NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

GOOGLE LLC,
Appellant

v.

MINDBASEHQ, LLC,
Cross-Appellant

2023-1622, 2023-1623, 2023-1669, 2023-1670

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-01251, IPR2021-01252.

Decided: August 28, 2025

NATHAN K. KELLEY, Perkins Coie LLP, Washington, DC, argued for appellant. Also represented by JONATHAN IRVIN TIETZ; DAN L. BAGATELL, Hanover, NH; ANDREW BALUCH, Smith Baluch LLP, Washington, DC.

JAMES IACONIS, Iaconis Law Office, Moundsville, WV, argued for cross-appellant.

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

STARK, *Circuit Judge*.

Google LLC ("Google") appeals from the final written decisions of the Patent Trial and Appeal Board ("Board") determining that Google failed to prove several claims of patents owned by MindbaseHQ, LLC ("Mindbase") are unpatentable. Because the Board's implicit claim construction was incorrect, and it further erred by not considering Google's reply evidence and arguments, we vacate and remand for further proceedings with respect to these claims. The Board also found that Google succeeded in proving other Mindbase claims were unpatentable and, as to these, Mindbase cross-appeals. We find no error in the Board's conclusion relating to these claims and, therefore, affirm with respect to Mindbase's cross-appeal.

I

Mindbase owns U.S. Patent Nos. 6,510,433 ("'433 patent") and 6,665,680 ("'680 patent") (together, the "Challenged Patents"). The patents share a title, "Database Structure Having Tangible And Intangible Elements And Management System Therefor," and a specification.[1] Generally, they disclose database systems modeled on the human mind and its ability to store "all of the descriptive details and word associations that people usually leave out of their communications." '433 pat. 3:19-25. The disclosed systems accomplish this by classifying data into "tangible" and "intangible" elements. *E.g.*, '433 pat. 2:28-42. The Challenged Patents refer to "tangible" data as "cause" data (i.e., physical data elements with weight), and "intangible" data as either "effect" data (i.e., verbs) or "descriptors" (i.e., adjectives and adverbs). *Id.* For example, in the sentence "The tall man drove the car 50 miles per hour," "man" is tangible while "drove the car," "tall," and "50 miles per hour" are intangible (with "drove the car" being an effect

[1] Like the parties, we cite to the '433 patent.

and "tall" and "50 miles per hour" being descriptors). '433 pat. 7:64-8:5. The Challenged Patents explain that the disclosed classification system is formatted to mirror the human mind and overcomes problems such as "automatically integrating an unlimited number of heterogeneous databases into a single database," and "storing all data elements only once." *E.g.*, '433 pat. 3:47-63.

Two types of claims are at issue in Google's appeal. The first are the "dictionary routine" claims (claims 14-19 and 33-40 of the Challenged Patents). Claim 14 of the '433 patent is representative of the dictionary routine claims:

> A database system, comprising:
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> > [14.1] a database stored in a fixed medium and having a set of tangible data elements representing things which have physical weight and can cause an effect and a set of intangible data elements representing words and concepts which have no physical weight and cannot be weighed;
> >
> > [14.2] said set of intangible data elements including a first subset of effect data elements representing verbs, standing alone and in combination with other words, which describe actions, objectives, results, missions, procedures and processes, and a second subset of descriptive data elements describing said tangible data elements, said effect data elements and degrees of performance of said tangible data elements; and,
> >
> > [14.3] a dictionary routine for automatically classifying and storing words entered into said database according to said sets and subsets of data elements.

The second type of claims at issue are the "normalization" claims (claims 43 and 44 of the Challenged Patents).

In this context, "normalization" generally refers to de-duplicating and simplifying database entries (for instance, combining entries for "car" and "automobile"). Claim 43 of the '433 patent is representative of these claims:

> A method for inter-relating different databases structured as recited in claim 41,[2] comprising the steps of:
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> > [43.1] for each of said databases, and in any order, normalizing names of like data elements having different names in said different databases and normalizing names of different data elements having like names in said different databases;
> >
> > [43.2] normalizing data elements which are separate in any one of said databases and which are grouped together as single data elements in any other of said databases;
> >
> > [43.3] comparing each of said normalized databases with each other one of said normalized databases;
> >
> > [43.4] recording all common data elements found during each said comparing step; and,

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[2] As relevant here, claim 43 depends from claim 41, which includes these limitations: "each said tangible data element being linked to each said effect data element partially or wholly caused by said tangible data element; each said effect element being linked to each said tangible data element required for said effect to occur; and, all said data elements being stored in hierarchal structures of parent-child relationships, said hierarchal structures defining vertical lines and horizontal levels." '433 pat. claim 41.

