United States Court of Appeals for the Federal Circuit

CHEVRON U.S.A. INC.,
Appellant

v.

UNIVERSITY OF WYOMING RESEARCH CORPORATION, DBA WESTERN RESEARCH INSTITUTE,
Appellee

2019-1530

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board, in Interference No. 106,064.

Decided: November 4, 2020

PATRICK JOSEPH COYNE, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Washington, DC, argued for appellant.

LUKE SANTANGELO, Santangelo Law Offices, PC, Fort Collins, CO, argued for appellee. Also represented by ALFRED K. WIEDMANN, JR.; WILBUR T. BAKER, CHARLES L. GHOLZ, Oblon LLP, Alexandria, VA.

Before NEWMAN, LOURIE, and SCHALL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* SCHALL.

Dissenting opinion filed by *Circuit Judge* NEWMAN.

SCHALL, *Circuit Judge*.

DECISION

This is an appeal from the Patent Trial and Appeal Board's ("Board") Decision on Motions under 37 C.F.R. § 41.125 ("Decision on Motions") and from the Board's Judgment under 37 C.F.R. § 41.127(a) in Interference No. 106,064.[1] J.A. 6–41; J.A. 46–49. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (2000) and 35 U.S.C. § 141 (2002). For the reasons stated below, we *affirm*.

BACKGROUND

The University of Wyoming Research Corporation, d/b/a Western Research Institute ("Wyoming"), is the owner of U.S. Patent No. 8,367,425 ("the '425 patent"). The '425 patent is directed to a procedure whereby (1) solvents of increasing strength are successively passed over asphaltenes that have been segregated in a packed column from a hydrocarbon such as oil; and (2) amounts of asphaltenes dissolved and eluted from the column by the various

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[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") eliminated interference proceedings and established derivation proceedings. AIA § 3, 125 Stat. 285–93; *Biogen MA, Inc. v. Japanese Found. for Cancer Research*, 785 F.3d 648, 654 (Fed. Cir. 2015). However, the '814 application was filed before the amendments made by AIA § 3 went into effect on March 16, 2013. Accordingly, the earlier version of the patent statute governs the activities in this case. AIA § 3(n)(1), 125 Stat. at 293; *Tobinick v. Olmarker*, 753 F.3d 1220, 1223 n.1 (Fed. Cir. 2014).

solvents yield information about the oil. *See* '425 patent Abstract & col. 12 ll. 53–65. The Board defined the single count of the interference as claim 1 of Chevron U.S.A. Inc.'s ("Chevron") U.S. Patent Application No. 12/833,814 ("the '814 application") or claim 5 of the '425 patent, which Wyoming had copied from Chevron in order to provoke an interference ("the Count"). Claim 1 of the '814 application reads as follows:

> 1. A method for determining asphaltene stability in a hydrocarbon-containing material having solvated asphaltenes therein, the method comprising the steps of:
>
> (a) precipitating an amount of the asphaltenes from a liquid sample of the hydrocarbon-containing material with an alkane mobile phase solvent in a column;
>
> (b) dissolving a first amount and a second amount of the precipitated asphaltenes by *gradually and continuously changing the alkane mobile phase solvent to a final mobile phase solvent* having a solubility parameter at least 1 $MPa^{0.5}$ higher than the alkane mobile phase solvent;
>
> (c) monitoring the concentration of eluted fractions from the column;
>
> (d) creating a solubility profile of the dissolved asphaltenes in the hydrocarbon-containing material; and
>
> (e) determining one or more asphaltene stability parameters of the hydrocarbon-containing material.

Decision on Motions at 3, J.A. 8 (emphasis in original, additional emphases removed).

Relevant to this appeal, the Board construed the terms "gradually" and "continuously" in the limitation "gradually

and continuously changing the alkane mobile phase solvent to a final mobile phase solvent" as follows: The Board construed "gradually" to mean that "the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent." *Id.* at 10, J.A. 15. The Board construed "continuously" to mean "without interruption." *Id.* at 8, J.A. 13. Based upon these constructions, the Board held that Wyoming's '425 patent had adequate written description for this Count limitation. *Id.* at 12–14, 17, J.A. 17–19, 22. The Board further held that Wyoming was entitled to the benefit of the earlier filing dates of two patent applications, U.S. Provisional Application 60/711,599 (Aug. 25, 2005), and follow-up U.S. Nonprovisional Application 11/510,491 (Aug. 25, 2006) (collectively, "the priority applications"). *Id.* at 35, J.A. 40. Because Chevron had filed a Priority Statement that indicated its earliest corroborated conception coupled with diligence date was March 1, 2009, the Board determined that Chevron was unable to prevail on priority. *Id.*; Judgment at 2, J.A. 47. Accordingly, the Board assigned Wyoming status as senior party and entered judgment in its favor in the interference. Judgment at 2–3, J.A. 47–48.

