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Paper 8
Entered: April 22, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOMTECH ELECTRONICS, CO. LTD.
Petitioner

v.

MEDIUM-TECH MEDIZINGERÄTE GMBH
Patent Owner

Case IPR2014-00138
Patent 6,505,530 B2

Before KARL D. EASTHOM, BENJAMIN D. M. WOOD, and PHILIP J. HOFFMANN, *Administrative Patent Judges.*

EASTHOM, *Administrative Patent Judge*.

DECISION

Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Petitioner filed a Petition requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 6,505,530 B2. Paper 3 ("Pet."); Ex. 1002 ("'530 Patent"). Patent Owner filed a Preliminary Response. Paper 7 ("Prelim. Resp."). The Board has jurisdiction under 35 U.S.C. § 314.

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which follows:

> THRESHOLD.—The Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

On this record, Petitioner establishes a reasonable likelihood of prevailing with respect to challenged claims 1–12 and 16–20 of the '530 patent. Accordingly, we grant the Petition and institute an *inter partes* review of claims 1–12 and 16–20 of the '530 patent. We do not institute an *inter partes* review of challenged claims 13–15 of the '530 patent.

B. Related Proceedings

Petitioner filed a petition requesting review of U.S. Patent No. 6,345,553 ("'553 patent") in IPR2014-00137. The '530 Patent claims continuity to the '553 patent and foreign priority to German Patent No. DE 299 19 199 U1 ("Adler," *see* note 2). The '530 Patent and the '553 patent are asserted against Petitioner in

Medium-Tech Medizingeräte GMBH v. Bomtech Electronics Co. Ltd., No. 1:13-cv-2933 (E.D.N.Y. filed May 17, 2013). *See* Ex. 1001.

C. The '530 Patent

The '530 Patent describes an ink application tattooing device. The device includes a removable, sterile, disposable module, which attaches to a reusable basic module in a releasable manner. The disposable module includes a needle, an ink reservoir, and a diaphragm to seal the ink in the disposable module. The reusable basic module functions as a handle and drive for the needle. Ex. 1002, Abstract, col. 1, ll. 11–15, col. 2, ll. 15–48.

Figure 2 from the '530 Patent follows:

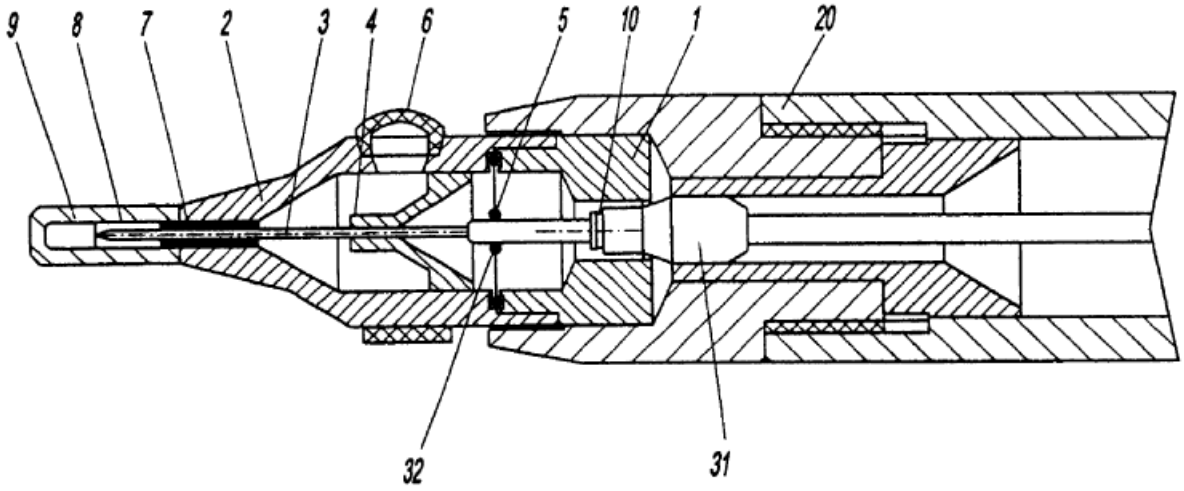


FIG. 2

Figure 2 depicts disposable module 1, 2 and basic module 20. In disposable module 1, 2, resilient diaphragm 5 and bearing 4 prevent ink from leaking from ink tank 14 into basic module 20. *Id*. at col. 4, ll. 12–25. Collar 6 covers a hole for introducing ink into ink tank 14 of disposable module 1, 2. *Id*. at col. 3, l. 66 – col.

4, l. 8. Basic module 20 includes drive 21 (attached to 31) for driving needle 3 in disposable module 1, 2. *Id*. at col. 3, ll. 44–47, col. 4, ll. 26–34.

Figure 3 from the '530 Patent, depicting the disposable module, follows:

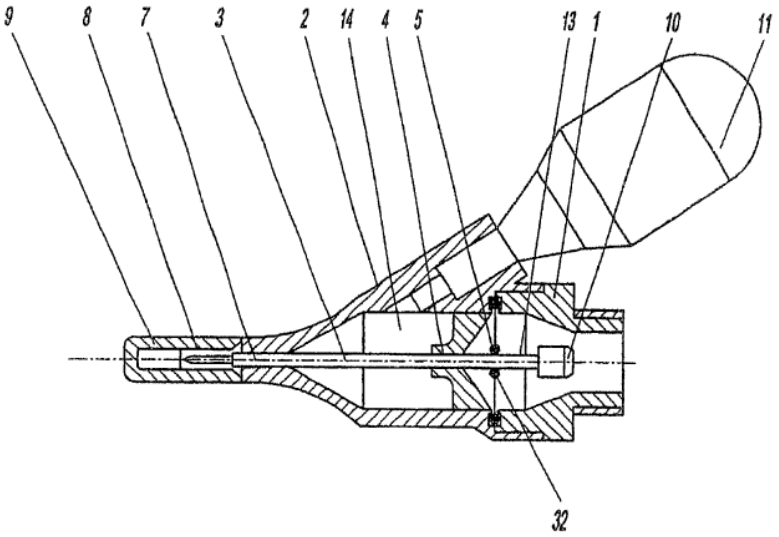


FIG. 3

Figure 3 depicts ink module 11 attached to disposable module 1, 2, which, as noted above, includes ink tank 14, needle shaft 13, and diaphragm 5. In operation, removing needle cap 9 allows ink to exit via movement of needle 3 through needle nozzle 8. *Id*. at col. 1, ll. 43–53, col. 4, ll. 29–50.

Claims 1, 9, 10, and 19 follow:

> 1. An ink application device for tattooing or for making permanent make-up, comprising:
>
> a basic module having a handle and an integrated needle drive; and
>
> a disposable module including an outer housing substantially surrounding a needle which is supported at one end of the disposable module by a needle nozzle and which is supported at another end of the disposable module by a portion that can contact the integrated needle drive, the needle being movable relative to the outer housing, and an ink receiving portion disposed around the needle, and

means for allowing simultaneous removal of the entire disposable module from the basic module.

