

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

ACCUSEARCH TECHNOLOGIES LLC,
Patent Owner.

U.S. Patent No. 11,971,937
Issue Date: April 30, 2024

Title: INTERNET SEARCH RESULTS ANNOTATION, FILTERING, AND
ADVERTISING WITH RESPECT TO SEARCH TERM ELEMENTS

Inter Partes Review No. IPR2026-00289

PATENT OWNER'S PRELIMINARY RESPONSE

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<i>In re Fine</i> , 837 F.2d 1071 (Fed. Cir. 1988)	11, 51
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<i>Graham v. John Deere Co.</i> , 383 U.S. 1 (1965)	55
<i>Hyundai Motor Co. v. Blitzsafe Texas, LLC</i> , IPR2016-01476, Paper 12 (PTAB Jan. 24, 2017)	44, 46
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<i>Lectrosonics, Inc. v. Zaxcom, Inc.</i> , IPR2018-01129, Paper 33 (PTAB Jan. 24, 2020)	55
<i>Liqwd, Inc. v. L’Oreal USA, Inc.</i> , 941 F.3d 1133 (Fed. Cir. 2019)	54
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<i>Qualcomm Inc. v. Apple Inc.</i> , 134 F.4th 1355 (Fed. Cir. 2025)	42
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<i>Shopkick Inc. v. Novitaz, Inc.</i> , IPR2015-00279, Paper 7 (PTAB May 29, 2015)	45
<i>Tesla, Inc. v. Intellectual Ventures II LLC</i> , IPR2025-00340, Paper 18 (Director Nov. 5, 2025).....	17
<i>Volvo Penta of the Ams., LLC v. Brunswick Corp.</i> , 81 F.4th 1202 (Fed. Cir. 2023)	55, 57

Statutes

35 U.S.C. § 312(a)(4).....	18, 43
35 U.S.C. § 314(a)	1, 17, 20, 43

Other Authorities

37 C.F.R. § 42.104(b)(3).....	4, 13, 37
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37 C.F.R. § 42.107	1

PATENT OWNER’S EXHIBIT LIST

Exhibit No.	Description
2001	Scheduling Order in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, Dkt. No. 34 (D. Del. Sept. 4, 2025)
2002	Joint Claim Construction Chart in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW (D. Del. April 23, 2026) (without Exhibits B–H)
2003	U.S. Patent No. 9,104,765
2004	June 27, 2017 email from noreply@google.com to gustavo@rzv-ip.com
2005	U.S. Patent No. 10,083,237
2006	November 2, 2017 Notice of References Cited for U.S. Pat. Appl. No. 14/841,078
2007	June 20, 2025 Motion to Dismiss in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, Dkt. No. 14 (D. Del. June 20, 2025)
2008	August 8, 2025 Motion to Dismiss in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, Dkt. No. 27 (D. Del. August 8, 2025)
2009	September 5, 2025 Opposition to Motion to Dismiss in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, Dkt. No. 37 (D. Del. September 5, 2025)
2010	September 19, 2025 Reply In Support of Motion to Dismiss in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, Dkt. No. 44 (D. Del. September 19, 2025)
2011	Petitioner’s Invalidity Contentions in <i>AccuSearch Technologies LLC v. Google LLC</i> , C.A. No. 25-514-GBW, (D. Del.)
2012	Declaration of Steven J. Reynolds
2013	September 25, 2017 email from noreply@google.com to gustavo@rzv-ip.com [Sealed]
2014	PTAB Default Protective Order
2015	April 30, 2026 email from David Silbert to Steve Reynolds
2016	Declaration of Robert Osann, Jr., dated July 11, 2025
2017	Amendment No. 9 to Google Inc. S-1, dated August 18, 2004
2018	Google, “How our business works,” downloaded from https://about.google/company-info/how-our-business-works/ , last

	accessed May 28, 2026
2019	“Dear Google, Stop Messing With My Search,” November 8, 2011 Blog entry from Karen Blakeman’s Blog, downloaded from https://www.rba.co.uk/wordpress/2011/11/08/dear-google-stop-messing-with-my-search/ ; last accessed May 26, 2026.
2020	“6 Ways to Reduce Irrelevant Results on Google Search,” Tina Sieber, www.makeuseof.com , April 18, 2010, downloaded from https://www.makeuseof.com/tag/6-ways-reduce-irrelevant-results-google-search/ ; last accessed May 27, 2026.
2021	“Why Millennials Don’t Know How to Use Google,” Whet Moser, Chicago Magazine, August 23, 2011, downloaded from https://www.chicagomag.com/city-life/august-2011/why-millennials-dont-know-how-to-use-google/ , last accessed May 27, 2026
2022	Statcounter Global Stats, Search Engine Market Share Worldwide from January 2012 through May 2026, downloaded from https://gs.statcounter.com/search-engine-market-share#monthly-201201-202605 ; last accessed May 28, 2026.
2023	Barry Schwartz, “Crossed Out Keywords In Google’s ‘Similar Searches,’” Search Engine Roundtable, December 12, 2012, downloaded from https://www.seroundtable.com/google-similar-crossed-16073.html ; last accessed May 27, 2026.
2024	“Google is Now Showing ‘Missing’ Keywords in SERPs,” www.aaronrobb.ca , December 2013, downloaded from https://aaronrobb.ca/google-showing-missing-keywords-serps/ ; last accessed May 27, 2026.
2025	Alphabet Inc. 2018 10-K, dated February 4, 2019.
2026	Claim chart of Google’s search engine against the challenged claims of the ’937 Patent (Exhibit D to Plaintiff’s Disclosure of Initial Infringement Contentions in AccuSearch Technologies LLC v. Google LLC, C.A. No. 25-514-GBW (D. Del.))
2027	Google, “Ten Things We Know to Be True,” downloaded from https://about.google/company-info/philosophy/ ; last accessed June 5, 2026.

Pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.107, Patent Owner AccuSearch Technologies LLC (“AccuSearch” or “Patent Owner”) submits this Patent Owner’s Preliminary Response setting forth merits and non-discretionary reasons why institution of the Petition for *Inter Partes* Review (“IPR”) of claims 1-39 of U.S. Patent No. 11,971,937 (“the ’937 Patent”), as requested by Google LLC (“Google” or “Petitioner”), should be denied.

I. INTRODUCTION

The Petition fails for at least four reasons. First, no asserted ground renders obvious two limitations recited in every challenged independent claim. No asserted reference discloses the claimed missing-term warning: “a first warning to the search engine user that the first webpage is missing the first search term element, wherein the first warning comprises a text representing the first search term element.” Ex. 1001 [’937 Patent], cl. 1 ([1D]); *see also* cls. 15 ([15E]), 29 ([29D]). For grounds 1A through 1C (Bates-(Bhagat-)Brinson), Bates’ correlation indicator is a colored bar, but the bar does not comprise a text representing a missing search term element. *See* Ex. 1010 [Bates], [0033]–[0034]. Moreover, Bhagat displays strikethrough text only in an alternative-query header presented after a zero-results search. The strikethrough in Bhagat indicates which term Bhagat’s system removed from the user’s original query. It does not show that any individual referenced webpage lacks that term. *See* Ex. 1011, [Bhagat], 1:58–2:4, Fig. 2.

