United States Court of Appeals for the Federal Circuit

KONINKLIJKE PHILIPS N.V.,
Appellant

v.

GOOGLE LLC, MICROSOFT CORPORATION, MICROSOFT MOBILE INC.,
Appellees

2019-1177

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2017-00447.

Decided: January 30, 2020

JUSTIN J. OLIVER, Venable LLP, Washington, DC, argued for appellant.

DAVID M. KRINSKY, Williams & Connolly LLP, Washington, DC, argued for all appellees. Appellee Google LLC also represented by KEVIN HARDY, AARON P. MAURER, ANDREW V. TRASK.

CHRISTINA JORDAN MCCULLOUGH, Perkins Coie, LLP, Seattle, WA, for appellees Microsoft Corporation, Microsoft

Mobile Inc. Also represented by CHAD S. CAMPBELL, Phoenix, AZ.

Before PROST, *Chief Judge*, NEWMAN and MOORE, *Circuit Judges*.

PROST, *Chief Judge*.

Koninklijke Philips N.V. ("Philips") appeals the decision of the Patent Trial and Appeal Board ("Board") in an inter partes review of U.S. Patent No. 7,529,806 ("the '806 patent"), in which the Board found that claims 1–11 were unpatentable as obvious. For the reasons below, we affirm.[1]

BACKGROUND

I

The '806 patent identifies two prior art technologies for delivering digital content for playback on a client device: downloading and streaming. The '806 patent states that the downloading approach suffers from delay because the user cannot play back the digital content until after the entire file finishes downloading. The patent also states that streaming generally requires "two-way intelligence" and a "high level of integration between client and server software," which "mostly excludes third parties from developing custom server software . . . and/or client applications." '806 patent col. 1 ll. 24, 36–41.

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[1] Appellee Google LLC argues that, even if we disagree with the Board's findings on obviousness, we can affirm the judgment as to claims 1–9 and 11 on the alternative ground that the claims are anticipated. Because we affirm the Board's obviousness findings, we do not reach this issue.

The '806 patent offers a hybrid approach as a solution. In particular, the alleged invention relates to a method of forming a media presentation using a control information file that (a) offers the media presentation in multiple alternative formats to allow a client device's media player to "automatically choose the format compatible with the client's play-out capabilities," *id.* at col. 3 ll. 55–56; and (b) provides the media presentation in multiple files so the media player can download the next file concurrently with playback of the previous file, *see id.* at claim 1. Compared to the traditional downloading approach, the alleged invention purportedly reduces delay because the media player can download the next portion of a media presentation concurrently with playback of the previous portion. The alleged invention also purportedly avoids any need for "two-way intelligence" or "integration" between the client and server software by permitting the media player itself to choose which of the multiple alternative formats is most appropriate.

Claim 1 is representative and recites:

> 1. A method of, at a client device, forming a media presentation from multiple related files, including a control information file, stored on one or more server computers within a computer network, the method comprising acts of:
>
> [1] downloading the control information file to the client device;
>
> [2] the client device parsing the control information file; and based on parsing of the control information file, the client device:
>
> [3] identifying multiple alternative f[il]es corresponding to a given segment of the media presentation,
>
> [4] determining which files of the multiple alternative files to retrieve based on system restraints;

> [5] retrieving the determined file of the multiple alternative files to begin a media presentation,
>
> wherein if the determined file is one of a plurality of files required for the media presentation, the method further comprises acts of:
>
> [6] concurrent with the media presentation, retrieving a next file; and
>
> [7] using content of the next file to continue the media presentation.

Id. at claim 1 (bracketed numbers added for ease of discussion).[2] Method steps identified above as steps [6] and [7] only occur "if the determined file is one of a plurality of files required for the media presentation" ("the conditional statement").

II

There are two prior art references relevant to this appeal: Synchronized Multimedia Integration Language 1.0 Specification ("SMIL 1.0") and Kien A. Hua et al., *2PSM: An Efficient Framework for Searching Video Information in a Limited-Bandwidth Environment*, 7 Multimedia Systems 396 (1999) ("Hua").

