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Paper 13
Date: November 15, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MAHLE BEHR CHARLESTON INC.,
Petitioner,

v.

FRANK AMIDIO CATALANO,
Patent Owner.

IPR2023-00861
Patent RE47,494 E

Before GRACE KARAFFA OBERMANN, JON B. TORNQUIST, and CHRISTOPHER M. KAISER, *Administrative Patent Judges.*

KAISER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

A. Background and Summary

MAHLE Behr Charleston Inc. ("Petitioner") filed a petition for an *inter partes* review (Paper 1 ("Pet.")) challenging claims 12, 15–17, 19–29, 31–40, and 42–47 of U.S. Patent No. RE47,494 E (Ex. 1001 ("the '494 patent")). Frank Amidio Catalano ("Patent Owner") filed a Preliminary Response. Paper 12 ("Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

For the reasons set forth below, we determine the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. Accordingly, we do not institute an *inter partes* review.

B. Real Parties-in-Interest

Patent Owner identifies itself as the real party-in-interest. Paper 4, 2. Petitioner identifies itself as the real party-in-interest. Pet. 1. The parties disagree about whether Petitioner additionally should have identified one of its customers, Daimler Trucks North America LLC, as a real party-in-interest. Pet. 2–6; Prelim. Resp. 42–43. As discussed below, we deny institution on the merits of the Petition, so we need not reach this real party-in-interest issue.

C. Related Matters

The parties identify *Electrolysis Prevention Solutions LLC v. Daimler Trucks North America LLC*, No. 3:21-cv-171 (W.D.N.C.), as a related matter. Pet. 6; Paper 4, 2.

D. The '494 Patent (Ex. 1001)

The '494 patent, titled "Electrolysis Prevention Device and Method of Use," issued on July 9, 2019. Ex. 1001, codes (45), (54). The '494 patent "relates generally to motor vehicles, whether powered by gas, diesel, electric battery, propane, natural gas, or any other like material, and in particular to radiators and engines and preventing corrosion in the cooling system of said vehicles." *Id.* at 1:35–39. According to the '494 patent, "[r]adiators and engines were historically made of . . . similar metals," but as "aluminum parts have been incorporated into engine thermal control devices, such as radiators and heater cores," this use of "dissimilar metals [causes] an increase in electrolytic activity, leading to increased vulnerability to corrosion." *Id.* at 1:56–64. This causes "aluminum components [to] corrode and become porous." *Id.* at 1:65–66.

"Chemical corrosion inhibitors have been developed to inhibit electrolysis, but they are toxic, present problems to the environment, and present problems of disposal." *Id.* at 2:3–6. As an alternative to these inhibitors, "sacrificial anodes, constructed of active metals, . . . such as magnesium, aluminum, zinc or combinations thereof, have also been used as corrosion inhibitors." *Id.* at 2:6–9. These anodes "act[] as a 'lightning rod' that electricity clings to, thus relieving the anodic metal of the thermal control device from the corrosive damage of electrolysis." *Id.* at 2:9–13. Previous anodes, however, sometimes were "hard to access to check [their]

condition or replace when [they wore] out." *Id.* at 2:14–19. Other previous anodes were placed "too far from the inlet to effectively prevent corrosion from occurring." *Id.* at 2:24–31.

The '494 patent describes "a device to prevent corrosion caused by electrolysis comprised of metal, preferably disposed in or near the inlet hose connection of a radiator, heater core, or other such engine thermal control device." *Id.* at 2:40–3:43. In particular, the '494 patent describes "attaching the sacrificial anode to the engine heat exchange component within 10 inches of a center of the inlet connection." *Id.* at 3:21–23.

E. Illustrative Claim

Of the challenged claims, claims 12, 25, and 37 are independent claims. Claim 12 is illustrative and reproduced below.

> 12. A method of preventing corrosion of a radiator, the method comprising: installing a sacrificial anode assembly including a sacrificial anode within the radiator, wherein the sacrificial anode is placed within 10 inches of a hot liquid inlet to the radiator.

Ex. 1001, 11:57–63.

