UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

Inter Partes Review No.: IPR2023-00861

PETITIONER'S SECOND REQUEST FOR DIRECTOR REVIEW

The second 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 (EX1001, the "'494 Patent") again violates Federal Circuit precedent and is rooted in an erroneous interpretation of Petitioner's argument and a factually impossible interpretation of prior art. *See* Paper 18 (the "Second Decision"). As set forth below, the Board's Second Decision erroneously analyzes, first, the disclosures of Int'l Patent App. Pub. No. 03/100337 (EX1008, "Godefroy"), and second, the disclosures of Japanese Patent App. Pub. No. H1-217196 (EX1006, "Hanazaki-196"), as to the distance between the sacrificial anode and the center axis of the hot liquid inlet, and related testimony establishing a POSITA's understanding.

As to Godefroy, the Board concluded that Petitioner "has not shown sufficiently that . . . the sacrificial anode necessarily is placed within 10 inches of the center axis of the hot liquid inlet." Paper 18, 7-13. This was again remarkable because Godefroy indisputably teaches the sacrificial anode lining the hot liquid inlet of a motor vehicle radiator. To reach its conclusion, the Board treated Petitioner's argument as one of inherency and required Petitioner to prove that "radiator inlet pipes necessarily have diameters less than 20 inches." *Id.*, 12. Within this erroneous framework, the Board concocted an ***impossible*** scenario where the diameter of the hot liquid inlet in Godefroy's motor vehicle radiator would be greater than 20 inches such that its sacrificial anode at the inlet is more than 10 inches from

the center axis of the inlet (and therefore outside of the claimed range). *Id.*, 11-12. This was improper.

Had reliance on inherency been necessary, Petitioner would have, and easily could have, presented such evidence as it is simply not possible for a motor vehicle radiator to have a liquid inlet greater than 20 inches in diameter. Such a radiator inlet would be as large as most motor vehicle wheels. Even the concurring opinion acknowledged that a motor vehicle radiator having a liquid inlet greater than 20 inches would be "***highly improbable***." *Id.*, Concur., 2 ("I find it highly improbable that Figure 1 of Godefroy depicts an inlet for a motor vehicle radiator that has a diameter of greater than 20 inches. Such an enormous inlet appears to find no support in the record or in the disclosures of Godefroy."). Instead, Petitioner presented evidence, through Dr. Medlin's testimony, that Godefroy explicitly discloses locating the sacrificial anode within 10 inches of the hot liquid inlet. Accordingly, the question of whether "radiator inlet pipes necessarily have diameters less than 20 inches," although easily answered ("yes"), is for another day.

In view of these errors, Petitioner respectfully requests the Director reverse the Board's decision as to Godefroy or vacate and remand with instructions to analyze Petitioner's argument as an explicit disclosure, not an inherent one, and without discounting Dr. Medlin's testimony as to what Figure 1 of Godefroy

reasonably suggests to a POSITA (which is the standard the Director previously instructed the Board to apply).

As to Hanazaki-196, the Board concluded that Petitioner failed to show that Hanazaki-196 discloses placing an anode within 10 inches of a center axis of a hot liquid inlet to a radiator. *Id.*, 13-18. Reaching this conclusion, the Board observed that the figures of Hanazaki-196 do not provide a dimension between the anode and hot liquid inlet, and then criticized Dr. Medlin for not showing sufficiently that a POSITA would understand the anode of Hanazaki-196 to be within 10 inches of a center axis of the inlet.

The Board stated, "Dr. Medlin does not explain why a person of ordinary skill in the art would have understood the distance between sacrificial anode 12 in Figure 2A of Hanazaki '196 and the center axis of the hot liquid inlet . . . would be less than 10 inches." This is not true. While Hanazaki-196 does not explicitly disclose the precise anode-to-inlet axis dimension, Hanazaki-196 does disclose the dimension between adjacent welding points on each anode, which are shown in the same figure as the inlet. Dr. Medlin relied upon these dimensions to inform his understanding of the dimension and therefore to support his conclusion that Hanazaki-196 discloses placing an anode within 10 inches of a center axis of a hot liquid inlet to a radiator. EX1004, ¶¶128–30. This form of dimensional extrapolation is consistent with Federal Circuit precedent and the Board failed to analyze or even acknowledge it.

In view of these errors, Petitioner respectfully requests the Director reverse the Board's decision as to Hanazaki-196 or vacate and remand with instructions to analyze Petitioner's argument without discounting Dr. Medlin's testimony as to what Godefroy reasonably suggests to a POSITA, particularly where Dr. Medlin relied upon other dimensions in Hanazaki-196 to inform his analysis.