SMIL 1.0 describes a computer language in which a designer creates a SMIL file that specifies the relationship among media files that collectively make up a media presentation. For example, SMIL 1.0 teaches a "switch" element that specifies a set of alternative files from which only one should be chosen by a media player. J.A. 243–44. The switch element can, for instance, specify two audio

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[2] Google contends that claim 1 is representative. Appellee's Br. 4. Philips neither disputes the representativeness of claim 1 nor makes any arguments suggesting that claim 1 is not representative.

files of different quality and instruct a media player to select one of the files based on the client system's bandwidth. J.A. 246. SMIL 1.0 also teaches a "seq" element that instructs a media player to play a list of files in sequence, one after another. J.A. 237–38; *see also* Appellant's Br. 7–8. SMIL 1.0 does not disclose a way to specify the timing for playback of a particular media file relative to the timing of downloading another media file.

Hua provides a "review [of] the conventional pipelining scheme." J.A. 316. Hua explains that pipelining refers to dividing a media presentation into multiple segments (S_0, S_1, etc.) and playing segment S_n while $S_{(n+1)}$ is downloading. So long as the playback duration of S_n "eclipse[s]" the download time for $S_{(n+1)}$, the media presentation can be continuously played back starting after the first segment S_0 finishes downloading. *Id.*

III

Google LLC ("Google") filed a petition for inter partes review presenting two grounds of unpatentability. First, Google alleged that claims 1–7 and 9–11 of the '806 patent are anticipated by SMIL 1.0.[3] *Google Inc. v. Koninklijke Philips N.V.*, No. IPR2017-00447, Paper 2, at 20 (P.T.A.B. Dec. 9, 2016) ("*Petition*"). Google argued that because steps [6] and [7] of claim 1 are only required if the conditional statement is met, these steps are not limiting and thus can be ignored in the anticipation analysis. Google did not address how or whether SMIL 1.0 would disclose these steps if they were considered limiting.

Second, Google contended that, even if SMIL 1.0 did not anticipate any claims, and even if steps [6] and [7] are limiting, claims 1–11 "would nevertheless have been obvious over SMIL 1.0 in light of the *general knowledge* of the

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[3] Google also alleged that claims 12–13 were anticipated, but those claims are not at issue on appeal.

[skilled artisan] regarding distributed multimedia presentation systems as of the priority date." *Id.* at 40 (emphasis added).[4] Citing Hua and an expert declaration as authority, the petition contended that "'[p]ipelining' was a well-known design technique that minimized the amount of time a user would have to wait to receive multimedia content" and that a skilled artisan "would have been motivated to use pipelining with SMIL" to "minimize the amount of time a user would have to wait to view a media presentation." *Id.* at 42–43.

In its preliminary response, Philips argued that it was inappropriate for Google to rely on Hua as evidence of general knowledge but rather was required to make Hua "part of the combination" and "explain[] how [Hua] would have been combined with SMIL 1.0." *Google Inc. v. Koninklijke Philips N.V.*, No. IPR2017-00447, Paper 6, at 42 (P.T.A.B. Mar. 13, 2017) ("*Preliminary Response*"); *see also id.* at 49–52. Philips also argued that Google could not rely on "conclusory statements of 'general knowledge'" to supply a missing claim limitation. *Id.* at 51.

The Board instituted review on three grounds, including both grounds raised by Google. In addition, although the Board disagreed with Philips that there was "any error in [Google] relying on Hua as evidence of the knowledge of a person [of] ordinary skill in the art," the Board stated that "[n]onetheless, for clarity, we exercise our discretion and institute an inter partes review on the additional ground that claims 1–11 would have been obvious over SMIL 1.0 and Hua based on the arguments and evidence presented in the Petition." *Google Inc. v. Koninklijke*

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[4] Google also alleged that claims 12–16 were unpatentable as obvious, but those claims are not at issue on appeal.