9. An ink application device for tattooing or for making permanent make-up as claimed in claim 7, further comprising a diaphragm disposed between the ink receiving portion and the basic module.

10. An ink application device for tattooing or for making permanent make-up, comprising:

a basic module having a handle and an integrated needle drive; and

a disposable module having a housing that includes a needle disposed therein, an ink receiving portion around the needle disposed inside the housing, a needle nozzle disposed on one end of the disposable module, another end of the disposable module having a portion that is connectable to the integrated needle drive and a bearing element disposed inside the housing and supporting the needle in the housing so that the needle, the ink receiving portion, the bearing element and the housing form a unit that is detachable from the basic module, and sealing means disposed between the ink receiving portion and the basic module for preventing liquids from reaching the basic module;

whereby components of the device that could be infected by the bodily fluids of a user are integrated into the disposable module.

19. A method of using an ink application device for tattooing or for making permanent make-up, comprising the steps of:

providing a basic module having a handle and an integrated needle drive;

providing a disposable module including an outer housing substantially surrounding a needle which is supported at one end of the disposable module by a needle nozzle and which is supported at another end of the disposable module by a portion that can contact the integrated needle drive, an ink receiving portion disposed around the needle,

applying ink to a surface; and

simultaneously removing the entire disposable module from the basic module directly following an application of ink using the ink application device.

D. References

Petitioner relies upon the following references:[1]

Adler	DE 299 19 199 U1	Jan. 20, 2000	Ex. 1004[2]
Theiss	US 6,033,421	Mar. 7, 2000	Ex. 1005
Zhan	TW 326643B	Feb. 11, 1998	Ex. 1006
Beuchat	US 4,671,277	June 9, 1987	Ex. 1007
Bailey	US 4,582,060	Apr. 15, 1986	Ex. 1008
Trott	US 4,796,624	Jan. 10, 1989	Ex. 1009
Stocking	US 5,704,914	Jan. 6, 1998	Ex. 1010
Proni	US 5,580,030	Dec. 3, 1996	Ex. 1011
Chou	US 5,472,449	Dec. 5, 1995	Ex. 1017

[1] Exhibit numbers for the listed foreign patents refer to English translations thereof.

[2] The ’530 Patent claims priority to DE 299 19 199 U1, Adler. For purposes of this Decision, the Board assumes the inventors are the same—i.e., “Adler” is merely a short-hand designation for the German priority patent, notwithstanding the ’530 Patent lists two inventors.

E. The Asserted Grounds of Unpatentability

Petitioner asserts the unpatentability of claims 1–20 based on the following grounds:

Reference(s)	**Basis**	**Claims challenged**
Adler	§ 102(b)	10–18
Theiss	§§ 102(b) and (e)	1–3, 7–12, and 16–20
Zhan	§ 102(b)	1–3 and 7–20
Theiss and Beuchat	§ 103(a)	2, 4–6, 11, and 13–15
Theiss and Bailey	§ 103(a)	7, 8, 16, and 17
Theiss and Zhan	§ 103(a)	1–3 and 7–20
Theiss and Trott, Stocking, or Proni	§ 103(a)	9 and 18
Chou and Bailey	§ 103(a)	1 and 19
Chou, Bailey, and Theiss	§ 103(a)	10

See Pet. 3–4.

II. DISCUSSION

A. Claim Construction

Consistent with the statute and the legislative history of the Leahy-Smith America Invents Act ("AIA"), the Board construes the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); Office Patent Trial

Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Claim terms carry their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the art in question and in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

The '530 Patent includes means-plus-function claim terms that fall under the ambit of 35 U.S.C. § 112, sixth paragraph, which follows:[3]

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Asyst Techs, Inc. v. Empak, Inc., 268 F.3d 1364 (Fed. Cir. 2001) sets forth the following procedure for construing means-plus-function claims:

> The first step in construing a means-plus-function limitation is to identify the function explicitly recited in the claim. The next step is to identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim. Section 112 paragraph 6 does not "permit incorporation of structure from the written description beyond that necessary to perform the claimed function." Structural features that do not actually perform the

[3] Section 4(c) of the AIA re-designated 35 U.S.C. § 112, ¶ 6, as 35 U.S.C. § 112(f). The filing date of the '530 patent precedes September 16, 2012, the effective date of the AIA. Therefore, the pre-AIA version of 35 U.S.C. § 112 applies to this proceeding.

> recited function do not constitute corresponding structure and thus do not serve as claim limitations.

Id. at 1369–70 (citations omitted). The structure corresponding to a function set forth in a means-plus-function limitation actually must perform the recited function, not merely enable the pertinent structure to operate as intended. *Id*. at 1371.

1. "sealing means . . . for preventing liquids from reaching the basic module"

Independent claim 10 recites the following means-plus-function clause: "sealing means disposed between the ink receiving portion and the basic module for preventing liquids from reaching the basic module." The recited function is "preventing liquids from reaching the basic module." According to the '530 Patent, a diaphragm and a bearing keep liquids, which may include ink, or ink contaminated with bodily fluids during the tattooing process, from entering into the basic module. *See* Ex. 1002, col. 2, ll. 33–38, col. 3, ll. 1–9, col. 4, ll. 13–26.

In other words, bearing 4 works in conjunction with diaphragm 5 to prevent leaking: "The leaking of ink . . . is prevented because the bearing 4 is dimensioned to [have a] tight fit, and the needle shaft 13 is closed by a diaphragm 5, [which] is made of a resilient material." *Id*. at col. 4, ll. 12–16.

Claim 10 separately recites "a bearing element" and a "sealing means." In each of the depicted embodiments, diaphragm 4 appears between bearing 5 and an opening to basic module 20. *See* Ex. 1002, Figs. 1–5. As implied by the figures and corresponding descriptions thereof, diaphragm 5 prevents any *further* leakage, which may occur through bearing 4, from reaching basic module 20. For example, the '530 Patent states as follows: "A sealing diaphragm provided, according to the preferred embodiments[,] . . . ensures that *no ink leaks from the ink tank* of the

disposable module and enters the basic module. This ensures that the reusable basic module is not exposed to bodily fluids and can be reused without having to be sterilized." *Id*. at col. 3, ll. 1–9 (emphasis added).

In the context of the '530 Patent according to the foregoing discussion, and pursuant to the ordinary meaning of "preventing," the recited sealing means ensures that no ink leaks to the basic module. *See* WEBSTER'S II NEW RIVERSIDE DICTIONARY 933 (1984) (prevent, "[t]o keep from happening: AVERT"). Ex. 3001. Therefore, the recited function of "preventing liquids from reaching the basic module" requires the sealing means to keep liquids from reaching the basic module.

Regarding the structure corresponding to the sealing means, the '530 Patent describes a sealing diaphragm as follows:

> A sealing diaphragm provided, according to the preferred embodiments, between the basic and disposable module ensures that no ink leaks from the ink tank of the disposable module and enters the basic module. This ensures that the reusable basic module is not exposed to bodily fluids and can be reused without having to be sterilized. In addition, the diaphragm also prevents the penetration of impurities, germs or bacteria which may adhere to the basic module, into the sterile disposable module.

