

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

METALL ZUG AG, HAAG-STREIT AG,
AND HAAG-STREIT USA, INC.,
Petitioner,

v.

CARL ZEISS MEDITEC AG,
Patent Owner.

IPR2020-00911
Patent 9,044,164 B2

Before GRACE KARAFFA OBERMANN, ELIZABETH M. ROESEL, and
AMBER L. HAGY, *Administrative Patent Judges*.

HAGY, *Administrative Patent Judge*.

DECISION
Denying Petitioner's Request for Rehearing
37 C.F.R. § 42.71(d)

I. BACKGROUND

Metall Zug AG, Haag-Streit AG, and Haag-Streit USA Inc. (collectively, “Petitioner”) timely filed a request for rehearing (Paper 9, “Reh’g Req.” or “Request”) of our Decision denying institution of *inter partes* review (Paper 8, “Decision”). The Request seeks rehearing of our determination to deny institution of *inter partes* review of claims 1–20 of U.S. Patent No. 9,044,164 B2 (“the ’164 patent”) on the asserted grounds of obviousness over (1) Huber¹, Everett², and Lexer³ (claims 1 and 2); and (2) Huber, Everett, Lexer, and Drexler⁴ (claims 3–20).

For the reasons that follow, Petitioner’s request for rehearing is denied.

II. STANDARD OF REVIEW

The party challenging a decision in a request for rehearing bears the burden of showing the decision should be modified. 37 C.F.R. § 42.71(d). A request for rehearing “must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed.” *Id.* Upon a request for rehearing, the

¹ Huber et al., U.S. Patent No. 7,414,779 B2, issued August 19, 2008 (Ex. 1008, “Huber”).

² Everett et al., U.S. Patent No. 7,365,856 B2, issued April 29, 2008 (Ex. 1009, “Everett”).

³ F. Lexer, C.K. Hitzenberger, A.F. Fercher, M. Kulhavy, “Wavelength-tuning interferometry of intraocular distances,” *Appl. Optics*, vol. 36, pp. 6548–6553 (Sept. 1, 1997) (Ex. 1006, “Lexer”).

⁴ W. Drexler and J. Fujimoto, eds., *Optical Coherence Tomography – Technology and Applications*, ISBN 978-3-540-77549-2, Springer Verlag Berlin Heidelberg (2008) (Ex. 1010, “Drexler”).

decision on a petition will be reviewed for an abuse of discretion. 37 C.F.R. § 42.71(c). An abuse of discretion occurs when a “decision was based on an erroneous conclusion of law or clearly erroneous factual findings, or . . . a clear error of judgment.” *PPG Indus. Inc. v. Celanese Polymer Specialties Co. Inc.*, 840 F.2d 1565, 1567 (Fed. Cir. 1988).

III. ANALYSIS

We denied institution of *inter partes* review based on our determination that Petitioner failed to satisfy its burden of showing, sufficiently for institution, that the alleged combination teaches or suggests (1) the claimed photon flux, as recited in independent claim 1 (Decision 16–22); (2) a line width δk of less than 81 m^{-1} (as recited in claim 7), or less than 47 m^{-1} (as recited in claim 14) (*id.* at 22–25); and (3) a wavelength suitable for measuring an eye, as required at least by independent claims 7 and 14 (*id.* at 25–27).

Petitioner argues that “the Board’s decision to deny institution was based on flawed factual findings that ignored a POSITA’s advanced knowledge and level of skill in the art as explained in the technical line of reasoning for obviousness by Petitioners’ technical expert Dr. Brennan in his Declaration.” Reh’g Req. 2. In particular, Petitioner argues “[t]he Board erred by requiring the Petitioner to show an explicit teaching of a motivation to combine the prior art as it applied to” the photon flux limitation (*id.* at 4–10), the line width limitations (*id.* at 10–13), and a “wavelength suitable for measuring an eye” (*id.* at 13–15). We address these arguments in turn.

