

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MAHLE BEHR CHARLESTON INC.,  
Petitioner,

v.

FRANK AMIDIO CATALANO,  
Patent Owner,

Patent No. RE47,494 to Catalano  
Issue Date: July 9, 2019

Title: ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

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*Inter Partes* Review No.: IPR2023-00861

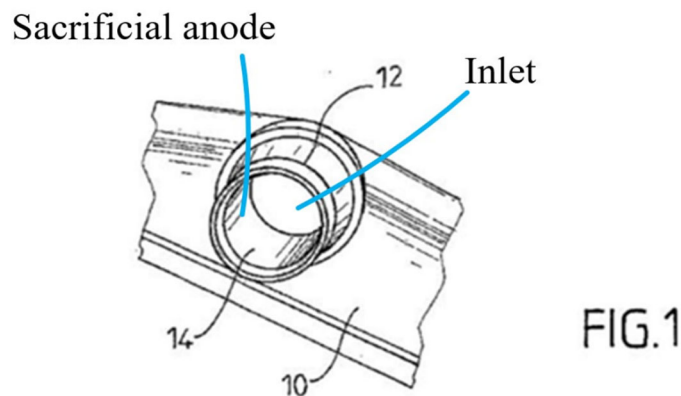
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**PETITIONER'S REQUEST FOR DIRECTOR REVIEW**

## Petitioner's Request for Director Review

The decision denying institution of *Inter Partes* review of Claims 12, 15–17, 19–29, 31–40, and 42–47 (the “Challenged Claims”) of U.S. Patent No. RE47,494 (the “’494 Patent,” EX1001) did not identify any claim element allegedly missing from any of the three prior art references independently advanced by Petitioner. *See* Paper 13 (the “Decision”). Instead, it denied institution on the basis that the references do not expressly *recite* a claimed dimensional range—“within 10 inches”—between the “sacrificial anode” and “liquid inlet” elements of the radiator. In doing so, the Decision clearly disregarded the prior art’s facial teaching of the dimensional range.

In particular, the Decision disregarded Int’l Patent App. Pub. No. 03/100337 to Godefroy *et al.*’s (“Godefroy,” EX1008) teaching of the “sacrificial anode 14” located at, and lining, the interior of pipe 12, which itself is the liquid inlet.



Petitioner argued that Godefroy’s “sacrificial anode” located at, and lining, the inlet necessarily satisfies the “within 10 inches” limitation (*see* Paper 1, 20, 68–70), and supported its argument with testimony from the person of ordinary skill in the art (“POSITA”) interpreting the figure the same way (*see* EX1004, ¶¶143–44, 355–61).

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The Decision rejected this argument, criticizing Petitioner for “attempt[ing] to back-fill” the lack of a recited dimensional range in Figure 1 of Godefroy with opinion testimony, *without ever addressing the fact that no dimensional interpretation is even required*. Figure 1 of Godefroy is clear on its face that the sacrificial anode 14 is located at, and lines, the liquid inlet; a fact the Decision never acknowledges or even analyzes. Indeed, how much closer can the sacrificial anode get than lining the very tube forming the inlet?

This erroneous finding alone warrants Director Review as it cannot be that a patent drawing depicting an element at and lining a location (*i.e.*, “within 0 inches”) does not teach the element being “within 10 inches” of that location. A contrary conclusion incentivizes use of dimensional ranges in claims to superficially distinguish prior art. Indeed, prior art expressly teaching the claimed invention in every respect, as here, could be disregarded on the dubious basis that dimensions are not expressly recited. This outcome is particularly problematic where, as here, the challenged patent is silent as to any benefit or advantage gained from the dimensional range. Petitioner presented prior art depicting the sacrificial anode at the liquid inlet, supported the simple interpretation of the figure with expert testimony, and was so far denied even a trial on the question.

The Decision is an abuse of discretion because it: (1) erroneously found that Godefroy does not depict the sacrificial anode “within 10 inches” of the inlet and

thus does not teach the dimensional range; (2) erroneously concluded that drawings cannot teach dimensional ranges without reciting dimensions; and (3) allowed these errors to infect its analysis of Petitioner's alternative obviousness arguments.