F. Asserted Unpatentability Challenges

Petitioner asserts that claims 12, 15–17, 19–29, 31–40, and 42–47 are unpatentable based on the following challenges:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
12, 15, 16, 19–21, 24–26, 29, 31–34, 37, 40, 42, 43, 45	102	Tomosada[1]
12, 15, 16, 19–21, 24–26, 29, 31–34, 37, 40, 42, 43, 45	103	Tomosada
22, 23, 27, 35, 36, 38, 39, 46, 47	103	Tomosada, Hanazaki '069[2]
12, 15–17, 19–21, 24	102	Hanazaki '196[3]
12, 15–17, 19–21, 24	103	Hanazaki '196
22, 23, 25–29, 31–40, 42–47	103	Hanazaki '196, Hanazaki '069
12, 15–17, 19–21, 24–29, 31–34, 37–40, 42–45	102	Godefroy[4]
12, 15–17, 19–21, 24–29, 31–34, 37–40, 42–45	103	Godefroy
22, 23, 35, 36, 46, 47	103	Godefroy, Hanazaki '069

[1] Japanese Patent Application Publication S55-68595, published May 23, 1980 (Ex. 1005).
[2] Japanese Patent Application Publication JP-A-6-272069, published Sept. 27, 1994 (Ex. 1006).
[3] Japanese Patent Application Publication H1-217196, published Aug. 30, 1989 (Ex. 1007).
[4] WO 03/100337 A2, published Dec. 4, 2003 (Ex. 1008).

Petitioner relies on the declaration of Dr. Dana J. Medlin (Ex. 1004, the "Medlin Declaration").

II. ANALYSIS

A. Legal Standards

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable under 35 U.S.C. § 103 if "the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103. The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when present, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To show obviousness, it is not enough to merely show that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). "Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and

development to yield the claimed invention." *Id.* (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007)). "This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR*, 550 U.S. at 418–19. On the other hand, an obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Nevertheless, "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421.

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art "would have had at least a bachelor's degree in mechanical engineering, metallurgical engineering, or materials science engineering, and have two or more years of experience in mechanical engineering, metallurgical engineering, or materials science engineering and/or corrosion prevention system design." Pet. 16 (citing Ex. 1004 ¶¶ 72–75). According to Petitioner, "[a] person could also have qualified as a [person of ordinary skill in the art] with some combination of more formal education (*e.g.*, a Ph.D.) and less technical experience," or vice versa. *Id.* at 16–17. "To the extent necessary, the [person of ordinary skill in the art] may have collaborated with other skilled artisans, such that the individual and/or team collectively would have had experience and/or knowledge or particular characteristics of a radiator

system." *Id.* at 17. "For the limited purpose of [its] Preliminary Response, Patent Owner does not contest Petitioner's definition of a person of ordinary skill in the art, but it reserves the right to do so if trial is instituted." Prelim. Resp. 7.

In light of the record before us, and for purposes of this Decision, we adopt Petitioner's proposal regarding the level of ordinary skill in the art. Based on our review of the '494 patent and the prior art of record, we determine that the definition offered by Petitioner comports with the qualifications a person would have needed to understand and implement the teachings of the '494 patent and the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings regarding ordinary skill level are not required "where the prior art itself reflects an appropriate level and a need for testimony is not shown") (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

C. Claim Construction

In an *inter partes* review, we construe claim terms according to the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2022). Under *Phillips*, claim terms are afforded "their ordinary and customary meaning." *Phillips*, 415 F.3d at 1312. "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1313. "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

Both parties argue that we need not construe any terms in order to decide whether to institute trial. Pet. 17; Prelim. Resp. 8. We agree. After considering the arguments and information presented in the Petition and Preliminary Response, we determine that we do not need to construe any terms expressly for purposes of this Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.")).