DISCUSSION

I.

On appeal, Chevron argues that the Board erred because it should have construed the limitation "gradually and continuously changing the alkane mobile phase solvent to a final mobile phase solvent" to mean that "the amount of alkane mobile phase solvent fed into the column is incrementally decreased from 100% to 0% over a period of time without interruption while the amount of final mobile phase solvent fed into the column is incrementally increased from 0% to 100% over the same period of time." Appellant's Br. 10–15, 44–56; *see* Decision on Motions at 9, J.A. 14. This is the same construction Chevron urged

before the Board. *See* Interference No. 106,064, Chevron Mot. 1 (Lack of Written Description and Enablement) (Mar. 2, 2017) at 6–7, J.A. 405–06. For its part, Wyoming argues that the Board properly construed the limitation to mean that "the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent." Appellee's Br. 18–35. Neither Chevron nor Wyoming argues that the Board erred in construing the term "continuously" to mean "without interruption."

Chevron's appeal presents us with only one, narrow issue: whether the Board erred in its construction of the limitation "gradually and continuously changing the alkane mobile phase solvent to a final mobile phase solvent." This is so for two reasons: *first*, because it is the only claim limitation the parties dispute; and *second*, because the parties are in agreement that Wyoming's '425 patent and the priority applications have written description support for the limitation under the Board's construction, but that they lack such support under the construction urged by Chevron. In other words, the parties concur that if we agree with the Board's construction of "gradually," we must affirm, whereas if we conclude that the Board erred, we must reverse.

II.

We review the Board's decisions for compliance with the Administrative Procedure Act. *Rovalma, S.A. v. Bohler-Edelstahl GmbH & Co. KG*, 856 F.3d 1019, 1024 (Fed. Cir. 2017). Where, as here, the intrinsic record fully governs the proper construction of a claim term, we review the Board's claim construction de novo. *In re Power Integrations, Inc.*, 884 F.3d 1370, 1375 (Fed. Cir. 2018).

Because Wyoming copied claim 1 of Chevron's '814 application to provoke the interference, we give the claim its broadest reasonable construction in light of the '814 application's specification. *ULF Bamberg v. Dalvey*, 815 F.3d

793, 796 (Fed. Cir. 2016) ("Because this is an interference, and Bamberg copied Dalvey's claims, we give the claims their broadest reasonable construction in light of the Dalvey specification."). "Under the broadest reasonable interpretation, the Board's construction cannot be divorced from the specification and the record evidence, and must be consistent with the one that those skilled in the art would reach." *Id.* (brackets and citation omitted).

III.

The Board recognized that the disputed claim term, "gradually," had to be construed in the context of the '814 application's specification. *See ULF Bamberg*, 815 F.3d at 796. Although the Board had before it the testimony of both Chevron's expert, Dr. Lante Carbognani, and Wyoming's expert, Dr. Vladislav Lobodin, as to the meaning of the limitation "gradually and continuously changing," Decision on Motions at 8–10, J.A. 13–15, it declined to resort to this extrinsic evidence. Instead, it rested its construction of the "gradually and continuously changing" limitation on intrinsic evidence, specifically, the definition of "gradually" appearing in ¶ 37 of the '814 application's specification:

> The term gradually as used herein shall be understood to mean that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent having a solubility parameter at least 1 $MPa^{0.5}$ higher than the alkane mobile phase solvent to the column.

J.A. 682–83.

