United States Court of Appeals for the Federal Circuit

BOUNDARY SOLUTIONS, INC.,
Appellant

v.

CORELOGIC, INC.,
Appellee

2016-2354, 2016-2355

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2015-00226, IPR2015-00228.

Decided: October 17, 2017

BRUCE JOSHUA WECKER, Hausfeld LLP, San Francisco, CA, argued for appellant.

STEPHEN BLAKE KINNAIRD, Paul Hastings LLP, Washington, DC, argued for appellee. Also represented by NAVEEN MODI, JOSEPH PALYS, DANIEL ZEILBERGER.

Before PROST, *Chief Judge,* WALLACH and STOLL, *Circuit Judges.*

WALLACH, *Circuit Judge.*

Appellant Boundary Solutions, Inc. ("BSI") appeals two related inter partes review decisions of the U.S. Patent and Trademark Office's Patent Trial and Appeal Board ("PTAB") entering judgment in favor of Appellee CoreLogic, Inc. ("CoreLogic"). The PTAB found claims 1–12, 14–15, and 19–21 of U.S. Patent No. 7,499,946 ("the '946 patent") and claims 1–12, 14–15, and 19 of U.S. Patent No. 7,092,957 ("the '957 patent") (together, "Patents-in-Suit")[1] (collectively, the "Asserted Claims") obvious over two prior art references. *See CoreLogic, Inc. v. Boundary Sols., Inc.* (*CoreLogic I*), No. IPR2015-00226 (P.T.A.B. May 19, 2016) (J.A. 1–31) (invalidating the aforementioned claims of the '946 patent); *CoreLogic, Inc. v. Boundary Sols., Inc.* (*CoreLogic II*), No. IPR2015-00228 (P.T.A.B. May 19, 2016) (J.A. 32–61) (invalidating the aforementioned claims of the '957 patent).[2]

BSI appeals.[3] We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (2012). We affirm.

---

[1] The '957 patent is the parent of the '946 patent, and these Patents-in-Suit share a common specification. We cite to the '946 patent when referring to the common specification.

[2] The records in the two inter partes review proceedings are largely identical. For ease of reference, we cite to *CoreLogic I* for findings common to both decisions, unless otherwise noted.

[3] BSI appeals all findings with respect to all Asserted Claims except claim 20 of the '946 patent. *See* Appellant's Br. 2 n.1.

BACKGROUND

I. The Patents-in-Suit

The Patents-in-Suit relate to geographic information system ("GIS") technology, specifically disclosing a National Online Parcel-Level Map Data Portal ("NPDP"). *See* '946 patent, Abstract. This national repository, assembled using an "interactive computer implemented method," *id.* col. 15 l. 57, seeks to collect and assemble already-existing data from hundreds of local government parcel maps to "provid[e] the first national repository of parcel data for use by all industry sectors," *id.* col. 1 ll. 21–22; *see id.* col. 1 ll. 13–22. The NPDP uses files from "original jurisdiction graphic database[s]" that have been normalized to a single protocol (e.g., shapefile (.shp) format). *Id.* col. 7 l. 22; *see id.* col. 1 ll. 52–56, col. 7 ll. 21–44.

Independent claim 1 of the '946 patent is illustrative, and recites:

An interactive computer implemented method for retrieving geographic parcel boundary polygon maps and associated parcel attribute data linked to a non-graphic database, wherein the data is acquired electronically, comprising:

a. activating a computer terminal;

b. accessing an applications program for access to the data;

c. accessing a data entry screen and entering a parcel attribute to call up the parcel selected;

d. subsequently accessing a multi-state parcel map database comprising multiple jurisdictional databases which *have been normalized* to a common data protocol;

> e. searching a *jurisdiction look up table* associated with the multi-state parcel map database, said look up table indexed for identification of the pertinent jurisdictional database, whereby *a jurisdictional identifier* for the selected jurisdiction is located, and the identified jurisdictional database thereafter accessed; and,

> f. thereafter displaying on screen a parcel boundary polygon map, along with surrounding parcel boundary polygons, the default scale of the displayed map selected to fill the computer display screen with parcel boundaries within a selected distance around the subject parcel, the selected parcel boundary polygon highlighted, defining both the location and boundary of the parcel, and associated attribute data for the highlighted parcel displayed.