D. Challenges Based on Tomosada

Petitioner contends claims 12, 15, 16, 19–21, 24–26, 29, 31–34, 37, 40, 42, 43, 45 are anticipated by, as well as unpatentable as obvious in view of, Tomosada. Pet. 8–9, 22–43. Petitioner also contends claims 22, 23, 27, 35, 36, 38, 39, 46, 47 are unpatentable as obvious in view of the combination of Tomosada and Hanazaki '069. *Id.* at 8–9, 43–57.

1. Tomosada

Tomosada "relates to improvements to an aluminum heat exchanger." Ex. 1005, 1. Because "electrochemically, aluminum is a base metal relative to other structural metals typically used, anti-corrosion measures are required for heat exchanger tubes in an aluminum heat exchanger." *Id.* According to Tomosada, these measures have included both forming heat exchanger tubes from "anti-corrosion aluminum alloys . . . such as aluminum-manganese and aluminum-magnesium" and coating "heat exchanger tubes . . . with zinc on the inner surface," but these measures have proven unsatisfactory. *Id.*

To "solve[] the problems associated with conventional aluminum heat exchangers," Tomosada discloses forming "heat exchanger tube[s]" of anti-corrosion aluminum alloy" and placing therein "turbulator[s] . . . for improving heat exchange performance," with the turbulators being "made using zinc or a zinc compound material that is an electrochemical base relative to aluminum." *Id.* "When the heat exchanger tube . . . is filled with coolant, this turbulator . . . becomes a sacrificial anode relative to the heat exchanger tube." *Id.* at 1–2.

2. Analysis

Each of the independent claims of the '494 patent recites the placement of an anode or an anode holder "within 10 inches of a hot liquid inlet to [a] radiator." Ex. 1001, 11:57–63; *see* Ex. 1001, 12:35–42, 12:65–13:4. In arguing that the challenged claims are unpatentable on grounds based on Tomosada, Petitioner relies on Tomosada to teach or suggest these 10-inch limitations. Pet. 29–33, 37–38, 40–48.

Tomosada itself does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator. Ex. 1005, 1–3. Instead, Petitioner directs us to the testimony of Dr. Medlin to explain why a person of ordinary skill in the art would have understood that Tomosada's anodes were placed within 10 inches of the requisite inlet. Pet. 29–33, 37–38, 40–48 (citing Ex. 1004 ¶¶ 82, 83, 91, 94–99, 155–174, 201–204, 207–210, 224–226).

Dr. Medlin testifies that a person of ordinary skill in the art "would have understood that as a result of [Tomosada's] turbulators 2 being located underneath the hot liquid inlet, the sacrificial anodes contained in each of the turbulators 2 would be placed within 10 inches of a center axis of a hot

liquid inlet to the radiator of Tomosada." Ex. 1004 ¶ 96. It is not clear why the conclusion follows from the premise, and Dr. Medlin does not explain why it does. *Id.* In addition, Dr. Medlin testifies that, "if the turbulators 2 are inserted through the hot liquid inlet . . . , the sacrificial anodes contained in each of the turbulators 2 would be placed within 10 inches of a center axis of a hot liquid inlet to the radiator of Tomosada." *Id.* But neither Dr. Medlin nor Petitioner directs us to evidence of how Tomosada's device is assembled. *Id.* Accordingly, this testimony does not show sufficiently that Tomosada would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Tomosada's hot liquid inlet.

Dr. Medlin next testifies that a person of ordinary skill in the art would have understood that sacrificial anodes "provide anodic protection over a . . . distance . . . significantly greater in the downstream direction" than in the upstream direction and therefore "would have been motivated to locate a sacrificial anode as close to a hot liquid inlet as possible," leading them to place the anode within 10 inches of the inlet. *Id.* ¶ 97. Even if we accept Dr. Medlin's testimony about locating the anode as close as possible to the inlet, it is not clear why that would lead to a distance less than or equal to 10 inches, and Dr. Medlin does not explain why it would. *Id.* Accordingly, this testimony does not show sufficiently that Tomosada would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Tomosada's hot liquid inlet.