The Board explained that "[a]s we cannot rely on the plain meaning of gradually (given the definition given in the specification) we conclude that 'gradually,' therefore, for purposes of this decision means that 'the alkane mobile phase solvent is incrementally removed from the column

over a period of time by continuously adding a final mobile phase solvent.'" Decision on Motions at 10, J.A. 15. Thus, the Board rejected Chevron's argument that "gradually and continuously changing" refers to the act of feeding alkane mobile phase solvent into the inlet of the column. *See* Chevron Mot. 1 at 6–7, J.A. 405–06. Instead, it concluded that "gradually and continuously changing" refers to the change of solvents in the column, not at the inlet to the column. Decision on Motions at 12, J.A. 17 ("[G]radually is a term of degree and not specifically defined as a specific input change, but rather on the removal of one solvent by the addition of another, which is not quite the same.").

IV.

Chevron argues that the Board's construction of "gradually and continuously changing" is inconsistent with the specification of the '814 application, and is, therefore, unreasonable under our decision in *In re Suitco Surface, Inc.*, 603 F.3d 1255 (Fed. Cir. 2010). Appellant's Br. 44–51. This is so, Chevron asserts, because the specification discloses that the solvent is "gradually and continuously" changed at the inlet to the column. *Id.* at 46–51 (citing the '814 application at ¶¶ 31, 37–40, J.A. 681–84); Oral arg. 00:45–01:45, 08:00–08:45 (June 2, 2020), available at http://oralarguments.cafc.uscourts.gov/default.aspx?fl=19-1530.mp3, (citing the '814 application at ¶¶ 37–41, J.A. 682–84). Chevron also contends that the Board improperly took into account extrinsic evidence through its consideration of testimony by Dr. Lobodin regarding testing he performed. Appellant's Br. 51–53. Next, Chevron argues that the Board construed the terms "gradually" and "continuously" separately, divorced from the context of the claim. *Id.* at 53–55. Last, citing *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010) and *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006), Chevron asserts that the Board's construction encompasses even sudden, abrupt immediate solvent switches, thereby rendering the limitation meaningless. *Id.* at 55–56.

Wyoming responds that, unlike in *Suitco*, here the '814 application itself specifically and unambiguously provides a definition (of "gradually"). It also responds that the Board's construction is "precisely the definition Chevron provided in its specification," and that Dr. Lobodin's testing "only confirm[ed] . . . that even Wyoming's abrupt, single-step solvent transition at column inlet yielded 'incremental[ ] remova[al] [of the alkane solvent] from the column.'" Appellee's Br. 22; *see id.* at 21–24. Wyoming notes that the examples Chevron relies on as supporting "gradually and continuously changing" at the column inlet expressly state that the solvents are "gradually and continuously *added*," not "gradually and continuously *chang[ed]*," as required by the claim. Wyoming reasons that this further supports the Board's construction that it is solvent in the column that is "changed." *Id.* at 28–31. In addition, Wyoming disagrees that the Board improperly construed "gradually" and "continuously" separately, pointing out that the Board's construction of "gradually" requires "continuously adding a final mobile phase solvent." *Id.* at 33–36. Last, while rendering claim terms "superfluous" or meaningless may be "disfavored," Wyoming contends that the express definition set forth in the '814 application controls. *Id.* at 36–39.

V.

We agree with Wyoming that the Board did not err in construing the "gradually and continuously changing" limitation.

Paragraphs 37–41 of the '814 application, upon which Chevron relies, do not persuade us that the broadest reasonable construction of the "gradually and continuously changing" limitation requires a change of solvents at the inlet to the column. First and most significantly, ¶ 37 of the '814 application, upon which the Board relied, provides an express definition of "gradually." That definition requires "incremental[] remov[al]" and "continuous[] adding." As noted above, ¶ 37 states:

> The term gradually as used herein shall be understood to mean that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent having a solubility parameter at least 1 $MPa^{0.5}$ higher than the alkane mobile phase solvent to the column.

J.A. 682–83. Paragraphs 38 and 40 of the '814 application provide examples of "gradually and continuously add[ing]" final mobile phase solvents at the inlet of a column until the solvent "in the column" is 100% final mobile phase solvent. Thus, ¶¶ 38 and 40 illustrate that one way to implement a "gradual[ ] and continuous[ ] chang[e]" of the solvent in the column is by "gradually and continuously add[ing]" a final mobile phase solvent. Paragraph 37 of the '814 application explains that "[g]enerally, gradually and continuously changing" "can occur" during certain specified time periods. Paragraph 39 describes adding a second final mobile phase solvent to provide a more accurate solubility profile of the dissolved asphaltenes, while ¶ 41 is a single sentence that states that the "flow rate and time period" for "gradually and continuously adding" the second final mobile phase solvent "are substantially the same as for the first final mobile phase solvents." J.A. 682–84.