A. “*wherein a photon flux of 3×10^8 to 3×10^{13} is directed onto the eye during tuning of the time τ of the light source*”

Petitioner first contends our Decision erred in determining that Petitioner failed to satisfy its burden for institution as to the “photon flux” limitation recited in independent claim 1. Reh’g Req. 4. In particular, Petitioner argues that (1) by disclosing an output power (which Petitioner maps to the claimed “photon flux”) of *higher* than the claimed range, Huber actually overlaps the claimed range by covering the range from zero to Huber’s disclosed limit (*id.* at 8); (2) the ordinarily skilled artisan would be able to choose an appropriate value to be within the claimed range to avoid damage to eye tissue (*id.* at 4–7); and (3) the Board erred in requiring Petitioner to provide evidence of “a *specific motivation* for controlling the power of a controllable light source to a desired level” (*id.* at 7 (emphasis added); *id.* at 7–10).

Turning first to Petitioner’s contention that Huber’s disclosure overlaps the claimed range: in our Decision, we found “Petitioner has not demonstrated, sufficiently for purposes of institution, that the prior art discloses a range of photon flux values that *overlaps* the claims. Rather, Petitioner asserts that Huber discloses a ‘photon flux that is *greater* than the claimed range.’” Decision 19 (citing Pet. 40). As a result, we concluded “Petitioner has not demonstrated a presumption of obviousness so as to shift the burden of production to Patent Owner.” *Id.*

Petitioner does not show error in these findings. Although the Request argues that Huber discloses a **maximum** power and photon flux, the Petition asserted just the opposite—that Huber discloses a **minimum** power and photon flux. Pet. 40 (“Huber discloses a swept source . . . where the

‘output-power is *greater than* 10 mW,’” which Petitioner converted to a photon flux of “a photon flux of $6.6 * 10^{16}$ photons per second.”). Both the Petition and the Request are based on a theory of overlapping ranges, but fail to show the factual basis for the application of that theory. The Decision correctly determined that the Petition fails to show that Huber discloses a range of photon flux that overlaps the claimed range.

Petitioner also contends the Board erred in requiring Petitioner to provide “a *specific motivation* for controlling the power of a controllable light source to a desired level.” Reh’g Req. 7 (emphasis added). Petitioner asserts that the ordinarily skilled artisan, observing criteria of avoiding risk of damage to the eye, while maintaining signal quality, would have “inevitably come to a power within the claimed range.” *Id.* at 9. As support, Petitioner again invokes the Brennan Declaration, which Petitioner states shows that the ordinarily skilled artisan

would understand that when used in applications for the eye, the output power would be limited to avoid damage to structure within the eye. Huber discloses the combination of both sufficient output power (and therefore photon flux) and a way to regulate such output power (and therefore photon flux). Dr. Brennan’s Declaration explains why such regulation, given the disclosure of Huber, would be obvious to prevent tissue damage.

Id. at 7.

We disagree that we misinterpreted the Petition or mischaracterized Petitioner’s arguments therein. Petitioner’s primary argument in that regard is that “[t]he Board erred by requiring the Petitioner to show an *explicit teaching of a motivation to combine* the prior art as it applied” to the limitations now addressed in Petitioner’s Request. Reh’g Req. 4 (emphasis

added). The Decision did not, however, fault Petitioner in this manner. Rather, in the Decision, we appropriately focused on the crux of Petitioner's argument; namely that, although Huber does not disclose an output power (which Petitioner converts to the claimed photon flux) within the claimed range, one of ordinary skill would have been motivated by Everett to use Huber's laser on eyes, and that such use would have motivated the ordinarily skilled artisan to (in Petitioner's words) "reduce the photon flux of the Huber laser" to achieve the claimed range "or any other ranges needed to prevent tissue damage and optimize signal strength." Decision 20 (quoting Pet. 42). As we also noted in the Decision, the only support provided in the Petition for these assertions is a blanket citation to nearly a dozen paragraphs (spanning six pages) primarily consisting of background technical discussion from Dr. Brennan's Declaration. Decision 20; *see* Pet. 41–42 (citing Ex. 1012 ¶¶ 76–85, 185). In that technical background, Dr. Brennan purportedly explains how and why "optimal optical power" may be set and selected generally in systems employing lasers. *See* Ex. 1012 ¶¶ 76–85. But, as we pointed out in the Decision, neither Petitioner nor Dr. Brennan tied any of this analysis to the prior art of record or otherwise explained the conclusory assertion made in the Petition (and echoed by Dr. Brennan) that the ordinarily skilled artisan would have combined the teachings of Huber, Everett, and Lexer to apply photon flux *within the claimed range* for measurement of eyes. Decision 20; *see* Pet. 41–42; Ex. 1012 ¶ 185.

