

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUM INDUSTRIAL TECHNOLOGY, INC.
Petitioner

v.

AMSTED RAIL COMPANY, INC.
Patent Owner

Case IPR2023-00539
Patent No. 9,981,673

Before JAMES P. CALVE, KEVIN W. CHERRY, and MICHAEL L. WOODS,
Administrative Patent Judges.

**PETITIONER'S SUR-REPLY IN OPPOSITION TO PATENT OWNER'S
REVISED MOTION TO AMEND**

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1038	U.S. Patent No. 7,089,099 to Shostak et al. ("Shostak")

* Filed under seal

Petitioner submits this Sur-Reply in response to Patent Owner's Reply (Paper 42 ("Reply")) and in opposition to Patent Owner's Revised Motion to Amend (Paper 32 ("Motion")).

I. Petitioner's Motion Does Not Satisfy the Threshold Requirements of 37 C.F.R. § 42.121 or 35 U.S.C. § 316(d)(3)

Patent Owner has argued that it bears no burden to show that substitute claims 23–43 comply with the written description requirement. *See, e.g.*, Patent Owner's Revised Motion to Amend (Paper 32) ("RMTA") at 4–5, n.3; Patent Owner's Reply in Support of the Revised Motion to Amend (Paper 42) ("RMTA Reply") at 5. Patent Owner is mistaken. As discussed in detail below, Rule 42.121(d)(1) "assigns the burden of persuasion to the patent owner to show, by a preponderance of the evidence, that a motion to amend complies with certain statutory and regulatory requirements for a motion to amend," including that the substitute claims comply with the written description requirement. Rules of Practice To Allocate the Burden of Persuasion on Motions To Amend, 85 FR 82923, 82924 (Dec. 21, 2020).

As explained in Petitioner's Opposition to the Motion to Amend (Paper 37) ("Opposition"), Patent Owner has not carried its burden to show that substitute claims 23–43 are supported by written description in the application as filed. The additional arguments raised in its RMTA Reply with respect to these claims are

further addressed below.

A. Patent Owner must show compliance with the threshold requirements of 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121.

In an IPR proceeding, motions to amend are governed by 35 U.S.C.

§ 316(d). The statute expressly prohibits the introduction of new matter as part of the substitute claims. 35 U.S.C. § 316(d)(3). As the Federal Circuit explained in *Aqua Products*, compliance with the statutory requirements of 35 U.S.C. § 316(d) is a ***threshold*** question that is separate from any question of patentability:

[T]he patent owner may proffer amendments that propose to cancel any challenged claim and propose a reasonable number of substitute claims as long as the substitute claims (1) do not impermissibly enlarge the scope of the claims, and (2) do not introduce new subject matter. 35 U.S.C. § 316(d)(1), (d)(3). These requirements describe a threshold showing the Board must deem satisfied before the amended claims can be considered in—i.e., “entered into”—an IPR. This showing by the patent owner is *not* the same as the burden of proof on the question of patentability.

Aqua Prod., Inc. v. Matal, 872 F.3d 1290, 1304 (Fed. Cir. 2017) (emphasis in

original).¹

Consistent with both the statute and the Federal Circuit’s holding in *Aqua Products*, 37 C.F.R. § 42.121(d)(1) requires a patent owner to show, by a preponderance of the evidence, that a motion to amend complies with the threshold requirements imposed by § 316(d)). If a patent owner fails to satisfy the threshold requirements, the Board must deny the motion and decline to enter the amendments into the IPR proceeding. *See Aqua Prod.*, 872 F.3d at 1305–06 (“[T]he patent owner must satisfy the Board that the statutory criteria in § 316(d)(1)(a)–(b) and § 316(d)(3) are met and that any reasonable procedural obligations imposed by the Director are satisfied before the amendment is entered into the IPR.”).

With respect to the present motion, Patent Owner therefore bears the burden of showing, by a preponderance of the evidence, that substitute claims 23–43 are supported by written description in the application as filed. To carry this burden,

¹ In this context, “new matter” simply means added or amended claim limitations that lack written description support in the original disclosure. *See Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 7 (PTAB Feb. 25, 2019) (precedential) (citing *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001).

Patent Owner was required to set forth written description support for each substitute claim in the motion itself. *Lectrosonics, Inc.*, IPR2018-01129, Paper 15 at 7–8 (precedential) (“[T]he Board requires that a motion to amend set forth written description support in the originally filed disclosure of the subject patent for each proposed substitute claim....”).

Because Patent Owner has failed to carry its burden of showing that substitute claims 23–43 satisfy the written description requirement, the Motion to Amend should be denied.

