undesirable effect of causing coffee grounds to fall into the beverage. RX-1085C (Howle DWS) at Q/A 164.

Accordingly, we find that Respondents have shown that Beaulieu discloses the limitation "at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure." The evidence clearly and convincingly shows that the filter cup of Beaulieu has sides extending up from the base. RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 36-41, col. 3, ll. 45-47, and col. 5, ll. 5-6; RX-1085C (Howle DWS) at Q/A 164-66.

**viii. wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening,**

Respondents contend that the limitation "wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening" is satisfied by
Beaulieu’s cover (annotated C in FIG. 6B, supra), which is adapted to sealingly engage with the top edge (annotated T) of the sidewall of the filter and contains an opening (annotated O). Resp. IPHB at 50 (citing RX-1004 (Beaulieu) at FIG. 6B, as annotated). ARM argues that Beaulieu does not satisfy this limitation because it describes a cartridge with a solid cover without an opening. ARM IPHB at 59-61; ARM RPHB at 25.

We find that Respondents have shown that Beaulieu satisfies the limitation “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening.” There is no dispute that Beaulieu has a cover that sealingly engages with the top edge of a sidewall. See RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 63-67; RX-1085C (Howie DWS) at Q/A 167-68. Additionally, Sylvan discloses that both the cover and the filter are heat sealed to the lip of the cartridge, creating a sealing engagement among the cover, filter, and cartridge. See RX-1005 (Sylvan) at col. 3, ll. 33-35 (“as depicted in the right-hand portion of FIG. 5, the rim 26 of the filter element 14 can be heat sealed as at 32 to a portion of the lip 20 of the base 12, closing the opening 18 to form an imperforate, impermeable cartridge 10.”); id. at col. 3, ll. 49-53 (“cover 16 is permanently joined as at 40 in a hermetically sealed relationship with the lip of the base”); id. at FIG. 5.

We also find that Respondents have shown that Beaulieu discloses “cover including an opening.” Although ARM argues that the Beaulieu discloses a beverage capsule with a solid cover, claim 18 is directed to a combination of a beverage capsule container with a brewer. CX-1005 (’320 patent) at col. 10, ln. 46-col. 11, ln. 10. Beaulieu discloses that, once the beverage capsule is placed in the brewer, the brewer pierces the beverage capsule’s cover to create an opening. RX-1004 (Beaulieu) at col. 4, ll. 32-35 (disclosing that the brewer “causes a downwardly aperture probe 126 to pierce the top of the cartridge of 50 establishing a flow
inlet”). Similarly, Sylvan discloses that the upper part of the brewer “includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54 . . . .” RX-1005 (Sylvan) at col. 4, ll. 21-22 and FIG. 4 (depicting a cartridge with an object penetrated through the cover); see also id. at col. 3, ll. 53-56 (“cover 16 is yieldably pierceable with an instrument such as a tubular needle 42 or other penetrator”). Accordingly, Beaulieu discloses that, when the brewer and beverage capsule container are combined as claimed, the container has an opening.

Accordingly, we find that Respondents have shown that Beaulieu discloses the limitation “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening.” The evidence clearly and convincingly shows that Beaulieu discloses a cover that is sealed to the sidewall of the filter cup, and includes an opening once the cover is punctured by the brewer. RX-1004 (Beaulieu) at col. 4, ll. 32-35 and FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 33-35, 49-53, and 63-67; col. 4, ll. 21-22, and FIGS 4 and 5; RX-1085C (Howle DWS) at Q/A 167-68 (testifying that these passages show that Beaulieu satisfies this claim limitation).

ix. wherein the container is adapted to accept the input fluid from the inlet port through the opening and to provide a corresponding outflow of fluid through the passageway.

Respondents contend that the limitation “wherein the container is adapted to accept the input fluid from the inlet port through the opening and to provide a corresponding outflow of fluid through the passageway” is satisfied by Beaulieu because the cartridge is adapted to accept input fluid from “probe 126” through the puncture opening, and is also adapted to provide a corresponding outflow of fluid through the pores of the filter. Resp. IPHB at 51 (citing RX-1004 (Beaulieu) at FIG. 6B). ARM and OUII do not dispute that Beaulieu satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).
We find that Respondents have shown that Beaulieu satisfies the limitation. There is no dispute that the “punctured cartridge” of Beaulieu is adapted to accept input fluid and to provide a corresponding outflow of fluid through its filter. See RX-1004 (Beaulieu) at FIG. 6B and col. 4, ll. 32-40; RX-1085C (Howle DWS) at Q/A 169-70. Additionally, Beaulieu discloses that the top and bottom of the cartridge are punctured “to establish a liquid flow path therethrough during the brewing cycle.” RX-1004 (Beaulieu) at col. 1, ll. 24-25. Furthermore, Sylvan discloses a brewing machine in which “[u]pper part 48 includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54 to coffee extract 38 in filter 14” and “[a] second penetrator or needle 22 is yieldably pushed through the bottom 12b of base 12 to receive the outflow of coffee beverage . . . .” RX-1005 (Sylvan) at col. 4, ll. 21-26; see also id. at col. 2, ll. 17-20 (“Both the cover and base are yieldably pierceable, the cover to accommodate an injection of liquid into the first chamber for combination with the extract to produce a beverage, and the base to accommodate the outflow of the beverage from the second chamber”). Accordingly, the evidence clearly and convincingly shows that Beaulieu discloses a cartridge that receives an input of hot water from a probe, and provides a corresponding outflow of brewed beverage through the filter cup pores. See RX-1004 (Beaulieu) at col. 1, ll. 24-25, col. 4, ll. 32-40, and FIG. 6B; RX-1005 (Sylvan) at col. 2, ll. 17-20, col. 4, ll. 21-26; RX-1085C (Howle DWS) at Q/A 169-70.

e. Beaulieu -- Claim 20: The beverage brewer of claim 18, wherein the receptacle also includes at least one extension that raises the base a predetermined distance above a lower surface of the brewing chamber.

Respondents contend that the limitation “[t]he beverage brewer of claim 18, wherein the receptacle also includes at least one extension that raises the base a predetermined distance above a lower surface of the brewing chamber” is satisfied for the same reason that Beaulieu satisfies that limitation in claim 7. Resp. IPHB at 55; Respondents’ RPHB at 31. ARM argues that
Beaulieu does not satisfy this limitation for the same reason that Beaulieu does not satisfy claim 7. ARM IPHB at 62 (citing CX-0004C (Phillips RWS) at Q/A 69-72, 89-92).