## **I. LEGAL STANDARD**

“Requests for Director Review of the Board’s decision whether to institute an AIA trial ... shall be limited to decisions presenting (a) an abuse of discretion or (b) important issues of law or policy.” *See* USPTO, Revised Interim Director Review Process at 2.B, Availability of Director Review: AIA Trial Proceedings (last modified July 25, 2023). An abuse of discretion is found if a decision: (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact finding; or (4) involves a record that contains no evidence on which the Board could rationally base its decision. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

## **II. BACKGROUND**

The '494 Patent is generally directed to “radiators and engines and preventing corrosion in the cooling system of [] vehicles, especially those with components of dissimilar metal construction which present most cooling system corrosion problems.” EX1001, 1:35–41. The '494 Patent states that “an unfortunate side effect of using dissimilar metals is an increase in electrolytic activity, leading to increased vulnerability to corrosion” and that “[i]n response to the electrolytic activity, also

known as electrolysis, aluminum components corrode and become porous and may begin to leak in as little as two weeks.” *Id.*, 1:61–67. The ’494 Patent states that “sacrificial anodes, constructed of active metals, that is metals that react with oxygen, such as magnesium, aluminum, zinc or combinations thereof, have also been used as corrosion inhibitors.” *Id.*, 2:6–9.

Independent Claim 12, which the Decision found to be illustrative, recites:

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.

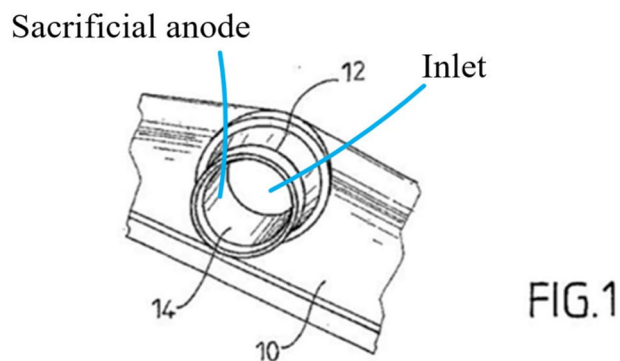
While Petitioner challenged other independent claims, all Challenged Claims recite the dimensional range (within 10 inches), which was the only purportedly distinguishing feature identified during prosecution. Paper 1, 12–16.

### **A. Godefroy**

In discussing Godefroy (Ground 5), the Decision found that, “Godefroy itself does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator.” Paper 13, 18. The Decision based this finding on the Federal Circuit’s statement in *Hockerson-Halberstadt, Inc. v. Avia Group Int’l* that, “[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.” Paper 13, 18 (citing 222 F.3d 951, 956 (Fed. Cir. 2000)). The Decision concluded

that, because there are no dimensions in Figure 1 of Godefroy, it “cannot be relied on to teach or suggest the 10-inch limitation of the challenged claims.” Paper 13, 18.

Petitioner recognized that Godefroy does not expressly recite the dimensional range, and argued Godefroy's depiction in Figure 1 of the sacrificial anode located at, and lining, the tube forming the liquid inlet necessarily disclosed the claimed dimensional range (0 inches being “within 10 inches”).



Paper 1, 15, 20, 68–70; EX1004, ¶¶141–44, 359–61; EX1008, FIG. 1. Petitioner did not present an alternative obviousness argument as to Godefroy because a POSITA could not locate the sacrificial anode any closer to the liquid inlet than what is shown.

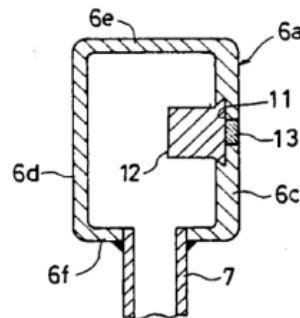
### **B. Hanazaki-196**

The Decision similarly found Japanese Patent App. Pub. No. H1-217196 to Hanazaki, *et al.* (“Hanazaki-196,” EX1006) (Ground 3) “does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator.” Paper 13, 15. Again, Petitioner recognized that Hanazaki-196 does not expressly recite the dimensional range, but argued that a POSITA would have understood the reference to disclose the dimensional range based on spatial relationships in the

patent's overall disclosure. *See* Paper 1, 52–54; EX1004, ¶¶117–31, 264–67.

