2016-2509

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

GOOGLE LLC,

Appellant,

v.

NETWORK-1 TECHNOLOGIES, INC.,

Appellee

Appeals from the United States Patent and Trademark Office's Patent Trial and Appeal Board, in Case Nos. IPR2015-00343, IPR2015-00345, IPR2015-00347, IPR2015-00348.

EN BANC BRIEF FOR AMICUS CURIAE NATIONAL ASSOCIATION OF PATENT PRACTITIONERS IN SUPPORT OF NETWORK-1

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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Google LLC, v. Network-1 Technologies, Inc.

No. 2016-2509

CERTIFICATE OF INTEREST

Counsel for the National Association of Patent Practitioners certifies the following:

1. The full name of every party or amicus represented by me is:

National Association of Patent Practitioners

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

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3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

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Dated: May 23, 2018

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INTEREST OF AMICUS CURIAE

The National Association of Patent Practitioners ("NAPP") is an association of hundreds of patent agents and patent attorneys. The practice of most of the membership relates to patent prosecution before the USPTO.

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As an organization, NAPP has no stake in any of the parties to this litigation. No party to the appeal or its counsel authored this brief in whole or in part. Further, no party to the appeal, its counsel, or other person besides NAPP has contributed money that was intended to fund preparation or submission of this brief. NAPP's Committee Chairs' voted on the preparation and submission of this brief, and no NAPP member voting to prepare and submit this brief has served as record counsel to any party in the subject of this appeal. NAPP procedures require approval of briefs by the Chairs present. This brief was authored by NAPP members Richard Baker of New England Intellectual Property, LLC, Ben Williams of Williams Intellectual Property, and the Counsel of this Amicus Brief.

SUMMARY OF THE ARGUMENT

This amici curiae provides support to Network-1 on the main issues of : (1) Whether the Federal Circuit can ignore the well-established precedence of claim construction in *Phillips v AWH Corp.*, 415 F.3d 1303 (Fed. Cir 2005) when the Panel decided to disregard intrinsic, and extrinsic evidence that "non-exhaustive" doesn't necessarily mean the converse of "exhaustive," i.e. "not exhaustive" and; (2) Whether the Federal Circuit improperly broadened Google's definition of "non-exhaustive search" when Google limited the term with the added phrase "all data within all possible matches."

The Panel commits clear error in the methodology that is used to construe the term "non- exhaustive search". The Panel ignores well-established precedence established in *Phillips* that defines how claim construction should be construed. Further, the Panel improperly broadened Google's definition when a limiting term was added.

This opinion sets a precedent that false logic can be used in construing claims of a patent, leading to uncertainty with patent drafters, patent holders, and those seeking to avoid patent infringement. This opinion is so far outside of standard claims construction principles that it must be reversed.

ARGUMENT

A. "Non-exhaustive" doesn't necessarily mean the converse of "exhaustive," i.e. "not exhaustive."

The Panel Opinion ignores well-established precedence established in *Phillips v AWH Corp.*, 415 F.3d 1303 (Fed. Cir 2005) that defines how a claim should be construed.

1. The Panel Opinion ignores the *Phillips* hierarchy of claims construction evidence.

"[W]hile extrinsic evidence can shed useful light on the relevant art," we have explained that it is "less significant than the *intrinsic* record in determining 'the legally operative meaning of claim language.'" *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004).

Phillips generally defines how to construe claim language. First, the plain language of the claim is used, then the context of other claims. Then the specification is viewed, and finally, if no evidence is found, extrinsic evidence is used. In this case, there is copious intrinsic evidence to construe the term "non-exhaustive". Google, in its Appeal Brief at 33, falsely states that the written description never speaks of "exhaustive" or "non-exhaustive"

searches. The Panel then relies on Google's false statement at 9 to divert from the intrinsic evidence.

"Claims are to be defined first by 'the words of the claims themselves.'" *Phillips*, 415 F.3d at 1312. "Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) . The dependent claims in the '988 patent define "non-exhaustive search" as sublinear (claim 3) or based on kd-trees (claim 4) or based on vantage point trees (claim 5) or based on excluded middle vantage point forest (claim 6). Each of these are types of searches, and as dependent claims, provide examples of and help define, "non-exhaustive" searches.

"The best source for understanding a technical term is the specification from which it arose..." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998). The Specification of the '179 parent, in the Abstract, uses the term "non-exhaustive neighbor search," providing a context upon which to interpret the term "non-exhaustive." Network-1, in its briefs, then shows the details of this definition in the Specification.

The PTAB's decision to institute the IPR at 6, states "… we are persuaded that the broadest, reasonable construction, consistent with the

Specification, of "non-exhaustive search" is "a search that locates a match without a comparison of all possible matches." Patent Owner points out (*Id.* at 6) that the Specification of the '179 Patent discusses both exhaustive and non-exhaustive searches (Ex. 1001, 8:44–9:54). The PTAB saw the intrinsic evidence supports its claims construction. However, the Panel ignored the intrinsic evidence in the claims and specification and incorrectly relied on extrinsic evidence.