We find that Respondents have not shown that Beaulieu discloses "[t]he beverage brewer of claim 18, wherein the receptacle also includes at least one extension that raises the base a predetermined distance above a lower surface of the brewing chamber" for the same reason we find that Respondents have not shown that Beaulieu discloses claim 7. Respondents contend that Beaulieu's filter cup constitutes the "receptacle" and the edge of that filter cup constitutes "an extension" of that receptacle. Resp. IPHB at 47-48. Respondents do not, however, provide evidence showing that the edge of the filter cup constitutes "an extension." We therefore find that Respondents have not carried their burden of showing that this claim is invalid by clear and convincing evidence.

f. APA -- Claim 18

We find that Respondents have not shown by clear and convincing evidence that the Admitted Prior Art, or APA, anticipates claim 18. As discussed previously, the APA refers to the material that the '320 patent admits constitutes prior art, and includes the '320 patent at col. 3, ll. 52-65, and FIG. 1, and incorporates Sylvan by reference.

i. A beverage brewer including a brewing chamber configured to receive a brewing cartridge, an inlet port adapted to provide an input fluid, and a needle-like structure fixed in a bottom of the brewing chamber and adapted to puncture a shell of the brewing cartridge to carry an outflow of brewed beverage from the brewing cartridge and arranged to avoid puncturing the filtering material containing brewing material disposed inside the shell, the improvement comprising:

Respondents contend that they do not need not show that the APA discloses the limitations of the preamble because claim 18 is a Jepson claim, and its preamble is impliedly admitted to be prior art. Resp. IPHB at 51. The preamble of a Jepson claim, however, is
Respondents argue, in the alternative, that the APA does disclose all of the limitations of the preamble. Specifically, Respondents argue that the APA discloses a beverage brewer that includes a brewing chamber ("brewing chamber 10") that is configured to receive a brewing cartridge. Resp. IPHB at 51 (citing RX-1001 (’320 patent) at col. 3, ll. 52-55, and FIG. 1). Respondents further argue that the brewing system includes an inlet port ("upper needle 20"), a needle-like structure ("bottom needle 22") fixed in the bottom of the brewing chamber ("brewing chamber 10") and adapted to puncture the bottom of the shell of the beverage cartridge ("brewing cartridge 12") to carry an outflow of brewed beverage, and so arranged that the needle avoids puncturing the filtering material ("filter material 18"). Id. at 51 (citing RX-1001 (’320 patent) at col. 1, ll. 30-35, col. 3, ll. 53-65, and FIG. 1.; RX-1005 (Sylvan) at col. 3, ll. 1-2, 37-47, 63-67, and FIG. 5); see also RX-1085C (Howle DWS) at Q/A 214 (testifying that these passages show that the APA satisfies this claim limitation). ARM and OUII do not dispute that Beaulieu satisfies these limitations. See ARM and OUII IPHB, RPHB, Pet., and Pet. Reply (making no such argument). Accordingly, we find that the evidence clearly and convincingly shows that Beaulieu discloses all of the limitations of the preamble of claim 18.

**ii. a container configured to replace the brewing cartridge, the container positionable within the brewing chamber and adapted to hold brewing material while brewed by the beverage brewer,**

Respondents contend that the limitation “a container configured to replace the brewing cartridge, the container positionable within the brewing chamber and adapted to hold brewing material while brewed by the beverage brewer” is satisfied by the APA. Resp. IPHB at 52 (citing RX-1001 (’320 patent) at FIG. 1; RX-1005 (Sylvan) at col. 3, ll. 1-2, and FIG. 5); see also RX-1085C (Howle DWS) at Q/A 215-16 (testifying that these citations show that the APA
satisfies this claim limitation). Specifically, they argue that the APA’s “brewing cartridge 12” is a container configured to replace the brewing cartridge. Resp. IPHB at 52. ARM argues that a “brewing cartridge” is not “configured to replace the brewing cartridge.” ARM IPHB at 61 (citing CX-0004 (Phillips RWS) at Q/A 75, 88).

We find that Respondents have not shown that the APA satisfies this limitation by clear and convincing evidence. Respondents fail to cite any evidence that puncturing a beverage cartridge creates “a container configured to replace the brewing cartridge.” Accordingly, we find that Beaulieu simply discloses a brewing cartridge, and not “a container configured to replace the brewing cartridge.”

iii. the container including: a receptacle configured to receive and support the brewing material,

Respondents contend that the limitation “the container including: a receptacle configured to receive and supported the brewing material” is satisfied by the APA’s “brewing cartridge 12,” which includes a receptacle (annotated R, including shell S and “filter material 18”) which is configured to receive and support “brewing material 16”: 
Resp. IPHB at 52 (citing RX-1001 ('320 patent) at FIG. 1 (as annotated by Respondents)); see also RX-1085C (Howle DWS) at Q/A 217-18 ((testifying that this figure shows that the APA satisfies this claim limitation). Additionally, the APA discloses that" brewing cartridge 12 includes a pierceable shell and contains brewing material 16 held in the cartridge by filter material 18." CX-1005 ('320 patent) at col. 3, ll. 55-57. ARM and OUII do not dispute that the APA satisfies this limitation of claim 18. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that the APA satisfies the limitation by showing that the APA's "brewing cartridge 12" has a filter cup that receives and supports the brewing material. CX-1005 ('320 patent) at col. 3, ll. 55-57 and FIG. 1; RX-1085C (Howle DWS) at Q/A 217-18. Furthermore, Sylvan discloses that the filter cup holds brewing material. RX-1005 (Sylvan) at col. 3, ll. 37-40 ("The filter element 14 is configured and dimensioned to divide the
base into two chambers 34, 36. In the first chamber 34, an extract 38 of the beverage that is to be made, such as coffee, is stored.

Accordingly, we find that Respondents have shown that the APA satisfies the limitation “the container including: a receptacle configured to receive and supported the brewing material.” The evidence clearly and convincingly shows that the APA discloses a cartridge shell that satisfies the “container” limitation and a filter cup that satisfies the “receptacle” limitation. CX-1005 (‘320 patent) at col. 3, ll. 55-57 and FIG. 1; RX-1005 (Sylvan) at col. 3, ll. 37-40; RX-1085C (Howle DWS) at Q/A 217-18.

iv. [the container including] a cover;