B. Patent Owner has failed to show that substitute claims 23–43 satisfy the written description requirement.

1. Claim 23: “mounted on a sidewall of a bearing adapter”

With respect to the limitation “mounted on a sidewall of a bearing adapter” in claim 23, Patent Owner argues that “Figures 3 and 3A, when viewed on their own, do not in any way limit the sensor device to only a temperature sensor.” RMTA Reply at 3. As a general principle, Patent Owner is correct that “drawings alone *may* be sufficient to provide the ‘written description of the invention’ required by § 112, first paragraph.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1564 (Fed. Cir. 1991) (emphasis in original). But Patent Owner cites no authority for the proposition that drawings may be interpreted in a manner that ignores express, written language in the specification that explains what is depicted.

Here, a PHOSITA would understand that Figures 3 and 3A disclose precisely what the specification of the '673 Patent *says* they disclose: “a temperature sensing mote 10 of the type described above mounted to a bearing adapter.” EX1001, 5:44–47. No other type of sensor other than a temperature sensor is described with respect to this embodiment; no alternative types of sensors are depicted, or even suggested, anywhere in the text or in the figures themselves.

2. Claim 23: “a plurality of defined severity levels that are each assignable based on respective possible values for a magnitude of the deviations of one or more numeric values from nominal operating conditions for the bearing during operation of the railcar”

With respect to the “plurality of defined severity levels” required by claim 23, Patent Owner has charted a new course in its Reply, and now relies upon the “Leveled Alarms and Responses” section of the '673 Patent to provide written description support for this limitation. RMTA Reply at 4 (citing EX1001 at, *inter alia*, 13:30–14:3). These passages were not discussed in the Revised Motion to Amend, which relied upon an entirely different section of the specification as allegedly supporting this limitation. *Compare* RMTA Reply at 4 *with* RMTA at 10–11 (discussing EX1001 at cols. 7–12, 12:44–47, and 12:57–58, and arguing that “[t]he specification explicitly describes the ‘severity levels’ as ‘tiered alarm levels.’”).

The RMTA did include a lone citation to lines 13:30–14:3 in the table on

page 7. Presenting a bare citation without any supporting explanation, however, is not sufficient to carry Patent Owner's burden to show compliance with the written description requirement. *Intel Corp. v. Alacritech, Inc.*, IPR2017-01391, Paper 81 at 42 (PTAB Nov. 26, 2018) (collecting cases); *Facebook, Inc. v. Everymd LLC*, IPR2014-00242, Paper No. 31 at 13 (May 12, 2015) ("Patent Owner's mere citation in a table to various portions of the original disclosure, without any explanation why a person of ordinary skill in the art would have recognized that the inventor possessed the claimed subject matter as a whole, is inadequate to satisfy the written description requirement").

3. Claim 30: "and performing steps b-d at said location remote from said railcar"

Patent Owner cites EX1001, 11:51-54 for the proposition that "heuristics" may be performed by either a mobile base station or a land-based base station. RMTA Reply, 7. The use of heuristics is recited in step (b) of claim 23. But claim 30 requires that ***all three*** of steps (b), (c), ***and*** (d) recited in claim 23 are performed at a remote location. Patent Owner has not even cited any disclosure relevant to steps (c) or (d), and has not identified any embodiment wherein ***all three*** of these

steps are performed off the railcar as required by claim 30.²

4. Petitioner has applied the correct standards for evaluating the written description requirement.

The remainder of Patent Owner’s arguments allege that Petitioner has applied an incorrect standard for evaluating the written description requirement.

Patent Owner is correct that the written description requirement does not require *in haec verba* support in the specification. However, “[a]lthough the exact terms need not be used *in haec verba*, the specification must contain an equivalent description of the claimed subject matter.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (internal quotation omitted). *See also Flash-Control, LLC v. Intel Corp.*, No. 2020-2141, 2021 WL 2944592, at *3 (Fed. Cir. July 14, 2021) (“While the written description requirement does not require that the specification recite the claimed invention in any particular way, pointing to an ‘amalgam of disclosures’ from which an artisan could have created the claimed invention does not satisfy this requirement.” (quoting *Novozymes A/S v. DuPont Nutrition Biosciences APS*, 723 F.3d 1336, 1349 (Fed. Cir. 2013)); accord *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010).

² In contrast, the ’673 Patent **does** expressly describe and claim an embodiment where all three steps are performed **on the railcar**. EX1001, claim 4.

Patent Owner makes two fundamental errors in its arguments regarding written description. First, Patent Owner repeatedly refers to concepts that a PHOSITA would allegedly have understood, but which are not actually recited or described anywhere in the specification. Written description support, however, “does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed.” *Lockwood*, 107 F.3d at 1571–72. *See also Ariad*, 598 F.3d at 1352 (“it is the specification itself that must demonstrate possession”). “One shows that one is ‘in possession’ of *the invention* by describing *the invention*, with all its claimed limitations, not that which makes it obvious.” *Lockwood*, 107 F.3d at 1572 (emphasis in original).