Accordingly, while ¶¶ 38–41 provide examples of "gradually and continuously changing" that is accomplished by "gradually and continuously add[ing]" solvents to a column, and provide potential time frames for "gradually and continuously changing," or "gradually and continuously adding," we do not read these paragraphs to require that the claimed "chang[ing]" be limited to occurring at the column's inlet. This is particularly true given the language used in the express definition of "gradually" set forth in ¶ 37.

We do not think that our decision in *Suitco* requires a different result. In *Suitco*, we disagreed with the Board's

broadest reasonable construction of the term "finishing the top surface of the floor," because the Board's construction "allow[ed] the finishing material to fall anywhere above the surface being finished regardless of whether it actually 'finishes' the surface." 603 F.3d at 1260. We held this construction to be unreasonably broad because "the express language of the claim and the specification require[d] the finishing material to be the top and final layer on the surface being finished." *Id.* Here, the "express language" of the specification "requires" that the term "gradually" "*shall be understood to mean* that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent . . . ." J.A. 682–83 (emphasis added). It is this definition that the Board tracked verbatim in its construction.

We also do not think that the Board improperly considered extrinsic evidence in construing the "gradually and continuously changing" limitation. Although the Board cited expert testimony from both parties when it set forth the parties' claim construction arguments, the Board stated it "[saw] no persuasive reason . . . to deviate from the intrinsic evidence in this situation." Decision on Motions at 10, J.A. 15; *see also id.* at 34, J.A. 39 (stating that, in construing the "gradually and continuously" term, the Board "strictly relied upon the intrinsic evidence in the . . . specification [of the '814 application]"). The Board referred to Dr. Lobodin's testimony regarding testing simply to confirm its understanding of the fluid dynamics in the column as part of its determination that Wyoming's '425 patent had adequate written description for the "gradually and continuously changing" limitation. *See id.* at 11–12, J.A. 16–17.

In addition, in view of the express definition provided in the specification, we do not think that the Board erred when it construed "gradually" and "continuously" separately. As noted above, the '814 application defined "gradually," an adverb generally used to describe a pace at which

something is performed, "[to] be understood to mean that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent."

Finally, we are not persuaded that *Haemonetics* and *Bicon* require a different result. In *Haemonetics*, a district court construed "centrifugal unit" to include "a plurality of tubes" in the preamble of the claim, but to exclude "a plurality of tubes" in the body of the claim. 607 F.3d at 780. The district court reasoned that including the tubing in the context of limitations directed to the centrifugal unit's physical dimensions recited in the body of the claim "would yield an absurdity." 607 F.3d at 780 (quoting *Haemonetics Corp. .v Baxter Healthcare Corp.*, 517 F. Supp. 2d 514, 519 (D. Mass. 2007)). We held the court's construction with respect to the body of the claim to be erroneous. In so doing, we noted that the specification described an embodiment in which a centrifugal unit was described both as including a plurality of tubes and as satisfying the dimensional limitations. *Id.* at 781–83. Similarly, in *Bicon*, we rejected the patentee's construction of a claim term that would render claim terms meaningless, noting that the construction was "contrary to the specification." 441 F.3d at 951. In sum, in both *Haemonetics* and *Bicon* we corrected claim constructions that were inconsistent with the patent's specification. Here, as discussed above, the Board's construction is consistent with, and indeed tracks a verbatim definition set forth in, the '814 application.

CONCLUSION

For the foregoing reasons, we conclude that the Board did not err in its construction of the Count's "gradually and continuously changing" limitation. We therefore affirm the Board's judgment in the interference in favor of Wyoming.

AFFIRMED

United States Court of Appeals for the Federal Circuit

CHEVRON U.S.A. INC.,
Appellant

v.

UNIVERSITY OF WYOMING RESEARCH CORPORATION, DBA WESTERN RESEARCH INSTITUTE,
Appellee

2019-1530

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 106,064.

NEWMAN, *Circuit Judge*, dissenting.

This case concerns a patent "interference" proceeding, conducted under the now-discontinued statute whereby the patent for a commonly claimed invention is awarded to the party who was the first to invent, rather than the first to file the patent application. The interference is a trial-like administrative proceeding in which the competing inventors prove their dates of invention. Extensive precedent evolved over the decades of this often complex procedure, providing guidance for determination of the core priority issues of conception, corroboration, reduction to practice, and diligence.