> [43.5] recording one location of each said common data element in each of said databases.

Representative of the issues presented by Mindbase's cross-appeal is claim 1 of the '433 patent:

> A database of information stored in a fixed medium, said database comprising:
>
> > [1.1] a set of tangible data elements, said tangible data elements representing things which have physical weight and can cause an effect;
> >
> > [1.2] a set of intangible data elements, said intangible data elements representing words and concepts which have no physical weight and cannot be weighed;
> >
> > [1.3] said set of intangible data elements including a first subset of effect data elements, said effect data elements representing verbs standing alone and in combination with other words, which describe actions, objectives, results, missions, procedures and processes; and,
> >
> > [1.4] said set of intangible data elements including a second subset of descriptive data elements, said descriptive data elements describing said tangible data elements, said effect data elements and degrees of performance of said tangible data elements.

Google petitioned for *inter partes* reviews ("IPR"), contending that every claim of the Challenged Patents is invalid as obvious based on combinations of four prior art

references. Three of these references – Conlon,[3] Miller,[4] and Beckwith[5] – relate to lexical databases (i.e., databases of words), computational linguistics, and computational lexicography, and their implementation. The fourth reference, Fong,[6] relates to designing a normalized database.

The Board found that Google failed to prove claims 14-19, 33-40, and 43-46 of the Challenged Patents are obvious under any of the grounds asserted in the petition but succeeded in proving that claims 1-13, 20-32, 41, and 42 are obvious based on various combinations of Conlon, Miller, and Beckwith. Google timely appealed the Board's final written decision; Mindbase cross-appealed, arguing that the Board erred in finding certain claims obvious.

The Board had jurisdiction under 35 U.S.C. § 316(c). We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

II

We review the Board's ultimate claim construction and obviousness determinations de novo and its underlying factual determinations for substantial evidence. *See Wasica*

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[3] Sumali Pin-Ngern Conlon et al., *Developing a Large Lexical Database for Information Retrieval, Parsing, and Text Generation Systems*, 29(4) Info. Processing & Mgmt. 415 (1993).

[4] George A. Miller, *Nouns in WordNet: A Lexical Inheritance System*, 3(4) Int'l J. Lexicography 245 (1990).

[5] Richard Beckwith & George A. Miller, *Implementing a Lexical Network*, 3(4) Int'l J. Lexicography 302 (1990).

[6] Elizabeth N. Fong et al., *Guide on Logical Database Design*, NBS Special Publication 500-122 (1985).

Fin. GmbH v. Cont'l Auto. Sys., Inc., 853 F.3d 1272, 1278 (Fed. Cir. 2017); *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1337 (Fed. Cir. 2020). We review decisions related to compliance with Board procedures for abuse of discretion. *See Ericsson Inc. v. Intell. Ventures I LLC*, 901 F.3d 1374, 1379 (Fed. Cir. 2018).

III

A

Google first appeals the Board's determination that it failed to prove that the "dictionary routine" claims (claims 14-19 (system claims) and 33-40 (method claims) of the Challenged Patents) are obvious. This aspect of Google's appeal turns principally on the meaning of the limitation "a dictionary routine for automatically classifying and storing words entered into said database according to said sets and subsets of data elements" (hereinafter, the "automatically classifying and storing limitation"). Google argues, as it did before the Board, that the correct construction of the automatically classifying and storing limitation is "a conventional lookup process that retrieves dictionary information from a database and also stores the queried word." Open. Br. at 36. In Google's view, the Board's "analysis necessarily rested on a flawed reading of that limitation that required a routine to *create* a database or definition," resulting in the limitation not being satisfied by mere *use* (i.e., "looking up words *already in* the database"). Open. Br. at 1-2. The proper construction, Google continues, requires "using a dictionary" but does *not* necessarily require "creating a dictionary or dictionary definitions in the first place." Open. Br. at 33 (citing Appx2728-31, 4132-33, 5219 ¶ 42); *see also* Google's Reply Br. at 5 ("Creation and use are separate and distinct processes, and the claims require only that the latter process be automatic. They are agnostic about how the database was built."). Google faults the Board for "effectively constru[ing] 'automatically classifying' to exclude automatic retrieval of a word's

predetermined classification . . . . thus requir[ing] automatically *creating* a classification." Open. Br. at 42.