2. "non- exhaustive" is not the converse of "exhaustive"

The negative does not necessarily define the positive. For example, because a noun is not a verb does not mean that every word that is not a noun is therefore a verb (false contrapositive). In defining broadness of the converse by means of the narrowness of the inverse, the panel creates a false-dichotomy. A narrower construction of "[e]xhaustive" does not *ipso facto* conclude to a broader construction of "[n]on-exhaustive" as inverse.

The Panel's opinion follows Google's contention that non-exhaustive is the converse of exhaustive. There is no evidence to support this contention. This is incorrect in the realm of computer science. In addition to exhaustive (aka linear) searches, there are at least two other types of searches, non-

exhaustive searches (tree searches, et al), and hash algorithms.[1] A hash search is neither exhaustive nor non-exhaustive, but instead computes an address to lookup to find the desired record. These types of searches are taught in a sophomore Computer Science class.[2] Both Network-1 and Google claim that one of ordinary skill in the art have at least a Bachelors in Computer Science, thus one of ordinary skill would understand there are multiple types of searches. Thus, the "logic" in the Opinion's Footnote 4 and elsewhere in the Opinion is illogical, as there is a third type of search, hashing, that is neither exhaustive nor non-exhaustive. The fallacy occurs because the Panel decided upon a factual issue, whether there are only two types of searches, without relying on the evidence presented at the PTAB. This is clear error on behalf of the Panel.

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[1] See Donald Knuth, The Art of Computer Programming, Volume 3 – Searching and Sorting, Second Edition, 1998, pages 392-558, found at http://www.softouch.on.ca/kb/data/The%20Art%20Of%20Computer%20Programming%20-%20Sorting%20and%20Searching%20(2nd%20edition%20Volume%203).pdf

[2] See "Computer Science Curricula 2013 Curriculum Guidelines for Undergraduate Degree Programs in Computer Science", The Joint Task Force on Computing Curricula Association for Computing Machinery (ACM), IEEE Computer Society, December 20, 2013, page 58 found at https://www.acm.org/binaries/content/assets/education/cs2013_web_final.pdf

3. Broadest reasonable must be applied to the term "non-exhaustive"

The Broadest Reasonable Interpretation ("BRI") standard must be applied to the term itself, and not to the converse of the term. "Even when giving claim terms their broadest reasonable interpretation, the Board cannot construe the claims "so broadly that its constructions are unreasonable under general claim construction principles." *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015). "[T]he protocol of giving claims their broadest reasonable interpretation . . . does not include giving claims a legally incorrect interpretation" "divorced from the specification and the record evidence." *Id.* (citations and internal quotation marks omitted).

The Panel engages in a confusing analysis to construe the term non-exhaustive. "[T]he linchpin … is … what [is] an 'exhaustive' search" "This is so because … non-exhaustive … is necessarily … not 'exhaustive.'" "[T]he … limitation … does not require ... 'exhaustive'" "Rather, it requires … 'non-exhaustive'" 16-2509 Panel Opinion 11-12 at 7. Thus, "what must be determined is the meaning of … 'exhaustive.'" *Id.* "Google's argument is … that the broadest construction of 'non-exhaustive' … corresponds to the narrowest construction of 'exhaustive,'" "As 'exhaustive' narrows …, 'non-exhaustive' must broaden" *Id.* at 8. It is unreasonable to construe a different

term, “exhaustive”, and then find the broadest reasonable interpretation of that term, and then apply the negative.

Second, the term being construed is “non-exhaustive”. Applying BRI to a different term is unreasonable given the specification and plain words of the claim. Rather, “claims should always be read in light of the specification and teachings in the underlying patent.” *In re Suitco Surface, Inc*., 603 F.3d 1255, 1260 (Fed. Cir. 2010). The claims and the specification use the word “non-exhaustive”. They do not use the word “exhaustive”. Thus, applying BRI to “exhaustive” is improper.

Third, as discussed above, “exhaustive” is not the converse of “non-exhaustive” in the realm of computer search algorithms. So applying the BRI to “exhaustive” is a logical fallacy. Because there is no symmetry, the broadening of “exhaustive” does not correlate to the breadth of “non-exhaustive”.

For these reasons, the Broadest Reasonable standard must be applied to the actual claim term, “non-exhaustive”, as the PTAB did in its opinion. The Panel is incorrect to revise the PTAB’s construction.

B. Google's definition "a search that locates a match without conducting a brute force comparison of all possible matches, and all data within all possible matches" is unduly narrow and misconstrued.