Although the purpose of the first-to-invent rule was to achieve fairness to inventors and relieve the pressure to "race to the Patent Office," interference proceedings were expensive and time-consuming. In addition, the first-to-invent policy was unique to the United States, presenting international treaty concerns. Thus, the Leahy–Smith America Invents Act abolished the principle of first-to-invent and eliminated the accompanying interference proceedings, except for patent applications filed before the effective date of March 16, 2013. Pub. L. 112–29, § 3(n)(2), 125 Stat. 284, 293 (2011). The case at bar is in that legacy class.

The competing parties are Chevron U.S.A. Inc. ("Chevron") and the University of Wyoming Research Corporation ("Wyoming"). Both Wyoming and Chevron were studying the analysis of asphaltene impurities in crude oil, and the parties developed different methods of analysis by solvent extraction. Purification of crude oil has been much studied, and the specifications of both parties list extensive prior art. Each party's method in this interference is described in multi-page specifications with specific examples, explicit data, and graphs.

Wyoming initiated the interference by copying into its pending application the claims from a pending Chevron application. The Patent Trial and Appeal Board ("Board") conducted the interference proceeding and awarded priority of invention to Wyoming,[1] leading to this appeal.

As I shall discuss, the Board erred. The Wyoming specification does not describe and does not support the claims copied from Chevron. In its chain of applications Wyoming describes and claims a different method. Wyoming's only

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[1] *Schabron* [Wyoming] *v. Rogel* [Chevron], Patent Interference No. 106,064, 2018 WL 6573279 (P.T.A.B. Dec. 11, 2018) ("Board Op.").

mention of the Chevron method is in the claims that Wyoming copied from Chevron. In the absence of any description of the Chevron method, Wyoming's applications cannot establish conception and constructive reduction to practice[2] of the Chevron method.

No Wyoming inventor asserted conception or reduction to practice of the Chevron method, and no testimonial or documentary evidence was offered. Wyoming relies entirely on its earlier-filed specifications, which describe only the different Wyoming method. As summarized in *Ariad Pharmaceuticals, Inc. v. Eli Lilly & Co.*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc), the test is whether the priority application "convey[ed] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id.* at 1351 (citing *Ralston Purina Co. v. Far–Mar–Co, Inc.*, 772 F.2d 1570, 1575 (Fed. Cir. 1985)).

The Board erred in law and fact. From the majority's affirmance of the Board's decision, I respectfully dissent.

DISCUSSION

For a patent interference to be "declared," each competing party must describe and be entitled to claim the same invention. A challenging party may copy into its application the claims from another party's application, when the challenging party has the requisite support for the copied claims. The Patent and Trademark Office ("PTO") then declares the interference and designates an interference "Count" that states the common invention. The competing parties then are tasked to prove their dates of invention of the subject matter of the Count.

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[2] "*Constructive reduction to practice* means a described and enabled anticipation under 35 U.S.C. § 102(g)(1), in a patent application of the subject matter of a count." 37 C.F.R. § 41.201.

Wyoming copied claims from Chevron's U.S. Patent Application No. 12/833,814 ("Chevron '814 application"), and informed the examiner, as required, that the claims were copied for interference purposes. Wyoming then filed a continuation application that included the copied claims, and the examiner issued U.S. Patent No. 8,367,425 ("Wyoming '425 patent") including the claims copied from Chevron. The examiner also allowed Chevron's claims in Chevron's '814 application, holding Chevron's claims patentable over Wyoming's application that had been cited as prior art. The examiner then "declared" this interference.

The Board recited the Count of the interference as Chevron's claim 1 or Wyoming's claim 5, as follows:

> Chevron Claim 1. A method for determining asphaltene stability in a hydrocarbon-containing material having solvated asphaltenes therein, the method comprising the steps of:
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> (a) precipitating an amount of the asphaltenes from a liquid sample of the hydrocarbon-containing material with an alkane mobile phase solvent in a column;
> (b) dissolving a first amount and a second amount of the precipitated asphaltenes *by gradually and continuously changing the alkane mobile phase solvent to a final mobile phase solvent* having a solubility parameter at least 1 $MPa^{0.5}$ higher than the alkane mobile phase solvent;
> (c) monitoring the concentration of eluted fractions from the column;
> (d) *creating a solubility profile of the dissolved asphaltenes in the hydrocarbon-containing material*; and
> (e) *determining one or more asphaltene stability parameters of the hydrocarbon-containing material.*

> Wyoming Claim 5. The method of [Wyoming] claim 1, wherein said step of dissolving comprises the step of dissolving by *gradually and continuously changing the alkane mobile phase solvent to a final mobile phase solvent* having a solubility parameter that is at least 1 $MPa^{0.5}$ higher than the alkane mobile phase.