Google's proposed construction of the automatically classifying and storing limitation is correct. In light of the other claims and the specification, Google explains that "classifying" refers to identifying a word's predetermined categorizations (i.e., classifications). *See id.* Mindbase does not meaningfully dispute this argument. Accepting this construction of "classifying," nothing about the term "automatically classifying and storing words" would inform a person of ordinary skill in the art that automatic "creation" of a database, in addition to "use" of an already-created database, is a requirement of the dictionary routine claims. That the plain and ordinary meaning of the claim language is broad enough to include "use" is reflected in the fact that certain claims of the Challenged Patents, including claims 20-32, add limitations expressly requiring "creating" a database. Similarly, several of the dictionary routine claims themselves (claims 39-40) add the limitation "further comprising the step of *generating* a dictionary." '433 pat. 38:37-44 (emphasis added). These claims provide clear indications that "automatically classifying and storing words" does not itself require "creating" or "generating," as otherwise there would be no need to call out these latter steps through additional claim language. *See also* Appx656 (during prosecution, applicant distinguishing "claims 14-20 [reciting] a dictionary routine for automatically classifying and storing words" with claims 39 and 40 requiring "[g]enerating such a dictionary").

Moreover, as Google correctly states, the "specification describes the 'dictionary routine' as the act of looking up words *already in* the database." Open. Br. at 2; *see also* '433 pat. 3:33-35 ("The [claimed] system can advantageously be provided with a very detailed dictionary routine that classifies all words as causes, effects, or descriptors. This routine also differentiates between uses of the same word for different parts of speech."). The specification also

provides examples of use – that is, mere lookup – not accompanied by creation. '433 pat. 13:65-15:4. These "use" embodiments would be excluded from the scope of the dictionary routine claims by a construction that requires creation of a dictionary in order to meet the automatically storing and classifying words limitation. Such an outcome is generally disfavored. *See Apple Inc. v. Corephotonics, Ltd.*, 81 F.4th 1353, 1359 (Fed. Cir. 2023) ("Our caselaw counsels against interpreting the claims in a way that would omit a disclosed embodiment absent clear evidence to the contrary."). It is notable, as well, that the specification nowhere describes automatically *creating* a dictionary; all instances of creating dictionary entries rely, at least in part, on manual data entry by users. '433 pat. 13:57-60 (referring to storing in dictionary "all cause-effect relationships that are *created by users*" (emphasis added)); *see also* Appx4132-33.

Mindbase does not point to anything in the prosecution history detracting from our conclusion. Thus, the intrinsic evidence establishes that Google's proposed construction is correct, and we adopt it.[7]

Our agreement with Google's construction does not necessarily prevent us from affirming the Board's judgment. This is because the Board did not expressly construe the automatically classifying and storing limitation. It stated, instead, that "we do not need to expressly construe any term, including 'dictionary routine' and 'automatically classifying and storing,' . . . [because] whether these terms are construed in the sense of using a dictionary lookup

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[7] We do not need to analyze Google's arguments that rely on extrinsic evidence. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (explaining we generally look to extrinsic evidence only where a term's meaning remains ambiguous after review of all intrinsic evidence).

function, or initially creating the dictionary, Petitioner has not shown by a preponderance of the evidence that Conlon teaches" the disputed limitation. Appx24; *see also* Appx40-43. The Board purported to apply Google's proposed construction in reaching its conclusion that Google failed to meet its burden.

Google argues that while the Board *said* it was not construing the automatically classifying and storing limitation, in actuality it implicitly construed the term and, relatedly, failed to evaluate Google's obviousness combination under Google's proposed construction. Google states that the Board's "analysis continued to require automatically creating a dictionary definition" and, therefore, ignored evidence "that the prior art disclosed an automatic dictionary lookup." Open. Br. at 3. Google may be right. The statements from Conlon on which the Board relied in rejecting Google's obviousness case relate to creating a database. *See, e.g.*, Appx40-42 (citing Appx725-26, 732-36). In providing its reasoning for finding that Conlon did not render the dictionary routine claims obvious, the Board emphasized that in Conlon "the process of translating knowledge from a machine-readable dictionary into a form usable in a lexical database . . . [is] describe[d] [in Conlon] . . . as semi-automatic, not automatic." Appx42. If, as we have now held, the dictionary routine claims can be satisfied by mere use of a lexical database, and do not also require the automatic creation of additional definitions, these distinctions of Conlon may lack merit.