Ex. 1002, col 3, ll. 1–9.

In line with this description, Petitioner contends that "the only description that is possibly pertinent to 'sealing means' is 'a diaphragm.'" Pet. 8. Nevertheless, Petitioner also asserts that Patent Owner first introduced the term "sealing means" during prosecution of the '530 Patent, and that Patent Owner argued that the sealing means includes other structure that lacks original support. *See id*. For example, during prosecution of the '530 Patent, Patent Owner argued

that "the resilient diaphragm is not an essential element," and that "[s]ealing can be done with a number of structural elements." Ex. 1015 at 59–60 (arguments made pursuant to an amendment filed Sept. 9, 2002 during prosecution of the '530 Patent); Pet. 8 (discussing arguments).

Under 35 U.S.C. § 112, sixth paragraph, however, the recited "means" covers corresponding equivalents. Therefore, notwithstanding Petitioner's related argument that the claim embraces "new matter which is not supported" (Pet. 8), Patent Owner's prosecution history arguments are interpreted as urging that the recited sealing means includes the disclosed diaphragm embodiments and equivalents thereto, in line with the sixth paragraph of 35 U.S.C. § 112.

One disclosed diaphragm embodiment, element 5, includes an opening for needle shaft 13. *See* Ex. 1002, Figures 2 and 3. Another embodiment does not include an opening: "As an alternative, the diaphragm can also be formed without an opening for the needle 3 and fully close the disposable module in the direction of the basic module." *Id*. at col. 4, ll. 56–58. Figure 5 depicts an example embodiment of this alternative "closed form diaphragm." *See id*. at col. 5, l. 4, Fig. 5. Figure 4 depicts a third embodiment for diaphragm 5—what appears, in cross-section, to be two interconnected O-ring-type structures.

Therefore, because, as noted above, claim 10 separately recites a bearing element, and because the '530 Patent discloses diaphragm structure as the final leak preventer in the disposable module, the disclosed diaphragms and equivalents thereto reasonably correspond to the "sealing means . . . for preventing liquids from reaching the basic module," as recited in claim 10. Accordingly, for this Decision, the structure of the sealing means recited in claim 10 corresponds to a solid diaphragm, a diaphragm defining an opening, a dual diaphragm-type

structure defining two openings, and equivalents thereof. The Board deems it unnecessary to define structural equivalents precisely at this juncture.

2. "means for allowing simultaneous removal of the entire disposable module from the basic module"

As Petitioner maintains, this "means-plus-function" element, recited in claim 1, recites a function of "allowing simultaneous removal of the entire disposable module from the basic module." *See* Pet. 15. The '530 Patent does not describe this simultaneous removal function in explicit detail. Figures 2 and 3 of the '530 Patent imply two separable housing modules, with basic housing module 20 surrounding and holding disposable module 1, 2 in Figure 2. The figures and description imply that the disposable module, as an intact unit, can be separated from the basic module. *See* Ex. 1002, col. 2, ll. 26–32. On this record, the recited function, "allowing simultaneous removal of the entire disposable module from the basic module," constitutes removing the entire disposable module, as an intact unit, from the basic module.

Petitioner points to the corresponding structure as "rear housing part 1 of the disposable module that is connected to, and detachable from, the basic module, as shown in Figures 1 and 2 of the '530 Patent." Pet. 15. Petitioner points out that Patent Owner presented this construction, along with alternative "optional" magnetic and clamping device structure, during an ITC Investigation. *See* Pet. 14 (citing Ex. 1014, ITC Order 21, No. 337-TA-832, at 7, 8, 19, and 26).

As indicated, Figures 1 and 2 of the '530 Patent depict two housing parts, with the basic housing module surrounding and holding the disposable module. At this juncture, the Board declines to include the optional structure, which appears, on this record, to relate to different embodiments, as corresponding structure. This

alternative or optional structure does not appear to relate to a ground of unpatentability advanced here. On this record, the corresponding structure recited in claim 1 includes two modules, as follows: a basic module housing part that fits around and holds a separable module housing part of the disposable module.

3. "diaphragm"

Claims 9 and 18 recite a "diaphragm." Petitioner proposes that a "'resilient diaphragm' [is] 'a resilient structure ensuring substantially no ink leakage from the ink tank of the disposable module.'" Pet. 18. Patent Owner maintains that "no construction is required" and that Petitioner's "construction . . . is defined only in terms of its function." *See* Prelim. Resp. 13, 14. Patent Owner does not provide a definition. As discussed above, one of the diaphragms in the patent has no opening, another has a single opening, and another has two openings. *See* Ex. 1002, Figs. 2, 4, and 5. As also discussed, the disclosed diaphragms generally control the flow of a substance—ink or ink with contaminants. *See* Ex. 1002, col. 3, ll. 1–9, col. 4, ll. 13–16, col. 5, ll. 3–7.

According to an applicable definition in a technical dictionary, a "diaphragm" is "[i]n general, any opening, sometimes adjustable in size, which is used to control the flow of a substance or radiation." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 558 (5th ed. 1994). Ex. 3002. This definition presents a functional concept that is consistent with the diaphragms disclosed in the '530 Patent. In light of the plain meaning and the '530 Patent, a diaphragm constitutes fluid control structure that either defines an opening (for example, an opening for a needle or shaft as disclosed in the '530 Patent), or has no opening (for example, a "closed form" embodiment as disclosed in the '530 Patent). *See* Ex. 1002, col. 4, ll. 56–61, col. 5, ll. 4–7, Fig. 5. Therefore, for

purposes of this Decision, a diaphragm is a sealing structure defining one or more openings, or having no opening, which has the ability to aid in controlling or stopping the leakage of a fluid.

4. "bearing"

Claim 10 recites "a bearing element disposed inside the [disposable module] housing and supporting the needle in the housing." Figures 1–6 essentially show that bearing element 4 constitutes a sliding surface for either needle 3 or needle shaft 13. *See also* Ex. 1002, col. 3, ll. 61–63 (describing movement of needle 3 through bearing 4 in the embodiment of Figures 1 and 2).

The parties do not provide a definition for a "bearing element." One normal meaning of a "bearing" is "[a] machine part that supports another part which rotates, slides, or oscillates on it." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 297 (5th ed. 1994). This normal meaning is consistent with the '530 Patent and is adopted for this Decision.

B. Priority Date

Petitioner contends that independent claim 10, and claims 11–18 dependent therefrom, are not entitled to written descriptive support back to the filing date of the '530 Patent and the German priority document, Adler. *See* Pet. 7–9. As discussed above, Petitioner reasons that, during prosecution, Patent Owner added the term "sealing means" to independent claim 10 and argued that the term embraces broad structure, which according to Petitioner, the '530 Patent does not support. *See id*. at 8–9.