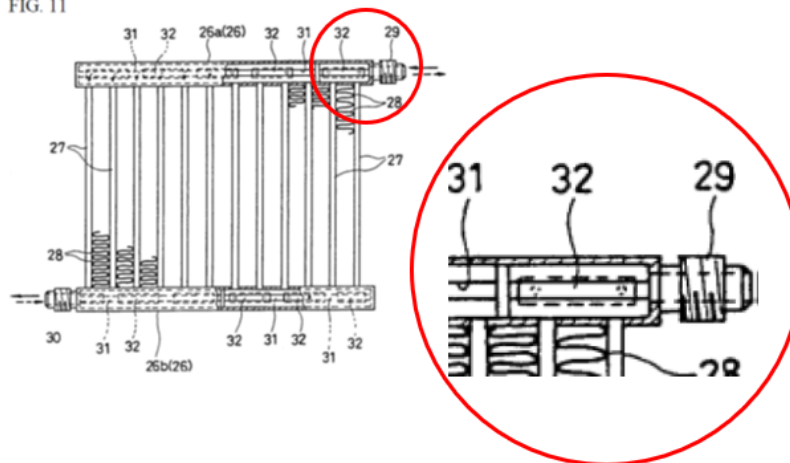
For example, referring to Figure 3 below, Petitioner's declarant explained that an exemplary sacrificial anode 12 is extrusion molded, fitted into attaching groove 11, and plug welded at points 13 to header pipe 6a within the radiator.

FIG. 3



*Id.*, ¶123; EX1008, FIG. 3. Referring to Figure 11 below, Petitioner's declarant explained that the sacrificial anode 32 can be located at a “supplying opening 29” (the liquid inlet), and further provided a blown-up image of Figure 11 showing the sacrificial anode 32 closest to the supplying opening 29. *Id.*, ¶¶128–30.

FIG. 11



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Petitioner's declarant explained that the sacrificial anode can be plug welded at two welding points, *e.g.*, "with spacing of 30cm." *Id.*, ¶129. Petitioner's declarant then derived that, "[a] POSITA would have understood that this sacrificial anode is within 10 inches of the center axis of the hot liquid inlet." *Id.*, ¶130.

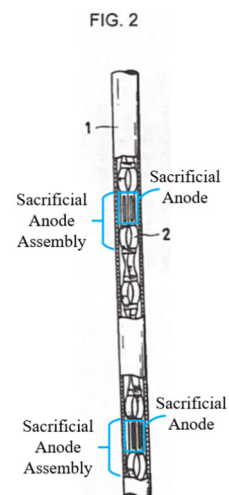
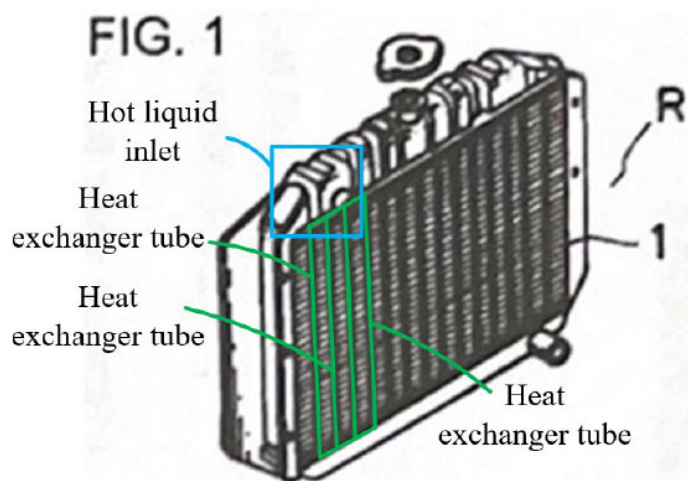
This derivation follows from a simple comparison of the spacing between the plug welds on the sacrificial anode (the dotted circles at either end of the sacrificial anode 32 in Figure 11 spaced 30cm apart (~12 inches)), to the spacing between the depicted sacrificial anode and the liquid inlet (approximately half that distance). Although the Decision conceded Figure 11 depicted the sacrificial anode "near" the liquid inlet, it nonetheless dismissed it on the basis that it did not expressly recite "within 10 inches." Paper 13, 15–16. This was again based on *Hockerson. Id.*, 16.