For grounds 2A-2C (Wang-Mills-Brinson), Wang teaches only keyword relaxation—that is, relaxing searches so that returned results are not required to contain all keywords in the search query. It does not disclose the claimed warning. Ex. 1005 [Wang], Abstract; [0014], Fig. 5. And Mills Figure 2 depicts strikethrough only in the altered-search-string header. Ex. 1006 [Mills], Fig. 2. But the strikethrough-altered string is a query-level group label; it is *not* the claimed warning within an individual search result grouping. Ex. 1006 [Mills], 6:38–46.

Nor does any asserted reference disclose the claimed filtering option: a “filtering option” whose selection “causes an updated Internet search user interface to be generated” such that the updated interface “does not display the first Internet search result.” Ex. 1001 [’937 Patent], cl. 1 ([1H]); *see also* cls. 15 ([15I]), 29 ([29I]), 39. Every asserted ground in the petition relies on Brinson for this limitation. But the terms Brinson displays are terms “found in” each displayed result, and then marking a term “Required” in Brinson refines the query for a new search. Ex. 1007 [Brinson] [0045], [0073]. The Petition’s own framing confirms the gap. It supplies the operation its [1H] mapping requires through a “known technique” that “would have applied the ‘required’-term designation to already-identified search results (rather than execute an entirely new search)” —a technique found not in Brinson, but in Dr. Bederson’s testimony and two references asserted in no ground, Fowler (Ex. 1081) and Stonehocker (Ex. 1082). Pet., 26–27 (citing

Bederson Decl. ¶¶ 138–140). Because every ground relies on Brinson for the filtering option, this defect alone defeats every ground in the petition.

Petitioner’s expert, Dr. Bederson, argues that a POSITA would have understood Bates’ color-coded bar, Bhagat’s strikethrough, or Mills’ altered-string display could be modified to comprise the missing-term warning text. Pet., 39–41 (citing Bederson Decl. ¶¶ 159–160); Pet., 89 (citing Bederson Decl. ¶ 314). But the Petition relies on expert testimony from Dr. Bederson to supply the missing limitations to Bates, Wang-Mills, and Brinson. Pet., 18–27, 86–89, 92. Under 37 C.F.R. § 42.104(b)(4) and the USPTO Director’s July 31, 2025, memorandum on Rule 42.104(b)(4) enforcement, expert testimony and general knowledge may not supply a missing claim limitation.

Second, the Petition fails because it does not demonstrate that a POSITA would have combined the references with a reasonable expectation of success. There have always been limitless possibilities for displaying search results. Each of Bhagat, Wang, and Mills addresses a distinct user-interface problem through a specifically tailored solution. The Petition provides no reason a POSITA would have selected those references or revised them as proposed—especially not to arrive at the claimed per-result missing-term warning. The Petition is based purely on hindsight.

Third, the invention of the ’937 Patent exhibits objective indicia of

nonobviousness, including at least long-felt need and commercial success. Search engines in the 2008–2011 time frame returned voluminous search results, many of which were irrelevant or did not contain one or more of the search terms in the query—a long-felt need for users to be able to quickly determine which results were actually relevant. The inventor of the '937 Patent solved this need with user-interface functionality that warns users, within individual search result groupings, when referenced webpages are missing search terms, and that provides filtering options that yield updated interfaces no longer displaying the warned results.

The invention of the '937 Patent has achieved commercial success. Google adopted the claimed missing-term annotation in its market-leading search engine in or around December 2012, modified it in or around December 2013, and has maintained it through the present. Other search engines followed suit. Microsoft Bing deployed similar functionality by at least 2020. Accordingly, the '937 Patent demonstrates objective indicia of long-felt need and commercial success.

Fourth, the Petition fails because Petitioner has advanced inconsistent claim construction positions in this IPR from the positions it has taken in the district court, thus failing to satisfy 37 C.F.R. § 42.104(b)(3)'s non-discretionary requirement that the Petition identify “how the challenged claim is to be construed.” The Petition alleges that “[c]laim terms are given their ordinary meaning in light of the specification and prosecution history.” Pet., 7 (citing 37

C.F.R. § 42.100(b)). However, in the related district court litigation, Petitioner has proposed an express construction for the “filtering option” limitation recited in every challenged independent claim—a construction the Petition neither discloses nor applies—and argues that six different claim terms are invalid as indefinite. Accordingly, under the Director’s precedent in decisions like *Revvo* and *Ford Motor Co.*, the Petition fails.

For each of these reasons, and for those developed below, the Petition fails to demonstrate a reasonable likelihood that any challenged claim is unpatentable. Institution should therefore be denied.

II. THE ’937 PATENT

The ’937 Patent was filed on May 10, 2023, and issued on April 30, 2024. Ex. 1001 [’937 Patent], (22), (45). Through a series of continuation applications, the ’937 Patent claims priority to application no. 13/163,614, filed on June 17, 2011, which issued as U.S. Pat. No. 9,104,765. *Id.*, (63). The specification of the ’937 Patent is substantively identical to the ’765 Patent.

The ’937 Patent discloses “systems and methods for Internet search and related advertising functions.” Ex. 1001 [’937 Patent], 1:55-56. In particular, the ’937 Patent relates to providing Internet search results annotation and filtering with respect to search term elements. *Id.*, Title. The claimed invention allows users to “annotate and/or filter their search results to delineate and/or remove references to

sites that offer unwanted or irrelevant categories of information and as a result provide the user with a set of search results that offer and/or emphasize information of substance on their search topic.” *Id.*, 3:27-31.

The ’937 Patent is directed to multiple improvements to Internet search technology existing as of its earliest priority date (on or before June 17, 2011), when Internet search pages frequently presented results that did not offer the information the user sought. *See, e.g., id.*, 1:60-65. *See also* Ex. 2016 [Osann Decl.], ¶¶ 13-15. Such prior art systems and methods contained URL links to webpages containing irrelevant information or that did not contain the specified search terms. *Id.*, 2:2-5, 2:32-35. But in such prior art systems, users could not know that the presented results did not contain specific search term elements unless they clicked on the URL links and visited the webpages, often causing the user to waste time. Ex. 2016 [Osann Decl.], ¶¶ 8, 48, 14-15.

To solve this problem, the ’937 Patent discloses and claims inventions that annotate results to show when some of the search terms entered by a user are missing from the webpage located at a URL returned by the Internet search and presented on the search results page. *See, e.g., id.*, 4:46-51, 10:17-38, Fig. 5. One embodiment involves determining the presence of search term elements in a webpage located at a search result URL. *Id.*, 6:24-28; Ex. 2016 [Osann Decl.], ¶¶ 35-39, 42-48.