On the other hand, Petitioner essentially treats Adler and the '530 Patent as containing the same or similar disclosure as it relates to written description support for the diaphragms that correspond to the "sealing means." *See id*. at 8–9. For

example, Petitioner asserts that "Figures 1-5 of DE '199 [i.e., Adler] illustrate the same embodiments as those illustrated in Figures 2-6 of the '530 Patent." Pet. 21.[4] On this record, the '530 Patent and Adler include substantially similar, overlapping, subject matter, as it relates to the "sealing means" recited in claim 10.

Petitioner does not show, and the Board does not find, a persuasive reason to treat the disclosures differently in terms of written description support for claim 10.

> To obtain the benefit of the filing date of a parent application, the claims of the later-filed application must be supported by the written description in the parent "in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought."

Anascape, Ltd. v. Nintendo of Am. Inc., 601 F.3d 1333, 1335 (Fed. Cir. 2010) (quoting *Lockwood v. Am. Airlines, Inc*., 107 F.3d 1565, 1572 (Fed. Cir. 1997)). According to the discussion of "sealing means" in the claim construction section, skilled artisans would have recognized that it corresponds to the diaphragms disclosed in the '530 Patent and equivalents thereto. Petitioner does not present a persuasive contrary position.

That "the disputed term is not limited to a single structure does not disqualify it as a corresponding structure, as long as the class of structures is identifiable by a person of ordinary skill in the art." *Linear Tech. Corp. v. Impala Linear Corp*., 379 F.3d 1311, 1322 (Fed. Cir. 2004). It is axiomatic that claims

[4] Adler discloses five figures. The '530 Patent discloses six figures. Adler's figures do not depict the basic module, although Adler, like the '530 Patent, describes such a module connected to a disposable module. Adler states "[f]or reasons of simplicity and greater clarity, the basic module, formed as a conventional handle, is not shown in the drawings." Ex. 1004, 3.

typically are not limited to the disclosed embodiments. Petitioner does not explain persuasively how adding the term "sealing means" to claim 10, a means limitation which, by statute, embraces equivalent sealing means, shows a lack of written descriptive support for the term. As indicated above, the Board interprets Patent Owner's prosecution history arguments as urging that claim 10 is broader than any single disclosed embodiment. Petitioner fails to demonstrate a reasonable likelihood that the '530 Patent and Adler do not provide written description support for the sealing means, or any term, recited in claims 10–18.

C. Anticipation

1. Adler

According to Petitioner, Adler, the German priority document to the '530 Patent, constitutes prior art under 35 U.S.C. § 102(b) with respect to claims 10–18 of the '530 Patent, because Patent Owner added the term "sealing means" to claim 10 during prosecution of the '530 Patent. *See* Pet. 20–24. As discussed above, the '530 Patent claims priority to Adler.

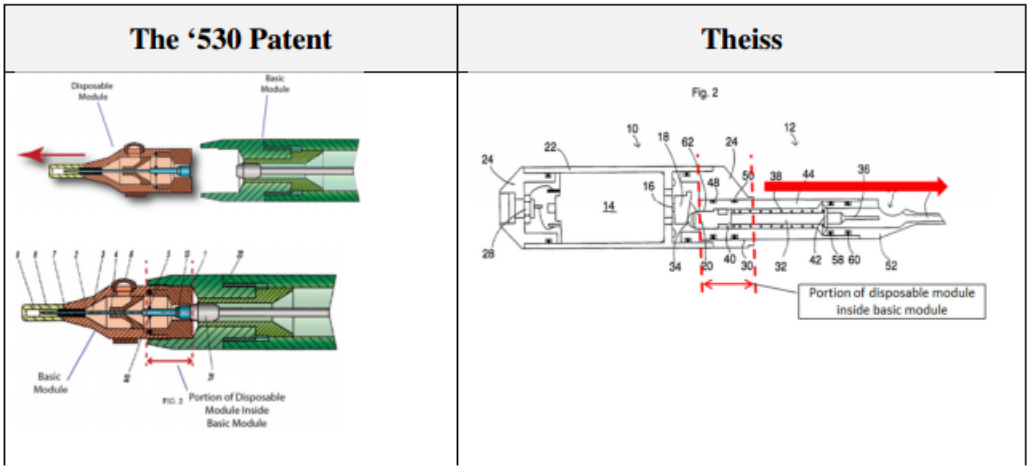
On this record, Petitioner fails to demonstrate a reasonable likelihood that the '530 Patent and Adler do not provide written description for claims 10–18, or that Adler is prior art to the '530 Patent under 35 U.S.C. § 102(b) or any other statutory category. Accordingly, Petitioner fails to demonstrate a reasonable likelihood that Adler anticipates claims 10–18.

2. Theiss

Theiss discloses a "tattoo machine in which the needle holder can be quickly and easily replaced during use, and which can be quickly and easily cleaned after use." Ex. 1005, col. 1, ll. 50–52. Petitioner contends that Theiss anticipates claims

1–3, 7–12, and 16–20. Pet. 24–38. Petitioner provides claim charts to address anticipation by Theiss of independent claims 1, 10, and 19. *See* Pet. 25–38 (citing Ex. 1005).

Petitioner also provides a side-by-side comparison of annotated figures in the '530 Patent and Theiss, as follows:



Pet. 27.

Petitioner's figure above relates Theiss's replaceable driven grip tube 12 and drive unit 10 respectively to the '530 Patent's disclosed disposable module and basic module. *See* Pet. 27. Addressing claims 1, 10, and 19, Petitioner identifies a basic module as reading on Theiss's drive unit 10, and a disposable module as reading on Theiss's "'replaceable driven grip tube'" 12. *See* Pet. 25 (quoting Ex. 1005, col. 4, ll. 11–12, emphasis by Petitioner); Pet. 29, 32–33.

Petitioner reads "the means for allowing simultaneous removal of the entire disposable module from the basic module," as claim 1 recites, onto Theiss's housing structure as depicted above in the above figure, and the following description in Theiss: "The driven grip tube is designed to be easily insertable into

the receiving bore of the drive unit housing to position the needle bar for engagement by the cam, thus permitting the ready substitution of different needles during use of the device . . . ." Pet. 26 (quoting Ex. 1005, col. 2, ll. 17–21, emphasis by Petitioner).

On this record, Petitioner demonstrates a reasonable likelihood that Theiss anticipates claim 1. Patent Owner's argument does not overcome Petitioner's showing. For example, Patent Owner argues "a disclosure that ***needles*** can be readily substituted is not a disclosure of the 'simultaneous removal of the ***entire disposable module*** from the basic module.'" Prelim. Resp. 17–18. As the record reflects, contrary to Patent Owner's argument, Petitioner does not restrict the showing to Theiss's needles. Rather, Petitioner relies on Theiss's "driven grip tube," which, on this record, includes a movable needle and ink receiving portion corresponding to the elements recited in the disposable module of claim 1. *See* Pet. 26; Ex. 1005, Fig. 3.

With respect to claims 2, 3, 7–9, 19, and 20, Petitioner explains how the claims read on Theiss's tattoo device. *See* Pet. 24–38. Based on the showing, Petitioner establishes a reasonable likelihood that Theiss anticipates claims 1–3, 7–9, 19, and 20.

