United States Court of Appeals for the Federal Circuit

DIONEX SOFTRON GMBH,
Appellant

v.

AGILENT TECHNOLOGIES, INC.,
Appellee

2021-2372

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 106,109.

Decided: January 6, 2023

ANDREW JAMES ISBESTER, Kilpatrick Townsend & Stockton LLP, San Francisco, CA, argued for appellant. Also represented by BYRON ROBERT CHIN; KRISTOPHER L. REED, Dallas, TX.

JOHN B. SGANGA, JR., Knobbe, Martens, Olson & Bear, LLP, Irvine, CA, argued for appellee. Also represented by EDWARD M. CANNON, PHILIP MARK NELSON.

Before REYNA, CHEN, and STARK, *Circuit Judges*.

STARK, *Circuit Judge*.

Dionex Softron GmbH ("Dionex") appeals the Patent Trial and Appeal Board's ("Board") judgment in an interference proceeding, awarding priority to Agilent Technologies, Inc. ("Agilent"). The parties dispute priority, claim construction, written description support, conception, and reduction to practice. We affirm.

I

This case involves an unusual history, in which the parties copied one another's claims in separate attempts to provoke an interference. First, Agilent substantially copied Dionex's claims but, nonetheless, failed to provoke an interference.[1] Agilent then amended its claims, and Dionex subsequently copied those amended claims verbatim, resulting in the interference at issue. The instituted interference was between Agilent's U.S. Patent Application No. 15/965,402 and Dionex's U.S. Patent Application No. 16/016,866.

In the interference, the Board identified Dionex as the senior party and Agilent as the junior party, thereby requiring that Agilent prove priority by a preponderance of the evidence. The Board defined a single count as claim 1 of Agilent's patent application, reproduced below:

> A method of operating a liquid chromatography system, the liquid chromatography system comprising a liquid chromatography column and an injection valve, the method comprising:
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> isolating a sample loop of the liquid chromatography system from a high-pressure fluidic path in

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[1] Specifically, Agilent substantially copied the claims of Dionex's U.S. Patent Application No. 15/596,738, which eventually became Dionex's U.S. Patent No. 10,031,112 ("'112 patent").

> fluid communication with the liquid chromatography column, wherein the high-pressure fluidic path is at a pump pressure, wherein the sample loop is in fluid communication with the injection valve and the sample loop comprises a metering device for loading a sample on the sample loop, and isolating the sample loop comprises placing the injection valve in a PRESSURE COMPENSATION position, wherein a volume of the metering device is defined by a chamber in which a piston is reciprocatingly mounted;
>
> *determining a movement amount of the piston within the chamber from a first position to a second position to increase a pressure in the sample loop from an essentially atmospheric pressure to the pump pressure, based on the pump pressure*; and
>
> while the sample loop is isolated from the high-pressure fluidic path, decreasing the volume of the metering device to increase the pressure in the sample loop from the essentially atmospheric pressure to essentially correspond to the pump pressure of the high-pressure fluidic path;
>
> wherein decreasing the volume includes *forwarding the piston within the chamber by the determined movement amount from the first position to the second position*;
>
> wherein the metering device and the sample loop are in fluid communication in each position of the injection valve.

J.A. 15 (italicized emphasis added by Board).

In the interference, Dionex moved for judgment that Agilent's claims were invalid based on a lack of written description support for the following limitation: "determining a movement amount of the piston within the chamber from a first position to a second position to increase a pressure

in the sample loop from an essentially atmospheric pressure to the pump pressure, based on the pump pressure." J.A. 16. Dionex argued that "determining a movement amount" had to occur prior to "forwarding the piston" but the relevant specification did not provide adequate written description support for this order of operations. Dionex contended that the relevant specification from which to measure the adequacy of the written description support was generally its '112 patent, but Dionex stated that some terms, such as "determining," had to be construed in light of Agilent's '402 application. Agilent maintained that the limitation had to be viewed solely in light of its own specification.