Dr. Medlin also testifies that, "where [Tomosada's] heat exchanger tubes [we]re 20 inches long, a [person of ordinary skill in the art] would have understood that almost half of each of the heat exchanger tubes 1

[would have been] located within 10 inches of a center axis of the hot liquid inlet," meaning that "[a] significant portion of each of these heat exchanger tubes 1 is within 10 inches of a center axis of the hot liquid inlet." *Id.* ¶ 167. But Tomosada does not limit the length of the heat exchanger tubes to any maximum length. Ex. 1005, 1–2. Aluminum automotive radiators can be over 35 inches high. Ex. 2001, 4. It is not clear why Tomosada's teaching that some portion of the length of each heat exchanger tube, significant or otherwise, is within 10 inches of the inlet would have led a person of ordinary skill in the art to place an anode less than or equal to 10 inches from the inlet, and Dr. Medlin does not explain why it would. *Id.* Accordingly, this testimony does not show sufficiently that Tomosada would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Tomosada's hot liquid inlet.

Dr. Medlin next testifies that "Tomosada teaches that the turbulator 2 extends at least almost an entire length of the heat exchanger tube 1." Ex. 1004 ¶ 168. According to Dr. Medlin, this teaching "is consistent with, for example, Hanazaki-069 which explains that 'it is preferable to provide a sacrificial anode over the *entire length of the radiator tube*.'" *Id.* (citing Ex. 1006 ¶ 14). Regardless of how consistent such a teaching might be with Hanazaki '069, it is not a teaching that Tomosada makes. Figure 2 of Tomosada shows heat exchanger tube 1 extending above and below the boundaries of the figure but does not indicate whether turbulator 2 extends to, or near, those limits. Ex. 1005, 3. The text of Tomosada does not discuss how near either end of the heat exchanger tube the turbulator extends. *Id.* at 1–2. Accordingly, this testimony does not show sufficiently that Tomosada would have suggested to a person of ordinary skill in the art

that anodes should be placed within 10 inches of Tomosada's hot liquid inlet.

On this record, we determine that Petitioner advances Dr. Medlin's testimony to make out a claim limitation that is not suggested, much less taught, by the text of the prior art reference at hand. Because that testimony lacks objective support or adequate technical reasoning, it is entitled "little weight" and, moreover, is insufficient to support institution of trial. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (Aug. 24, 2022) (precedential). Dr. Medlin's remaining testimony relies on the testimony we have discussed so far. Ex. 1004 ¶¶ 201–204, 207–210, 224–226. Accordingly, this testimony does not show sufficiently that Tomosada would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Tomosada's hot liquid inlet.

Because Petitioner relies on Dr. Medlin's testimony to show that a person of ordinary skill in the art would have understood that Tomosada suggested placing an anode within 10 inches of a hot liquid inlet to a radiator, and because that testimony does not show sufficiently that a person of ordinary skill in the art would have had such an understanding, we determine that Petitioner has not shown a reasonable likelihood of prevailing with respect to any claim challenged on the basis of Tomosada.

E. Challenges Based on Hanazaki '196

Petitioner contends claims 12, 15–17, 19–21, and 24 are anticipated by, as well as unpatentable as obvious in view of, Hanazaki '196. Pet. 8–9, 48–57. Petitioner also contends claims 22, 23, 25–29, 31–40, and 42–47 are unpatentable as obvious in view of the combination of Hanazaki '196 and Hanazaki '069. *Id.* at 8–9, 58–66.

1. Hanazaki '196

Hanazaki '196 "relates to a heat exchanger than is made from aluminum that uses a brine that comprises an aqueous solution of calcium chloride or sodium chloride, and, in particular, to a heat exchanger, made from aluminum, that is superior in resisting pitting." Ex. 1007, 1. According to Hanazaki '196, in aluminum heat exchangers, "typically Freon gas, ammonia gas, or the like, has been used as the coolant," but Freon has "problems with the damage to the environment," and ammonia poses "not only a problem with toxicity for the human body, but also problems with foul odors or soiling of the environment, and problems with explosiveness, and the like." *Id.* Brine coolants lack these problems, but "when these brine coolants are used, the corrosiveness in relation [to] metal is extremely high." *Id.* at 1–2. To permit the use of an aluminum heat exchanger with brine coolants, Hanazaki '196 discloses the use of "a sacrificial anode, formed from metal that is less noble than aluminum, . . . formed on an inner wall of a pipeline that forms a brine flow path." *Id.* at 2.