Petitioner's arguments in the Request suffer from the same deficiencies as Petitioner's conclusory analysis in the Petition. For example, Petitioner asserts, without citation to supporting argument or evidence in the Petition, "when the light source of Huber is used, a POSITA would

determine which power within the power range the light source can provide, is appropriate.” Reh’g Req. 7. We reject that conclusory argument on rehearing, because Petitioner does not “identify the place in the record where it previously” asserted the matter.⁵ 37 C.F.R. § 42.71(d). Further, that conclusory statement cannot remedy the lack of supporting analysis in the Petition, which, as noted in the Decision and above, fails to tie the teachings of the prior art to the claimed range, much less explain adequately how or why the ordinarily skilled artisan would have modified Huber’s light source to operate within the claimed range.

Simply put, we did not hold Petitioner to an improper standard regarding motivation to combine. Rather, we pointed out the evidentiary deficiencies underlying Petitioner’s assertions. We further observed in the Decision that Petitioner’s blanket reference to Dr. Brennan’s analysis was an “unguided invitation to the Board to sift through the technical background discussion in Dr. Brennan’s Declaration in search of the necessary analysis to support the Petition,” which we noted “amounts to an improper incorporation by reference.” Decision 20–21(citing 37 C.F.R. § 42.6(a)(3)(2020)).

⁵ In the Request, Petitioner cites to the Petition at pages 35–36 for the proposition that “the Petition argues that Huber discloses a light source with a maximum power and apparatus for reducing the power, which address limitations other than photon flux.” Reh’g Req. 7. The cited pages of the Petition, however, address limitations other than photon flux. The Petition’s discussion of the photon flux limitation begins at page 39. The part of that argument that is echoed by Petitioner’s arguments on rehearing appears to be on page 42 of the Petition—which, as discussed above and in the Decision, is conclusory and supported by only unguided citation to a dozen paragraphs in the Brennan Declaration. *See* Decision 20.

In short, as explained in the Decision, upon review and consideration of the arguments and evidence submitted by the parties, we determined Petitioner failed to show sufficiently for institution that the combined teachings of Huber, Everett, and Lexer would have led one having ordinary skill in the art to modify the laser light source, as described in Huber, to achieve a photon flux within the range as recited in claim 1. Decision 16–22. Petitioner has not demonstrated in its Request for Rehearing that we overlooked any arguments or evidence in reaching that conclusion. Rather, Petitioner simply rehashes arguments and evidence that we considered and rejected. A request for rehearing is not merely the opportunity for the requester to reargue positions, elaborate on previous positions, or to disagree with the analysis or conclusions of the panel. *See Nestlé Purina Petcare Co. v. Oil-Dri Corp. of Amer.*, IPR2015–00737, Paper 39 at 8 (PTAB Feb. 9, 2017) (“Merely disagreeing with our analysis or conclusions does not serve as a proper basis for a request for rehearing.”). Instead, the requester must identify previously-presented arguments and/or evidence that the panel overlooked or misapprehended or evidence of abuse of discretion by the panel. Petitioner fails to do so here.

For these reasons, Petitioner’s arguments in the Request for Rehearing do not persuade us that we erred in our application of the facts as presented by Petitioner to the standard for determining obviousness, as set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007), in finding that Petitioner failed to show unpatentability of claim 1.