The Board concluded that Agilent's specification controlled, construed the disputed claim language in light of that specification, and found that the specification provided adequate written description support. Under the applicable broadest reasonable construction standard, the Board rejected Dionex's proposal to limit claim scope to require a determination of a movement amount *before* forwarding the piston. Instead, the Board construed the claim language as permitting real-time, empirical determination of a movement amount *while* forwarding the piston to achieve pressure equalization between the sample loop and the pump pressure. The Board found adequate written description support for the thus-construed determining limitation based on paragraphs 81-84 of Agilent's specification, as attested to by Agilent's expert.

Later in the proceeding, Agilent and Dionex separately moved for judgment on the basis of priority due to their respective alleged dates of conception and reduction to practice. The Board granted Agilent's motion and denied Dionex's motion, finding that Agilent proved conception as of May 1, 2007 and actual reduction to practice as of June 1, 2007, all before Dionex's earliest alleged conception date of December 4, 2007.

In its analysis, the Board applied the rule of reason and found that the testimony of Wolfgang Kretz, one of Agilent's two co-inventors, was sufficiently corroborated by two of his co-workers, Manfred Berndt and Martin Bäuerle, who had worked near Kretz during the relevant time. Berndt and Bäuerle testified that Kretz successfully tested a prototype encompassing all limitations of the count by June 1, 2007.

The Board discussed Bäuerle's testimony in detail. It noted that Bäuerle testified he had witnessed, in the relevant time frame, the successful prototype as well as a document depicting the prototype. Although the document, which was admitted as Exhibit 2152, had a creation date of April 4, 2006 and a last modified date of November 11, 2008, the Board credited Bäuerle's testimony that the document had existed and shown the prototype's configuration during the relevant time frame; i.e., by June 1, 2007. The Board further noted that Agilent's expert testified that the configuration in Exhibit 2152 was for an apparatus that would achieve the count's pressure equalization requirement. The Board rejected Dionex's contention that Exhibit 2152 lacked a pressure sensor necessary for the claimed pressure equalization, instead crediting Bäuerle's corroborating testimony that Kretz used a high-pressure pump with a built-in pressure sensor to achieve pressure equalization. The Board also denied Dionex's requests to draw negative inferences from the lack of testimony from Kretz's co-inventor, Bernd Glatz,[2] and the lack of contemporaneous documentary evidence (such as photographs, technical drawings, schematics, firmware specifications, laboratory notebooks, and research and development reports).

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[2] Agilent explained to the Board that Glatz, like Kretz, was retired and argued that his testimony would have been cumulative of Kretz's.

Although the Board noted that it need not evaluate conception, because Agilent proved actual reduction to practice prior to Dionex's earliest alleged conception date, the Board determined that Agilent proved conception as of May 1, 2007.

Based on the foregoing, the Board entered judgment on priority for Agilent and against Dionex and refused Dionex's claims. Dionex timely appealed.

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) (2012) and 35 U.S.C. § 141 (2012). *See* Technical Corrections–Leahy-Smith America Invents Act, Pub. L. No. 112-274, 126 Stat. 2456, 2458 (2013).[3]

II

We review the Board's claim construction based on intrinsic evidence de novo and subsidiary factual findings based on extrinsic evidence for substantial evidence. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331-32 (2015). In an interference proceeding, claims are given their broadest reasonable construction in light of their originating specification. *See ULF Bamberg v. Dalvey*, 815 F.3d 793, 796 (Fed. Cir. 2016). Determining which specification to consult as the "originating specification" in connection with claim construction is a legal question we review de novo. *See Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1374 (Fed. Cir. 2009).