For example, independent method claim 19 is similar in scope to device claim 1. As another example, claim 2 depends from claim 1, and recites "wherein the ink receiving portion has a volume sufficient for one application of ink." Petitioner points to Theiss's "pigment reservoir 56" as supplying "one application of ink" and relies further on declarant Mr. Stein, who testifies that "a person having ordinary skill would understand that the ink tank of Theiss has a volume sufficient for one application of ink because an ordinarily skill[ed] person would

know an ink tank is necessary for operation without interruption." *See* Pet. 34 (citing the Stein Declaration, Ex. 1021 ¶ 27). Claim 2 does not quantify a "volume sufficient for one application of ink," which reasonably includes a volume for a small tattoo or tattoo area, and necessarily depends on the size and color of a desired tattoo. Accordingly, on this record, Petitioner establishes a reasonable likelihood that Theiss anticipates claim 2.

Claim 7 depends from claim 1 and requires a needle shaft to contact an integrated needle drive. Claim 8 depends from claim 7 and requires a cylindrical needle shaft. Theiss discloses cam 18 on integrated needle drive 14, 16, 18 contacting needle shaft 32 at its cam follower end 34, as claim 7 requires. *See* Ex. 1005, Fig. 2; Pet. 35.

With respect to claim 8, Petitioner asserts that needle bar 32 is cylindrical. *See* Pet. 36. Figure 2 appears to show portions of the bar, which are housed in a cylindrical housing according to Figure 1, as cylindrical, although other shapes may be contemplated.[5] The '530 Patent refers to an example embodiment having a flattened area on the needle bar (at bore area 62) in order to prevent rotation of the bar, implying that flange 40, retainer 42, and portion 32, surrounded by spring 38, are not flattened, but are implicitly cylindrical—because a cylindrical bar may rotate in a tight fitting bore as depicted, and other shapes would not. *See* Ex. 1005, Figs. 1, 2, col. 4, ll. 53–58. On this record, Petitioner establishes a reasonable likelihood that Theiss anticipates claims 7 and 8.

[5] Theiss describes Figures 2 and 3 as "sectional" views. *See* Ex. 1005, col. 3, ll. 58–62.

Claim 9 depends from claim 7, which depends from claim 1, and recites "further comprising a diaphragm disposed between the ink receiving portion and the basic module." Claim 18 is similar, except it depends from claim 16, which depends from claim 10.

With respect to claims 9 and 18, Petitioner reads the claimed diaphragms onto Theiss's O-rings. As discussed further below, these O-rings define openings and limit ink flow in Theiss's tattoo device. *See* Pet. 36–37; Ex. 1005, col. 4, ll. 37–40, col. 5, ll. 26–29. In the context of the '530 Patent, as discussed above in the claim construction section, a diaphragm includes sealing structure that defines one or more openings and that has the ability to control fluid flow.

Patent Owner argues that "there is no disclosure in Theiss of a portion of the grip tube (which petitioner identified as the claimed sterilized disposable module) that is connectable to the integrated needle drive *through* the O-rings." Prelim. Resp. 20 (emphasis by Patent Owner). Patent Owner also argues that "the O-rings would have no effect on fluid flowing from . . . pigment reservoir 56 of Theiss to the basic module," and that the O-rings "provide a seal between the portion of the outer periphery of the grip tube 12 that is inserted into the drive unit." Prelim. Resp. 19–20. Patent Owner does not explain clearly why the O-rings do not qualify as diaphragms. As noted, Patent Owner characterizes Theiss's O-rings as "provid[ing] a seal."

Theiss states in one portion that the O-rings "'<u>prevent[ ] fluid penetration</u>'" and in another place that they "'<u>minimize[] the transmission of fluids into the drive unit, facilitating cleaning.</u>'" *See* Pet. 30 (quoting Ex. 1005, col. 4, ll. 39–40, col. 5, ll. 28–29, emphasis by Petitioner). On this record, Theiss's O-rings meet the definition discussed above in the claim construction of "diaphragm," because the

O-rings constitute sealing structure defining one or more openings and controlling ink fluid flow by minimizing that flow.

On the other hand, as noted above, claim 18 depends from claim 10. Addressing claim 10, Petitioner relies on Theiss's O-rings as "sealing means . . . for preventing liquids from reaching the basic module." Pet. 30. As the above-quoted passage in Theiss shows, however, Theiss's O-rings *minimize* or *control* fluid leakage into the basic module, but do not *prevent* such flow.

As discussed in the claim construction section, the function of "preventing liquids from reaching the basic module," as recited in claim 10, precludes any leakage. Therefore, Petitioner fails to show that Theiss anticipates claim 10. Claims 11, 12, and 16–18 depend from claim 10. Petitioner relies on its unpersuasive showing with respect to claim 10 to address the function of preventing leakage that these dependent claims also require.

Based on the foregoing discussion and the record, Petitioner demonstrates a reasonable likelihood that Theiss anticipates claims 1–3, 7–9, 19, and 20. Petitioner does not demonstrate a reasonable likelihood that Theiss anticipates claims 10–12 and 16–18.

3. Zhan

Zahn's Figures 1 and 3 depict dye cartridge 10 connected to main tattooing device body 30. Zahn describes attaching or connecting cartridge 10 to body 30 by "clicking, screwing or other attachment means." *See* Ex. 1006, 6, ll. 3–4. Zahn also describes fluid isolation between the separable dye cartridge and main body: "[F]lexible sealing element 16 segments the dye cartridge 10 and main body 30 of tattooing machine into two independent spaces, and can locally block backflow of dye and body fluid into the main body 30 . . . [to] prevent the transmission of

virus." *Id*. at ll. 22-26. Dye cartridge 10 can "be discarded, in order to prevent transmission of virus through the body fluid mixed with the dye." *Id*. at ll. 29–31.

Petitioner contends that Zhan anticipates claims 1–3, 7–12, and 16–20.[6] Pet. 38–43. Petitioner's claim charts and explanations identify how these claims read on Zhan's tattooing device. *See* Pet. 38–43.

With respect to claim 1, Petitioner identifies a "basic module" as main body 30, and a "disposable" module as dye cartridge 10. Pet. 38. As noted, Zahn teaches that dye cartridge 10 can be attached to the main body "by clicking, screwing or other attachment means." Ex. 1006, 6, l. 4. Petitioner reads the "means for allowing simultaneous removal of the entire disposable module from the basic module" onto the housing structure in Zahn, which includes this clicking, screwing, or other means of removal and attachment. Pet. 39.