The '937 Patent Figure 5 illustrates an annotation showing which search terms are missing from a URL and which search terms are present:

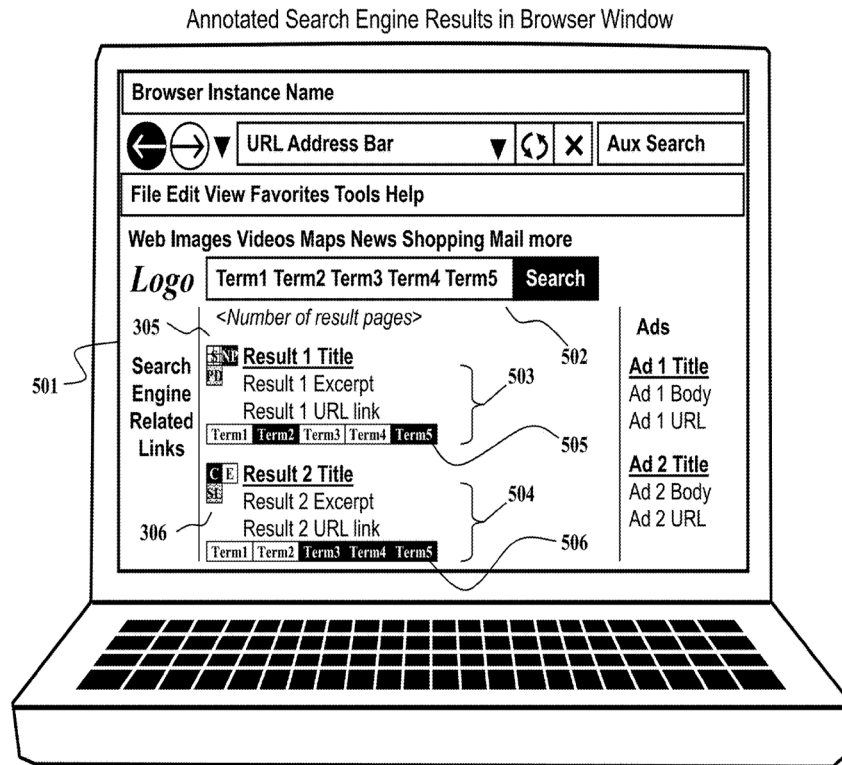


Figure 5

Id., Fig. 5. In Figure 5, “[s]earch input bar 502 contains five exemplary search term elements” and “search result groupings 503 and 504 contain search term elements annotations 505 and 506 indicating for example which search term elements actually appear on the webpage located at the search result URL link.” *Id.*, 10:27-34. “[S]earch term elements [in 505 and 506] which are present might be shown as black text on a white background, with those search term elements that are not present shown with white text on a black background.” *Id.*, 10:34-37. Thus, the

individual search result grouping contains annotations indicating which search terms are missing from the returned URL and which search terms are present in the returned URL.

A. Claims of the '937 Patent

Claim 1 of the '937 Patent is reproduced below:

Claim	Claim Language
[1PRE]	A process for Internet search, annotation, and filtering for providing an enhanced interactive graphical user interface for Internet search that enables a search engine user to automatically remove one or more search results that each reference a webpage that does not contain a desired search term element, enabling a faster operation of Internet search for the search engine user by enabling the search engine user to avoid spending time visiting a webpage that is missing the desired search term element, the process comprising:
[1A]	receiving a search request from a search engine user on a personal computing device having a display screen, the search request comprising one or more search term elements;
[1B]	generating, by operating a search engine in response to receiving the search request, a first Internet search result that references a first webpage that is missing a first search term element and a second Internet search result that references a second webpage;
[1C]	generating and providing, for display on the personal computing device, an Internet search user interface;
[1D]	wherein the Internet search user interface comprises the first Internet search result and a first warning to the search engine user that the first webpage is missing the first search term element, wherein the first warning comprises a text representing the first search term element;
[1E]	wherein the first Internet search result is organized for display as a first search result grouping comprising a first excerpt for the first webpage, a first Internet link for the first webpage, and the first warning;

[1F]	wherein the Internet search user interface further comprises the second Internet search result; wherein the second Internet search result is organized for display as a second search result grouping that comprises a second excerpt from the second webpage and a second Internet link for the second webpage but does not comprise any warning that any of the one or more search term elements is missing from the second webpage;
[1G]	wherein the first and second search result groupings are each a unique search result grouping displayed separately from each other;
[1H]	wherein the Internet search user interface provides a filtering option, wherein the search engine user's selection of the filtering option causes an updated Internet search user interface to be generated and provided for display on the personal computing device, and wherein the updated Internet search user interface does not display the first Internet search result; and
[1I]	wherein the process is performed on one or more servers located remotely from the personal computing device.

See Ex. 1001, cl. 1.

Two limitations of claim 1 frame this Preliminary Response. Limitation [1D] requires that the Internet search user interface comprise “a first warning to the search engine user that the first webpage is missing the first search term element,” and that the warning “comprise[] a text representing the first search term element.” Limitation [1H] requires that the interface provide “a filtering option” whose selection “causes an updated Internet search user interface to be generated” such that the updated interface “does not display the first Internet search result.” As discussed below, both limitations are missing from the prior art.

The two remaining independent claims—claim 15 (system) and claim 29 (process)—recite materially the same limitations as claim 1. The [1D] warning limitation appears as [15E] in claim 15 and as [29D] in claim 29, and the [1H] filtering limitation appears as [15I] in claim 15 and as [29I] in claim 29, in each case with the same operative language. Claim 29 recites both limitations twice over: it requires a first and a second warning—each “an individual warning displayed separately from each other”—and a first and a second filtering option. Claim 39, which Grounds 1A and 2A also challenge, depends from claim 29 and requires that “each of the first and second updated Internet search user interfaces does not display the first and second Internet search results.” *Id.*, cls. 15, 29, 39. Petitioner’s mappings for claims 15, 29, and 39 cross-reference its mapping for claim 1, *see* Pet., 47–54, 94–97; Bederson Decl. ¶¶ 185, 190–194, 322–325, so Patent Owner’s arguments regarding [1D] and [1H] apply equally to claims 15, 29, and 39.

The dependent claims (2–14, 16–28, and 30–39) add features such as selectable advertisements related to the search term elements (2, 16, and 30), specific formats for the warning text (3, 17, and 31), confirmation that the removed result would not have been displayed had the search engine applied an “AND” operation to the search request (4, 13, 18, 27, 32, and 37), responsiveness to descendant webpages (5, 9, 19, 23, and 33), display efficiencies for smartphone

screens (6, 8, 10, 20, 22, 24, 34, and 36), synonyms and misspellings (7, 11, 21, 25, and 35), first and second search term elements that are the same (12, 26, and 39), and advertisement adjacency (14, 28, and 38). *Id.*, cls. 2–14, 16–28, and 30–39.