In sum, as Google contends and we now hold, the "dictionary routine" claims can be practiced by *use* of an already-created dictionary, and do not also require the automatic *creation* of a dictionary. The Board needs to consider Google's evidence and argument by applying this construction of the automatically classifying and storing limitation, and using this understanding to determine whether Conlon may, in fact, render the "dictionary routine" claims obvious (and, relatedly, whether its prior

distinctions of Conlon may be immaterial). Therefore, we vacate the Board's judgment and remand for such further proceedings.[8]

B

Google next challenges the Board's conclusion that it failed to prove the "normalization" claims (claims 43-46 of both Challenged Patents) obvious in view of Fong. According to Google, the Board reached this determination by improperly excluding Google's reply argument and the accompanying supplemental declaration of its expert. Again, we agree with Google.

In its final written decisions, the Board stated that Google's petition failed to "identif[y] with particularity how the references, particularly Fong," teach limitations [43.3] ("comparing each of said normalized databases with each other one of said normalized databases"), [43.4] ("recording all common data elements found during each said comparing step"), and [43.5] ("recording one location of each said common data element in each of said databases"). Appx54. The Board further determined that Google's reply brief and supplemental expert report raised new arguments that could have been included in its petition and, therefore, should not be considered. According to the Board:

> [Google's] Reply does not merely "respond" to the issues discussed in our Institution Decision but instead "proceed[s] in a new direction with a new approach as compared to the positions taken in" the Petition by introducing in the Reply new argument and evidence not presented in the Petition regarding how limitations [43.3], [43.4], and [43.5] are

[8] While, as we have explained, it appears to us that the Board did not actually apply Google's proposed construction, on remand it will necessarily do so.

> "necessary" or inherent. We decline to consider these late arguments and evidence.

Appx57 (internal citation omitted; alteration in original).

By not considering the arguments made by Google in its reply and the supplemental declaration provided by Google's expert, Dr. Jansen, the Board abused its discretion. These materials appropriately elaborated on the petition's contention that Fong's disclosure of four conditions of a normalized database would have motivated a person of ordinary skill in the art to modify Conlon's system with Fong to practice the normalization limitations of claims 43-46. Google appropriately used its reply and supplemental declaration to address reasons the Board had provided in its institution decision for why it believed Google's references failed to teach three limitations of claim 43 ([43.3], [43.4], [43.5]) and an additional limitation of claim 44 ([44.6]). In doing so, Google and Dr. Jansen relied on the same theory as set out in the petition, based on the same portions of the same prior art references.[9]

Specifically, and contrary to the Board's finding, Google's petition and reply advanced the same theory of obviousness: "a skilled artisan would have been motivated to

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[9] The Board noted that at the oral hearing, Google had described its theory that Fong renders limitation [43.3] obvious as "an inherency argument." Appx56. We are not holding that the Board abused its discretion by failing to consider an "inherency" theory that the Board found was missing in the petition; nor are saying that Board must address "inherency" on remand. Instead, we are requiring that the Board address the evidence and argument Google submitted with its reply that supports the theory Google articulated in its petition. This is, as Google puts it, an "express-disclosure theory," not an "inherent-anticipation theory." Open. Br. at 51.

normalize Conlon's database using Fong's four conditions, and a skilled artisan would have performed the limitations of claims 43-36 to reach that result." Open. Br. at 51 (internal emphasis omitted); *see also* Appx4099-4100 (Dr. Jansen explaining how his supplemental illustrations, at Appx4157, depicted how Fong's four normalization conditions mapped onto claim limitations, as articulated in words in original declaration, at Appx360-61, 363). In particular, Dr. Jansen visually depicted the same theory he had described verbally in his earlier declaration, and explicitly described how his supplemental analysis was substantively identical to his original analysis. Appx4110-15, 4123-24.

The Board's decision to exclude Google's rebuttal argument and supplemental declaration is based on a clear factual error (i.e., that Google improperly raised a new theory of obviousness), rendering its exclusion an abuse of discretion. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016) (explaining abuse of discretion occurs where, *inter alia*, Board's decision "is based on an erroneous conclusion of law" or "rests on clearly erroneous fact finding"); *see also Apple Inc. v. Andrea Elecs. Corp.*, 949 F.3d 697, 705-07 (Fed. Cir. 2020) (finding Board erred in refusing to consider reply arguments that did not present "new theory of unpatentability" and "squarely respond[ed] to" Board's institution decision); *Ericsson*, 901 F.3d at 1381 (vacating Board refusal to consider reply arguments that "expressly follow[ed] from . . . contentions raised in the Petition").