Respondents contend that the limitation “a cover” is satisfied by the top of “shell 14” of the APA. Resp. IPHB at 52 (citing RX-1001 (‘320 patent) at FIG. 1 and RX-1005 (Sylvan) at col. 3, ll. 1-2 (stating that the cartridge has “an impermeable imperforate yieldably pierceable cover 16); see also RX-1085C (Howle DWS) at Q/A 219-20 (testifying that these citations show that these limitation are satisfied). ARM and OUII do not dispute that the APA satisfies this limitation of claim 18. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that the APA satisfies the limitation “a cover.” There is no dispute that the top portion of the APA’s shell constitutes “a cover.” See CX-1005 (‘320 patent) at col. 3, ll. 1-2 and FIG. 1; RX-1085C (Howle DWS) at Q/A 219-20. Additionally, Sylvan discloses that the cartridge has “an impermeable imperforate yieldably pierceable cover.” RX-1005 (Sylvan) at col. 3, ll. 1-2. Accordingly, the evidence clearly and convincingly shows that the APA discloses a cover. RX-1004 (Beaulieu) at FIG. 6B; RX-1005 (Sylvan) at col. 3, ll. 1-2; RX-1085C (Howle DWS) at Q/A 159-60.
Respondents contend that the limitation “wherein the receptacle includes: a passageway providing fluid communication between an interior of the receptacle and the brewing chamber” is satisfied by the pores of the APA’s filter material, which provide fluid communication between the interior of the filter cup and the brewing chamber. Resp. IPHB at 52 (citing RX-1001 (‘320 patent) at col. 1, ll. 27-29 (stating that the prior art cartridges “are configured in the form of a container having a cone-shaped permeable filter packet”)) and FIG. 1; RX-1005 (Sylvan) at col. 3, ll. 37-47 and 63-67, FIG. 5). ARM and OUII do not dispute that the APA satisfies this limitation of claim 18. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that the APA discloses the limitation “wherein the receptacle includes: a passageway providing fluid communication between an interior of the receptacle and the brewing chamber.” Under the ID’s construction, “passageway” means “a path, channel, or course by which something passes.” ID at 27. The evidence clearly and convincingly shows that the APA discloses a filter cup that contains pores that permit the brewed beverage to flow from the inside of the filter cup to the brewing chamber. CX-1005 (‘320 patent) at col. 1, ll. 27-29 and FIG. 1; RX-1005 (Sylvan) at col. 3, ll. 37-47 and 63-67, FIG. 5; RX-1085C (Howle DWS) at Q/A 221-22 (testifying that these citations show that these limitation are satisfied).

Respondents contend that the limitation “a base, having an interior surface and an exterior surface and configured to avoid contact with the needle-like structure” is satisfied by the bottom (annotated B in FIG. 1, supra) of the APA’s “filter material 18,” which has an interior
(annotated I) and an exterior (annotated E) surface and is configured to avoid contact with "bottom needle 22." Resp. IPHB at 52 (citing RX-1001 ('320 patent) at FIG. 1).

ARM and OUII contend that the APA does not disclose this limitation because its needle pierces the base of the cartridge, which shows that the needle does contact the base. ARM IPHB at 61-62; ARM RPHB at 26; OUII IPHB at 44-45. The ID adopted this reasoning, and found that the APA did not satisfy this limitation because its needle punctured the cartridge. ID at 80-81.

We find that Respondents have shown that the APA has "a base, having an interior surface and an exterior surface." All of ARM's and OUII's arguments, as well as the ID's findings, require that "base" refer to the bottom of the cartridge. Claim 18, however, states that "base" refers to the bottom of the "receptacle," and we find that the APA's filter cup satisfies the "receptacle" limitations for the reasons discussed above. There is no dispute that the filter cup of the APA has a bottom region with interior and exterior surfaces. See RX-1001 ('320 patent) at FIG. 1); RX-1085C (Howle DWS) at Q/A 223-24. Additionally, Sylvan discloses a filter with a base. RX-1005 (Sylvan) at col. 2, ll. 30-31 ("The filter may be a triangular prism with a circular base").

We also find that Respondents have shown that the filter cup base of the APA avoids contact with the needle-like structure. RX-1001 ('320 patent) at FIG. 1; RX-1085C (Howle DWS) at Q/A 223-24. The APA further discloses that its needle avoids the filter cup by stating that "[t]he lower needle pierces the shell 14 but avoids the filter material 18 and brewing material 16". RX-1001 ('320 patent) at col. 3, ll. 63-65. Additionally, Sylvan discloses that the filter is not contacted by any piercing element. RX-1005 (Sylvan) at col. 2, ll. 36-41 ("The filter element may terminate in a reduced apex portion spaced from the bottom of the base to define an
enlarged second chamber for receiving the piercing element in the lower portion of the base without subjecting the filter element to penetration’’; id. at 3:45-47 (“There is ample room in the second chamber 36 so that a penetrator 22 which yieldably pierces base 12 will not rupture or otherwise deform the filter 14”). Finally, Respondents’ expert testified that a person of ordinary skill in the art would understand that Beaulieu’s needle was located below the filter, because otherwise the needle would puncture the filter cup and have the undesirable effect of causing coffee grounds to fall into the beverage. RX-1085C (Howle DWS) at Q/A 164.

Accordingly, we find that the APA satisfies the limitation “a base, having an interior surface and an exterior surface and configured to avoid contact with the needle-like structure.” The evidence clearly and convincingly shows that the APA discloses a piercing member that is located below the bottom of the filter cup. RX-1001 (‘320 patent) at FIG. 1); RX-1085C (Howle DWS) at Q/A 164, 223-24 (testifying that these citations show that these limitation are satisfied); RX-1005 (Sylvan) at col. 2, ll. 30-31, and col. 3, ll. 45-47.

vii.  [wherein the receptacle includes] at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure,

Respondents contend that the limitation “at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure” is satisfied by the sides (annotation SW in FIG. 1, supra) of the APA’s “filter material 18” because the sides are configured to avoid contact with “bottom needle 22.” Resp. IPHB at 52 (citing RX-1001 (‘320 patent) at FIG. 1); see also RX-1085C (Howle DWS) at Q/A 225-26 (testifying that these limitations show that these limitations are satisfied). ARM and OUII do not dispute that the APA satisfies this limitation of claim 18. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that the APA discloses a “sidewall extending
upwardly from the interior surface of the base.” There is no dispute that the filter cup of the APA has sides extending up from the base that constitute a sidewall. See RX-1001 (’320 patent) at FIG. 1; RX-1085C (Howle DWS) at Q/A 225-26. Sylvan also discloses that the filter cup can be “an inverted hollow cone having a curved wall.” RX-1005 (Sylvan) at col. 5, ll. 5-6.

We also find that Respondents have shown that the APA discloses that the sidewall is configured to avoid contact with the needle-like structure.” Figure 1 of the APA depicts a filter cup arranged in such a way to avoid contact with the needle. RX-1001 (’320 patent) at FIG. 1. Sylvan further discloses that the filter is not contacted by a needle-like structure. RX-1005 (Sylvan) at col. 2, ll. 36-41; id. at col. 3, ll. 45-47.