Each dependent claim incorporates by reference all the limitations of its independent claim, including the [1D]/[15E]/[29D] warning limitation and the [1H]/[15I]/[29I] filtering limitation. The dependent claims are therefore patentable for at least the same reasons as the independent claims. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (finding dependent claims nonobvious if the independent claims from which they depend are found nonobvious).

III. LEVEL OF ORDINARY SKILL

Petitioner asserts that a person of ordinary skill “would have had a bachelor’s degree in computer science or a related field, plus at least two years of industry or graduate-level experience with designing user interfaces for Internet search engines.” Pet., 7 (citing Bederson Decl. ¶¶ 33–37). Petitioner’s definition is too limiting. The two years of industry or graduate-level experience should include searching, querying, or related technologies (i.e., the technologies encompassed by the claims). The Petition fails under either parties’ proposed Level of Ordinary Skill for the reasons discussed below.

IV. CLAIM CONSTRUCTION

In the corresponding district court litigation, Patent Owner has proposed a construction for the term “Internet search” of “plain and ordinary meaning, where the plain and ordinary meaning refers to a general purpose Internet search, such as one offered by an Internet search engine, rather than a search constrained to a particular vendor and product offering (*e.g.*, search offered on amazon.com constrained to products and services offered by Amazon).” Ex. 2002 [Joint Claim Construction Chart], 7–8.

Petitioner has proposed the terms “a filtering option, wherein the search engine user’s selection of the filtering option causes an updated Internet search user interface to be generated and provided for display on the personal computing device” and “descendant webpage[s]” for construction in the litigation. *Id.*, 5-7. For the former, Patent Owner proposes “plain and ordinary meaning. No construction required.” *Id.*, 5.

For “descendant webpages,” Patent Owner also believes no construction is required. *Id.*, 6. However, Patent Owner has proposed alternative constructions of “[p]lain and ordinary meaning; not limited to webpages in the same domain” and “[p]lain and ordinary meaning, where the plain and ordinary meaning means ‘webpages linked from the referenced webpage’” should the district court choose

to provide an express construction. *Id.*, 6–7. Claim construction briefing is currently ongoing, and the district court has not yet construed the claims.

The constructions proposed by Patent Owner in the litigation reflect the plain and ordinary meaning of the claim terms. *Id.* Patent Owner does not believe that its proposed constructions in the litigation impact the issues raised in this Preliminary Response. Thus, for purposes of this Preliminary Response, no claim terms need to be expressly construed. However, should the Board determine that “Internet search” or “descendant webpage[s]” require express construction in this IPR, the constructions proposed by Patent Owner above are appropriate and should be adopted.

Patent Owner reserves the right to propose claim terms for construction should this IPR be instituted, including to address any constructions adopted by the district court.

A. The Petition’s Unexplained Inconsistent Claim Construction Positions Fail Under 37 C.F.R. § 42.104(b)(3)

In addition to supporting discretionary denial (*see* Discretionary Denial Brief (Paper 7), 4–6), Petitioner’s unexplained inconsistent constructions independently fail to satisfy 37 C.F.R. § 42.104(b)(3)’s non-discretionary requirement that the Petition identify “how the challenged claim is to be construed.” The Petition alleges that “[c]laim terms are given their ordinary meaning in light of the

specification and prosecution history.” Pet., 7 (citing 37 C.F.R. § 42.100(b)).

However, in the related district court litigation, Petitioner has proposed the terms “a filtering option, wherein the search engine user’s selection of the filtering option causes an updated Internet search user interface to be generated and provided for display on the personal computing device” (claims 1, 15, and 29) and “descendant webpage[s]” (claims 5, 9, 19, 23, and 33) require express construction. Ex. 2002 [Joint CC Chart], 1–3. In addition, in its invalidity contentions, Petitioner alleges that six different terms from the ’937 Patent are indefinite:

'937 patent:

- “a font representing the text has been altered” / “a font representing the first text or second text has been altered” (claims 3, 17, 31);
- “the text is shown with one or more lines merged with the text” / “the first or second text is shown with one or more lines merged with the text” (claim 3, 17, 31);
- “the text is shown with one or more lines superimposed thereupon” / “the first or second text is shown with one or more lines superimposed thereupon” (claim 3, 17, 31);
- “the text is shown within a shaded area” / “the first or second text is shown within a shaded area” (claim 3, 17, 31);
- “the text is shown with a reversed format” / “the first or second text is shown with a reversed format” (claim 3, 17, 31);
- “wherein the personal computing device is a smartphone with a smaller display screen than a laptop, desktop, or tablet computer's display screen, and wherein the updated Internet search user interface enables the smaller display screen to display an increased number of Internet search results that each reference a webpage containing the first search term element compared with the Internet search user interface prior to the selection of the filtering option, without being scrolled by the search engine user, thereby further speeding the search engine user's operation of Internet search” / “wherein the personal computing device is a smartphone with a smaller display screen than a laptop, desktop, notebook, or tablet computer's display screen, and wherein the first and second updated Internet search user interfaces enable the smaller display screen to display an increased number of Internet search results that each reference a webpage containing the first or second search term elements, respectively, compared with the Internet search user interface prior to the selection of the first or second filtering option, respectively, without being scrolled by the search engine user, thereby further speeding the search engine user's operation of Internet search” (claims 6, 8, 10, 20, 22, 24, 34, 36)

See Ex. 2011 [Petitioner's Invalidity Contentions], 73.

For the “filtering option” limitation of independent claims 1, 15, and 29, Petitioner proposes a construction of “[a]n [option/function] that, when selected by the user, causes the system to display a narrowed set of search results by removing, from the original search results, references to webpages that are missing one or

more terms from the user’s query.” Ex. 2002 [Joint CC Chart], 1. For the “descendant webpage[s]” term in claims 5, 9, 19, 23, and 33, Petitioner proposes a construction of “[a] webpage in the same domain as the referenced webpage and that is reachable by clicking an outbound link on the referenced webpage.” *Id.*, 2. Petitioner has not explained why these terms warrant specific constructions in district court but no construction here—not in the Petition, not in the Bederson Declaration, and not elsewhere in the record. The construed “filtering option” term appears in every challenged independent claim, and Petitioner’s own proposed construction—requiring removal “from the original search results”—is irreconcilable with the new-search, query-refinement operation Petitioner maps from Brinson. *See infra* Section V.A.3. Patent Owner does not adopt Petitioner’s construction. Rather, Patent Owner raises the petition’s lack of particularity as an independent defect. Petitioner proposed a narrowing construction in district court, proposed no construction here, and has never explained how Brinson satisfies the limitation under either position.