Figures 1 and 3 of Zahn depict basic module 30 surrounding and holding, via threads, disposable module 10. Further characterizing the attachment means, Zahn states that the dye cartridge "can be attached to the tattooing machine . . . during operation, causing the operation to be simpler and more convenient." Ex. 1006, 3, ll. 20–21. Thereafter, the "dye cartridge can be dispose[d]." *Id*. at 25. Figures 1 and 3 imply that the whole disposable module 10, as a unit, can be separated from basic module 30 simply by unscrewing the two parts, or

[6] Petitioner states in a section heading that Zahn anticipates claims 1–3 and 7–20. Pet. 38. The heading appears to represent a typographical or other error, because Petitioner does not present an explanation as to how Zahn anticipates claims 13–15.

overcoming the clicking mechanism. On this record, Petitioner establishes a reasonable likelihood that Zahn discloses the simultaneous removal means.

Patent Owner argues that Petitioner does not provide evidence that Zahn's dye cartridge 10 is disposable, and also argues that Zhan requires a multi-step assembly, and that Zahn's disinfection step is distinct from a sterilization step. *See* Prelim. Resp. 21–22. Patent Owner acknowledges that Zhan's module can be "discarded." Prelim. Resp. 22. Patent Owner's arguments do not overcome Petitioner's showing. As noted above, Zahn describes disposing of, or similarly, discarding a module, cartridge 10. None of the claims recites a sterilized module or precludes a multi-step assembly.

Independent claim 10 recites "a bearing element disposed inside the housing and supporting the needle in the housing." Zahn's "fixing ring 14" supports needle shaft 40 which supports needle 42. The shaft slides along the ring. *See* Ex. 1006, 5, ll. 17–22, Figs. 1 and 3. On this record, according to the claim construction section, Zahn's ring 14 constitutes a bearing element, because it indirectly supports needle 42 via needle shaft 40, and the shaft slides along the ring. *See id*.

Claim 10 also recites a sealing means for preventing leakage, as noted above. In Zahn, diaphragm 16 seals ink that surrounds needle 42 in an ink receiving portion of disposable module cartridge 10. *See* Ex. 1006, 6, ll. 22–26. Figs. 1–3. As discussed above, Zahn's diaphragm 16 prevents ink and contaminants in the ink from leaking out of disposable module 10.

Therefore, on this record, diaphragm sealing means 16 is "disposed between the ink receiving portion and the basic module for preventing liquids from reaching the basic module," as claim 10 requires. The other elements recited in clam 10 are the same as or similar to elements recited in claim 1, which Petitioner addresses in

a claim chart. *See* Pet. 38–39. Mr. Stein, Petitioner's expert, further shows how these similar elements recited in claims 1 and 10, including basic module 30, disposable module 10, integrated needle drive 38, bearing 14, needle 42, a needle nozzle, and an ink receiving portion, read on Zahn's device. *See* Ex. 1021 ¶ 35.

Petitioner provides a claim chart and further explanation to address the limitations of claims 2, 3, 7–9, 11, 12, 16–18, and 20. As noted, independent claim 19 is similar to claim 1. *See* Pet. 41–43. Petitioner's showing supports the challenge of claims 1–3, 7–9, 11, 12, 16–18, and 20. For example, claims 7 and 16, which recite similar limitations, respectively depend from claims 1 and 10. Claim 7 recites "the portion that can contact the integrated needle drive is the needle shaft." Petitioner identifies needle drive 36, 38, and needle holder shaft 40, which holds needle 42. Needle shaft 40 contacts drive 36, 38. *See* Pet. 41–42; Ex. 1006, Fig. 1.

As another example, claims 8 and 17 respectively depend from claims 7 and 16. Claims 8 and 17 recite "wherein the needle shaft is cylindrical." Petitioner asserts that "the needle holder 40 is cylindrical." Pet. 42. Petitioner relies on Figures 1–7. *Id*. In each of the figures, element 14 is a "fixing ring . . . with a hole 24 to allow needle holder 40 to go through." Ex. 1006, 5, ll. 21–22. Figure 1 represents an "axial cross-section view" of a first embodiment of the tattooing machine. A ring is a "circular object, form, or arrangement with a vacant circular center," or a "small circular band." WEBSTER'S II NEW RIVERSIDE DICTIONARY 1012 (1984). Therefore, needle holder or shaft 42 goes through circular bearing 14 and moves along the axis of the shaft. Figure 1 portrays a tight fit between shaft 42 and bearing ring 14 along an axial cross-section. *See* Ex. 1006, Fig. 1. Accordingly, skilled artisans would have recognized that Zahn implies or

contemplates shaft 40 as cylindrical, because the shaft has the same cross-section as circular ring 14, and slides along "in a linear reciprocating motion." *Id*. at 5, ll. 12–13. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) ("prior art references must be 'considered together with the knowledge of one of ordinary skill in the pertinent art'") (citation omitted).[7]

As noted, independent method claim 19 recites elements that are similar to those recited in device claim 1. According to the discussion above, Zahn "provid[es] a basic module," and "a disposable module," as set forth in claim 19. *See* Pet. 38–39. Zahn's tattoo device "appl[ies] ink to a surface," and a user can "simultaneously remov[e] the entire disposable module," as also set forth in claim 19, by unscrewing disposable cartridge 10, or overcoming the clicking mechanism discussed above. *See* Pet. 42–43. As Petitioner points out, Zahn teaches that the whole die cartridge, as a unit, including flexible sealing element 16, fixing ring or bearing 14, needle 42, and needle sleeve 44, "can be detached from the main body 30 of the tattooing machine to be discarded." *See* Ex. 1006, 6, ll. 27–30; Pet. 42.

Claim 20 recites "replacing another disposable module on the basic module to allow another application of ink." Petitioner relies on Zahn's disposable module teachings. *See* Pet. 42. In addition to discarding a cartridge, Zahn also teaches attaching pre-filled cartridges "[b]efore a tattoo or eyebrow operation," Ex. 1006, 6, ll. 3–4, and in another section, attaching a cartridge "during (eyebrow) tattooing

[7] Figure 8 explicitly discloses shaft 40 as circular in cross-section for a third embodiment. Although Figures 1–3 represent a first (i.e., different) embodiment than Figure 8, Zhang does not limit the first embodiment to any specific shaft shape or specify that circular embodiments are limited to any single embodiment.

operations," *id*. at 4, l. 4, and "eliminating the needs [for refills] . . . making the tattooing operation simpler and more convenient," *id*. at 3, ll. 14–17. Zahn also teaches eliminating the need for "dozens of refills" by drip methods during tattoo operations. *Id*. at 2, ll. 15–17. Based on these teachings, i.e., elimination of refills by dripping, discarding of cartridges, attaching cartridges before and during tattoo operations, and eliminating the transmission of viruses, skilled artisans would have recognized that Zahn implies "replacing another disposable module" as set forth in claim 20.

On this record, Petitioner establishes a reasonable likelihood of prevailing on the ground that Zahn anticipates claims 1–3, 7–12, and 16–20. Patent Owner generally alleges that Petitioner impermissibly relies on Zahn's Figures 1–7, which correspond to three different embodiments. Patent Owner also argues that Petitioner does not address all the elements recited in claims 10 and 19. *See* Prelim. Resp. 22–23. Nevertheless, based on the foregoing discussion, Petitioner's showing is sufficient to establish a reasonable likelihood that at least Zahn's first embodiment, as depicted in Figures 1–3 and as described in Zahn, anticipates claims 1–3, 7–12, and 16–20.