Board Op. at *2–3 (italics by Board "on terms disputed in this proceeding").

Each of the Wyoming and Chevron specifications contains a detailed description of each party's method, with specific experimental examples, graphs, and data. Chevron argued that Wyoming has no support for the "gradually and continuously changing" limitation. The Board recognized that Wyoming's method differed in that Wyoming required an abrupt and discontinuous solvent change, but the Board discarded the difference and awarded Wyoming priority of the claims to Chevron's method.

No Wyoming record describes a gradual and continuous solvent change, and no Wyoming inventor asserted possession of this concept of gradual and continuous solvent change. No Wyoming specification mentions or suggests a gradual and continuous solvent change. To the contrary, the Wyoming specifications are explicit in their requirement of an abrupt and complete solvent change.

Chevron's motion to dissolve the interference should have been granted, for Chevron and Wyoming describe and claim different inventions. There is no interference in fact; I start with this aspect.

There is no interference in fact

The premise of the patent interference proceeding is that the parties are entitled to claim the same invention. *See Jepson v. Coleman*, 314 F.2d 533, 536 (C.C.P.A. 1963) ("When one copies claims from a patent for the purpose of instituting interference proceedings, in order to be

successful, that person's application must clearly support those counts. There must be no doubt that an applicant discloses each and every limitation of the claims and all doubts must be resolved against the copier.") (internal citation omitted); *Goeddel v. Sugano*, 617 F.3d 1350, 1357 (Fed. Cir 2010) ("The Board's decision that the Japanese Application constitutes constructive reduction to practice of the subject matter of these interferences is not in accordance with law, for the Japanese Application does not meet the criteria of § 112, [the written description and enablement requirements], as to this subject matter.").

In *Storer v. Clark*, 860 F.3d 1340 (Fed. Cir. 2017), the court again explained that the specification must contain adequate written description and enablement for the subject matter of the Count. *Id.* at 1344–45. "When a party to an interference seeks the benefit of an earlier-filed United States patent application, the earlier application must meet the requirements of 35 U.S.C. § 120 and 35 U.S.C. § 112 ¶ 1 for the subject matter of the count." *Id.* (quoting *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998)).

These requirements are plainly not met by Wyoming. Indeed, the Board did not find otherwise; the Board simply construed Chevron's gradual and continuous solvent change as somehow met by Wyoming's abrupt and discontinuous solvent change. However, priority of invention requires proof of conception and reduction to practice of the same invention, not of a different invention.[3]

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[3] My colleagues on this panel hold that the "broadest reasonable interpretation" of the term "gradually and continuously changing" includes the abrupt and complete solvent switch of the Wyoming method, and that nothing more is needed. The court now discards as "not controlling" our uniform precedent that requires that the interference count is construed in light of the application from which it

The Board did acknowledge the major distinction that Chevron gradually and continuously changes the solvent while Wyoming abruptly and completely changes the solvent. The Chevron specification defines "gradually" as follows:

> The term gradually as used herein shall be understood to mean that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent having a solubility parameter at least 1 $MPa^{0.5}$ higher than the alkane mobile phase solvent to the column.

Chevron '814 application ¶ 37. Chevron's specification describes that this gradual change of solvent is performed by the continuous addition of the new solvent at the column inlet. *Id.* at ¶¶ 37–38. Chevron's specification elaborates that "gradually and continuously changing from essentially the alkane mobile phase solvent to the final mobile phase solvent can occur during a period of about 5 minutes to about 120 minutes at a flow rate of about 1 mL/min. to about 4 mL/min." *Id.* at ¶ 37. The Chevron specification describes:

> [A] first final mobile phase solvent . . . is gradually and continuously added to the column to sequentially change the alkane mobile phase solvent from 100% alkane mobile phase solvent to 100% first final mobile phase solvent, i.e., the alkane mobile phase solvent is changed to 1% dichloromethane in

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arose; that is, *Haemonetics Corp. v Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010) and *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006). Having removed the restraints of precedent and logic, the court holds that "gradual and continuous" includes abrupt and discontinuous.