The Director has explained that such unexplained inconsistency is an independent basis to deny institution. *See Revvo Techs., Inc. v. Cerebrum Sensor Techs., Inc.*, IPR2025-00632, Paper 20, 3–4 (Director Nov. 3, 2025) (precedential) (“the Board erred when it determined that Petitioner complied with Rule 42.104(b)(3) by proposing Patent Owner’s district court constructions”), Paper 36

(Director Jan. 26, 2026) (denying institution on remand); *see also Ford Motor Company v. AutoConnect Holdings LLC*, IPR2025-01342, Paper 27 (Director May 12, 2026) (informative) (denying institution where the petitioner advanced inconsistent indefiniteness positions). The Director rejected similar inconsistencies in *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00340, Paper 18, 3 (Director Nov. 5, 2025) (informative), holding that a petitioner’s “statement that it cannot raise indefiniteness challenges in an inter partes review is not a sufficient explanation” for taking inconsistent positions—asserting indefiniteness in district court while seeking plain and ordinary meaning before the Board. Accordingly, institution should be denied because the Petition does not comply with Rule 42.104(b)(3).

**V. PETITIONER FAILS TO DEMONSTRATE A REASONABLE
LIKELIHOOD THAT ANY OF THE CHALLENGED CLAIMS ARE
UNPATENTABLE**

Institution may issue only on a showing of “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). The Petition cannot make that showing. Each of the six grounds depends on a showing that the asserted combinations disclose or render obvious both the [1D]/[15E]/[29D] warning limitation and the [1H]/[15I]/[29I] filtering limitation. Petitioner’s combinations—Bates-(Bhagat-)Brinson and Wang-Mills-Brinson—disclose neither feature, individually or in

combination, and Petitioner’s expert testimony cannot supply what the references themselves do not teach. The Petition’s reliance on Dr. Bederson to supply those limitations independently requires denial under 37 C.F.R. § 42.104(b)(4): the Board “shall deny” a petition that rests a claim element on expert testimony rather than on the prior art. *See* Memorandum from Acting Director, USPTO, “Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in *Inter Partes* Reviews,” 1–2 (July 31, 2025) (“Director Memo”) (citing 35 U.S.C. § 312(a)(4)).

This Section develops those failures in four parts. Subpart A shows that no asserted combination discloses or renders obvious the [1D] warning limitation or the [1H] filtering limitation. Subpart B shows that, because the Petition supplies those limitations through Dr. Bederson’s testimony rather than the references, the Petition independently fails under 37 C.F.R. § 42.104(b)(4). Subpart C shows that the proposed combinations independently fail for lack of a motivation to combine and a reasonable expectation of success. Subpart D addresses the remaining grounds and the dependent claims, which fall with the independent claims.

A. None of the Asserted Combinations Discloses or Renders Obvious the [1D] Warning Limitation or the [1H] Filtering Limitation.

Limitation [1D] of claim 1 requires that the Internet search user interface comprise “a first warning to the search engine user that the first webpage is

missing the first search term element,” and that the warning “comprise[] a text representing the first search term element.” Ex. 1001 [’937 Patent], cl. 1. The corresponding limitations of claims 15 and 29 are identical in operative language. *Id.*, cls. 15, 29. Limitation [1D] requires that the warning comprise a text representing the search term element that is missing from the referenced webpage. Read together with limitation [1E]—which requires that the first Internet search result be “organized for display as a first search result grouping comprising a first excerpt for the first webpage, a first Internet link for the first webpage, and the first warning,” *Id.*, cl. 1 ([1E])—the claim requires the missing-term warning text to be part of the individual search result grouping.

Neither the Bates-(Bhagat-)Brinson combinations (Grounds 1A–1C) nor the Wang-Mills-Brinson combination (Grounds 2A–2C) discloses the claimed warning. Bates places a correlation indicator within the search result grouping, but the indicator is a colored bar *that contains no text*, not a “text representing” the missing search term element. Ex. 1010 [Bates] [0033]–[0034]. Bhagat displays strikethrough text only in a suggested alternative-query header presented after a zero-results search, where the strikethrough indicates which terms Bhagat’s system removed from the user’s original query, not that any referenced webpage lacks the removed term. Ex. 1011 [Bhagat], FIG. 2. Wang teaches only backend keyword relaxation (*i.e.*, searches that do not require a result to contain all keywords in the

search query) and discloses no warning, no display element of any kind that signals keyword presence or absence to the user. Ex. 1005 [Wang], Abstract. Lastly, Mills' altered search strings, as depicted with strikethrough in Figure 2, appear as headers labeling each *group of results* with the query that produced that group—not as warnings, within any individual search result grouping, that a referenced webpage is missing the stricken term. Ex. 1006 [Mills], 6:38–46. And Brinson's displayed terms are terms found in each result, presented for query refinement—not warnings that a term is missing. Ex. 1007 [Brinson] [0073]. None of these references, alone or in combination, discloses the [1D] warning.

Petitioner attempts to fill this gap with Dr. Bederson's testimony, arguing that a POSITA would understand how to modify Bates or Mills to supply the missing claim annotation. Subpart B explains why Rule 42.104(b)(4) does not permit that approach. The subsections below explain why, even if it were permissible to supply missing limitations with expert testimony, the references do not disclose the [1D] warning or the [1H] filtering option under the § 314(a) reasonable-likelihood standard.

1. Bates-Brinson and Bates-Bhagat-Brinson (Grounds 1A–1C)

The Bates-based grounds depend on Petitioner's showing that Bates as modified by Brinson, or Bates in combination with Bhagat and Brinson, discloses

or renders obvious [1D]. Petitioner identifies Bates’ “correlation indicator”—a horizontal colored bar—as the “first warning” required by claims [1D] and [1E]. Pet., 39–42; Bederson Decl. ¶¶ 159–161. Bates as disclosed does not place missing-term text within any individual search result grouping. Petitioner’s gray-font variant is a newly designed display supplied by Dr. Bederson, not a display disclosed in Bates, and Bhagat’s strikethrough is a query-level label that does not change that result.

a) Bates’ Correlation Indicator Does Not Comprise a Text Representing the Missing Search-Term Element.