Satisfaction of the written description requirement presents a question of fact we review for substantial evidence. *See ULF Bamberg*, 815 F.3d at 797. We review de novo the Board's legal conclusions concerning priority, conception, and reduction to practice; the factual findings

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[3] We apply pre-AIA law. *See, e.g.*, *Regents of Univ. of Cal. v. Broad Institute, Inc.*, 903 F.3d 1286, 1291 n.2 (Fed. Cir. 2018).

underpinning these conclusions, including findings relating to corroboration, we review for substantial evidence. *See Taskett v. Dentlinger*, 344 F.3d 1337, 1339-40 (Fed. Cir. 2003); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1171 (Fed. Cir. 2006). We review the Board's evidentiary determinations, including whether to draw an adverse inference, for abuse of discretion. *See Chen v. Bouchard*, 347 F.3d 1299, 1307 (Fed. Cir. 2003); *see also Overnite Transp. Co. v. N.L.R.B.*, 140 F.3d 259, 266 n.1 (D.C. Cir. 1998) (finding, in context of NLRB, that "the decision of whether to draw an adverse inference has generally been held to be within the discretion of the fact finder").

III

On appeal, the parties dispute whether the Board erred by evaluating claim construction and written description support in light of Agilent's specification instead of Dionex's. They further disagree as to whether the Board erred in the construction it adopted and its findings of adequate written description support, priority, and reduction to practice.[4] We address these issues in turn.

A

The Board properly treated Agilent's specification as the "originating specification" for purposes of construing the disputed claim terms and evaluating the sufficiency of written description support for the claims. "[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

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[4] The parties also dispute conception, but because we agree with the Board that Agilent reduced the invention to practice before Dionex's earliest possible date of conception, Agilent did not have to prove conception. *See Fox Grp., Inc. v. Cree, Inc.*, 700 F.3d 1300, 1304-05 (Fed. Cir. 2012). We need not and do not address conception.

language." *Agilent Techs.*, 567 F.3d at 1375. This rule was created "to ensure that the PTO would only declare an interference if both parties had a right to claim the same subject matter." *Id.* (quoting *Rowe v. Dror*, 112 F.3d 473, 479 (Fed. Cir. 1997)).

Here, it was Dionex's copying of Agilent's claims that provoked the interference. That renders the Agilent application the originating disclosure. Therefore, we evaluate the patent claims based on the Agilent specification. *See Agilent Techs.*, 567 F.3d at 1375; *see also In re Spina*, 975 F.2d 854, 858 (Fed. Cir. 1992) ("A claim is not interpreted one way in light of the specification in which it originally was granted, and another way in light of the specification into which it is copied as a proposed interference count."). Although we have not had occasion to apply this rule in circumstances in which there was a prior unsuccessful effort between the same parties to provoke an interference, we neither see nor have been provided any persuasive reason not to apply our rule in this context.

B

The Board did not err in construing the claim language to permit "determining a movement amount" *while* "forwarding the piston . . . by the determined movement amount." Dionex wrongly contends that "determining" has to occur before "forwarding" because of the "logical structure" of the claim language and because the Board's construction renders "the determined movement amount" language superfluous. *See* Opening Br. 37-39.

Although the language of a method claim does not generally require that its steps be undertaken in the listed order, sometimes either logic or grammar mandates a particular order of steps. *See Mformation Techs., Inc. v. Rsch. in Motion Ltd.*, 764 F.3d 1392, 1398-1400 (Fed. Cir.

2014).[5] Here, neither the logic nor grammar of the claim compel such a result under the applicable broadest reasonable construction approach. Instead, as the Board concluded, "determining" could occur during the forwarding of the piston, much like a fuel pump determines the amount of fuel necessary to fill a vehicle's fuel tank during filling, a comparison described by Agilent's expert and credited by the Board.

Our conclusion does not render any claim language superfluous. Instead, as the Board concluded, "the determined movement amount" portion of the claim is necessary in order for the method to accurately move the piston in a manner that achieves the claimed pressure equalization.

C

The Board did not err in concluding that Agilent's specification provided adequate written description support. Dionex's arguments on this point depend entirely on our adopting Dionex's proposed claim construction. In other words, Dionex contends there is not adequate written description support for its ordered steps construction of the claim, but we have rejected this proposed construction. Since we affirm the Board's claim construction, Dionex's written description arguments necessarily fail.