Philips N.V., No. IPR2017-00447, Paper 7, at 18 (P.T.A.B. June 8, 2017) ("*Institution Decision*").

The Board construed the claim term "a given segment of [a/the] media presentation" to mean "a media presentation with multiple segments." *Google Inc. v. Koninklijke Philips N.V.*, No. IPR2017-00447, Paper 29, at 7–8 (Sept. 6, 2018) ("*Final Written Decision*") (alteration in original). As conceded by Google, under this claim construction, the conditional statement of claim 1—i.e., "if the determined file is one of a plurality of files required for the media presentation"—is always satisfied, rendering the steps that follow mandatory and limiting. *See, e.g.*, Appellee's Br. 53–54.[5]

In view of this claim construction, the Board concluded that Google had not demonstrated that any of the claims were anticipated. *Final Written Decision*, at 10. But the Board concluded that Google had demonstrated that claims 1–11 would have been obvious in view of SMIL 1.0. In addition, "[f]or the same reasons," and based on "the same arguments and evidence," the Board concluded that Google had demonstrated that claims 1–11 would have been obvious over SMIL 1.0 in view of Hua. *Id.* at 38–39.

Philips appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

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[5] Although Google disputes this construction, it does so only in relation to its argument that we can affirm the judgment as to claims 1–9 and 11 on the alternative ground that the claims are anticipated. Because we do not reach this alternative avenue for affirmance, we do not reach this claim construction dispute. Moreover, as explained below, even under the Board's construction, substantial evidence supports the Board's findings that claims 1–11 are unpatentable as obvious.

DISCUSSION

Obviousness is a legal question based on underlying fact findings. *Purdue Pharma L.P. v. Epic Pharma, LLC*, 811 F.3d 1345, 1351 (Fed. Cir. 2016). We review the Board's legal determinations de novo and its underlying factual determinations for substantial evidence. *Rambus Inc. v. Rea*, 731 F.3d 1248, 1251 (Fed. Cir. 2013).

As stated previously, the Board found that claims 1–11 would have been obvious over SMIL 1.0 in light of Hua, and SMIL 1.0 alone. On appeal, Philips advances three arguments challenging these obviousness findings. First, Philips argues that the Board erred by instituting inter partes review on the ground that the claims would have been obvious over SMIL 1.0 in light of Hua because Google did not advance that combination of prior art in its petition. Second, Philips contends that the Board erred in finding that the claims would have been obvious in view of SMIL 1.0 because the Board impermissibly relied on "general knowledge" to supply a missing claim limitation. Third, Philips argues that even if we reject one or both of Philips's first two arguments, the Board's obviousness findings are nevertheless unsupported by substantial evidence. We discuss each of these arguments in turn.

I

We begin with Philips's first argument that the Board erred by instituting inter partes review on a ground not advanced in Google's petition. The Board instituted inter partes review on three grounds of unpatentability: (1) anticipation in view of SMIL 1.0; (2) obviousness over SMIL 1.0; and (3) obviousness over SMIL 1.0 in combination with Hua. It is undisputed that Google's petition advanced only the first two grounds; the petition did not allege the third. *See, e.g.*, Appellee's Br. 45 ("The Board instituted [the ground identified by Google in its petition], as well as a second obviousness ground based on 'SMIL 1.0 and Hua.'"); *see also Petition*, at 20 (identifying ground 1 as anticipation by

SMIL 1.0); *id.* at 40 (identifying ground 2 as obviousness over SMIL 1.0); *Institution Decision*, at 18.