Accordingly, we find that the APA satisfies the limitation “at least one sidewall extending upwardly from the interior surface of the base and configured to avoid contact with the needle-like structure.” The evidence clearly and convincingly shows that the APA discloses a filter cup with sides that avoid contact with its needle. RX-1001 (’320 patent) at FIG. 1; RX-1005 (Sylvan) at col. 2, ll. 36-41, col. 3, ll. 45-47, and col. 5, ll. 5-6; RX-1085C (Howle DWS) at Q/A 225-26.

viii. wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening,

Respondents contend that the limitation “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening” is satisfied by the top of APA’s “shell 14,” which is adapted to sealingly engage with the top edge (annotated T in FIG. 1, supra) of the filter material’s sidewalls and contains an opening (annotated O). Resp. IPHB at 52-53 (citing RX-1001 (’320 patent) at FIG. 1. ARM argues that the APA does not disclose “the cover including an opening” its cartridge has a solid top without an opening. ARM IPHB at 61; ARM RPHB at 25.
We find that Respondents have shown that the APA discloses a cover “wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall.” There is no dispute that the APA has a cover that sealingly engages with the top edge of a sidewall. See RX-1001 (‘320 patent) at FIG. 1. Additionally, Sylvan discloses that both the cover and the filter are heat sealed to the lip of the cartridge, creating a sealing engagement among the cover, filter, and cartridge. See RX-1005 (Sylvan) at 3:33-35 (“as depicted in the right-hand portion of FIG. 5, the rim 26 of the filter element 14 can be heat sealed as at 32 to a portion of the lip 20 of the base 12, closing the opening 18 to form an imperforate, impermeable cartridge 10.”); id. at 3:49-53 (“cover 16 is permanently joined as at 40 in a hermetically sealed relationship with the lip of the base”); id. at FIG. 5.

We also find that Respondents have shown that the APA discloses a “cover including an opening.” Although ARM argues that the Beaulieu discloses a beverage capsule with a solid cover, claim 18 is directed to a combination of a beverage capsule container with a brewer. CX-1005 (‘320 patent) at col. 10, ln. 46-col. 11, ln. 10. The APA discloses that, once the beverage capsule is placed in the brewer, the brewer pierces the beverage capsule’s cover to create an opening. RX-1001 (‘320 patent) at col. 3, ll. 61-63 (“The upper needle 20 is seen to enter the brewing cartridge 12 by piercing the shell 14”) and Fig. 1 (depicting a penetrated top of the cartridge); see also RX-1005 (Sylvan) at col. 4, ll. 21-22 (disclosing that the upper part of the brewer “includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54”) and FIG. 4 (depicting a cartridge with an object penetrated through the cover); id. at col. 3, ll. 53-56 (“cover 16 is yieldably pierceable with an instrument such as a tubular needle 42 or other penetrator”). Thus, the APA discloses that, when the brewer and beverage capsule container are combined as claimed, the container has an
Accordingly, we find that Respondents have shown that the APA discloses the limitation "wherein the cover is adapted to sealingly engage with a top edge of the at least one sidewall, the cover including an opening." The evidence clearly and convincingly shows that the APA discloses a cover that is sealed to the sidewall of the filter cup, and includes an opening once the cover is punctured by the brewer. RX-1001 ('320 patent) at col. 3, ll. 61-63 and FIG. 1; RX-1005 (Sylvan) at col. 3, ll. 33-35, 49-53, and 63-67; col. 4, ll. 21-22, and FIGS 4 and 5; RX-1085C (Howle DWS) at Q/A 227-28.

ix. wherein the container is adapted to accept the input fluid from the inlet port through the opening and to provide a corresponding outflow of fluid through the passageway.

Respondents contend that the limitation "wherein the container is adapted to accept the input fluid from the inlet port through the opening and to provide a corresponding outflow of fluid through the passageway" is satisfied by the APA because the cartridge is adapted to accept input fluid from "upper needle 20" through the puncture opening, and is also adapted to provide a corresponding outflow of fluid through the pores of the filter material. Resp. IPHB at 53 (citing RX-1001 ('320 patent) at col. 1, ll. 30-35, col. 3, ll. 57-63, and FIG. 1). ARM and OUII do not dispute that the APA satisfies this limitation. See ARM and OUII IPHB, RPHB, Pet., and Resp. (making no such argument).

We find that Respondents have shown that the APA satisfies the limitation. There is no dispute that the brewing cartridge of the APA is adapted to accept input fluid and to provide a corresponding outflow of fluid through its filter. See RX-1001 ('320 patent) at col. 1, ll. 30-35, col. 3, ll. 57-63, and FIG. 1); RX-1085C (Howle DWS) at Q/A 229-30. Additionally, Sylvan discloses a brewing machine in which "upper part 48 includes a penetrator or needle 42 which yieldably penetrates cover 16 to provide pressurized hot water through hole 54 to coffee extract
38 in filter 14” and “[a] second penetrator or needle 22 is yieldably pushed through the bottom
12b of base 12 to receive the outflow of coffee beverage . . . .” RX-1005 (Sylvan) at col. 4, ll. 21-26; see also id. at col. 2, ll. 17-20 (“Both the cover and base are yieldably pierceable, the
cover to accommodate an injection of liquid into the first chamber for combination with the
extract to produce a beverage, and the base to accommodate the outflow of the beverage from the
second chamber”). Accordingly, the evidence clearly and convincingly shows that the APA
discloses a cartridge that receives an input of hot water from a probe, and provides a
corresponding outflow of brewed beverage through the filter cup pores. RX-1001 (“320 patent)
at col. 1, ll. 30-35, col. 3, ll. 57-63, and FIG. 1; RX-1005 (Sylvan) at col. 2, ll. 17-20, and col. 4,
ll. 21-26; RX-1085C (Howle DWS) at Q/A 229-30.

g. APA -- Claim 20: The beverage brewer of claim 18, wherein the receptacle
also includes at least one extension that raises the base a predetermined
distance above a lower surface of the brewing chamber.

Respondents contend that the limitation “[t]he beverage brewer of claim 18, wherein the
receptacle also includes at least one extension that raises the base a predetermined distance above
a lower surface of the brewing chamber” is satisfied by the APA for the same reason that
Beaulieu satisfies that limitation in claim 7. Resp. IPHB at 55-56. ARM argues that the APA
does not satisfy this limitation for the same reason that Beaulieu does not satisfy claim 7. ARM
IPHB at 62 (citing CX-0004C (Phillips RWS) at Q/A 69-72, 89-92).

We find that Respondents have not shown that the APA discloses “[t]he beverage brewer
of claim 18, wherein the receptacle also includes at least one extension that raises the base a
predetermined distance above a lower surface of the brewing chamber” for the same reason we
find that Respondents have not shown that Beaulieu discloses claim 7. Respondents contend that
Beaulieu’s filter cup constitutes the “receptacle” and the edge of that filter cup constitutes “an
extension” of that receptacle. Resp. IPHB at 55-56. Respondents do not, however, provide
evidence showing that the edge of the filter cup constitutes "an extension." We therefore find that Respondents have not carried their burden of showing that this claim is invalid by clear and convincing evidence.

3. Obviousness

A patent "may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." 35 U.S.C. § 103(a).\textsuperscript{18} Because patents are presumed valid, the accused is "required to prove that the asserted claims were obvious by clear and convincing evidence." Allergan, Inc. v. Sandoz Inc., 726 F.3d 1286, 1291 (Fed. Cir. 2013).