Petitioner's declarant also explained, in the alternative, that even if Hanazaki-196 did not expressly teach the claimed dimensional range, it would have been obvious. For example, Petitioner's declarant explained that in addition to the reasons provided below in connection with Tomosada, which are equally applicable to the disclosure of Hanazaki-196, Hanazaki-196 further discloses using dividing plates 14 to cause serpentine flow of fluid through the radiator. *Id.*, ¶267. Petitioner's declarant explained that the inclusion of dividing plates 14 would further cause the sacrificial anodes 32 to be located at the liquid inlet 29 and therefore "within 10 inches." The Decision never addressed this additional, alternative argument.

### C. Tomosada

In discussing Japanese Patent App. Pub. No. S55-68595 to Tomosada (“Tomosada”, EX1005) (Ground 1), the Decision again found that, “Tomosada itself does not disclose that its sacrificial anodes are placed within 10 inches of a hot liquid inlet to a radiator,” and further concluded that Petitioner’s declarant did not explain how Tomosada’s device is assembled such that the identified sacrificial anode would be placed within 10 inches of the liquid inlet. Paper 13, 10.

The Decision overlooked Petitioner’s explanation of Tomosada, including its express explanation of the device’s assembly. Paper 1, 29–31; EX1004, ¶¶76–96, 162–70. Petitioner’s declarant provided annotated Figure 1 below, and explained that a “POSITA would have understood that the turbulator 2 includes multiple sacrificial anode assemblies, each of which includes one of the sacrificial anodes (the rectangular components) . . . .” *Id.*, ¶91.



Petitioner's declarant then explained how "the turbulators 2 would be located within the heat exchanger tubes 1 underneath the hot liquid inlet" and that a "POSITA would have understood that as a result . . . , 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.*, ¶96. The Decision did not see this conclusion as following from the offered premise, yet provided no alternative or competing interpretation of the figure. *See* Paper 13, 10–11.

Again, Petitioner's declarant alternatively argued that even if Tomosada did not teach the claimed dimensional range, a POSITA would have found it obvious. Paper 1, 31–33; EX1004, ¶¶97–99, 171–74. For example, Petitioner's declarant explained that the location of the sacrificial anode within a flow path is an important design consideration, and an anode placed within the flow path provides less protection upstream than it does downstream. *Id.*, ¶171. For this reason, the declarant explained that a POSITA would have been motivated to locate the anode as far upstream as possible. *Id.* The declarant also explained that corrosion is generally greater proximate the liquid inlet than the liquid outlet due to temperature differences. *Id.*, ¶172. Lastly, the declarant explained that the location of the sacrificial anode within the radiator would have been optimized during design and testing of the corrosion prevention system, which in combination with the considerations above rendered the "within 10 inches" limitation obvious. *Id.*, ¶173.

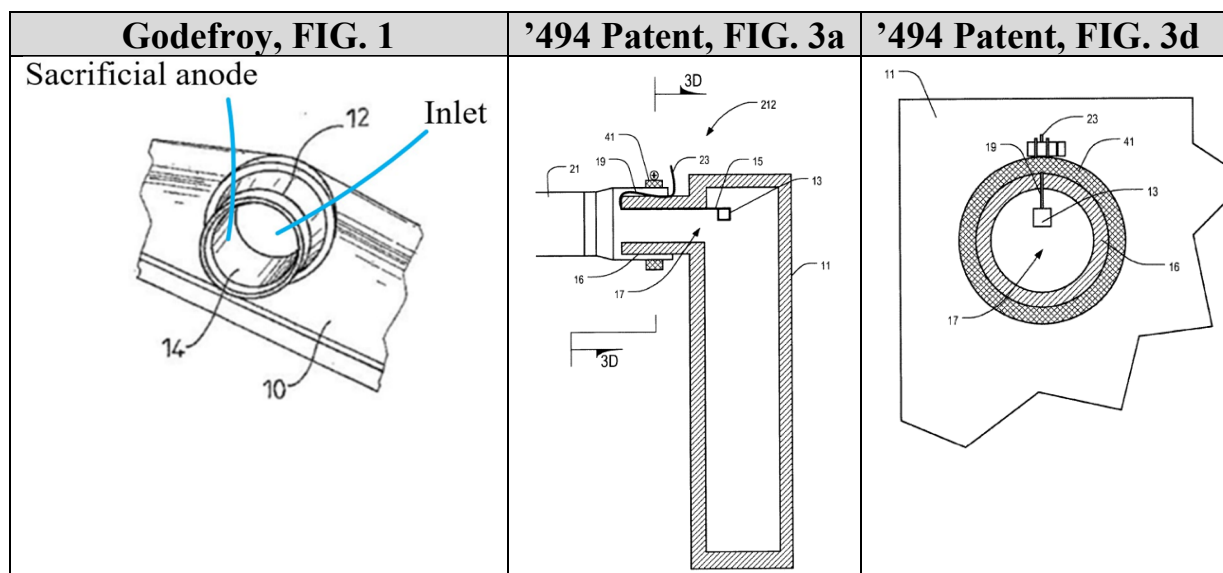
The Decision concluded that these considerations still do not explain why a POSITA would have located the sacrificial anode “within 10 inches.” Paper 13, 11.