The Board further faulted Google's reply for being "significantly more detailed" than what Google had articulated in its petition. Appx56. But greater detail is allowed on reply, provided that the reply is responsive (to the Board's institution decision and/or the patent owner's preliminary response) and not new. *See Andrea Elecs. Corp.*, 949 F.3d at 705-07; 37 C.F.R. § 42.23(b) ("A reply may only respond to arguments raised in the corresponding opposition,

patent owner preliminary response, patent owner response, or decision on institution."). Likewise, just because the evidence and argument submitted on reply could also have been included in the petition does not mean the Board can ignore it, provided such evidence and argument is responsive and not new.[10]

Accordingly, we vacate the Board's judgment that Google failed to prove the normalization claims are obvious and remand for further proceedings, which must include evaluation of the evidence and argument Google provided in reply.

IV

Mindbase raises multiple issues in its cross-appeal. None has merit.

First, Mindbase argues that the Board erred in adopting Google's proposed level of skill for a person of ordinary skill in the art. Substantial evidence supports the Board's finding that a person of ordinary skill in the art "would have had at least a bachelor's degree in computer science, computational linguistics, computational lexicography, or the equivalent, [and] at least two years of academic or industry experience in lexical databases, computational linguistics, computational lexicography, or the equivalent, and experience or coursework in computer science, database development, or the equivalent." Appx2479-80 (Google proposing this level of skill in its petition); *see also* Appx21 (Board adopting Google's proposal). After

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[10] The Board reiterated in its final written decisions that it had found the petition "deficient," as well as "confusing and vague," with respect to the normalization claims. Appx56. Whether or not we were to agree with the Board's characterization of the petition, an issue not before us, our holding today is limited to the Board's handling of the reply evidence and argument.

considering both parties' proposed descriptions of the person of ordinary skill in the art, including Mindbase's critique that Google required too high a level of skill and qualifications untethered to the patents, the Board determined that the specification and claims demand knowledge of Google's identified areas, even though Google's precise words are not recited in them. Indeed, the Board pointed out that the specification's references to lexical concepts were "too numerous to recount." Appx17.

Relatedly, Mindbase contends that Conlon, Miller, and Beckwith are not analogous art, because these references deal with lexical databases. Mindbase insists that the Board erred in "ignor[ing] the problems described and addressed" in the Challenged Patents and that these references are "not concerned with the particular problems the inventors sought to solve." This is essentially a reiteration of Mindbase's challenge to the Board's identification of the person of ordinary skill in the art. Having found substantial evidence supporting the Board's finding that such a person would have education and experience in computer science, computational linguistics, computations lexicography, lexical databases, or the equivalent, it follows that substantial evidence also supports the Board's finding that Conlon, Miller, and Beckwith – each of which indisputably addresses these subjects – is also supported by substantial evidence.

Mindbase next argues that substantial evidence does not support the Board's findings that elements [1.3] ("said set of intangible data elements including a first subset of effect data elements, said effect data elements representing verbs standing alone and in combination with other words, which describe actions, objectives, results, missions, procedures and processes") and [1.4] ("said set of intangible data elements including a second subset of descriptive data elements, said descriptive data elements describing said tangible data elements, said effect data elements and degrees of performance of said tangible data elements") of the

Challenged Patents were disclosed in Google's prior art references. It attacks the Board for purportedly relying on nothing more than conclusory statements that Conlon's Table 14 discloses the claimed "objectives, results, missions, procedures and processes" of element [1.3] and Conlon's Tables 19 and 21 render element [1.4] obvious. Resp. Br. at 65-67 (citing Appx31-34). We disagree. The Board's findings are supported by substantial evidence. *See* Appx31-34 (citing Appx2497-2500, 4144-47).

Finally, Mindbase asserts that the Board failed "to provide explanation as to all of the claim limitations in order to substantiate an obviousness determination" and improperly shifted the burden of proof onto Mindbase. Resp. Br. 67-69. Mindbase is wrong. The Board provided sufficient explanation to allow us to reasonably discern the basis for its findings. That the Board did not say all that much reflects Mindbase's relatively cursory arguments and the fact that the Board found them decidedly unpersuasive. *See* Appx32-33. Nor do we see any indication in the final written decisions that the Board shifted a burden onto Mindbase to prove the patentability of its claims. The statements Mindbase points to as showing such error are, instead, simply the Board's explanation for why it was persuaded by Google, after considering all of the evidence and argument before it. Appx32-34.

V

We have considered Mindbase's remaining arguments and find them unpersuasive. Accordingly, for the foregoing reasons, with respect to Google's appeal we vacate the Board's final written decisions concluding the "dictionary routine" and "normalization" claims of the Challenged Patents were not proven unpatentable and remand for further proceedings consistent with this opinion. With respect to Mindbase's cross-appeal, we affirm.

VACATED AND REMANDED IN PART, AFFIRMED IN PART

COSTS

Each party to bear its own costs.