Second, Patent Owner fails to recognize that it “cannot show written description support by picking and choosing claim elements from different embodiments that are never linked together in the specification.” *NeuroDerm Ltd. V. AbbVie Inc.*, PGR2022-00040, Paper 77 at 31 (PTAB, Oct. 31, 2023) (citing *Flash-Control, LLC v. Intel Corp.*, No. 2020-2141, 2021 WL 2944592, at *4 (Fed. Cir. July 14, 2021)). Instead, the claims must be supported “as an integrated whole rather than as a collection of independent limitations.” *Novozymes A/S*, 723 F.3d at 1349. Patent Owner’s arguments address each claim limitation in isolation, and do not address how the specification provides support for the claimed ***combination*** of

limitations “as an integrated whole.” Patent Owner has therefore failed to carry its burden of persuasion to establish that substitute claims 23–43 are supported by written description in the original specification of the ’673 Patent.

II. SUBSTITUTE CLAIMS 23–43 ARE INVALID UNDER 35 U.S.C. § 112

A. Indefiniteness

Patent Owner misstates Petitioner’s argument that the “temperatures”/ “temperature value(s)” limitations of claim 33 are indefinite. The issue is not that the word “temperature” or the term “temperature value” is itself indefinite. Rather, the issue is that claim 33 includes *five distinct limitations* that define *different* temperatures or temperature value(s) that are used in the claimed method. *See* RMTA Opposition, 9–11. Claim 33 is indefinite because it is unclear what each temperature-related term means in the context of the claim as a whole, how the multiple temperature-related terms relate to one another, or how each term relates to what is disclosed in the specification. *Id.* at 12.

B. Enablement

In response to Petitioner’s argument that substitute claims 23–43 lack enablement, Patent Owner writes that “Petitioner appears to require enablement of the full scope of the claim which is not the proper standard.” RMTA Reply, 12.

Once again, Patent Owner is mistaken about the proper legal standard. As the Supreme Court recently explained in *Amgen Inc. v. Sanofi*, 598 U.S. 594

(2023), the specification must indeed enable the full scope of the claims:

If a patent claims an entire class of processes, machines, manufactures, or compositions of matter, the patent's specification must enable a person skilled in the art to make and use the entire class. In other words, the specification must enable the full scope of the invention as defined by its claims. The more one claims, the more one must enable.

Amgen, 598 U.S. at 610. Here, the substitute claims broadly encompass using any possible heuristic to correlate any possible operational parameter of a wheel bearing with the condition of the bearing. *See generally* Opposition, 13–17.

Although the '673 Patent includes a table disclosing a number of exemplary heuristics, that disclosure alone is not sufficient to satisfy § 112, which requires that the specification “reliably enable a person skilled in the art to make and use all of what is claimed, not merely a subset.” *Amgen*, 598 U.S. at 611. The substitute claims encompass a vast number of additional heuristics, and the specification provides a PHOSITA with no way to reliably implement, or even identify, the full scope of what is claimed.

C. Patent Owner’s Corrected Claims Appendix raises new issues with respect to written description, enablement, and indefiniteness.

Patent Owner filed a “Claims Appendix A” with its RMTA Reply, in which

substitute claims 33 and 42 have been further amended. The Board permitted Patent Owner to file amended claims with its Reply over Petitioner's objection. *See* EX2165. The newly amended claims raise new patentability issues that Petitioner has not previously had an opportunity to address.

Substitute claim 33 has been amended to remove one of the “transmitting an alarm” steps previously recited in step (c); to remove the reference to step (c) and replace it with a reference to step I; and to introduce illegible language into step (d). As currently presented, claim 33 is indefinite at least because step (d) requires “transmitting an alarm **if in stI(c) it is determined** that the temperature of the desired part is outside the acceptable range of temperatures....” RMTA Reply, xviii (emphasis added). A PHOSITA would not be able to understand this phrase with reasonable certainty.

Substitute claim 42 has been amended to remove the phrase “based on the one or more numeric values.” This revision raises new patentability issues with respect to written description, enablement, and indefiniteness. Dependent claim 43 requires that “the collected data includes one or more numeric values based on data obtained at the bearing adapter.” Independent claim 42, as currently amended, is no longer limited to the use of “numeric values.” Accordingly, under the doctrine of claim differentiation, claim 42 now implicitly encompasses the collection and use of data *other than* numeric values. *See AK Steel Corp. v. Sollac & Ugine*, 344 F.3d

1234, 1242 (Fed. Cir. 2003) (“Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend.”); *Ortho-McNeil Pharm. v. Mylan Lab'ys, Inc.*, 520 F.3d 1358, 1362 (Fed. Cir. 2008) (“[T]his court strives to reach a claim construction that does not render claim language in dependent claims meaningless.”).