I. BACKGROUND

a. The '494 Patent

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 was 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.

See Paper 13, 4 (the "First Decision"). 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.

b. The First Decision and First Director Review

In its First Decision, the Board rejected Petitioner's arguments as to Godefroy and Hanazaki-196 largely on the basis that patent drawings do not define precise proportions and accordingly the relied upon figures cannot be used to show the claimed dimensional limitation (citing *Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000)). Paper 13, 16. Petitioner petitioned for Director Review on the basis that the Board misapplied *Hockerson* by declining to credit the relied upon figures in Godefroy and Hanazaki-196 with what they clearly show or reasonably suggest to a POSITA. The Director agreed and vacated and remanded the proceeding, directing the Board to "determine whether Petitioner has demonstrated that Figure 1 of Godefroy 'is clear on its face' or would have reasonably suggested the placement of Godefroy's sacrificial anode 'within 10 inches' of the hot liquid inlet." Paper 15, 9.

c. The Second Decision

In its Second Decision, the Board purportedly reconsidered Petitioner's arguments, including as to Godefroy and Hanazaki-196. Before doing so, however, the Board clarified its interpretation of the limitation at issue—"within 10 inches of a hot liquid inlet to the radiator"—addressing the Director-identified ambiguity in its First Decision as to whether the dimension is from the center axis of the inlet or from the inlet itself. Paper 18, 4-6; *see also* Paper 15, 8 n.4. On this issue, the Board re-affirmed the interpretation established in co-pending litigation requiring the dimension be from the anode to the center axis of the hot liquid inlet. Paper 18, 4-6. The Board acknowledged this is consistent with Dr. Medlin's analysis. *Id.*

i. Godefroy

Re-analyzing Godefroy, the Board acknowledged that Dr. Medlin testified that Figure 1 shows "that the sacrificial anode 14 is within 10 inches of a center axis of a hot liquid inlet." *Id.*, 10. The Board took this "as support for Petitioner's contention that Godefroy's 'sacrificial anode 14 . . . is *necessarily* placed within 10 inches of a center axis of the hot liquid inlet to the radiator.'" *Id.* The Board characterized this contention as "an attempt to establish that the sacrificial anode in Godefroy's device must inherently be placed within 10 inches of the center axis of the hot liquid inlet." *Id.*

Applying an inherency analysis, the Board concluded that, "Petitioner has not

shown sufficiently that, in Godefroy, the sacrificial anode necessarily is placed within 10 inches of the center axis of the hot liquid inlet." *Id.*, 11. Despite acknowledging Dr. Medlin's testimony that Figure 1 of Godefroy shows the anode within 10 inches of a center axis of hot liquid inlet, the Board concluded that without dimensions, it "cannot say that Godefroy is clear on its face, or reasonably suggests" the limitation. *Id.* The Board attempted to buttress its conclusion by providing an impossible scenario where the motor vehicle radiator inlet diameter is larger than 20 inches such that the anode would not be within 10 inches of the inlet's center axis.

As set forth below, the Board erred in mischaracterizing Petitioner's argument as to Godefroy as one of inherency and introducing a fanciful 20-inch diameter inlet scenario to try to discredit Dr. Medlin's testimony that the anode is shown (and at least reasonably suggested) within 10 inches of the center axis of the hot liquid inlet.

ii. Hanazaki-196

Re-analyzing Hanazaki-196, the Board applied an analysis similar to its analysis of Godefroy, purporting to consider Petitioner's argument and evidence as to the proximity of the sacrificial anode to the center axis of the hot liquid inlet in light of the Director's guidance on remand. Paper 18, 13-18. The Board first addressed Dr. Medlin's interpretation of Figure 2A, which included annotations reflecting the understanding of a POSITA as to the location of the hot liquid inlet otherwise not reflected in the figure. *Id.*, 14-15. The Board noted, "neither the figure

nor the text of Hanazaki '196 explains the size of the heat exchanger, so the figure is not clear on its face and does not reasonably suggest the anode is located within 10 inches of the center axis of the inlet." *Id.*, 15. The Board then concluded, Petitioner does not show sufficiently that Figure 2A shows that Hanazaki '196's sacrificial anodes are placed within 10 inches of the center axis of Hanazaki '196's hot liquid inlet." *Id.*

Akin to its analysis of Godefroy, despite acknowledging Dr. Medlin's testimony that the figure shows the anode within 10 inches of a center axis of hot liquid inlet, the Board determined that without dimensions Dr. Medlin's testimony is unsupported. The Board first noted that the sacrificial anode is not located exactly at the hot liquid inlet (but rather separated by the radius of the inlet pipe or the distance between the inlet pipe and the first anode), and then found that gap was not sufficiently shown by Dr. Medlin to be understood by a POSITA to under 10 inches.