> 99% alkane mobile phase solvent, then to 2% dichloromethane in 98% alkane mobile phase solvent, until the mobile phase solvent in the column is 100% dichloromethane and 0% alkane mobile phase solvent.

Id. at ¶ 38. Chevron exemplifies this gradual and continual change of solvent with specific examples, and demonstrates the method graphically and with specific data. Chevron's Figure 1 pictures the solubility profile that ensues from the gradual and continuous solvent change:

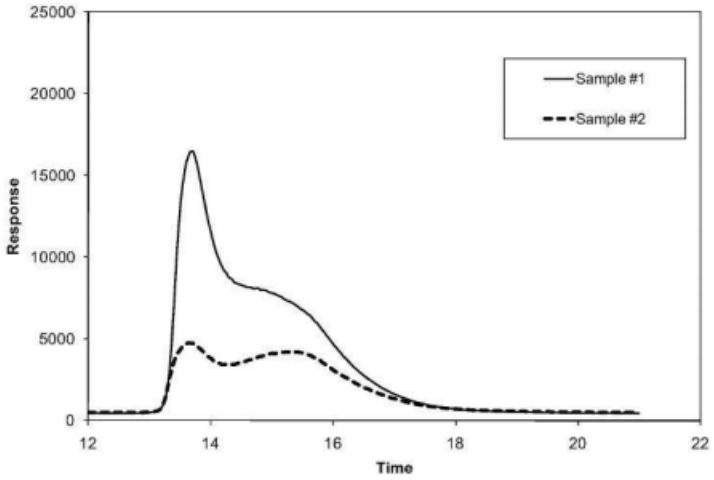

FIGURE 1

Id., Fig. 1. This profile is analyzed, in accordance with the Chevron specification, to determine the asphaltene solubility parameters.

The Wyoming inventors were also studying the analysis of asphaltenes by solvent extraction. However, Wyoming describes a different method. Unlike Chevron's gradual and continual change of solvents, in the Wyoming method the solvents are abruptly and completely changed.

Wyoming calls this a "step gradient sequence," described as follows:

> A more rapid method to measure asphaltene solubility was explored using a novel on-column asphaltene precipitation and re-dissolution technique. This was automated using high performance liquid chromatography (HPLC) equipment with a step gradient sequence using the solvents: heptane, cyclohexane, and toluene:methanol (98:2).

Wyoming '425 patent, col. 10, ll. 16–21. Wyoming describes its method as a series of switches of solvent:

> Once the sample solution enters the column with the heptane mobile phase, the heptane displaces and dilutes the injected solvent, and heptane insoluble materials precipitate. The soluble maltenes continue to move with the heptane and they elute from the column. The solvent is then switched to a stronger solvent, or a series of stronger solvents of increasing solvent strength, which dissolves a portion or all of the precipitated material. The solvent is then switched back to heptane in preparation for the next sample injection.

Id., col. 13, ll. 46–55.

Wyoming states that its complete switches of solvent are "important aspects to the separation." *Id.*, col. 14, ll. 43–54. Each successive Wyoming solvent displaces entirely the solvent preceding it, and that complete separation between the solvents is necessary. *Id.*, col. 8, ll. 33–46 ("[I]t is typically necessary to separate the existing dissolved material solution from a space contacting the generated material so that the subsequent solvent can then dissolve at least an additional portion of the generated material."); *see also id.*, col. 10, l. 16–col. 11, l. 4 (explaining advantages of the Wyoming method of switching solvents).