We hold that the Board erred by instituting inter partes review based on a combination of prior art references not advanced in Google's petition. Under 35 U.S.C. § 311(a), a party may seek inter partes review by filing "a petition to institute an inter partes review." The Supreme Court has explained that this language does not "contemplate a petition that asks the Director to initiate whatever kind of inter partes review he might choose." *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018). Rather, "[f]rom the outset, we see that Congress chose to structure a process in which it's the petitioner, not the Director, who gets to define the contours of the proceeding." *Id.* More specifically, "the statute envisions that a petitioner will seek an inter partes review of a particular kind—one guided by a petition describing 'each claim challenged' and 'the grounds on which the challenge to each claim is based.'" *Id.* (quoting 35 U.S.C. § 312(a)(3)); *see also id.* ("[R]ather than create (another) agency-led, inquisitorial process for reconsidering patents, Congress opted for a party-directed, adversarial process.").

In addition, 35 U.S.C. § 314(b) states that "[t]he Director shall determine whether to institute an inter partes review . . . pursuant to a petition." Thus, as explained by the Supreme Court, § 314(b) informs us that the Director

> is given only the choice "whether" to institute an inter partes review. That language indicates a binary choice—either institute review or don't. And by using the term "pursuant to," Congress told the Director what he must say yes or no to: an inter partes review that proceeds "[i]n accordance with" or "in conformance to" the petition.

SAS, 138 S. Ct. at 1355–56 (quoting Oxford English Dictionary (3d ed. Mar. 2016), www.oed.com/view/Entry/155073) (alteration in original); *see also id.* at 1356

("The rest of the statute confirms, too, that the petitioner's petition, not the Director's discretion, is supposed to guide the life of the litigation.").

Turning back to this case, in its institution decision, the Board stated, "we *exercise our discretion* and institute an inter partes review on the *additional ground* that claims 1–11 would have been obvious over SMIL 1.0 and Hua based on the arguments and evidence presented in the Petition."[6] *Institution Decision*, at 18 (emphases added). Although the Board is not limited by the exact language of the petition, *see, e.g.*, *Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018), the Board does not "enjoy[] a license to depart from the petition and institute a *different* inter partes review of his own design." *See SAS*, 138 S. Ct. at 1356 (emphasis in original). Accordingly, we conclude that the Board erred when it instituted inter partes review based on a combination of prior art references Google did not advance in its petition.

Google's counterarguments are unpersuasive. First, Google argues that the Board properly instituted inter partes review on obviousness over SMIL 1.0 in view of Hua because the Board did so only "for clarity," and only on "the [same] arguments and evidence" Google presented in its petition as to why the claims would have been obvious over SMIL 1.0. *See Institution Decision*, at 18. However, as we explained, it is the petition, not the Board's "discretion," that defines the metes and bounds of an inter partes review. *See SAS*, 138 S. Ct. at 1355–56. And Google's petition did not advance an argument that the challenged claims would have been obvious over SMIL 1.0 in combination with Hua.

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[6] We note that the Director has delegated the institution decision to the Board. *See* 37 C.F.R. § 42.4.

Second, citing to our decisions in *Anacor Pharmaceuticals, Inc. v. Iancu*, 889 F.3d 1372, 1379 (Fed. Cir. 2018), and *Genzyme Therapeutic Products Ltd. Partnership v. Biomarin Pharmaceutical Inc.*, 825 F.3d 1360, 1366 (Fed. Cir. 2016), Google argues that the Board "need not adhere unthinkingly to the evidence and arguments precisely as formulated in the petition" so long as the Board "provide[s] reasonable notice of the invalidity arguments at issue and an opportunity for the Patent Owner to be heard in response to those arguments." Appellee's Br. 49.

Google's reliance on *Anacor* and *Genzyme* is misplaced. Both *Anacor* and *Genzyme* relate to the circumstances under which the Board can rely on evidence not raised in the petitioner's petition to support the grounds that were raised in the petition. *See Anacor*, 889 F.3d at 1364–67; *Genzyme*, 825 F.3d at 1366. These cases do not concern whether the Board has discretion to institute an inter partes review on a ground of unpatentability not raised in the petitioner's petition. Thus, we find Google's reliance on these cases unpersuasive.

In sum, we conclude that the Board erred by instituting inter partes review of claims 1–11 of the '806 patent based on obviousness over SMIL 1.0 and Hua because Google did not advance such a combination of references in its petition.