The ID found that Respondents failed to show by clear and convincing evidence that the asserted claims are invalid as obvious. ID at 88-89. Specifically, the ID found that Respondents did not describe their prior art combinations and did not provide an element-by-element analysis of how those combinations renders the asserted claims obvious. Id.

Respondents argue that their briefing before the ALJ explains their prior art combinations and provides an element-by-element analysis on how those combinations render the asserted claims obvious. Resp. Pet. at 44-47. ARM argues that the ID correctly found that Respondents had not shown by clear and convincing evidence that the asserted claims are invalid as obvious. ARM Pet. Reply at 30. ARM also argues that Respondents’ arguments fail to show how U.S. Patent No. 3,878,772 (RX-1003, or "Nordskog") renders the "brewing chamber" limitation obvious, or how Beaulieu or the APA render the "such that the tip of the needle-like structure

\textsuperscript{18} The AIA amended 35 U.S.C. § 103, effective for any patent application with filing date on or after March 18, 2013, Pub. L. No. 112–29. Because the application resulting in the patent at issue in this case was filed before that date, we refer to the pre-AIA version of § 103.
does not penetrate the exterior surface of the base” and “configured to avoid contact with the
needle-like structure” limitations obvious. Id.

We find that Respondents explained their prior art combinations and provided an
element-by-element analysis on how those combinations allegedly render the asserted claims
obvious. Respondents argued that the APA renders claims 5-7 obvious, that Nordskog renders
claims 5-7 obvious, and that Nordskog in view of the APA renders all of the asserted claims
obvious. Resp. IPHB at 57-59. Respondents also provided an element-by-element analysis of
why they allege that the APA renders obvious claim 5. Id. at 56-58. We therefore reverse the
ID’s finding that Respondents’ obviousness arguments should be rejected for lack of adequate
briefing.

After considering Respondents’ arguments on the merits, however, we find that
Respondents have failed to show by clear and convincing evidence that the asserted claims are
invalid as obvious. We first address their argument that the APA renders claims 5-7 obvious.
Respondents contend that, although the APA does not disclose “a needle-like structure, disposed
below the base,” it would have been obvious to a person of ordinary skill in the art to raise the
position of the APA’s filter material and move the APA’s needle-like structure so that the
needle-like structure is disposed below the base. Resp. IPHB at 57. Respondents’ only evidence
that such a modification would have been obvious, however, is their expert’s conclusory
testimony that the change “is an obvious matter of design choice or shifting of position.” RX-
1085C (Howle DWS) at Q/A 203. Because the testimony failed to provide any evidence or
reason explaining why person of ordinary skill in the art would consider making such
modifications obvious, the testimony is conclusory and fails to show that the asserted claims are
obvious by clear and convincing evidence. See ActiveVideo Networks, Inc. v. Verizon
Comma'ns, Inc., 694 F.3d 1312, 1327 (Fed. Cir. 2012) (holding that conclusory expert testimony fails to establish obviousness).

We next address Respondents’ argument that Nordskog renders claims 5-7 obvious if “disposed below the base” is construed to require that the needle-like structure be below the entire base. Resp. IPHB at 58. Again, Respondents rely solely upon conclusory expert testimony, which fails to establish obviousness. ActiveVideo, 694 F.3d at 1327. Moreover, Respondents’ argument is premised upon the Commission adopting Respondents’ proposed construction of “disposed below the base,” which we did not do. Finally, even if Respondents had shown that Nordskog satisfied the “disposed below the base” limitation, they still failed to explain how Nordskog satisfies or renders obvious the limitations “brewing chamber” or “brewing material” under the constructions adopted by the Commission. See Resp. IPHB at 44-47, 53-55, 58 (arguing only under Respondents’ proposed and rejected constructions). For all of these reasons, Respondents have not shown that Nordskog renders claims 5-7 obvious.

We finally address Respondents’ arguments that Nordskog in view of the APA renders all of the asserted claims obvious. Respondents argue that a person of ordinary skill in the art would consider it obvious to substitute the knives of Nordskog with the needle of the APA. Resp. IPHB at 58-59. But even with such a substitution, Respondents’ arguments still suffer from the same defects as their arguments with respect to Nordskog itself: reliance upon conclusory expert testimony, reliance upon a rejected claim construction, and the failure to show satisfaction or obviousness of the “brewing chamber” and “brewing material” limitations.

In conclusion, although we reverse the ID’s finding that Respondents failed to explain their prior art combinations and failed to provide an element-by-element obviousness analysis, we find that Respondents have failed to show that the asserted claims are obvious by clear and
convincing evidence.

4. Conclusion

For the reasons discussed above, we find that Respondents have shown by clear and convincing evidence that all of the asserted claims are invalid for a lack of written description, and that claims 5 and 6 are invalid as anticipated by Beaulieu. We find that Respondents have not shown by clear and convincing evidence that claims 7, 18, or 20 are anticipated by Beaulieu, that claims 18 and 20 are anticipated by the APA, or that any of the asserted claims are invalid as obvious.

D. Technical Prong of the Domestic Industry Requirement

The technical prong of the domestic industry requirement compels a complainant to show “that the patent claims cover the articles of manufacture that establish the domestic industry.” *Crocs*, 598 F.3d at 1307. ARM asserted that it satisfied the technical prong of the domestic industry requirement because its domestic industry articles practiced claim 5. We did not review the ID’s finding that ARM showed that its EZ-Cup, Eco-Fill, and Eco-Fill Deluxe practice every limitation of claim 5 of the '320 patent. ID at 101-09.

A complainant, however, cannot satisfy the technical prong of the domestic industry requirement by practicing an invalid claim. *See Certain Vision-Based Driver Assistance Systems Camera and Components Thereof*, USITC Inv. No. 337-TA-907, Comm’n Op. at 36 (Dec. 1, 2015) (public version) (finding that a complainant cannot satisfy the domestic industry requirement based on an invalid patent claims). Because we find that claim 5 is invalid, ARM cannot satisfy the technical prong through claim 5.

ARM also alleged that its domestic industry articles practiced claims 1, 10, and 18. ARM IPHB at 36-54. Similarly, because we find that claim 18 is invalid, ARM cannot satisfy the technical prong through claim 18. The ID made no findings on whether the domestic industry
products practiced claims 1 and 10. However, because we find that ARM has not shown that Respondents infringe a valid claim, Respondents have not violated section 337 regardless of whether ARM’s products practice claims 1 and 10, and we therefore need not determine whether ARM’s products practice those claims.

