

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**INTELLECTUAL VENTURES I LLC,**  
*Appellant*

v.

**UNIFIED PATENTS, LLC,**  
*Appellee*

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2018-2308

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2016-  
01643.

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**INTELLECTUAL VENTURES I LLC,**  
*Appellant*

v.

**EMC CORPORATION, LENOVO (UNITED STATES)  
INC., NETAPP, INC.,**  
*Appellees*

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2019-1352

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2017-00429.

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Decided: March 17, 2020

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PETER J. AYERS, Law Office of Peter J. Ayers, Austin, TX, for appellee Unified Patents, LLC. Also represented by ROSHAN MANSINGHANI, JONATHAN RUDOLPH KOMINEK STROUD, Unified Patents Inc., Washington, DC,

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Before MOORE, REYNA, and TARANTO, *Circuit Judges*.  
TARANTO, *Circuit Judge*.

Intellectual Ventures I LLC (“IV”) owns U.S. Patent No. 6,775,745, which describes methods for caching data in a computer. Certain claims of the patent are the subject of two inter partes reviews under 35 U.S.C. §§ 311–319—one

initiated by Unified Patents, LLC (formerly known as Unified Patents, Inc.), the other initiated by EMC Corp., Lenovo (United States) Inc., and NetApp, Inc. (collectively, “EMC”). In those reviews, the Patent Trial and Appeal Board ultimately determined that claims 1, 2, 4–6, 12, and 14 of the ’745 patent are unpatentable. *Unified Patents Inc. v. Intellectual Ventures I LLC*, IPR2016-01643, 2018 WL 1511821 (P.T.A.B. Mar. 26, 2018); *EMC Corp. v. Intellectual Ventures I LLC*, IPR2017-00429, 2018 WL 5905861 (P.T.A.B. Nov. 8, 2018).

IV appeals, arguing that the Board erred in construing certain claim limitations and that, under proper constructions, those limitations are not taught by the cited prior-art references. We affirm without reaching all of IV’s contentions. Notably, as to the “scanning” limitation found in claim 6, we conclude that substantial evidence supports the Board’s finding that the pertinent reference discloses the limitation even under IV’s construction, and we therefore do not decide IV’s challenge to the Board’s construction of that limitation.

## I

The ’745 patent is titled “Method and Apparatus for Hybrid Data Caching Mechanism.” “Caching” is the process of storing some data files in cache memory, from which data may be retrieved more quickly than from a hard disk. ’745 patent, col. 1, lines 11–20; *id.*, col. 2, lines 1–3. But cache memory is limited, so files stored in the cache often need to be discarded to make space for new files. *Id.*, col. 2, lines 11–17. The ’745 patent purports to offer an improved method for choosing which files to discard. *Id.*, col. 2, lines 14–30. The choice is based on the recency and frequency of a file’s use. *Id.*, col. 2, lines 30–34.

Independent claim 4 and dependent claim 6 are representative of the issues and claims on appeal. Claim 4 recites:

4. A caching method for enhancing system performance of a computer, comprising:

reading an extended segment of data in response to a request from an operating system;

storing copies of files associated with the extended segment in a cache;

assigning frequency factors to each of the files stored in the cache, *the frequency factors indicating how often each of the corresponding files are requested by the operating system;*

scanning the frequency factors, the scanning being performed in response to a target capacity of the cache being attained;

identifying a least frequently and least recently used file; and

eliminating the least frequently and least recently used file to liberate capacity of the cache.

'745 patent, col. 12, line 54, through col. 13, line 4 (emphasis added). Claim 6, using "LRU" to mean "least recently used" and "MRU" to mean "most recently used," recites:

6. The method as recited in claim 4, wherein the scanning the frequency factors further includes:

*scanning from a frequency factor corresponding to a LRU file to a frequency factor corresponding to a MRU file.*

*Id.*, col. 13, lines 8–11 (emphasis added).

In the inter partes review initiated by Unified Patents, the Board determined that claims 1, 2, 4, 12, and 14 are unpatentable, relying on Ramakrishna Karedla et al., *Caching Strategies to Improve Disk System Performance*, Computer, March 1994, at 38 (Karedla); U.S. Patent No.

6,738,865 (Burton); and another reference not at issue. In the inter partes review initiated by EMC, the Board determined that claims 4–6 are unpatentable based on Karedla and Burton. It also determined unpatentability based on Donghee Lee et al., *Implementation and Performance Evaluation of the LRFU Replacement Policy*, 23 Proc. Euromicro Conf. New Frontiers of Info. Tech. 106 (1997) (Lee) and other references.

IV timely appealed the Board’s decisions. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

## II

We review a claim construction de novo and any underlying factual findings based on extrinsic evidence for substantial evidence, including where, as is undisputed here, the claim construction is governed by the broadest-reasonable-interpretation standard. *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 840–41 (2015); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1279–80 (Fed. Cir. 2015). What a piece of prior art teaches presents a question of fact, and the Board’s answer to the question is reviewed for substantial-evidence support. *See, e.g., Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364 (Fed. Cir. 2015). “Substantial evidence review asks ‘whether a reasonable fact finder could have arrived at the agency’s decision’ and requires examination of the ‘record as a whole, taking into account evidence that both justifies and detracts from an agency’s decision.’” *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1366 (Fed. Cir. 2016) (quoting *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000)).