Wyoming presents detailed examples of its method, including graphs showing the results of its method of complete switches of solvent, as in Figure 5 of the Wyoming '425 patent:

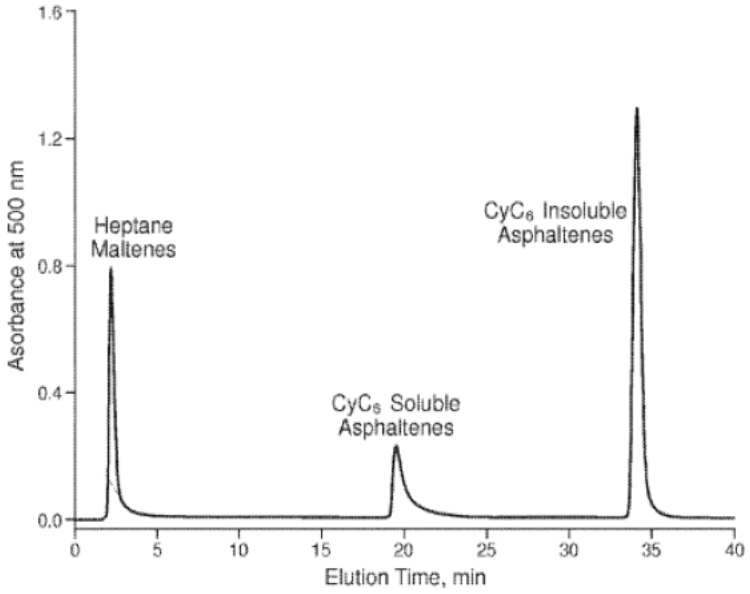

Fig. 5

Id., Fig. 5.

The Wyoming specification provides extensive description of its abrupt and complete switch of solvent for passage through the column, in contrast to the Chevron description of gradual and continuous solvent change for passage through the column. The Board was aware of these differences, for the Board stated:

> The underlying facts in this situation are, for the most part, not in dispute. Schabron's [Wyoming] example utilizes abrupt solvent input changes (Ex. 2016, ¶ 80 and 89), while Rogel's [Chevron]

> examples use solvent changes that are less so (Ex. 1001, ¶ 38).

Board Op. at *21. An abrupt solvent input change is not a gradual and continuous change, on any theory of interference priority. When claims are copied to provoke an interference, the copied claims are construed in light of the application from which the claims are copied. *See Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1375 (Fed. Cir. 2009) ("[W]hen a party challenges written description support for an interference count or the copied claim in an interference, the originating disclosure provides the meaning of the pertinent claim language.").

The Board recognized that Wyoming did not argue that its specification described the Chevron method. However, the Board undertook to fill that gap, the Board stating that "the description discusses variables such as injection volume and column size, which at least in part we think inevitably would affect solvent residence times, and solvent changeover times, in the column." Board Op. at *9 (citing Wyoming '425 patent, col. 15, ll. 9–11). The Board's speculative "at least in part we think," *supra*, is the only reason presented for the Board's ruling that Wyoming met the requirements of conception, written description, enablement, and reduction to practice of the interference Count.

Wyoming proved neither conception nor reduction to practice of the Count

The burden was on Wyoming, in its position as the copier of claims to provoke an interference, to establish that the claims are patentable to it, and to establish priority of invention with preponderant evidence of conception and reduction to practice. Interpretation of the claim selected as the interference count must "correspond[] with what and how the inventor describes his invention in the specification." *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017).

"Determining 'inventorship' is nothing more than determining who conceived the subject matter at issue, whether that subject matter is recited in a claim in an application or in a count in an interference." *Sewall v. Walters*, 21 F.3d 411, 415 (Fed. Cir. 1994). Wyoming offered no evidence of any inventor's conception of the "gradual and continuous" method presented by Chevron, and it is not disputed that the Wyoming specification contains no written description and no enablement of a gradual and continuous solvent change.

Interference priority requires proof of prior conception followed by diligent reduction to practice of the common invention. No Wyoming inventor asserted conception of the method of the Count, nor asserted reduction to practice of the invention of the Count. The Board recited, but then bypassed the requirement that "[a] party seeking the benefit of an earlier application must establish that the earlier application is a 'constructive reduction to practice' of an embodiment within the scope of the Count. It must also satisfy both the written description and enablement requirements of 35 U.S.C. § 112. *See* 37 C.F.R. § 41.202." Board Op. at *15. The Board did not apply these requirements.

CONCLUSION

The PTO erred at the threshold, in allowing Wyoming to copy Chevron's claims, in the absence of written description and enablement of the Chevron method of gradual and continual change of solvent. Wyoming did not establish conception and reduction to practice of the subject matter of the Count, either constructively or through evidence. The Board's award of priority to Wyoming is contrary to law. From my colleagues' contrary view, I respectfully dissent.