- B. *“wherein the light source has a line width of $\delta k < 81 \text{ m}^{-1}$ ” (claim 7)*
“wherein the light source has a line width of $\delta k < 47 \text{ m}^{-1}$ ” (claim 14)

With regard to the “line width” limitations of independent claims 7 and 14, Petitioner argues “[t]he Board’s Decision regarding these limitations is based on a factual finding that is not supported by the evidence.” Reh’g Req. 11. In particular, Petitioner argues the Board erred in finding Petitioner employed a “shifting analysis.” *Id.* This assertion apparently refers to our finding in the Decision that Petitioner’s analysis differed across the three independent claims, “with Petitioner relying on a wavelength-based equation for claim 1, but a ‘coherence length’-based equation for claims 7 and 14.” Decision 22.

As purported justification for switching formulas, Petitioner now asserts:

The reason that two different “methods” were used to calculate δk is that Huber discloses a wide range of possible embodiments, for only one of which is $\delta \lambda$ explicitly disclosed. For the other disclosures, it is not possible to just simply use the same formula, because $\delta \lambda$ was not directly provided for those Huber disclosures.

Reh’g Req. 11. Petitioner further asserts: “For these other disclosures, Petitioners calculated δk directly from L_c . Petitioner could have calculated $\delta \lambda$ from L_c and then used $\delta k = 2\pi/\lambda^2 \delta \lambda$ to determine δk and achieved the same result.”⁶ *Id.* at 11–12. Petitioner then asserts: “By ignoring the knowledge and level of skill in the art of a POSITA regarding this

⁶ Petitioner’s reference to “ $\delta k = 2\pi/\lambda^2 \delta \lambda$ ” appears to be a typographical error. The equation Petitioner set forth in the Petition, which is referenced by Dr. Brennan (and in the Decision) is $\delta k = (2\pi\delta \lambda)/\lambda^2$. Pet. 12; Ex. 1012 ¶ 177; Decision 23.

fundamental relationship, the Board's Decision relied on a flawed factual finding that Petitioners used two different 'methods' and a conclusion that one is 'a wavelength-independent calculation.'" *Id.* at 12.

We have reviewed Petitioner's arguments in its Request and Petition. We are not persuaded that we misapprehended or overlooked Petitioner's arguments, and the associated evidence, set forth in the Petition. As we noted in the Decision, Petitioner did not attempt to explain or justify its departure, in the Petition, from Petitioner's own definition of "line width δk " for claims 7 and 14. Decision 24. Petitioner now contends that it relied on different "embodiments" of Huber for its analysis of claim 1 versus claims 7 and 14. Reh'g Req. 11. Presumably, by this Petitioner means that it relied for claims 7 and 14 on an "embodiment" of Huber wherein the coherence length is 40 cm (*see* Pet. 62), as opposed to the embodiment it relied on for claim 1, wherein Petitioner relied on a "linewidth" ($\delta\lambda$) of 0.03 nm (*see id.* at 37). Although Petitioner asserts in its Request that Petitioner could have achieved the "same result" by calculating $\delta\lambda$ from L_c and then using the same formula as applied to claim 1 to determine δk (Reh'g Req. 11–12), Petitioner certainly did not make that connection in the Petition. And Petitioner does not now direct us to any disclosure in Huber of a "linewidth" or wavelength sweep range corresponding to a coherence length of 40 cm, much less apply Petitioner's wavelength-based equation to Huber's disclosure of a coherence length of 40 cm. This omission is significant, given that Petitioner's expert (Dr. Brennan) indicates that coherence length depends on wavelength. *See* Ex. 1012 ¶ 62 (providing a formula for coherence length L_C that depends on wavelength λ_0). Petitioner fails to acknowledge these wavelength dependencies in the Petition or here.