## A

With respect to all the claims at issue except claim 6, IV does not dispute that the Board’s unpatentability ruling must be affirmed if we uphold the Board’s claim construction of the “frequency factor” limitation, italicized in the

quotation of claim 4 above. Seeking the broadest reasonable interpretation, the Board construed “frequency factor” to mean “an indicator based on frequency of use or access.” *Unified Patents*, 2018 WL 1511821, at \*7; *EMC*, 2018 WL 5905861, at \*7. IV argues that the Board should have construed the term to mean “the frequency factors showing, *with a fair degree of certainty*, how often each of the corresponding files are requested by the operating system.” Appellant’s Opening Br. 29.

We agree with the Board. The ordinary meaning of “indicating,” on which IV relies, is not confined to conveying frequency with the “fair degree of certainty” urged by IV. Moreover, the specification describes embodiments in which the frequency factors may not show frequency of access with “a fair degree of certainty.” *Unified Patents*, 2018 WL 1511821, at \*6–7. We therefore determine that the Board’s construction of “frequency factor” is the broadest reasonable one. This determination is enough to affirm the unpatentability of claims 1, 2, 4, 5, 12, and 14.

## B

Claim 6 recites “scanning from a frequency factor corresponding to a LRU [least recently used] file to a frequency factor corresponding to a MRU [most recently used] file.” ’745 patent, col. 13, lines 10–11. The Board construed that limitation to encompass mere “scanning *in a direction* that proceeds from the LRU file towards the MRU file.” *EMC*, 2018 WL 5905861, at \*8 (emphasis added). IV disagrees, arguing that the broadest reasonable interpretation of the claim 6 limitation requires scanning “every frequency factor from the LRU file to the MRU file, inclusive.” Appellant’s Opening Br. 77.

We do not resolve that dispute. The Board found that, even under IV’s narrower interpretation, Burton discloses the limitation. *EMC*, 2018 WL 5905861, at \*14–15. Substantial evidence supports that finding, making it unnecessary to address the proper claim construction.

Burton teaches scanning the last 1024 blocks in its LRU list and then evicting the 32 blocks with the lowest “LRU rank.” J.A. 3059. EMC’s expert, Dr. Kubiadowicz, testified that in “caches of this scale (under 1024 blocks), there is no dispute that Burton would scan ‘all files from the LRU file to the MRU file, inclusive.’” J.A. 3806 (reply declaration). That evidence supports the finding that Burton discloses scanning *every* frequency factor from LRU to MRU—as IV’s construction requires—for caches with 1024 or fewer blocks. *EMC*, 2018 WL 5905861, at \*15.

IV argues that Burton does not disclose a cache having 1024 or fewer blocks. But we see no basis on which the Board was required not to credit Dr. Kubiadowicz’s contrary testimony. IV also argues that EMC failed to show that Burton discloses scanning in the direction from LRU to MRU. Appellant’s Opening Br. 82. But IV did not properly present this argument before the Board. Although IV made the point in demonstratives supporting its oral argument to the Board, J.A. 4705–06, it is impermissible to present new arguments at the oral hearing, Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,768 (Aug. 14, 2012). Thus, IV has forfeited this argument.

IV has likewise forfeited the argument that it was improper for the Board to consider Dr. Kubiadowicz’s assertion about Burton and the 1024-block cache in his reply declaration. Before the Board, IV did not contest the Board’s ability to rely on that assertion—either in a motion to strike, in its observations on cross-examination of Dr. Kubiadowicz, or during the oral hearing—even though IV challenged the propriety of other reply arguments. *See* J.A. 2372–80; J.A. 2700–16. It is generally incumbent on the party complaining of some procedural violation to raise the issue to the Board. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1082 (Fed. Cir. 2015). We see no basis for an exception here.

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The Board’s finding that Burton teaches claim 6’s “scanning” limitation even under IV’s narrower construction suffices to support the determination of unpatentability of claim 6. We do not need to decide whether the Board’s construction of that limitation is unreasonable. Because IV appealed the Board’s construction but we do not reach the issue, the proper construction of the limitation is open for fresh consideration, without issue preclusion, in other proceedings. *See, e.g., Yingbin-Nature (Guangdong) Wood Industry Co., Ltd. v. International Trade Comm’n*, 535 F.3d 1322, 1334 (Fed. Cir. 2008); *Masco Corp. v. United States*, 303 F.3d 1316, 1329–1331 (Fed. Cir. 2002).

## C

IV also challenges the Board’s construction of “a least frequently and least recently used file.” We do not reach that construction challenge either. That issue affects only the Board’s determination that claims 4–6 are unpatentable over Lee. But for the reasons we have discussed, we affirm the Board’s determination that those claims are unpatentable on independent grounds.

## III

For the foregoing reasons, we affirm the Board’s decisions.

Costs to the appellee.

**AFFIRMED**