Hanazaki '196 discloses one embodiment in which a rectangular header pipe has "attaching groove 11" formed in it, "and a sacrificial anode 12 . . . is fitted into this attaching groove 11, followed by plug welding at welding points 13 at at least five locations for a single sacrificial anode 12 with a prescribed spacing of, for example, 30 cm." *Id.* at 4. In a separate embodiment, Hanazaki '196 discloses forming "attaching groove 31" in "header pipes 26a and 26b" and fitting "sacrificial anode 32" "into the attaching groove," then "plug weld[ing], at at least two welding points for each individual sacrificial anode 32, at prescribed intervals such as, for example, with a spacing of 30 cm." *Id.* at 5.

2. Analysis

As noted above, each of the independent claims of the '494 patent recites the placement of an anode or an anode holder "within 10 inches of a hot liquid inlet to [a] radiator." Ex. 1001, 11:57–63; *see id.* at 12:35–42, 12:65–13:4. In arguing that the challenged claims are unpatentable on grounds based on Hanazaki '196, Petitioner relies on Hanazaki '196 to teach or suggest these 10-inch limitations. Pet. 52–54, 61–62, 64–65.

Hanazaki '196 itself does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator. Ex. 1007, 1–7. Instead, Petitioner directs us to the testimony of Dr. Medlin to explain why a person of ordinary skill in the art would have understood that Hanazaki '196's anodes were placed within 10 inches of the requisite inlet. Pet. 52–54, 61–62, 64–65 (citing Ex. 1004 ¶¶ 97–100, 117–121, 171–174, 259–267, 299–301, 329–334).

Dr. Medlin's testimony in paragraphs 97–100, 117–121, and 171–174 relates to the Tomosada grounds, which were discussed above. In particular, Petitioner advances Dr. Medlin's opinion testimony to make out a limitation that is not shown, on this record, to be suggested by any disclosure within Hanazaki '196. For example, with respect to the Hanazaki '196 grounds, Dr. Medlin first testifies that Figure 2A of Hanazaki '196 shows an anode 12 "with a[] portion cut away" to show the cross-section of an inlet to the radiator, "indicating to a [person of ordinary skill in the art] that this cut-away sacrificial anode 12 extends even closer to the hot liquid inlet," meaning that a person of ordinary skill in the art "would have understood at least one of the sacrificial anodes 12 depicted in Figure 2A to be within 10 inches of a center axis of the hot liquid inlet." Ex. 1004 ¶ 265. But Dr.

Medlin does not explain why an anode near (or "even closer to") the hot liquid inlet must be within 10 inches. *Id.* Accordingly, this testimony does not show sufficiently that Hanazaki '196 would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Hanazaki '196's hot liquid inlet.

Dr. Medlin also testifies that Figure 11 of Hanazaki '196 shows an "anode 32 at a supplying opening 29," meaning that it must be "placed within 10 inches of a hot liquid inlet to the radiator." *Id.* ¶ 266. But Dr. Medlin does not explain why the depiction of anode 32 as near opening 29 means that the distance between them must necessarily be less than 10 inches. *Id.* Although Figure 11 depicts anode 32 as near opening 29, "patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." *Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000). The specification of Hanazaki '196 does not mention the spacing between the first anode and the inlet to the radiator. Ex. 1007, 5–6. Accordingly, this testimony does not show sufficiently that Hanazaki '196 would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Hanazaki '196's hot liquid inlet.

Dr. Medlin's remaining testimony relies on the testimony we have discussed so far. Ex. 1004 ¶¶ 299–301, 329–334. Accordingly, this testimony does not show sufficiently that Hanazaki '196 would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Hanazaki '196's hot liquid inlet.