Google's construction of "*non-exhaustive*" is narrower contrary to the Panel's position which enumerates the broadness of Google's "non-exhaustive" term based solely on Google's alleged narrower construction of a converse, "*exhaustive*." The definition supplied by the patentee for "non-exhaustive" search was found in the common record, and states "a search that locates a match without conducting a brute force comparison of all possible matches." Google appended "and all data *within* all possible matches" to that definition. Since this is an additional requirement, it *de facto* limits scope of the phrase and should be considered a narrower construction.

For example, under Google's definition, if data matches three integers, "357", *four* iterations would be required to be "exhaustive" – "357"; "3"; "5"; and "7". Failure to execute any one of the four would thus render the search "non-exhaustive". Thus, Google's definition of non-exhaustive is narrower when reduced to practice.

Under Network-1's definition, conversely, any search that arrived at "357" without simple brute force matching of all possible outcomes would be

"non-exhaustive". That could include application of a probability matrix or a sequence-based neighbor search (for example, "356" and "358", or other sequential clusters) which would not be limited only to the dataset. Network-1's construction is broader for the term "non-exhaustive" (as applied to the *actual* term used in the specification and claims). The Panel erred in adopting Google's construction as the broader alternative.

Further, Network-1 defined a number of matching applications in column 9 lines 14-36 of its '988 Specification, incorporating specific definitions by reference which should be contemplated as part of the disclosure which seems to have been ignored by the Panel:

> Other forms of matching include those based on clustering, kd-trees, vantage point trees and excluded middle vantage point forests are possible and will be discussed in more detail later. See, e.g. P. N. Yianilos "Excluded Middle Vantage Point Forests for nearest Neighbor Seach", Presented at the Sixth DIMACS Implementation Challenge: Near Neighbor Searches workshop, (Jan. 15, 1999). See also, P. N. Yianilos, "Locally lifting the curse of Dimensionality for nearest Neighbor Search" SODA 2000: 361-370. (Each of these references is incorporated herein by reference.) Thus, for example, a sub-linear search time can be achieved. Unlike the kd-tree method which finds the nearest neighbor with certainty, randomized constructions, like the one described in P. N. Yanilos, "Locally lifting the curse of Dimensionality for nearest Neighbor Search" SODA 2000" 361-370, that succeed with some specified probability may be used. One example of a sub-linear time search is an approximate nearest neighbor search. A nearest neighbor search always finds the closest point to the query. An approximate nearest neighbor search does not

> always find the closest point to the query. For example, it might do so with some probability, or it might provide any point within some small distance of the closest point.

By disclosing a device that inherently performs a function or has a property, or operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. See M.P.E.P. 2163.07(a). Google's construction directly contradicts this.

The specification refers to a *method* of searching that can prioritize solutions based on approximation and the application of probability and sequencing in ranking results to expedite processing. This appears to be a prime motivation in the '179 disclosure; a teaching that the Panel appears to have ignored.

Thus, when the Panel writes that "the claim limitation at issue does not require a search that *employs* a stated method (an 'exhaustive' search"). Rather, it requires a search that *does not employ* a stated method (a 'non-exhaustive' search)" (Decision, at * 7; emphasis in original) the Panel conjures a false dichotomy that ignores established computer science and . contradicts the specification. A non-exhaustive search comprises a

methodology. It's not necessarily defined by negating what may otherwise be considered "exhaustive" in the abstract.

The Panel's interpretation raises further ambiguity by omitting the term "neighbor" from the compound comprising the element (a "non-exhaustive neighbor search") claimed. A "neighbor" search necessarily includes focused matching because a *neighbor* is determined by proximity to a preceding and subsequent datum in sequence. Again, the construction adopted by the Panel is ambiguous and erroneous. It's unclear if a true neighbor search can ever be "exhaustive" under Google's definition because a neighbor search prioritizes solutions to restrict searchable data within proscribed norms. Under Google's definition the term "non-exhaustive" becomes redundant relative "neighbor" i.e. every *neighbor* search is *de facto* non-exhaustive. Yet, different terms in patent claims are presumed to have different meanings. See *Augme Techs., Inc.* v. *Yahoo! Inc.*, 755 F.3d 1326, 1333 (Fed. Cir. 2014).

Thus, the construction of Google's "exhaustive" to frame the converse "non-exhaustive" as some sort of invented inverse violates any plain reading in light of the Specification as a whole – a vital tenet of patent prosecution where Applicants are allowed to be their own lexicographers. M.P.E.P. 21473.01 citing 35 U.S.C. § 112(b). The Panel's position violates a fundamental principle upon which patent prosecution is unwaveringly built.

CONCLUSION

To allow the Panel's opinion to stand in the case would turn claims construction on its head. The priority of evidence used in claims construction from *Phillips* would no longer apply. Intrinsic evidence could be ignored in light of extrinsic evidence. And the BRI could be applied to a different term and then imputed to apply to a claim term. This opinion is so far outside of standard claims construction principles that it must be reversed.

Dated: May 23, 2018

Respectfully submitted,

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