II

Next we address Philips's contention that the Board erred in relying on "general knowledge" to supply a missing claim limitation. Philips advances two arguments in support of this assertion.

First, Philips argues that because 35 U.S.C. § 311(b) expressly limits inter partes reviews to "prior art consisting of patents or printed publications," and because general knowledge is neither of those, § 311(b) prohibits use of

general knowledge to supply a missing claim limitation in an inter partes review. We disagree.

Although the prior art that can be considered in inter partes reviews is limited to patents and printed publications, it does not follow that we ignore the skilled artisan's knowledge when determining whether it would have been obvious to modify the prior art. Indeed, under 35 U.S.C. § 103, the obviousness inquiry turns not only on the prior art, but whether "the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103. Regardless of the tribunal, the inquiry into whether any "differences" between the invention and the prior art would have rendered the invention obvious to a skilled artisan necessarily depends on such artisan's knowledge. *Dow Jones & Co. v. Ablaise Ltd.*, 606 F.3d 1338, 1349, 1353 (Fed. Cir. 2010) (affirming the district court's grant of summary judgment of invalidity on "grounds of obviousness under [a single prior art reference] in view of general knowledge in the field," in part because the obviousness "analysis *requires* an assessment of the '. . . background knowledge possessed by a person having ordinary skill in the art'" (emphasis added) (quoting *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 401 (2007))); *see also Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016) (in an inter partes review, acknowledging that common sense and common knowledge can, under certain circumstances, be used to supply a missing limitation); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362–63 (Fed. Cir. 2013) (in an ex parte reexamination, in which the applicable prior art is similarly limited to patents and printed publications, determining that "[a]s *KSR* established, the knowledge of such an artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious").

Here, Google properly alleged that although SMIL 1.0 did not disclose each and every element of the claimed invention, the differences between the claimed invention and SMIL 1.0 are such that the claimed invention would have been obvious to a person having ordinary skill in the art when considering SMIL 1.0. In particular, Google properly alleged that a skilled artisan would have known about pipelining and been motivated to combine pipelining with SMIL 1.0. *See, e.g.*, *Petition*, at 40–43.

Second, Philips argues that even if the Board is permitted to rely on general knowledge to supply a missing claim limitation in an inter partes review, doing so in this case violates *Arendi*. In *Arendi*, we cautioned that although "common sense and common knowledge have their proper place in the obviousness inquiry," (a) invoking "common sense . . . to supply a limitation that was admittedly *missing* from the prior art" should generally only be done when "the [missing] limitation in question [is] unusually simple and the technology particularly straightforward;" and (b) references to common sense "cannot be used as a wholesale substitute for reasoned analysis and evidentiary support." 832 F.3d at 1361–62. We concluded in *Arendi* that the Board erred in relying on common sense because such reliance was based merely upon "conclusory statements and unspecific expert testimony." *Id.* at 1366.

Philips argues that this case is analogous to *Arendi*. We disagree. In *Arendi*, the Board relied on nothing more than "conclusory statements and unspecific expert testimony" in finding that it would have been "common sense . . . to supply a limitation that was admittedly *missing* from the prior art," *id.* at 1362, 1366 (emphasis added). Conversely, here the Board relied on expert evidence, which was corroborated by Hua, in concluding that pipelining was not only in the prior art, but also within the general knowledge of a skilled artisan. Moreover, Philips offered no evidence to rebut the conclusion that a skilled artisan would have known about pipelining.

In sum, we conclude that the Board did not violate § 311(b) or the inter partes review statute in determining that the claims would have been obvious over SMIL 1.0 in light of the general knowledge of a skilled artisan.

III

Finally, Philips argues that substantial evidence does not support the Board's determination that the claims would have been obvious over SMIL 1.0 in light of a skilled artisan's general knowledge. We disagree.