E. Economic Prong of the Domestic Industry Requirement

Although we conclude that ARM has not shown that it satisfied the technical prong of the domestic industry requirement, the economic prong of the domestic industry requirement is a separate inquiry. We affirm the ID’s finding that ARM has shown that it satisfied the economic prong of the domestic industry requirement through its investments in its beverage capsules. See ID at 109-16 (finding that ARM satisfied the economic prong of the domestic industry requirement through significant investment in plant and equipment, significant employment of labor or capital, and substantial investment in engineering, research, and development).

Respondents argue that, because the asserted claims encompass a combination of a beverage capsule with a beverage brewer, the ID erred by finding that ARM’s investments in beverage capsules alone could satisfy the economic prong. Resp. Pet. at 5-15. Section 337, however, does not require investments in all aspects of the claimed invention, and instead simply requires that the investments be made “with respect to the articles protected by the patent.” 19 U.S.C. 1337(a)(3). Thus, “nothing in 337 precludes a complainant from relying on investments or employment directed to significant components, specifically tailored for use in an article protected by the patent” because “[t]he investments or employments must only be ‘with respect to articles protected by the patent.’” Motorola Mobility, LLC v. Int’l Trade Comm’n, 737 F.3d 1345, 1351 (Fed. Cir. 2013). Here, the beverage capsule satisfies several of the limitations of the asserted claims, so we find that the beverage capsule is a significant component of the claimed
combination of the beverage capsule and brewing machine. Accordingly, we find that ARM’s investments in its beverage capsules were made “with respect to” the claimed invention, so the ID correctly found that ARM’s investments in its beverage capsules satisfied the economic prong of the domestic industry requirement.

III. CONCLUSION

For the foregoing reasons, we terminate the investigation with a finding of no violation of section 337 by Solofill and DongGuan because all of the asserted claims are invalid. We do, nonetheless, issue a limited exclusion order and cease and desist orders against defaulted parties Eko Brands, LLC; Evermuch Technology Company Co., Ltd.; and Ever Much Company Ltd., based on their infringement of claim 8 and 19. We do not find that claims 8 and 19 are invalid, and presume that ARM’s allegations in its complaint against these parties are true. See 19 U.S.C. § 1337(g)(1); 19 C.F.R. § 210.16(c)(1) (stating that facts alleged in a complaint against a defaulted respondent will be presumed to be true against that respondent).

By order of the Commission.

Lisa R. Barton
Secretary to the Commission

Issued: April 5, 2016
I join my colleagues’ thorough opinion in all respects save a single significant exception. I write separately because I do not find Solofill, LLC and DongGuan Hai Rui Precision Mould Co., Ltd. ("Respondents") have shown by clear and convincing evidence that the specification of U.S. Patent No. 8,720,320 ("the ‘320 patent"), as originally filed, fails to support the asserted claims, and therefore cannot agree that these parties met their burden of proving those patent claims invalid for lack of written description under 35 U.S.C. § 112 ¶ 1.

I begin my analysis with Section 282’s statutory presumption of validity, and the humble recognition that I sit deciding a matter that presumably has previously received the serious and competent attention of the legally and technically trained staff examining patent applications at our much larger sibling government agency, the Patent and Trademark Office (an agency staffed with many more times the number of diverse professionals having extensive expertise in the relevant law and technology, and legal practice such as drafting patents, than we have at the ITC). In a similar vein, I endeavor to exercise appropriate restraint in setting aside the fact-finding by the ALJ to whom the Commission has delegated the duty and opportunity to conduct an extensive hearing in this case, which of course includes the benefit of direct access to the testimony that was given, including cross examination and the like.
I then turn to Section 112 ¶ 1\(^1\) of the patent statute, which provides the relevant standard to be applied when assessing the adequacy of disclosure in a patent application's specification (which includes the text and drawings):

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. § 112 ¶ 1 (2006). This statutory language requiring, *inter alia*, an applicant to adequately describe in the patent specification his or her claimed invention,\(^2\) frequently has been analyzed in context where, as in this case, the patent claims later asserted in litigation were not presented in the originally-filed patent application. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1560 (Fed. Cir. 1991) ("The cases indicate that the ‘written description’ requirement most often comes into play where claims not presented in the application when filed are presented thereafter. . . . The question raised by these situations is most often phrased as whether the application provides ‘adequate support’ for the claim(s) at issue"). But especially in this context, the Federal Circuit has frequently reminded that the relevant question is not whether there is an exact, verbatim, description of a later-filed claim for the lay person reading a patent’s disclosure; but, instead, the relevant question is whether the patent specification sufficiently describes the invention by reasonably conveying to one of skill in the relevant art that the inventor possessed at the time the patent application was filed (as evidenced by the application itself) what is later claimed in the issued patent. As the Court put it:

\(^1\) Although subsection (a) would replace the previously undesignated first paragraph of Section 112 for patent applications filed on or after the corresponding effective date of the America Invents Act (*i.e.*, upon the expiration of a 1-year period beginning on September 16, 2011), the application leading to the ‘320 patent was filed prior to the effective date of the 2011 amendments to Section 112, and so the prior version of the statute applies.

\(^2\) *See Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 736 (2002) ("What is claimed by the patent application must be the same as what is disclosed in the specification; otherwise the patent should not issue.").
Since its inception, the Court of Appeals for the Federal Circuit has frequently addressed the "written description" requirement of § 112. A fairly uniform standard for determining compliance with the "written description" requirement has been maintained throughout: "Although [the applicant] does not have to describe exactly the subject matter claimed, ... the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." . . . "[T]he test for sufficiency of support in a parent application is whether the disclosure of the application relied upon `reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter.'"  

Id. at 1562-63 (citations and footnote omitted).

Here, the Respondents contend that "[i]f the claim term 'to hold brewing material' is construed to cover integrated-filter products like Solofill's K2 and K3, then the asserted claims have a scope whose breadth is not supported by the originally filed patent specification, and thus are invalid for lack of written description under pre-AIA 35 U.S.C. § 112, first paragraph." Respondents' Petition for Review of Initial Determination at 29. Respondents further point out that "[i]f the inventor did not actually have possession of an integrated-filter design, then it would be impossible for him to have described it in the specification to `reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.'" Id. (citing Ariad Pharm. Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (emphasis omitted). While of course the legal point is correct, I do not agree that it compels the outcome urged by Respondents.

We must be careful not to conflate actual reduction to practice of a tangible embodiment with the legal requirement of disclosure that is merely sufficient to demonstrate actual invention, or possession of the intellectual construct. As the en banc Federal Circuit specifically reaffirmed in Ariad, actual reduction to practice is not the test for adequate written description. 598 F.3d at 1352 ("We have made clear that the written description requirement does not demand either examples or an actual reduction to practice"). Instead, a specification's constructive reduction to practice can satisfy that requirement of Section 112. See id. ("... a
constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement.”)(citation omitted). As the en banc Court reminded, the “hallmark of written description is disclosure,” and “whatever the specific articulation, the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” Id. at 1351.