Id. col. 15 l. 57–col. 16 l. 14 (emphases added).[4]

II. The Prior Art References

Two prior art references are relevant to this appeal: (1) Christian Harder, Serving Maps on the Internet: Geographic Information on the World Wide Web (1998) ("Harder") (J.A. 1074–188); and (2) Paul A. Longley et al*.,* Geographic Information Systems and Science (2001) ("Longley") (J.A. 1206–458). The PTAB found the Assert-

---

[4] The asserted claims of the '957 patent do not differ from this illustrative claim for purposes of obviousness. *See, e.g.*, '957 patent col. 16 ll. 14–43 (claim 1) (replacing "multi-state map database" with "national parcel map database" in subpart (d) and adding "numerical" before "jurisdictional identifier" in subpart (e)).

ed Claims would have been obvious over Harder in combination with Longley.

A. Harder

Harder discloses web-based GISs where a server receives requests for parcel information from a client computer, searches a database for the selected parcel information, and returns the information to the client computer. *See* J.A. 1089–90, 1095, 1187–88. Harder also discloses applications that implement a web-based GIS, such as a GIS application developed to provide the public access to a county's land records database. J.A. 1100. According to Harder, this application joins tables of tax records to parcel information, "converts the data to shape-files," and "indexes key fields to speed up user-defined searches." J.A. 1085, 1105. The application permits a user to query the system for a parcel map by entering an address or parcel identification number of the desired parcel. J.A. 1089, 1102. Geographic and non-geographic data associated with the selected parcel, such as parcel owner, tax value, and property value, are retrieved and transmitted to a client computer for display with the selected parcel highlighted. J.A. 1102–03. Harder explains that its processes could be used to select data and control the "geographic area to be displayed (from statewide down to the town level)." J.A. 1089.

B. Longley

Longley describes methods of configuring and formatting parcel-level data retrieved by GISs from many jurisdictions and storing it in a database, J.A. 1440–45, linking the collections of data based on Federal Information Processing Standard ("FIPS")[5] codes or other

---

[5] According to the '946 patent, the FIPS number is "used nationally to numerically identify specific county jurisdictions." '946 patent col. 7 ll. 17–18.

jurisdictional identifiers, *see, e.g.*, J.A. 1443, searching and accessing the data through, inter alia, indexing tables, J.A. 1451–52, and maintaining the data in common formats, J.A. 1439–45. Longley explains that "[g]eographic databases tend to be very large and, because of this, geographic queries . . . can take a very long time." J.A. 1451. Longley discloses improvements over the prior art by "speed[ing] up queries" through "index[ing] a database." J.A. 1451. To index databases or tables in grid form, "[t]he grid location(s) of each object is recorded in a list (the index)" and then "[a] query to locate an object searches the indexed list first to find the object [in a grid cell] and then retrieves the object [from the grid cell]." J.A. 1451.

III. The IPR Proceedings

The PTAB determined, in part, that CoreLogic had demonstrated by a preponderance of the evidence that claims 1–10, 12, 14–15, and 19–21 of the '946 patent, as well as claims 1–10, 12, 14–15, and 19 of the '957 patent, would have been obvious over the combination of Harder and Longley; and claims 11 of the Patents-in-Suit would have been obvious over the combination of Harder, Longley, and a third prior art reference not relevant to this appeal. J.A. 29, 60. Subparts (d) and (e) of claims 1 of the Patents-in-Suit were the focus of the disputes regarding claim obviousness. *See* J.A. 8–10, 14–25, 39–41, 45–56.