It is entirely unclear how the method of claim 42 could be carried out on non-numeric data. Patent Owner has identified no written description support for the method of claim 42 as applied to non-numeric “collected data,” and Petitioner is aware of no disclosure in the specification of the ’673 Patent that could provide such support. Likewise, Petitioner is aware of no disclosure in the specification of the ’673 Patent that could enable a PHOSITA to carry out the method of claim 42 on non-numeric “collected data.”

III. SUBSTITUTE CLAIMS 23–43 ARE INVALID UNDER 35 U.S.C. § 103

Patent Owner raises four arguments that substitute claims 23–43 are not obvious over the prior art, each of which is addressed below.

First, there is no contradiction inherent in arguing that claims are both indefinite and obvious. The Federal Circuit has expressly recognized that “[t]he questions [of obviousness and indefiniteness] are different,” and that indefiniteness does not “imply that [a claim] is incapable of being compared to prior art to

determine if one of its alternatives is anticipated or would have been obvious on the grounds asserted.” *Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1360 (Fed. Cir. 2020). Here, with respect to claim 33, Petitioner has shown that the prior art discloses the same features that Patent Owner relies upon for written description support in the specification of the ’673 Patent, as well as the features that Patent Owner alleged were absent from the prior art in its Revised Motion to Amend. *See* RMTA, 33–34.

Second, Petitioner’s analysis of the “heuristics” limitations properly reflects the Board’s interpretation of “heuristics” presented in the Institution Decision, which is the plain and ordinary meaning. Paper 10, 7–8. Petitioner’s analysis would be identical under the similar construction of “heuristics” proposed by Patent Owner. *See id.* at 7. LeFebvre, Armitage, and Barone each disclose the use of heuristics to correlate collected data (e.g., temperature or vibration data) with the condition of a bearing, as extensively discussed in both the Petition and the Opposition. *See, e.g.*, Opposition, 21–22.

Third, Patent Owner argues that Inbarajan and Betters are not analogous art. Prior art is analogous if it satisfies either of the following tests: (1) “the art is from the same field of endeavor, regardless of the problem addressed” and, (2) “if the reference is not within the field of the inventor's endeavor, [it] is reasonably pertinent to the particular problem with which the inventor is involved.” *Donner*

Tech., LLC v. Pro Stage Gear, LLC, 979 F.3d 1353, 1359 (Fed. Cir. 2020).

Inbarajan and Betters satisfy both tests for analogous art. Both references—like the ’673 Patent—are directed to vehicular monitoring systems that collect data regarding operating parameters of the vehicle, analyze the collected, assign severity levels to any detected problems, and send appropriate alerts to a user. *See* EX1036, (57) Abstract, Fig. 9A, 5:58–65; EX1037, (57) Abstract, claims 1–17.

The references are therefore directed to the same field of endeavor as the ’673 Patent and are analogous art under test (1). And with respect to test (2) the monitoring systems and techniques disclosed by Inbarajan and Betters are reasonably pertinent to the railcar monitoring problem addressed by the ’673 Patent. Petitioner’s expert testified that “the monitoring and reporting systems described by Inbarajan and Betters include methods and techniques that are broadly applicable to a variety of vehicle types, including railcars.” EX1035, ¶ 53.

Finally, nothing in claims 23–43 requires a “real-time notification system” as alleged by Patent Owner. RMTA Reply, 16. In any event, the ’673 Patent itself states that “[a]lerts may also be sent via email or posted to a web site,” which is the same manner of notification used by Inbarajan. *Compare* EX1001, 12:46–47 with EX1036, (57) Abstract, 3:25–50.

IV. SUBSTITUTE CLAIMS 23–43 ARE INVALID UNDER 35 U.S.C. § 101

Patent Owner’s RMTA Reply offers no substantive rebuttal to Petitioner’s

argument that substitute claims 23–43 are directed to ineligible subject matter under 35 U.S.C. § 101. The absence of a § 101 argument in Petitioner’s Opposition to the original Motion to Amend was a matter of practicality: having argued (correctly) that the substitute claims were invalid for lack of written description, lack of enablement, indefiniteness, and obviousness in view of the prior art, Petitioner simply did not have space under the applicable page limits to advance an additional argument under § 101. Nevertheless, the Board (correctly) recognized that the substitute claims were directed to patent ineligible subject matter and raised the issue *sua sponte* in the Preliminary Guidance. Paper 29 at 17–19. The Board’s preliminary findings were correct, and none of the amendments presented in the Revised Motion to Amend warrant a different conclusion. Substitute claims 23–43 are directed to ineligible subject matter under 35 U.S.C. § 101.

Respectfully submitted,

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I hereby certify that on this 16th day of May, 2024, the foregoing was served via electronic mail to the attorneys of record for the '673 Patent at the following address:

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