D

The Board did not err in awarding priority to Agilent. Substantial evidence supports the Board's findings that Agilent's actual reduction to practice was sufficiently corroborated and occurred prior to Dionex's earliest conception date.

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[5] A specification, and not just the claim itself, may also directly or implicitly require an order of steps, *see Mformation*, 764 F.3d at 1398, but Dionex does not argue such is the case here.

Priority depends on conception and reduction to practice. *See, e.g.*, *Cooper v. Goldfarb*, 154 F.3d 1321, 1327 (Fed. Cir. 1998). "[T]o establish an actual reduction to practice, the inventor must prove that: (1) [the inventor] constructed an embodiment or performed a process that met all the limitations of the interference count; and (2) [the inventor] determined that the invention would work for its intended purpose." *Id.* Additionally,

> an inventor's testimony must be corroborated by independent evidence. However, a "rule of reason" analysis is applied to determine whether an inventor's testimony regarding reduction to practice has been sufficiently corroborated. The rule requires an evaluation of all pertinent evidence when determining the credibility of an inventor's testimony. In order to corroborate a reduction to practice, it is not necessary to produce an actual over-the-shoulder observer. Rather, sufficient circumstantial evidence of an independent nature can satisfy the corroboration requirement. Furthermore, an actual reduction to practice does not require corroboration for every factual issue contested by the parties. . . . [T]he law does not impose an impossible standard of "independence" on corroborative evidence by requiring that every point of a reduction to practice be corroborated by evidence having a source totally independent of the inventor; indeed, such a standard is the antithesis of the rule of reason. In the final analysis, each corroboration case must be decided on its own facts with a view to deciding whether the evidence as a whole is persuasive.

Id. at 1330-31 (internal quotation marks and citations omitted).

Dionex argues that the Board's finding of corroboration, particularly with respect to the claimed pressure

equalization functionality, is not supported by substantial evidence. In this regard, Dionex attacks various portions of Berndt's and Bäuerle's testimony, and emphasizes the last modified date and contents of Exhibit 2152. Dionex further argues that the Board erred by failing to draw negative inferences based on a lack of co-inventor testimony and a lack of certain documentary evidence. On each of these points, Dionex is mistaken.

1

The Board's finding of corroboration, under the rule of reason, is supported by substantial evidence. Kretz's testimony was corroborated by Bäuerle, Berndt, and Exhibit 2152. As the Board recounted, Bäuerle and Berndt both worked near Kretz and witnessed a successful working prototype containing all of the functionality and limitations of the count during the relevant time. While Exhibit 2152 was last modified after reduction to practice, there was evidence it was created before then, including Bäuerle's testimony that the successful prototype had the configuration generally depicted in Exhibit 2152.

The Board also credited Agilent's expert's opinion that the Exhibit (whatever the timing of its creation) disclosed a configuration that was designed to achieve the claimed pressure equalization. Similarly, the Board credited Bäuerle's testimony that Kretz had used a high-pressure pump with a built-in pressure sensor to achieve pressure equalization. Taken as a whole, there was substantial evidence under the rule of reason for finding corroboration here.

Dionex's efforts to demonstrate a lack of substantial evidence of corroboration are unpersuasive. Dionex argues that Bäuerle's testimony was not independent because (1) he did not know the prototype's hydraulic configuration; (2) his knowledge of Kretz's work to create the prototype's specialized grooves did not demonstrate his knowledge of the grooves' purpose; (3) his knowledge of a high-pressure

pump as a metering device conflicted with his admission that he did not know the prototype's specific hydraulic configuration; and (4) his knowledge of pressure equalization was based on documentary evidence produced by Kretz. Under the flexible rule of reason approach, there was nothing inappropriate about the Board accepting Bäuerle's testimony. Bäuerle may not have known every detail, but such omniscience is unnecessary under the rule of reason. *See, e.g.*, *Goldfarb*, 154 F.3d at 1330-31. He testified that he witnessed a successful prototype and, the Board found, "understood enough to know that the prototype performed all steps of the count and that the prototype had the configuration generally depicted in Exhibit 2152." J.A. 55. The Board's findings are supported by substantial evidence.