DISCUSSION

BSI argues there is no substantial evidence to support the PTAB's determination of obviousness because the jurisdiction lookup table, "a central limitation" of the Asserted Claims, "is not present" in the cited prior art. Appellant's Br. 1; *see id.* at 30–46. After articulating the

applicable standard of review and legal standard, we address BSI's argument.[6]

I. Standard of Review and Legal Standard

We review the PTAB's factual findings for substantial evidence and its legal conclusions de novo. *In re Adler*, 723 F.3d 1322, 1325 (Fed. Cir. 2013) (citations omitted). "Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence," meaning that "[i]t is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *In re NuVasive, Inc.*, 842 F.3d 1376, 1379–80 (Fed. Cir. 2016) (internal quotation marks and citations omitted). If two "inconsistent conclusions may reasonably be drawn from the evidence in record, [the PTAB]'s decision to favor one conclusion over the other is the epitome of a decision that must be sustained upon review for substantial evidence." *In re Jolley*, 308 F.3d 1317, 1329 (Fed. Cir. 2002).

---

[6]   The PTAB declined to expressly construe various terms of the Patents-in-Suit. *See* J.A. 10, 41. BSI concedes that it has abandoned any claim construction arguments. *See* Oral Arg. at 00:49–1:40, http://oralarguments.cafc.uscourts.gov/default.aspx?fl=20 16-2354.mp3 (Q: "[O]n appeal you are presenting a new claim construction argument . . . that requires a special normalization process . . . . Where in the record did you raise those positions in front of the PTAB?" A: "Those are not positions we are taking on appeal. We are not raising any claim construction issues. There was some confusion in [our] opening brief. We addressed the issue of the 'normalization' element, but it is purely to put in context the function of the jurisdictional look up table, which is the only issue we are raising on this appeal.")

A patent claim is invalid "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art [('PHOSITA')]." 35 U.S.C. § 103(a) (2006).[7] Obviousness is a legal determination based on underlying findings of fact. *See Adler*, 723 F.3d at 1325. Those underlying findings of fact include (1) "the scope and content of the prior art," (2) "differences between the prior art and the claims at issue," (3) "the level of ordinary skill in the pertinent art," and (4) secondary considerations, i.e., the presence of objective indicia of nonobviousness. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966); *see United States v. Adams*, 383 U.S. 39, 50–52 (1966). In assessing the prior art, the PTAB also "consider[s] whether a PHOSITA would have been motivated to combine the prior art to achieve the claimed invention." *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (internal quotation marks, brackets, and citation omitted).

II. Substantial Evidence Supports the PTAB's Determinations that the Asserted Claims Would Have Been Obvious

The PTAB found, inter alia, that CoreLogic established by a preponderance of the evidence that the Assert-

---

[7]   Congress amended § 103 when it enacted the Leahy-Smith America Invents Act ("AIA"). Pub. L. No. 112-29, § 3(c), 125 Stat. 284, 287 (2011). However, because the Patents-in-Suit have never contained (1) a claim having an effective filing date on or after March 16, 2013, or (2) a reference under 35 U.S.C. §§ 120, 121, or 365(c) to any patent or application that ever contained such a claim, the pre-AIA § 103 applies. *See id.* § 3(n)(1), 125 Stat. at 293.

ed Claims would have been obvious over a combination of Harder and Longley. J.A. 20, 23. BSI avers that neither Longley nor Harder teach or suggest a "jurisdictional identifier" as used in conjunction with the claim term "jurisdiction lookup table." Appellant's Br. 42; *see id.* at 29–46. In its analysis, the PTAB acknowledged the parties' agreement that a "jurisdiction lookup table" is a type of index. *See* J.A. 17–19; '946 patent col. 16 ll. 1–3. The PTAB further defined a "jurisdictional identifier"— the item used to enter searches in a jurisdiction lookup table—as "a number or other name, code, or description that identifies a jurisdiction." J.A. 9.