We focus our attention on the Board's analysis with respect to representative claim 1. The Board thoroughly explained why SMIL 1.0 combined with pipelining disclose all the limitations of claim 1. *Final Written Decision*, at 17–27. In addition, relying on an expert declaration and Hua as evidence of a skilled artisan's general knowledge, the Board found that a skilled artisan "would have been motivated to reduce the wait time to receive media content over the Internet by using pipelining with SMIL 1.0." *Id.* at 22–23; *see* J.A. 315; J.A. 199–200 (¶ 202). The Board also determined that there would have been a reasonable expectation of success. *Final Written Decision*, at 23. We therefore conclude that the Board's findings are supported by substantial evidence.

Philips's counterarguments are unavailing. For example, Philips argues that SMIL 1.0 and Hua's teaching of conventional pipelining cannot be combined because SMIL 1.0 is incompatible with Hua's teaching of dynamic re-segmentation of video content. *See, e.g.*, Appellant's Reply Br. 3. However, the relevant inquiry is not whether a skilled artisan would have been motivated to combine SMIL 1.0 with the teachings of Hua, but rather whether a skilled artisan would have been motivated to combine SMIL 1.0 with his general knowledge of pipelining. And, as noted above, substantial evidence, including expert testimony, supports the Board's determination that a skilled artisan would have been motivated to combine SMIL 1.0 with his

knowledge of conventional pipelining (i.e., simultaneous download and playback) to achieve the claimed invention. *See Final Written Decision*, at 26; *see also, e.g.*, J.A. 198–203 (¶¶ 198–207).

Philips also argues that the Board impermissibly relies on the notion that SMIL 1.0 and pipelining can exist "simultaneously" but fails to explain a reason for combining the elements in the manner claimed. *See, e.g.*, Appellant's Br. 39. Philips ignores the Board's extensive findings, which are supported by substantial evidence, explaining how a skilled artisan would have been motivated to combine SMIL 1.0 with pipelining to achieve the claimed method. *See, e.g.*, *Final Written Decision*, at 22–27; *see also, e.g.*, J.A. 198–203 (¶¶ 198–207).

Philips further argues that "[t]he Board's combination also fails because the basis for the combination rests on the patentee's own disclosure." Appellant's Br. 35–40, 50–51. More specifically, Philips argues that the Board impermissibly relied on the '806 patent's disclosure that a client device can playout one file while downloading another via a multithreaded environment and that "working with threads is a skill common for software engineers." *See* '806 patent col. 3 ll. 20–30; *see also* Appellant's Br. 35–36. Philips reasons that this statement only relates to enablement—i.e., that pipelining could be implemented with well-known multithreading techniques—and has no bearing on the obviousness inquiry. Appellant's Reply Br. 15–19.

The Board's reliance on the '806 patent's disclosure was proper. As an initial matter, it is appropriate to rely on admissions in a patent's specification when assessing whether that patent's claims would have been obvious. *See, e.g.*, *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007) ("Admissions in the specification regarding the prior art are binding on the patentee for purposes of a later inquiry into obviousness."). What matters is that substantial evidence supports the

findings and inferences made based on those admissions. Here, the Board properly relied on this disclosure as evidence that it would have been within a skilled artisan's abilities to take advantage of multithreaded environments to develop a simultaneous download and playback application. *See* J.A. 202–203. The Board supported its additional findings—including that a skilled artisan would have been motivated to combine SMIL 1.0 with pipelining to achieve the claimed invention and would have had a reasonable expectation of success in doing so—with, for example, citations to an expert declaration as well as the Hua reference. *See, e.g.*, *Final Written Decision*, at 22–23; *see also* J.A. 315; J.A. 199–200 (¶ 202).

Accordingly, we determine that the Board's factual findings underlying its obviousness determination are supported by substantial evidence.

CONCLUSION

We have considered Philips's remaining arguments but find them unpersuasive. For the foregoing reasons, we affirm the Board's decision that claims 1–11 of the '806 patent are unpatentable as obvious.

AFFIRMED