As set forth below, the Board erred, first, by again discounting the figures and specification of Hanazaki-196 for failing to disclose precise proportions (the same error made in its First Decision); and second, by again completely disregarding Dr. Medlin's testimony as to why a POSITA would understand the distance between the anode and the center axis of the inlet in Hanazaki-186 to be less than 10 inches.

II. 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, Revised Interim Director Review Process. 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).

III. ARGUMENT

a. The Board Erroneously Analyzed Petitioner's Arguments as to Godefroy

The Board's conclusion as to Godefroy is a result of an erroneous interpretation of Petitioner's argument. Petitioner argued that Godefroy explicitly teaches the "within 10 inches" limitation, yet the Board interpreted and analyzed Petitioner's argument as one of inherency. This was error. *See*, *e.g.*, *Amazon.com, Inc. v. Customplay, LLC*, IPR2018-01498, Paper 37 at *12-13 (P.T.A.B. Mar. 11, 2020) (refusing to require proof of inherency where petitioner never mentioned inherency and instead referred to what a POSITA "would have understood").

Referring to Figure 1, Dr. Medlin testified that "[a] POSITA would understand . . . that the sacrificial anode 14 is within 10 inches of a center axis of a hot liquid inlet because the sacrificial anode 14 is disposed on the inside of connector

12 . . . ." *See, e.g.*, EX1004, ¶144. Neither Dr. Medlin, nor Petitioner, refer to any missing limitation inherent in the figure or otherwise refer to inherency at all. Indeed, Dr. Medlin's statement implies that Dr. Medlin, a POSITA, understands Figure 1 of Godefroy to ***explicitly*** depict a motor vehicle hot liquid inlet having a diameter of less than 20 inches. He does not expressly say so, but it is the only interpretation of his testimony that is consistent with his conclusion. Accordingly, the Board's statement that Dr. Medlin's testimony is not "based on pipe 12 having any particular diameter" is simply untrue. *See* Paper 18, 10.

To the extent the Board faults Dr. Medlin for implying, but never expressly stating, that Godefroy's hot liquid inlet is less than 20 inches in diameter, the Board requires too much in this case. The Federal Circuit regularly reminds both district courts and the Board that "expert testimony is not required when the references and the invention are easily understandable." *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1242 (Fed. Cir. 2010); *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1079 (Fed. Cir. 2015) ("No rule requires a Petition to be accompanied by any declaration, let alone one from an expert guiding the Board as to how it should read prior art."). The Federal Circuit also recognizes that, "Board members, because of expertise, may more often find it easier to understand and soundly explain the teachings and suggestions of prior art without expert assistance." *Belden*, 805 F.3d at 1079.

Here, the Board did not need Petitioner's expert to expressly state what his conclusion clearly implied simply to rebut the Board's impossible interpretation of Godefroy's inlet diameter—an interpretation never argued by the Patent Owner and an interpretation the concurring opinion itself labeled "highly improbable." *C.f.*, *Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1269 (Fed. Cir. 2012) ("***There 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." (emphasis added)). This is particularly true where Godefroy itself states, "[t]he invention is particularly applicable to motor vehicle heat exchangers," (EX1008, 17), which would never comprise an inlet around the size of a typical motor vehicle wheel. To be clear, Petitioner is not suggesting the Board can never test a Petitioner's argument with hypotheticals, and of course Patent Owner is free to do so during trial. But applying a hypothetical completely untethered from reality in an institution decision and faulting Petitioner for not adequately addressing it risks applying a near impossible institution standard.

Patent Owner also proffered no evidence of a radiator with a greater than 20-inch inlet diameter. Rather, Patent Owner provided examples of motor vehicle radiators with overall heights and fan diameters that are smaller than the diameter of the inlet in the Board's absurd scenario. *See* Ex. 2001, 2 ("19 in. High"), 5 ("18.5 in. H"), 9 ("12 in. Fan"), 11 ("12 in. Fans"). A radiator with a 20-inch inlet diameter

would be, to use the Concurrence's terminology "enormous," and utterly inoperable and unusable in a motor vehicle.