Bates’ correlation indicator is a colored bar with segments. Ex. 1010 [Bates] [0033]. Each segment is associated with one of the user’s keywords. *Id.* When a keyword is present in the referenced webpage, its segment is colored. *Id.* When a keyword is absent, the segment is “left uncolored, or colored according to a background color not associated with any keyword by the color code map.” *Id.* In an alternative embodiment, Bates expressly contemplates that the indicator may simply omit the missing keyword’s segment entirely: “When a particular keyword does not appear in the web page identified by the URL, it is not necessary that the correlation indicator 212 have an uncolored Segment in recognition of the absence of that keyword.” Ex. 1010 [Bates], [0034]. Both embodiments show only the *absence* of color or the absence of a colored segment of the horizontal bar—not the

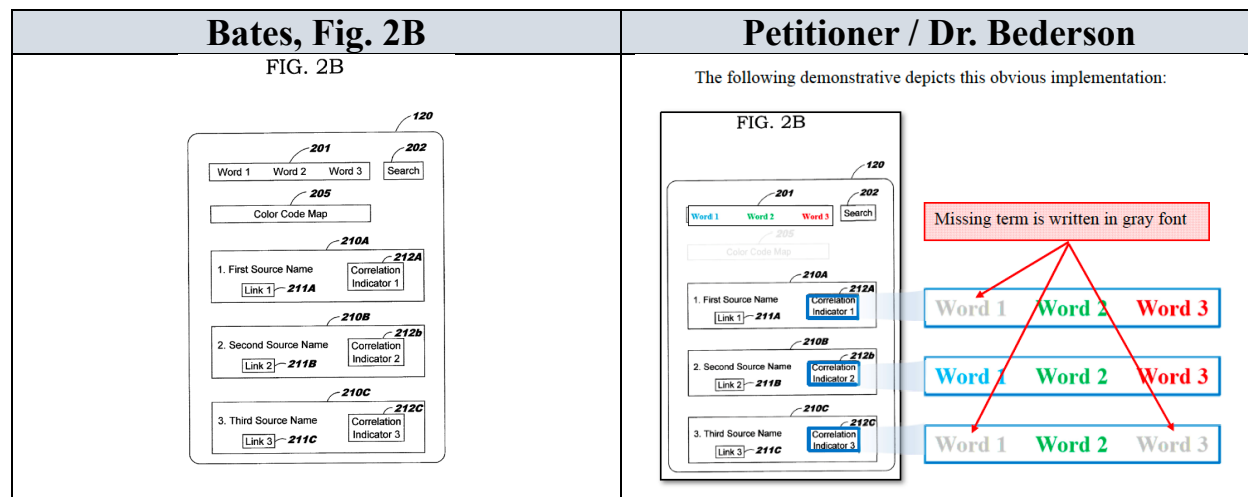
missing keyword's text (the claimed "text representing the first search term element").

Keyword text appears in Bates, but never within the correlation indicator that Petitioner alleges is the claimed warning. Bates discloses two places where the keyword text is rendered: (i) the user's "input line 201," where the searcher types the keywords; and (ii) the "color code map 205," which is a separate legend showing the assigned color for each keyword. Ex. 1010 [Bates], [0027]–[0031]; Fig. 2B. Neither of these two locations is Bates' correlation indicator [212]. Neither of them is part of an individual "search result grouping" as required by the claims. The "color code map 205" is a single legend displayed once on the search page, not with each search result as required by the claims. The input line 201 is the search box, not a search result. Thus, Bates does not disclose missing search term elements that are part of a search result grouping as required by the claims.

Put differently, claim [1D] requires that the warning—which, under Petitioner's mapping, is Bates' correlation indicator [212]—comprise the missing search-term elements. Bates' correlation indicator does not comprise missing search term elements, it comprises colors.

Petitioner's own phrasing confirms Bates lacks this limitation. The Petition characterizes its mapping as "another obvious implementation" of Bates—a phrase that does not describe what Bates itself teaches. *See* Pet., 19; *id.*, 21 n.4. Instead,

the Petition is arguing that it would have been obvious for a POSITA to modify Bates to supply the missing limitation by replacing Bates' colors with search-term text rendered, for example, with the "[m]issing term...written in gray font." Pet., 21–22.



Petitioner's annotated demonstrative (right) modifies Bates Figure 2B (left); it is not Bates' disclosed correlation indicator.

That modification is not disclosed in Bates. Bates discloses a colored-bar correlation indicator. Bates discloses keyword text elsewhere—on the input line and within the color code map (Ex. 1010 [Bates], [0027]–[0033]) but Bates does *not* disclose using the keyword text itself (*i.e.*, the missing search term element) as the correlation indicator within any individual search result grouping.

Moreover, the “implicit color coding” passage on which Petitioner relies (Ex. 1010 [Bates], [0031]) describes *the input line's keywords* being colored according to the code—*not* the inclusion of a missing-term-text indicator placed

inside an individual search result grouping. Petitioner’s modification is supplied through Dr. Bederson, who cites generic user interface design rationales rather than pointing to any teaching in Bates to supply the missing limitation. *See* Bederson Decl. ¶¶ 102–127.

Dr. Bederson’s proposed modification results from reading the claims in hindsight. Petitioner identifies, at most, generic user interface design considerations. *See* Bederson Decl. ¶¶ 102–127. It does not identify a non-hindsight reason grounded in the asserted references to supply the missing warning text from Bates’ color-coded bar and Bhagat’s query-edit header. *See infra*, Subpart C (explaining why those generic rationales operate at the wrong level of generality and do not justify this specific redesign). That is, Petitioner supplies the missing search term element through Dr. Bederson rather than through the disclosure of Bates or Bhagat. Subpart B explains why that supply independently fails under Rule 42.104(b)(4).

b) Bhagat’s Strikethrough Appears in an Alternative-Query Header When the Original Search Returns No Results, Not in an Individual Search Result Grouping.

Bhagat discloses a system for generating suggested queries when a user’s initial query produces few or no results. Ex. 1011 [Bhagat], 1:58–2:4; Title (“Generating Suggested Search Queries”). When the original query yields no results, Bhagat’s system identifies historical queries that match a subset of the

user's terms—that is, queries generated by removing one or more of the user's terms. Ex. 1011 [Bhagat], 6:4–22; Fig. 2. Bhagat then displays each suggested alternative query as a header labeling the corresponding *group of results*, with the term Bhagat's system removed from the user's original query shown in strikethrough form within that header. *See* Ex. 1011 [Bhagat], Fig. 2.

The strikethrough's function in Bhagat is a query-edit label. Ex. 1011 [Bhagat], 8:29-34 (“In [Fig. 2], the search application removes a search term from the user supplied search query ...”). It does *not* appear within any individual search result grouping. And it does *not* convey that any particular referenced webpage within the group lacks the removed term. Bhagat's strikethrough means that Bhagat removed the stricken term from the query used to generate that group of results. It does *not* mean that the stricken term is absent from every result in the group, much less that the term is missing from any particular referenced webpage. Indeed, in many scenarios, terms that are struck through in Bhagat could still be present in some of the returned results, as further explained below. That is, Bhagat's groups are generated by Bhagat's system having dropped the term(s) from the query, not by an examination of the individual referenced webpages.

The distinction matters for limitation [1D]. Limitation [1D] requires a warning comprising a text representing the search term element missing *in the referenced webpage*. Ex. 1001 ['937 Patent], cl. 1. Bhagat's strikethrough does not

say anything about whether the term is missing from any referenced webpage. It indicates only that Bhagat removed the term from the query (*i.e.*, that the term was ignored, rather than assessed with respect to individual references). In other words, Bhagat's (like Mills') strikethrough is for query editing, not what is contained in the referenced webpage. Petitioner's incorrect characterization that Bhagat's strikethrough indicates a search term "is missing" from a referenced result is supplied by Dr. Bederson (Bederson Decl. ¶ 127), not by Bhagat.

c) The Bates-Bhagat-Brinson Combination Does Not Supply the Missing Limitation.