D. Obviousness

1. Claims 2, 4–6, 11, and 13–15, Theiss and Beuchat

Petitioner contends that the combination of Theiss and Beuchat renders claims 2, 4–6, 11, and 13–15 unpatentable for obviousness. Pet. 43–47. Patent Owner disagrees and contends that Theiss does not teach all the elements of claims 1 and 10, from which claims 2, 4–6, 11, and 13–15 depend. Prelim. Resp. 26.

According to the discussion of Theiss above, Patent Owner's argument is not persuasive with respect to claim 1, but is persuasive with respective to claim 10. Claims 11 and 13–15 depend from claim 10. Petitioner does not rely on Beuchat to cure the above noted deficiency in Theiss with respect to claim 10—i.e., preventing liquids from reaching the basic module. Accordingly, Petitioner fails to establish a reasonable likelihood of prevailing on the assertion that the combination of Theiss and Beuchat renders claims 11 and 13–15 obvious.

Regarding dependent claims 2 and 4–6, in addition to relying on alleged deficiencies in Theiss with respect to independent claim 1, Patent Owner alleges other shortcomings in Petitioner's showing, including, *inter alia*, a failure to show "whether the embodiments are *capable* of being combined," "how the resulting apparatus would be configured," or "whether any . . . combination would yield predictable results." Prelim. Resp. 27.

Claim 2 depends from claim 1 and recites "wherein the ink receiving portion has a volume sufficient for one application of ink." This limitation is addressed above in the discussion of anticipation by Theiss. In the alternative here, Petitioner relies on obviousness based on the combination of Theiss and Beuchat. Beuchat discloses sterile, disposable, adaptor member 30, which provides "controlled dispensing [to a needle] wherein the reservoir contains sufficient pigment to perform the entire procedure without requiring the operator to stop and refill the reservoir." Ex. 1007, col. 2, ll. 41–45, col. 6, ll. 28–31, Fig. 3.

Petitioner asserts that based on Beuchat's teaching, "a person having ordinary skill in the art would have been strongly motivated to have an ink reservoir having a volume sufficient for one application of ink as taught by Beuchat." Pet. 44. On this record, notwithstanding Patent Owner's arguments,

merely altering the size of Theiss's reservoir, based on Beuchat's teachings, as Petitioner suggests, would have yielded the predictable result of creating a large, sanitary, reservoir that would not require refilling.

Claim 4 depends from claim 1 and recites "further comprising a separate ink module attachable to an opening in the disposable module for filling the ink receiving portion, the separate ink module having a quantity of sterile ink sufficient for one application." Petitioner relies on Beuchat's Figure 3 and disclosure of "'a disposable adapter for attachment to a head of a pigment-implanting unit, wherein the adapter houses the pigment reservoir and transfer tube in an angled relationship . . . to control the dispensing of pigment to the needle.'" Pet. 45 (quoting Ex. 1007, col. 1, ll. 13–19, emphasis by Petitioner).

Beuchat's Figure 3 follows:

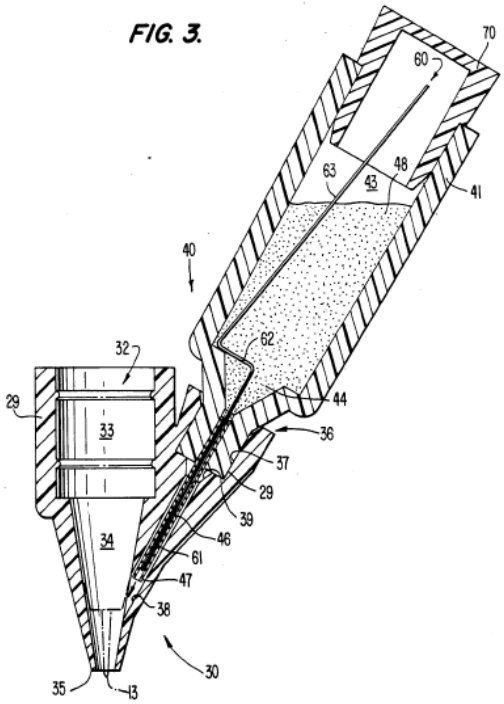


Figure 3 above depicts pigment reservoir 40 attached to disposable adapter body 29 of adapter member 30. *See* Pet. 45; Ex. 1007, col. 4, ll. 46–49, col. 5, ll. 13–15. Member 30 "readily fit[s] to the head of an available [(undepicted)] device of the type which includes a disposable tip assembly used to place the pigment into the dermis." Ex. 1007, col. 2, ll. 55–57. (Note: Needle outline 13 shown above represents a needle 13 location of the noted (undepicted) available device to which member 30 attaches. *See* Ex. 1007, col. 4, ll. 49–53, Fig. 2.) In other words, Beuchat's member 30 would have fit readily (i.e., with minor modifications at most) onto the head portion of existing tattoo devices, including tattoo devices such as Theiss's. *See* Ex. 1007, Fig. 2 (showing member 30 attached to prior art tattoo device head 12).

Petitioner characterizes a modification of Theiss's tattoo device, using Beuchat's device, as "a simple substitution of one known element for another to obtain predictable results." Pet. 46. On this record, either placing Beuchat's head member 30 onto Theiss's head 52, substituting a modified version of Beuchat's replaceable head member 30 for replaceable head 52 of Theiss's device, or modifying Theiss's re-fill hole 56 to accommodate Theiss's separable reservoir 40, would have yielded a predictable device—a tattoo device with a large fluid reservoir that avoids the necessity of unsanitary re-fills, as Beuchat suggests. Even if the record shows that Theiss's device carries sufficient fluid to avoid such re-fills, Beuchat suggests a mere substitution of a similar device to obtain the same or similar function, as Petitioner generally contends. *See* Pet. 46. In addition, Beuchat's device provides the added benefit of controlling pigment flow to a needle, as noted. *See* Ex. 1007, col. 1, ll. 13–19. Petitioner's showing establishes

a reasonable likelihood of prevailing on the ground that the combination of Theiss and Beuchat renders claim 4 obvious.

Claim 5 depends from claim 4 and requires that the "separate ink module" of claim 4 "includes an outlet for discharging ink with each needle stroke." Claim 6 depends from claim 1 and requires a similar outlet in the separate ink module. Petitioner relies, *inter alia*, on Beuchat's disclosure that the separate ink reservoir provides "'a controlled amount of pigment . . . to the reciprocating needle 13.'" Pet. 46 (quoting Ex. 1007, col. 5, ll. 49–50, emphasis by Petitioner). Petitioner also relies on opening 46 in Beuchat's separate ink module. Pet. 47; Ex. 1007, Fig. 3.