Dionex similarly argues that Berndt's testimony was not independent because he could only state that others considered the prototype a success. The Board did not rely on Berndt's testimony in great depth. In any event, his testimony was, at least in part, independent of Kretz and the Board was free to find it had some corroborative value. *See Goldfarb*, 154 F.3d at 1331 (rule of reason does not require impossible standard of total independence from inventor). Nothing about the Board's consideration of Berndt's testimony detracts from the substantial evidence supporting the Board's conclusions.

Dionex also argues that Exhibit 2152 could not corroborate Kretz's testimony because it was modified *after* Agilent's purported June 1, 2007 actual reduction to practice, even allowing that the document may have been created before that date. This contention lacks merit. The Board found that the Exhibit *as it existed at the relevant date* generally depicted a prototype that met the limitation of the claim. As a corollary, the Board was unpersuaded by Dionex's effort to prove that the Exhibit only came to include this depiction at a later date. As we have already explained, the record contains substantial evidence,

particularly Bäuerle's testimony, to corroborate Kretz's testimony that Exhibit 2152 depicted such an embodiment at the pertinent date. *See, e.g.*, *In re NTP, Inc.*, 654 F.3d 1279, 1291-92 (Fed. Cir. 2011); *see also Kolcraft Enters., Inc. v. Graco Children's Prods., Inc.*, 927 F.3d 1320, 1324 (Fed. Cir. 2019); *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1297 (Fed. Cir. 2018).

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Finally, Dionex argues that the Board erred by failing to draw negative inferences against Agilent based on a lack of co-inventor testimony and a lack of certain documentary evidence. We again disagree with Dionex.

There is no per se requirement to infer that the testimony of an inventor who fails to testify would be harmful to the position of his co-inventor. *See Borror v. Herz*, 666 F.2d 569, 574-75 (C.C.P.A. 1981); *see also id.* at 574 ("[T]he absence of the inventor's testimony does not require an inference that his testimony would have been inconsistent with other evidence."). Instead, the Board has discretion to determine whether to apply a negative inference based on what "is reasonable under the totality of evidence in the case." *Id.* at 574. While "the unexplained failure to call any known non-hostile person who has direct knowledge of facts being developed" may raise an inference that the testimony would be unfavorable, such an inference is not mandatory, and we have found it unwarranted where "the testimony of such a witness would be cumulative or inferior to what is utilized." *Id.* at 573-74. Here, the Board did not abuse its discretion in deciding not to draw negative inferences, particularly given Agilent's representations that the testimony of the co-inventor, Glatz, would have been cumulative of Kretz's testimony and inferior to it, for reasons including that Kretz testified about materials on his own hard drive.

Dionex contends that "a 'strong negative inference' is appropriate '[w]here ambiguities exist in the record or

there is conflicting testimony as to events which an inventor's testimony could clear up.'" Opening Br. 47-48 (quoting *Borror*, 666 F.2d at 574). This is not a correct statement of the law. In *Borror*, we explained that, under the circumstances described by Dionex, "a strong negative inference *may* be reasonable." 666 F.2d at 574 (emphasis added). Further, "[i]f an explanation is given for failure to call a witness which in ordinary logic or experience is satisfactory, no negative inference at all may be appropriate." *Id.* The Board found this is such a case, and we have no basis on which to disagree.

There is similarly no mandate that the Board draw a negative inference whenever a party fails to present some types of documentary evidence an opposing party insists must exist. Dionex asserts that "industry norms" should have caused Agilent to have created documents other than those produced in the interference, *see* Opening Br. 50-52, but the Board was not required to accept this contention. Nor was it required to reach the additional conclusion that the absence of such documents implies that the purportedly "missing" documents would harm Agilent's case. In short, again, the Board did not abuse its discretion.

IV

We have considered the parties' remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm the judgment of the Board.

AFFIRMED

COSTS

No costs.