The Bates-Bhagat-Brinson combination does not cure Bates' defect because no asserted reference teaches the claimed "first warning" that "comprises a text representing the first search term element" missing from the referenced webpage. The references merely disclose Bates' per-result colored-bar correlation indicator and Bhagat's strikethrough text in an alternative-query header. Petitioner's combination improperly adds annotated search terms into Bates' indicator location and assigns the search terms the meaning that the referenced webpage lacks the term. But neither Bates nor Bhagat uses struck through search terms to indicate that a specific result lacks the struck through term, and Petitioner identifies no non-hindsight reason to create that interface apart from the challenged claim. *See, e.g.*,

Pet., 18 (stating that “[i]mplementing Bates’s system using either” Bates’ own font-color technique or Bhagat’s stricken-text format “was obvious”).

Bates [0036]’s reference to alternative “visual presentation[s]” of the correlation indicator does not disclose the missing limitation. Ex. 1010 [Bates] [0036]. By its express terms, [0036] is *limited* to presentations that “use[] a color code.” *Id.* (“The correlation indicator 212 may be any visual presentation that uses a color code....”). It does *not* disclose using the search-term text itself as the per-result warning, and it does *not* explain why a POSITA would replace Bates’ color-coded bar with missing-term warning text inside each individual search result grouping. Subpart C addresses why Petitioner’s generic design rationales do not justify that redesign, and Subpart B explains why supplying the additional step through Dr. Bederson’s testimony does not satisfy Rule 42.104(b)(4). Thus, Bates does not teach or suggest using a missing search term element as an annotation that the search term element is missing from “the first webpage.”

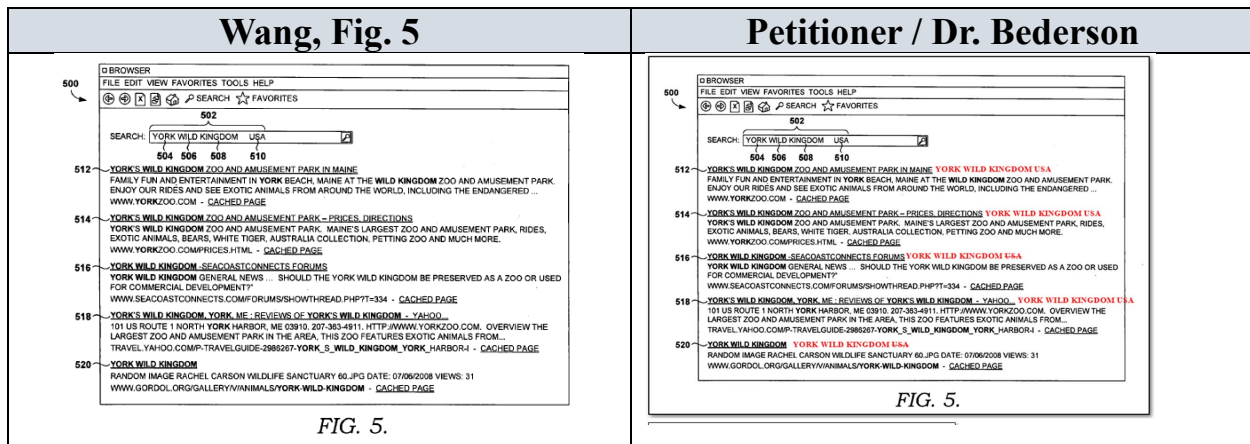
Petitioner’s “Bates-alone” theory fares no better. That theory rests on Bates’s “implicit” color-code embodiment, in which each keyword is rendered in colored font on the input line. Ex. 1010 [Bates], [0031]. But Bates renders that keyword text only in two places: (i) the “input line 201” and (ii) the “color code map 205.” Ex. 1010 [Bates], [0026]–[0031]. Neither is the per-result correlation indicator and neither is part of any individual search result grouping. Bates never renders the

keyword text itself as the relevance indicator within an individual search result, much less in a grayed-out font signifying that the term is missing from the referenced webpage. Supplying that gray-font, missing-term-text indicator therefore requires the same unsupported modification as the Bates-Bhagat theory, and Bates’s express limitation of its indicator to presentations that “use[] a color code” (*id.*, [0036]) forecloses it.

Grounds 1A–1C therefore fail on the merits. The Bates-Brinson and Bates-Bhagat-Brinson combinations do not disclose or render obvious limitation [1D]/[15E]/[29D].

2. Wang-Mills-Brinson (Grounds 2A–2C).

Petitioner alleges that Wang in combination with Mills discloses or renders obvious [1D]. Pet., 89. Petitioner identifies Mills’ “altered search string [163]”—displayed as a header above each result *group*— as the “warning” within each *individual* search result grouping required by claims [1D] and [1E]. Pet., 71–79, 89; Bederson Decl. ¶¶ 275–283, 314. That mapping fails because the altered search string is a group-header query label, not an individual per-result warning comprising a text representing a term missing from the referenced webpage. Wang adds nothing that could supply what Mills lacks.



Petitioner's annotated demonstrative (right) recharacterizes Mills' group-level query label as per-result warnings; it is not a display disclosed by Wang or Mills.

a) Wang Discloses No Warning at All; Mills' Altered Search String Is a Group Header, Not a Warning Within a Search Result Grouping.

Wang's contribution to the proposed combination is a backend keyword-relaxation technique. By "relaxed," Wang is referring to searching that "does not require a document [e.g. a search result] to contain all keywords in the search-engine query to be returned within a results list." Ex. 1005 [Wang], [0031]. When a multi-keyword query yields no results, Wang searches for documents containing a "subset" of the keywords, with selected keywords designated as "non-relaxed." See Ex. 1005 [Wang], Abstract; [0004]-[0005], [0014]–[0016]. Wang teaches that "[o]nly documents containing the subset of keywords is identified for the results list." *Id.* [0014]. Further, Wang is backend because it is directed to how the search is performed, not how the results are displayed. Wang's results display contains no warning and no indication of which keyword is missing from any referenced

webpage. Wang teaches no signal of relevance, no rendering of the missing keywords, and no marking of any kind on individual search results. Thus, Wang does not disclose limitation [1D].

Wang's relaxation logic compounds the problem. Only Wang's system knows which keywords were relaxed in the query. But limitation [1D] is not directed to a system for relaxing keywords in a search query. It is directed to displaying terms "missing in the referenced webpage" to a user. A keyword relaxed in the search query is not, by virtue of being relaxed, necessarily missing from webpages returned by the search query. A relaxed query may return documents that contain the relaxed term (because relaxation is permissive, not exclusive), and the relaxation operation itself does not indicate whether a particular result contains the relaxed term. Knowing which terms the system dropped from a search query is *not* the same as determining which terms are missing from an individual referenced webpage.