Addressing claims 5 and 6, Patent Owner presents arguments similar to those provided with respect to claims 2 and 4. *See* Prelim. Resp. 28–30. On this record, Petitioner's showing has merit for the reasons essentially noted above with respect to claim 4: substituting Beuchat's pigment head and adaptor for the head of Theiss's device, attaching the former to the latter, or modifying Theiss's re-fill hole to accommodate Beuchat's reservoir, would have yielded a predictable device—a device that holds sufficient fluid, controls fluid flow, and avoids unsanitary re-fills, as Beuchat suggests.

Accordingly, on this record, Petitioner establishes a reasonable likelihood of prevailing on the ground that the combination of Theiss and Beuchat renders obvious claims 2 and 4–6. Petitioner fails to establish a reasonable likelihood of prevailing on the ground that the combination of Theiss and Beuchat renders obvious claims 11 and 13–15.

2. Claims 7, 8, 16, and 17, Theiss and Bailey

As discussed above, Petitioner asserts that Theiss anticipates claims 7, 8, 16, and 17. Petitioner alternatively relies on the combination of Theiss and Bailey to assert the obviousness of these claims. Pet. 48–49.

As also discussed above, claim 7 requires the integrated needle drive to contact the needle shaft. Claim 8 requires the needle shaft to be cylindrical. Bailey discloses cylindrical needle shaft 65 parts, including, *inter alia*, tubular part 69, annular shoulder 71, neck 77, body 75, cap 79, and rim 81, for holding and driving a needle that contacts different parts of needle drive 7, including tube 41, in various places. *See* Pet. 49–50 (citing Ex. 1008, col. 3, ll. 63–68, Fig. 1). Notwithstanding Patent Owner's arguments, the record currently shows that contacting Theiss's needle drive with a cylindrical needle shaft amounts, at most, to a predictable variation of similar devices according to established functions, or, with respect to claim 8, a mere design choice of shape with no change in function. *See* Prelim. Resp. 30–33; Pet. 48–50. Skilled artisans would have recognized from Theiss and Bailey that contacting a cylindrical shaft with a drive facilitates driving the shaft and needle in a predictable fashion. *See id.*; Ex. 1008, Figs. 1, 2; Ex. 1005, Fig. 2. Accordingly, on this record, Petitioner establishes a reasonable likelihood of prevailing on the assertion that the combination of Theiss and Bailey renders claims 7 and 8 obvious.

Claims 16 and 17 depend from claim 10. Theiss does not anticipate claim 10, as noted above. Petitioner does not rely on Bailey to cure the above noted deficiency in Theiss with respect to the means function recited in claim 10—i.e., preventing liquids from reaching the basic module. Accordingly, on this record,

Petitioner fails to establish a reasonable likelihood of prevailing on the assertion that the combination of Theiss and Bailey renders claims 16 and 17 obvious.

3. Claims 13–15, Theiss and Zahn

Petitioner relies on the combination of Theiss and Zahn to show the obviousness of claims 13–15, which depend from claim 10. *See* Pet. 50–51. Theiss does not anticipate claim 10, as noted above. Petitioner does not rely on Zahn to cure the above noted deficiency in Theiss with respect to claim 10. In addition, although Petitioner includes claims 13–15 in a section heading involving the ground based on the combination of Theiss and Zahn, Petitioner does not address claims 13–15 in the body of the noted section. *See* Pet. 50–51 (listing claims 1–3 and 7–20 as unpatentable pursuant to "F. Ground 6"). These claims require a separate attachable ink module, and Petitioner does not assert that either Theiss or Zahn teaches or suggests such a module. Accordingly, on this record, Petitioner fails to establish a reasonable likelihood of prevailing on the assertion that the combination of Theiss and Zahn renders claims 13–15 obvious.

4. Claims 1 and 19, Chou and Bailey, and claim 10, Chou, Bailey, and Theiss

Petitioner does not identify how the references disclose or render obvious each of the claim elements. Petitioner effectively invites the Board to rely on an examiner's previous rejection of claims 1, 10 and 19 based on Chou. *See* Pet. 57–58. The Board declines that invitation. The Petition must specify how Chou and the combinations involving Chou, disclose or render obvious the claim elements recited in claims 1, 10 and 19. *See* 37 C.F.R. § 42.104(b)(4)("The *petition* must specify where each element of the claim is found in the prior art patents or printed

publications relied upon. (emphasis added)); 37 C.F.R. § 42.6(a)(3) (incorporation by reference of arguments improper).

Based on the foregoing discussion, Petitioner fails to establish a reasonable likelihood of prevailing on showing the unpatentability of claims 1, 10, and 19 based on the combinations of record involving Chou.

E. Result

1. Petitioner has established a reasonable likelihood of prevailing on the following grounds for which we institute *inter partes* review:

claims 1–3, 7–12, and 16–20 for anticipation based on Zahn;

claims 1–3, 7–9, 19, and 20 for anticipation based on Theiss;

claims 2 and 4–6 for obviousness based on Theiss and Beuchat; and

claims 7 and 8 for obviousness based on Theiss and Bailey.

2. Petitioner has not established a reasonable likelihood of prevailing on the following grounds:

claims 10–18 for anticipation by Adler;

claims 10–12 and 16–18 for anticipation by Theiss;

claims 13–15 for anticipation by Zahn;

claims 11 and 13–15 for obviousness based on Theiss and Beuchat;

claims 13–15 for obviousness based on Theiss and Zahn;

claims 16 and 17 for obviousness based on Theiss and Bailey;

claims 1 and 19 for obviousness based on Chou and Bailey; and

claim 10 for obviousness based on Chou, Bailey, and Theiss.

F. Other Challenges

Upon review of the other challenges asserted by Petitioner against claims 1–3, 7–12, and 16–20, we deny these other grounds, because Petitioner has failed to

show they are more persuasive to the grounds upon which we have instituted *inter partes* review for the same claims. *See* Pet. ii (the redundant grounds are listed Grounds 7–9 with respect to claims 9 and 18, and listed Ground 6 with respect to claims 1–3, 7–12, and 16–20).[8]

III. CONCLUSION

For the foregoing reasons, Petitioner has demonstrated that there is a reasonable likelihood of its demonstrating unpatentability of claims 1–12 and 16–20 of the ’530 patent.

The Board has not made a final determination on the patentability of the challenged claims.

IV. ORDER

For the reasons given, it is

ORDERED that the Petition is *granted* with respect to unpatentability of claims 1–12 and 16–20;

FURTHER ORDERED that the Petition is *denied* with respect to unpatentability of claims 13–15;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of the ’530 patent is hereby instituted commencing on the entry date of this

[8] Ground 6, obviousness based on Theiss and Zahn, is not redundant with respect to claims 13–15 for the reasons noted above.

Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial;

FURTHER ORDERED that no ground other than that specifically granted above is authorized for the *inter partes* review as to claims 1–12 and 16–20; and

FURTHER ORDERED that an initial conference call with the Board is scheduled for 2:00 PM Eastern Time on May 22, 2014. The parties are directed to the Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,765-66 (Aug. 14, 2012) for guidance in preparing for the initial conference call, and should be prepared to discuss any proposed changes to the Scheduling Order entered herewith and any motions the parties anticipate filing during the trial.

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