### III. ARGUMENT

#### A. The Decision Clearly Erred Interpreting Godefroy

The Decision's conclusion that Figure 1 of Godefroy does not teach a sacrificial anode located “within 10 inches” of the liquid inlet rests on a clearly erroneous factual finding. *See* Paper 13, 18. Although not dimensioned, Figure 1 of Godefroy shows the sacrificial anode located at, and lining, the liquid inlet and accordingly facially teaches a “sacrificial anode” being located “within 10 inches” of the inlet. Paper 1, 15, 20, 68–70; *see also* EX1004, ¶¶141–44, 359–61.

A side-by-side comparison of Godefroy's teaching of a sacrificial anode 14 located at, and lining, the liquid inlet, with the '494 Patent's sacrificial anode 13 located at the liquid inlet, underscores the Decision's abuse of discretion.



**B. The Decision's Application of *Hockerson* to Godefroy and Hanazaki-196 is Clearly Erroneous**

The Decision's conclusion that *Hockerson* disallowed Petitioner's reliance on the figures of Godefroy and Hanazaki-196 to teach the claimed dimensional range is based on an erroneous conclusion of law. Under the Decision's view of *Hockerson*, drawings are only capable of teaching a dimensional range (including a dimensional range including 0), if the patent drawings or specification expressly recite dimensions. This is an erroneous application of *Hockerson* in view of Godefroy's depiction of the sacrificial anode at the inlet and Hanazaki-169's disclosure of spatial relationships from which the sacrificial anode's proximity to the liquid inlet can be derived.

The Federal Circuit in *Hockerson* addressed claim language directed to a longitudinal groove along the bottom surface of a shoe and, in particular, whether patent drawings depicting a groove that is wider than the fins could overcome the applicant's disavowal of that very claim scope (*i.e.*, statements disclaiming a groove having a width greater than the combined width of the fins). *Hockerson*, 222 F.3d at 956–57. In this written description context, the Federal Circuit relied on the proposition that patent drawings do not define precise proportions, and accordingly cannot be relied upon to show particular sizes if the specification is otherwise silent on the issue to prevent the patent owner from circumventing its prior disavowal of claim scope. *Id.* at 956. The Federal Circuit cited *In re Wright* and *In re Olson* to

support its conclusion, which simply state that unless expressly drawn to scale, “arguments based on measurement of a drawing are of little value.” *See* 569 F.2d 1124, 1127–28 (CCPA 1976) and 41 CCPA 871, 874 (CCPA 1954), respectively.

Returning to first principles, a patentability analysis should consider what the drawings “reasonably disclose and suggest to one skilled in the art.” *In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979). Moreover, despite the Federal Circuit cautioning against use of patent drawings to teach express dimensions, there is no categorical prohibition in relying on patent drawings to teach what the drawings plainly show; and further, there is no rule against permitting experts to deduce dimensions from the patent’s overall disclosure. *See, e.g., Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1269 (Fed. Cir. 2012) (finding a patent drawing to plainly show a lamp “adjacent to a window”); *Cummins-Allison Corp. v. SBM Co.*, 484 F. App’x 499, 507 (Fed. Cir. 2012) (“As long as a person of skill in the art could derive the claimed dimensions from the patent’s disclosure, there is no additional requirement that the specification must explicitly disclose the precise proportions or particular sizes.”).