Rather than look to whether individual elements of the Asserted Claims are present in the prior art, the actual question we must address is whether the PTAB's determination, that the "subject matter as a whole" would have been obvious, 35 U.S.C. § 103(a), is supported by substantial evidence. "[T]he test for obviousness is what the *combined teachings* of the references would have suggested to [a PHOSITA]." *In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012) (emphasis added); *see In re Keller*, 642 F.2d 413, 426 (C.C.P.A. 1981) ("[One] cannot show non-obviousness by attacking references individually where . . . the rejections are based on combinations of references."). Through this lens, we address BSI's contention that the combined teachings of Harder and Longley do not disclose a "jurisdiction look up table."

We find that substantial evidence supports the PTAB's obviousness conclusion. The Patents-in-Suit disclose an interactive online method for users to retrieve geographic parcel maps and related data. *See* '946 patent col. 1 l. 57–col. 2 l. 3. This includes operations such as "accessing" a "multi-state[/national] parcel map database" where the database comprises "multiple jurisdictional databases which have been normalized to a common data protocol." *See id.* col. 15 ll. 65–67; '957 patent col. 16 ll. 26–28.

As the PTAB found, a combination of Harder's teaching that indexing key fields "can speed up searches" with Longley's disclosure of "the benefits of indexing geographic databases" renders the claims of the Patents-in-Suit obvious. J.A. 17–18 (citing J.A. 1105 (Harder) ("[A] custom . . . script . . . indexes key fields to speed up user-defined searches."), 1440–45 (describing tables and indexes), 1451 (Longley) ("[A] query to locate an object searches the indexed list first to find the object and then retrieves the object . . . for further analysis.")). Relevant here, the combination of Harder and Longley discloses the use of a state FIPS code as the basis for searching through databases to collect information, rendering the "jurisdictional identifier" feature obvious. *See* J.A. 1443–44 (Longley) (utilizing FIPS). Further, while Harder and Longley do not use the express verbiage "look up table," their combination renders obvious the claimed look up table based, in part, upon the list in Longley's grid indexing which operates just like the claimed look-up table. *See* J.A. 1451 (Longley) (providing that "[t]he grid location(s) of each object is recorded in a list (the index)" and then "[a] query to locate an object searches the indexed list first to find the object [in a grid cell] and then retrieves the object [from the grid cell]").

BSI's counter-arguments are unpersuasive. BSI first argues that a "jurisdictional identifier" requires a county FIPS code, which is not disclosed in Harder or Longley. *See* Appellant's Br. 31–34. However, the term as construed requires no specific code. *See* J.A. 9 (construing "jurisdictional identifier" as "a number or other name, code, or description that identifies a jurisdiction" (internal quotation marks omitted)). The PTAB properly found that the state FIPS identifier found in Longley was a jurisdictional identifier. J.A. 19; *see* J.A. 1440–44 (Longley). BSI offers no explanation for why we should find a meaningful distinction between a county FIPS code

and a state FIPS code as related to jurisdictional identifiers. *See generally* Appellant's Br.

We do not agree with BSI's contention that there is nothing to support a finding that a PHOSITA would be motivated to combine Harder and Longley. *See* Appellant's Br. 29; Reply Br. 22–25. As CoreLogic's expert, Michael Goodchild, explained, and the PTAB found persuasive, *see* J.A. 21–22, it would have been obvious to a PHOSITA to modify the GIS database system of Harder to use an index for locating jurisdictional identifiers associated with parcel data in the database as disclosed by Longley "to more easily manage parcel information across multiple jurisdictions" and make "searching parcel data more efficient," J.A. 416–17. On appeal, BSI avers that its expert, Mr. William Huxhold, offered more accurate testimony regarding the motivation to combine. *See* Appellant's Br. 32–34. However, we have repeatedly stated that "[w]e may not reweigh evidence on appeal." *Warsaw*, 832 F.3d at 1333. CoreLogic's expert testimony, along with the PTAB's other findings, is sufficient to support a conclusion that a PHOSITA would have been motivated to combine Harder and Longley.

CONCLUSION

We have considered BSI's remaining arguments and find them unpersuasive. For these reasons, the Final Written Decisions of the U.S. Patent and Trademark Office's Patent and Trial Appeal Board are

AFFIRMED