I therefore turn to the Complainants’ originally-filed disclosure, which appears in the record at RX-1002 at SOLO929000838-860, as well as in the published patent. In the Background of the Invention section, the patentee identifies a need to be resolved: “there is a need for an apparatus and method for modifying single serve beverage brewers configured for cup-shaped cartridges so that they can also be used to brew beverages from pods.” Id. paragraph [0004] at SOLO929000839. This same background paragraph indicates that one typical understanding of the term “pod” may be a “somewhat flattened disc shaped filter paper packet[] containing coffee.” But, importantly, this originally filed text goes further. It does not rely merely on that typical understanding. Instead, the first paragraph of the following section (the Summary of the Invention section), is clear in giving a broader definition to the word “pod”: “As used herein, the term ‘pod’ is a broad term and shall have its ordinary meaning and shall include, but not be limited to, a package formed of a water permeable material and containing an amount of ground coffee or other beverage therein.” Id. paragraph [0007] at SOLO929000839. This definition is broader than the prior definition that the application called “typical” in that this definition of “pod” is not limited to those pods that are sealed packets and containing coffee so long as they at least are formed of water permeable material.

3 For the entirety of the quotation, see id. (“... users of the Keurig machine or similar brewers designed for cup-shaped cartridges would have to purchase a different machine to brew beverage from pods, which are typically somewhat flattened disc shaped filter paper packets containing coffee.”).
Complainants make this point somewhat differently, when they highlight the difference between the meaning of the term “pod” and the meaning of the term “water permeable material,” which they refer to as a “filter.” As Complainants put it:

The claim term at issue is a container adapted “to hold brewing material.” A person of ordinary skill in the art would understand that a container adapted to hold brewing material would need some sort of filtration. Tr. 444:8-17; CX 3 at Q83-84. The ‘320 patent distinguishes between a “pod” and a paper filter. For example, “pod” in the ‘320 patent means, in part, “a package formed of a water permeable material....” CX-5 at 1:66-2:3; see also Phillips, Tr. 231:22-232:7 (distinguishing “pod” from filter material). The water permeable material would be a filter, and this definition makes clear that the filter material is not itself the “pod.”

Complainants’ Response to Respondents’ Petition for Review at 24.

At bottom, the patent application itself explicitly gives a broader-than-typical definition to the word “pod,” effectively setting forth a class of “pod adaptor assembly” that includes members of the class that incorporate closed packets and members of the class that incorporate open packages comprising a water permeable material or a filter, and containing ground coffee or other beverage therein. The testimony of Complainants’ expert is consistent with this broader understanding, as evidenced by the explanation he gave about a pod assembly with a paper filter:

Q So your definition of "pod" does not include the filter material that fits into that pod adaptor system, the EZ-Cup?
A What I consider is when I look at something even as a Keurig K-Cup, that's commonly known as a pod within the industry, as are a variety of other things. So to me, pod adaptor system is just telling me this is something that I can use in that type of single-service brewer.

Q Thank you. So Mr. Phillips, I'm holding up the EZ-Cup here and the paper filter. I believe, and correct me if I'm wrong, you say this paper filter is not a pod, according to the '320 patent?
A I would not consider that a pod, that's correct. It is simply a filter media.
Q But you do consider this to be a pod adaptor system, the EZ-Cup?
A The entire thing is a pod assembly.

The drawings also confirm this broader definition. They appear in the record at RX-1002 at SOLO929000852-860. Those figures included at least a handwritten version of a diagram that appears to have issued in the '320 patent as "Fig. 3a:"

See RX-1002 at SOLO929000856 (handwritten); RX-1001 at SOLO929000025 (issued). These drawings show a "pod adaptor assembly" having towards its bottom an "annular raised portion" 314. RX-1001, col. 5, Ins 45-46. The text further states that the "pod" is item 320, which appears above that annular raised portion. Id., Ins 48-49. Importantly, this item 320 is explicitly labeled as a "pod" and not as a water permeable material or a filter, which means that it is the "pod" that essentially equates with the large cavity, and not the filter that does so. Put differently, nowhere in these drawings or in the accompanying text is there any specific mention that the water-permeable material (the filter) referred to in the broader definition of the word "pod" is required to continue up the entire height of the side walls 308 (let alone go so far as to fully enclose the top). See, e.g., Vas-Cath, 935 F.2d at 1564-65 ("The issue here is whether there is supporting 'disclosure' and it does not seem, under established procedure of long standing, approved by this court, to be of any legal significance whether the disclosure is found in the specification or in the drawings so long as it is there.")(quoting In re Wolfensperger, 49 CCPA 1075, 1080-83; 302 F.2d 950, 955-56 (1962)).
This broader understanding is also confirmed by the additional testimony the expert gave when questioned first-hand by the ALJ:

Q And we discussed the definition of a pod, and we agreed that it had a broad definition. Do you agree that the filter cup could be considered a pod in that broad definition?
A That would be broader than I would personally choose. To me, that's not a pod, because a pod implies to me some sort of a construction that is -- has been prepared and sealed, and that filter cup is still an open device.
Q Have you ever provided that opinion before, that a pod is something that is sealed?
A I don't recall if I have or not.
Q Did you ever provide that opinion in -- did you provide it in your deposition, that a pod must be sealed?
A I don't recall if that was ever stated or not, sir.
JUDGE ESSEX: Pardon me a moment. Mr. Phillips, you were looking at the EZ-Cup pods earlier. Do you recall that?
THE WITNESS: Yes, sir.
JUDGE ESSEX: Those filters weren't sealed, were they, the pods?
THE WITNESS: They were not. That's the type of filter cup I'm referring to.
JUDGE ESSEX: So those pods don't have to be sealed, then?
THE WITNESS: That's what I'm saying. Those types of filters don't have to be sealed.


As Complainants point out, one of ordinary skill in the art would understand, in light of the '320 patent specification, that a pod adaptor assembly could use either an enclosed paper filter packet containing brewing material or brewing material sitting within an open chamber that is formed by the sidewalls of the pod adapter assembly and some kind of filter along the bottom (just above the "annular raised portion"). As Complainants put it:

Indeed, a person of ordinary skill reading the '320 patent would understand a container adapted to hold brewing material in the [sic, omitted word or clause] could utilize filters other than a separate pod, including paper filters, mesh filters integrated with the container, metal mesh filters, and nylon mesh filters. CX 3 at Q84-Q86; Tr. at 375:19-377:2. The patent further makes clear to a person of ordinary skill that there are multiple ways of implementing the inventions claimed in the '320 patent. CX 4C at Q109; CX 5 at 8:1-18.
Complainants' Response to Respondents' Petition for Review at 24-25. According to their expert, the role played by the water permeable material, or filter, is (1) to hold the brewing material and stop it from falling down below the annular raised portion; while (2) allowing the brewed liquid to pass through this plane. See CX-003 Q/A 84 (“A person of ordinary skill would understand that some form of filter material is needed to prevent coffee grounds or loose tea from exiting the container to the cup, but such person at the time of the invention would also know there are multiple ways to solve that beyond using a separate pod, including filter paper or integrated metal mesh filters.”). Complainants’ expert even specifically testified that the patent’s disclosure does not preclude having the filter be integrated with the walls:

Q So Mr. Phillips, we just reviewed all the embodiments. Do you agree now that all of the embodiments in the patent do not describe an integrated mesh or integrated filter media in that pod adaptor assembly?