A contrary result in this case elevates form over substance and faults Petitioner, and Petitioner's expert, for not predicting and preemptively rebutting the Board's impossible interpretation of Godefroy's inlet diameter. Petitioners cannot be required to anticipate and rebut fanciful, Board-provided scenarios that have no presence in the record or basis in fact.

b. The Board Failed to Follow the Director's Guidance as to Hanazaki-196, and Violated Federal Circuit Law in the Process

The Board failed to properly follow the Director's guidance and Federal Circuit precedent when it concluded that Petitioner failed to establish a reasonable likelihood of success on the merits of its anticipation and obviousness arguments as to Hanazaki-196. The Director stated, "[o]n remand, the Board shall determine whether Petitioner has demonstrated that [the figure] is 'clear on its face' or would have reasonably suggested the placement of [the reference]'s sacrificial anode 'within 10 inches' of the hot liquid inlet." Paper 18, 9 (modified to reflect Director's instruction that its guidance be applied to "the other asserted grounds"). Key to this guidance was the Director's clarification that, consistent with *Hockerson*, a drawing may be relied upon for what is clearly shows or reasonably suggests and need not "explicitly disclose the precise proportions or particular sizes." *Id.*, 7 (citing

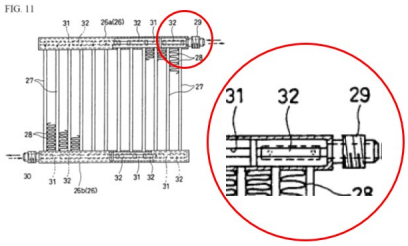
Cummins-Allison, 484 F. App'x at 507).

Despite purporting to follow this guidance, the Board again violated it. Addressing Dr. Medlin's testimony as to what is suggested by Figure 2A of Hanazaki-196, the Board stated ". . . neither the figure nor the text of Hanazaki-196 explains the size of the heat exchanger, so the figure is not clear on its face and does not reasonably suggest that the anode is located within 10 inches of the center axis of the inlet." Paper 18, 15. In contravention of Federal Circuit precedent, this statement admits that the Board required Hanazaki-196 to "explicitly disclose the precise proportions or particular sizes" of the heat exchanger, and did not consider Dr. Medlin's testimony as to what the figure instead reasonably suggests to a POSITA. This was error.

Moreover, not only did the Board fail to follow the Director's guidance, it again failed to consider Dr. Medlin's testimony regarding the known dimensions of Hanazaki-196 and the conclusions that can be drawn from them. For example, the Board stated, "Dr. Medlin does not explain why a person of ordinary skill in the art would have understood the distance between sacrificial anode 12 in Figure 2A of Hanazaki '196 and the center axis of the hot liquid inlet that Dr. Medlin adds to the figure would be less than 10 inches." Paper 18, 15. This is not true.

Referring to Figure 3, Dr. Medlin 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. EX1004, ¶123; EX1008, FIG. 3. Referring to Figure 11 below, Dr. Medlin explained that the sacrificial anode 32 is 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.



Dr. Medlin explained that the sacrificial anode is plug welded at two welding points, *e.g.*, "***with spacing of 30cm***." *Id.*, ¶129 (emphasis added). Dr. Medlin 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 center axis of the liquid inlet. The center axis extends horizontally in Figure 11, and there is very little, if any, spacing between the axis and the sacrificial anode 32.

This analysis is entirely consistent with *Hockerson* and *Cummins-Allison* (and thus the Director's guidance), and the Board erred in failing to consider it as a basis for Dr. Medlin to conclude that Hanazaki-196 reasonably suggests locating the

sacrificial anode within 10 inches of the hot liquid inlet. *See, e.g.*, *See Cummins-Allison*, 484 F. App'x at 507–08 (stating "[a]s 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," and 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" (emphasis added)).

IV. CONCLUSION

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

As to Godefroy, Petitioner respectfully requests the Director reverse the Board's decision or vacate and remand with instructions to analyze Petitioner's argument as an explicit disclosure, not an inherent one, and without discounting Dr. Medlin's testimony as to what Godefroy reasonably suggests to a POSITA based on unreasonable, arbitrary, or fanciful interpretations of the reference.

As to Hanazaki-196, Petitioner respectfully requests the Director reverse the Board's decision or vacate and remand with instructions to analyze Petitioner's argument without discounting Dr. Medlin's testimony as to what Hanazaki-196 reasonably suggests to a POSITA, particularly where Dr. Medlin relied upon other dimensions in Hanazaki-196 to inform his analysis.

Respectfully submitted,

Dated: June 7, 2024

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Petitioner's Second Request for Director Review together with all exhibits and other papers filed therewith was served on June 7, 2024 to Patent Owner's counsel:

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