Thus, Petitioner's argument that all of the calculations would ultimately achieve the same result using appropriate conversions is not only apparently outside the scope of the analysis of the Petition, but only highlights gaps in Petitioner's analysis as to the wavelengths that would apply in the various calculations. As we noted in the Decision, Petitioner's application of the wavelength-based equation for its analysis of claim 1, with a wavelength of 1305 nm (as assumed by Petitioner for claim 1), yields a line width value of 110.7 m^{-1} , which exceeds the upper boundary line width values of 81 m^{-1} and 47 m^{-1} recited in claims 7 and 14, respectively. Decision 24 (citing Pet. 37). As we also noted in the Decision, Petitioner mixes embodiments for claims 7 and 14 when it relies on Huber's disclosure of a coherence length of 40 cm for purposes of calculating "line width δk " (Pet. 61–62, 73), but relies on a centroid wavelength of 1305 nm (corresponding to Huber's Fig. 5a embodiment with a coherence length of 4 cm) for purposes of calculating tuning time τ (*id.* at 62–63, 74).

Petitioner also argues that "[e]ven if the calculation of linewidth for claims 7 and 14 is insufficient – which it is not for the reasons explained above – that has no bearing on the Petition's demonstration of the claimed linewidth in claim 1." Reh'g Req. 12. This argument, however, is misplaced. Our Decision did not fault Petitioner's showing as to claim 1 regarding the claimed line width; rather, the Decision determined Petitioner's showing as to claim 1 was deficient with regard to the photon flux limitation, as we discuss *supra*. See Decision 22.

Petitioner's arguments in the Request for Rehearing do not persuade us that we erred in our analysis of the facts as presented by Petitioner according to the standard for determining obviousness, as set forth in *KSR*,

in finding that Petitioner failed to show unpatentability of claims 7 and 14 with regard to the line width limitations.

C. “*wavelength suitable for measuring an eye*”

Finally, Petitioner argues that “[t]he Board erred in its conclusion that Petitioner failed to meet its burden of showing that Huber can be used with the eye.” Reh’g Req. 13. In particular, Petitioner argues: (1) claim 1 does not limit “movable sample” to an eye and claims 1, 7, and 14 do not recite any specific wavelengths; (2) Patent Owner is wrong that a wavelength of 800 nm must be used for ophthalmic imaging (because the ’164 patent discloses longer wavelengths up to 1150 nm can be used); and (3) the Board is wrong in its characterization of Petitioner’s analysis of claims 7 and 14 as using a “wavelength-independent calculation.” *Id.* at 13–14.

None of these arguments persuade us that we misapprehended or overlooked Petitioner’s arguments, and the associated evidence, set forth in the Petition. As to Petitioner’s first argument, we did not determine Petitioner’s showing as to claim 1 was deficient with regard to Petitioner’s failure to show that Huber’s wavelengths are suitable for use on a human eye. Rather, as noted above, we determined Petitioner’s showing as to claim 1 was deficient with regard to the photon flux limitation. Decision 16–22. We have also addressed Petitioner’s third argument in the preceding section herein.

As to Petitioner’s second argument, we acknowledged in the Decision that Huber’s broadly disclosed range of wavelengths encompasses shorter wavelengths overlapping those disclosed in the ’164 patent. *See id.* at 27. We noted, however, that Petitioner’s calculations presented in the Petition of the various parameters recited in the claims (including line width δk , photon

flux, and tuning time τ) all depended on using a wavelength of 1305, which Petitioner asserted was the center of Huber's wavelength sweep range of 1250–1360 nm. *Id.* (citing Pet. 36, 40, 62–63, 74). As we further noted in the Decision, Petitioner did not show in the Petition “that the claimed parameters would be satisfied if a shorter wavelength within a range recognized in the art as suitable for use in measuring an eye were used in the equations that it applies to calculate line width δk , photon flux, and tuning time τ .” *Id.* It was for that *additional* reason, beyond the deficiencies we noted regarding the photon flux and line width limitations, that we also determined Petitioner had not shown a reasonable likelihood of demonstrating that the claims 7 and 14 are unpatentable.

IV. CONCLUSION

For the foregoing reasons, we are not persuaded that Petitioner shows that we misapprehended or overlooked arguments or evidence.

V. ORDER

For the foregoing reasons, it is hereby:

ORDERED that Petitioner's request for rehearing is *denied*.

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