For example, the Federal Circuit in *Krippelz v. Ford Motor Co.* reversed the district court’s denial of judgment as a matter of law, concluding that “[t]here is no question that a person of ordinary skill, reviewing these figures, would understand them to show mounting the lamp adjacent to the side window.” 667 F.3d at 1269. As another example, the Federal Circuit in *Cummins-Allison Corp. v. SBM Co.*,

reversed a district court's judgement as a matter of law, concluding that a patent's disclosure of spatial relationships between claimed elements could be used to "scale the relevant figures and deduce dimensions from them." 484 Fed. App'x at 507–08.

With respect to the Godefroy, like the Federal Circuit concluded in *Krippelz*, there is no question that a person of ordinary skill, reviewing Figure 1, would understand it to show the sacrificial anode 14 at, and lining, the liquid inlet and accordingly "within 10 inches." No dimensional interpretation is required and, accordingly, the Decision's misapplication of *Hockerson* was not even necessary.

With respect to Hanazaki-196, like the Federal Circuit in *Cummins-Allison*, there was sufficient disclosure of the spatial relationships between the exemplary plug welds on the sacrificial anodes in Hanazaki-196's disclosure (30cm) to support Petitioner's declarant's derivation that the sacrificial anode closest to the liquid inlet was "within 10 inches." See EX1004, ¶¶129–30. This is the type of derivation the Federal Circuit affirmed in *Cummins-Allison*.

### **C. The Decision's Misapplication of *Hockerson* Infected its Obviousness Analysis**

The Decision's misapplication of *Hockerson* infected its obviousness conclusions with respect to Tomosada and Hanazaki-196. Again, the Decision did not find any claim element missing from Tomosada or Hanazaki-196; only that these references purportedly failed to anticipate the "within 10 inches" limitation.

With respect to Tomosada, as summarized above, Petitioner's declarant explained that corrosion is greater near the liquid inlet, that a sacrificial anode placed within a flow path provides less protection upstream than it does downstream, a POSITA would optimize the anode's location, and accordingly a POSITA would be motivated to locate the anode as far upstream as possible (*i.e.*, "within 10 inches"). EX1004, ¶¶171–74. The Decision dismissed these considerations as failing to specifically suggest placing the anode "less than or equal to 10 inches" of the liquid inlet (Paper 13, at 11), ***but this criticism did nothing more than effectively re-reject Tomosada as an anticipation reference.***

By requiring Petitioner's obviousness rationale to specifically suggest "less than or equal to 10 inches," the Decision's analysis merged with its anticipation analysis and Petitioner's identified motivation to place the anode as close to the liquid inlet as possible, no matter how robust, was destined to fail. Indeed, it is not apparent to Petitioner how it could have argued "less than or equal to 10 inches" was obvious any more strongly than via its declarant's testimony to locate the anode "as close as possible" (without relying on an express disclosure of the dimensional range in the reference itself which, of course, was unavailable). Condoning the Decision's analysis in this respect incentivizes use of superficial dimensional ranges in patent claims and runs counter to the Supreme Court's guidance in *KSR Int'l v. Teleflex Inc.* that the "expansive and flexible" approach to obviousness "need not seek out

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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 [POSITA] would employ.” 550 U.S 398 (2007). This is particularly true where, as here, the challenged patent assigns no significance or advantage to the dimensional limitation.

With respect to Hanazaki-196, as summarized above, Petitioner's declarant explained that in addition to the motivations provided in connection with Tomosada (equally applicable to the disclosure of Hanazaki-196), Hanazaki-196 discloses using dividing plates 14 to cause serpentine flow of fluid through the radiator, which would further motivate placement of the sacrificial anode at the liquid inlet and therefore “within 10 inches.” EX1004, ¶267. The Decision did not address this alternative obviousness argument at all.

For at least these reasons, individually and cumulatively, Petitioner respectfully requests Director Review of the Decision.

Respectfully submitted,

By:    / Jeanne M. Gills /

Dated: November 29, 2023

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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a copy of the foregoing Petitioner's Request for Director Review together with all exhibits and other papers filed therewith was served on November 29, 2023 to Patent Owner's counsel:

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