Because Petitioner relies on Dr. Medlin's testimony to show that a person of ordinary skill in the art would have understood that Hanazaki '196 suggested placing an anode within 10 inches of a hot liquid inlet to a radiator, and because that testimony does not show sufficiently that a person of ordinary skill in the art would have had such an understanding, we determine that Petitioner has not shown a reasonable likelihood of prevailing with respect to any claim challenged on the basis of Hanazaki '196.

F. Challenges Based on Godefroy

Petitioner contends claims 12, 15–17, 19–21, 24–29, 31–34, 37–40, and 42–45 are anticipated by, as well as unpatentable as obvious in view of, Godefroy. Pet. 8–9, 66–77. Petitioner also contends claims 22, 23, 35, 36, 46, and 47 are unpatentable as obvious in view of the combination of Godefroy and Hanazaki '069. *Id.* at 8–9, 77–79.

1. Godefroy

Godefroy "concerns a device for protecting the aluminum walls of a heat exchanger against corrosion by an aggressive environment to which its walls are subjected." Ex. 1008, 1. The invention of Godefroy "aims in particular to provide . . . a device which avoids the use of an anti-corrosion alloy applied, for example co-laminated, to the walls of aluminum tubes." *Id.* at 5. The device "comprises at least one renewable sacrificial resist formed of elements capable of lowering at least locally the electrochemical potential of the aluminum of the walls of the heat exchanger." *Id.* In one embodiment, Godefroy discloses "a heat exchanger manifold with a pipe in which a protection device according to the invention is placed." *Id.* at 8, Fig. 1.

2. Analysis

As noted above, each of the independent claims of the '494 patent recites the placement of an anode or an anode holder "within 10 inches of a hot liquid inlet to [a] radiator." Ex. 1001, 11:57–63; *see id.* at 12:35–42, 12:65–13:4. In arguing that the challenged claims are unpatentable on grounds based on Godefroy, Petitioner relies on Godefroy to teach or suggest these 10-inch limitations. Pet. 69–70, 73, 75–76.

Godefroy itself does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator. Ex. 1008, 1–15. Instead, Petitioner directs us to the testimony of Dr. Medlin to explain why a person of ordinary skill in the art would have understood that Godefroy's anodes were placed within 10 inches of the requisite inlet. Pet. 69–70, 73, 75–76 (citing Ex. 1004 ¶¶ 144, 355–361, 381–382, 406–408). Here again, we detect an attempt to back-fill with opinion testimony a prior art disclosure that does not suggest a required feature of the claimed invention.

With respect to the Godefroy grounds, Dr. Medlin admits that "Godefroy does not provide exact dimensions with Figure 1," but testifies that a person of ordinary skill in the art "would have understood Figure 1 as showing that an entirety of the sacrificial anode 14, or at least a significant portion of the sacrificial anode 14, is within 10 inches of a center axis of the inlet." Ex. 1004 ¶ 144; *see* Ex. 1004 ¶¶ 361, 382, 408 (repeating same testimony). "[P]atent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." *Hockerson-Halberstadt*, 222 F.3d at 956. Accordingly, Figure 1 of Godefroy cannot be relied on to teach or suggest the 10-inch limitation of the challenged claims. Thus, this

testimony does not show sufficiently that Godefroy would have suggested to a person of ordinary skill in the art that anodes should be placed within 10 inches of Godefroy's hot liquid inlet.

Because Petitioner relies on Dr. Medlin's testimony to show that a person of ordinary skill in the art would have understood that Godefroy suggested placing an anode within 10 inches of a hot liquid inlet to a radiator, and because that testimony does not show sufficiently that a person of ordinary skill in the art would have had such an understanding, we determine that Petitioner has not shown a reasonable likelihood of prevailing with respect to any claim challenged on the basis of Godefroy.

III. CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence presented, we determine that Petitioner has not shown a reasonable likelihood that it will prevail in showing that at least one of the challenged claims is unpatentable. Accordingly, we do not institute an *inter partes* review of any challenged claim based on any ground asserted in the Petition.

IV. ORDER

For the reasons given, it is:

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition is denied, and no *inter partes* review is instituted.

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