Q Okay. And if you were to describe the purpose of a filter for purposes of brewing coffee, how would you describe that purpose?
A Honestly, the biggest reason for the filter is to try to maintain the ground coffee within the brewing receptacle, whatever shape or form it was taking. It is generally advantageous to have openings for liquid entry and liquid exit that are larger in size than the size of a coffee ground.

* * *

So the filter allows me to have a large exit in the sense of something here where I'm filling it at the time of use, and that large exit does not create a significant pressure loss. So I can take the pressure drop across the bed of coffee.

If I'm preproducing something and shipping it around, it's advantageous for me to have that copy surrounded and sealed, because you don't want it to come out of the containment. So if you had that simple Reese's Cup kind of thing sitting inside of a container, and I will say like a Keurig pod, and I had a seal on the top and it was closed on the bottom but I didn't have something sealing that filter to the receptacle or sealing the top of that, when I transport it in the commercial space, when I take it home as a consumer, when I'm using it, I turn it over, things sort of salt shaker out, move around, get in places you don't want. And then you end up with coffee grounds being able to get to the exit port too easily.

So in those cases, that's why you want things connected together or sealed when you're doing that transport.

Phillips Tr. 378:6-379:18 (italics added). It is worth noting that, while the above-cited testimony describes certain advantages of sealed pods, the testimony is only talking about those advantages when the pods have been made in advance and shipped; but the testimony is silent about what occurs if the pod adapter assembly is filled “at the time of use” (at the time of brewing). Id.
A I would agree that none of those describe that, but they don't preclude it either, because several of them don't tell me what the filter media is. So again, I would have a design choice on how I would do that.

Phillips Tr. 275:3-10.

Compliance with the written description requirement is a fact intensive inquiry, for "each patented advance has a novel relationship with the state of the art from which it emerges."

Ariad, 598 F.3d at 1351-1352. Here, although sparse, the specification is not devoid of broadening language. To the contrary, it explicitly contains broadening language. The patent explicitly alerts readers by characterizing the definition it will employ for the term "pod" as "broad" when compared to the "typical" meaning of that term in the art; and then proceeds to give a definition that on its own terms actually is broader than the typical definition in the art. And unlike in Ariad, where the state of the art at the time of filing was "primitive and uncertain" (see 598 F.3d at 1358), the record testimony of Complainants' expert indicates the state of the relevant art at the time of filing in this case may provide prior art knowledge with which to fill what a layperson might perceive to be holes in the '320 patent specification's disclosure:

Q And in your opinion, you said it would be a design choice to take the integrated mesh from the My K-Cup, right, and use it in the '320 patent?
A It would be a design choice to take integrated mesh, as was done with the My K-Cup, because integrated mesh has been known for many number of years. I can't tell you how many, but it can certainly go back 20-plus years prior to that date. So it was well known to those in the art as an option for filters. I think most people might remember drip coffee brewers as well where there was a basket they could insert that could have an integrated mesh as opposed to using a paper filter. It's a well-known option.

Q But it's not in the patent, is it?
A It was not specifically embodied in the patent.
Q So if we're trying to understand the meaning of that phrase, "to hold brewing material," we shouldn't consider it, should we?

5 See Vas-Cath Inc., 935 F.2d at 1561 ("The issue, . . . was one of fact: 'Does the specification convey clearly to those skilled in the art, to whom it is addressed, in any way, the information that appellants invented that specific compound [claimed]?'")(citing In re Ruschig, 379 F.2d 990, 996 (CCPA 1967)).
6 Comparing "Eli Lilly, 119 F.3d at 1567 (holding an amino acid sequence did not describe the DNA sequence encoding it), with In re Wallach, 378 F.3d 1330, 1334 (Fed. Cir. 2004) (discussing how it is now a 'routine matter' to convert an amino acid sequence into all the DNA sequences that can encode it)."
A I would disagree, because my understanding of the way that I would look at the claim is if it's restricted in the claim language, you know, in the numbered claim, then it has to be done the way that it is. If it's a design choice that I have options as one skilled in the art, then I can execute any of those options and still be within the spirit of the claim.


For similar reasons, I do not agree that cases such as Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998) support a finding in this case that the asserted claims of the '320 patent are invalid for a lack of written description. I of course agree with the legal proposition that a narrow disclosure will limit claim breadth. See id. at 1480. And I agree that the patent specification does not explicitly mention an “integrated” filter.7 But I am also mindful of the en banc Federal Circuit’s reaffirmation of the legal proposition that the specification need not “recite the claimed invention in haec verba.” See Ariad Pharm. Inc. at 1352 (citations omitted).8

In view of cases like Ariad and Vas Cath and the substantial factual evidence in the record such as the above-quoted expert testimony that was credited by the ALJ, I cannot agree that Respondents have shown by clear and convincing evidence the specification of the '320 patent fails to support the asserted claims. For all of these reasons, I respectfully dissent from the Commission’s finding that the asserted claims of the '320 patent are invalid for lack of written description.

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7 See, e.g., Phillips Tr. 268:25-269:3 (“Q In the '320 patent, there's no suggestion or description of having integrated filter media or integrated mesh in figure 3A, is there? A There is not.”); Phillips Tr. 275:11-15 (“Q But nowhere in the '320 patent is there a suggestion to use an integrated filter media or integrated filter mesh in a pod adaptor assembly, is there? A To the best of my knowledge, the patent is silent on that option.”).

8 See also Union Oil Co. of California v. Atlantic Richfield Co., 208 F.3d 989, 997 (Fed. Cir. 2000) (“The written description requirement does not require the applicant “to describe exactly the subject matter claimed, [instead] the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed.”); see also id. at 1000 (“If lack of literal support alone were enough to support a rejection under § 112, then the statement of In re Lukach ... that ‘the invention claimed does not have to be described in ipsis verbis in order to satisfy the description requirement of § 112,’ is empty verbiage.”)(citing In re Wertheim, 541 F.2d 257, 265 (CCPA 1976)).
CERTAIN BEVERAGE BREWING CAPSULES, COMPONENTS THEREOF, AND PRODUCTS CONTAINING THE SAME

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached COMMISSION OPINION have been served by hand upon the Commission Investigative Attorney, Jeffrey Hsu, Esq., and the following parties as indicated, on April 6, 2016.

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