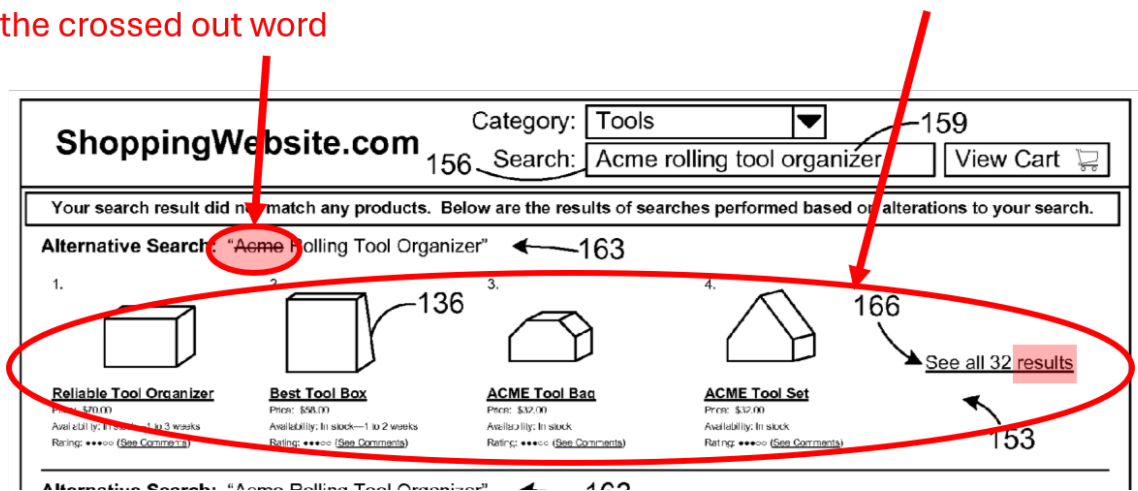
Mills' contribution to the asserted combination is the user-facing display of altered search strings. Mills' specification describes the system as follows. "[T]he search engine 129 generates a plurality of altered versions of the search string 159 that are displayed as altered search strings 163 in the network page 149. That is to say that each altered search string 163 comprises an altered version of the search string 159 originally entered by a user." Ex. 1006 [Mills], 6:38–46. However, each

altered search string is “graphically associated with *a group 153 of items* identified based upon a second query generated from the altered search string 163 itself.” *Id.*, 6:43–46 (emphasis added). The altered search strings are *not part of any individual search result grouping* as required by limitation [1D]; they are headers above *groups of separately presented results*. Mills makes this layout explicit: The network page “shows two or more separate *groups* of items 136 that result from corresponding ones of the second queries,” and each altered search string is “associated with” a “*group of items [136],*” not contained within an individual result as claimed in the ’937 Patent. *Id.*, 4:62–67, 6:43–46. (emphasis added.)

The excerpted and annotated image of Mills Figure 2 below demonstrates these differences:

The crossed out word in Mills indicates that it was not used in the search; not that the results group does not include the crossed out word

The crossed out word in Mills is associated with a group of search results, not a specific webpage



Ex. 1006 [Mills], Fig. 2 (excerpted and annotated).

Claim [1] requires that the warning be part of the individual “search result grouping”—which claim [1E] defines as the unit comprising the excerpt, the Internet link, and the warning. The “search result grouping” in the claims is associated with an *individual* webpage, not a group of search results. Ex. 1001 [’937 Patent], limitation [1E] (“the first Internet search result is organized for display *as a first search result grouping* comprising a first excerpt for the first webpage, a first Internet link for the first webpage, and *the first warning*”) (emphasis added). Mills’ altered search string is *not* part of any individual result presentation; it is a header above all results in the group. Petitioner’s mapping treats Mills’ group header as the [1D] warning for each individual search result, but Mills’ specification places the altered search string outside of any individual result, “graphically associated” with the group [153] as a whole. *Id.*, 6:43–46.

Mills’ own Figure 2 confirms that a struck-through term in the altered-search-string header is not a per-result warning that the term is missing from the referenced webpage. In the first altered-search group, the header “Acme Rolling Tool Organizer” shows “Acme” struck through, yet the results listed within that very group include “ACME Tool Bag” and “ACME Tool Set.” Ex. 1006 [Mills], Fig. 2. The struck term “Acme” thus appears in the titles of results displayed under the header from which it was struck. That is face-of-the-reference proof that the strikethrough signals only that Mills’ system removed the term from the user’s

query to generate the altered search, not that the term is absent from any individual referenced webpage. The altered-search-string strikethrough is a query-edit, group-level label, not the claimed per-result warning comprising a search term missing in the referenced webpage. Thus, Mills does not teach or suggest limitation [1D].

b) The Strikethrough Is Outside the Search Result Grouping.

Limitation [1E] requires that the first search result grouping comprise “a first excerpt for the first webpage, a first Internet link for the first webpage, and the first warning.” Ex. 1001 [’937 Patent], cl. 1. But Mills’ altered search string [163] is not within any individual search result grouping. It is a UI element sitting above the group of results as a whole. *See* Ex. 1006 [Mills], Fig. 2. Even if a POSITA understood the strikethrough on the altered string to convey that Mills’ system removed the stricken term from the user’s original query, that understanding does not make the altered-string header part of any individual search result grouping, and it does not characterize the term as missing in the first individual referenced webpage. Wang adds nothing on this point because Wang teaches no display element at all.

c) The Wang-Mills Combination Does Not Cure the Underlying Defects.

Even if a POSITA combined Wang’s backend search query relaxation with Mills’ display of results for altered search queries, the resulting system would not

include “a first warning to the search engine user that the first webpage is missing the first search term element,” comprising “a text representing the first search term element,” within each individual search result grouping. Ex. 1001 [’937 Patent], limitation [1D]. The resulting system would consist instead of (i) Wang’s backend search results based on a relaxed keyword subset and (ii) Mills’ user interface displaying altered search strings as headers above corresponding result groups. The altered search string would still be a query-level group header. The individual results within each group would still not contain any per-result warning comprising the missing term’s text, nor would those results necessarily be missing the search terms that Mills displays as crossed out. The Petition itself acknowledges the point: in Wang’s Figure 5, “even though ‘USA’ is not displayed in the search-result grouping *it could still be present somewhere in the webpage.*” Pet., 77. (emphasis added.)

The references as disclosed provide, at most, Wang’s backend relaxation and Mills’ altered-search query group-level headers. Although Petitioner repositions Mills’ altered strings as per-result warnings adjacent to each result, that arrangement is not taught or suggested by Wang or Mills. It is supplied by Dr. Bederson. Pet., 78 (citing Bederson Decl. ¶ 292). For example, the Petition asserts that the Wang-Mills-Brinson interface includes annotations “which each include a first warning to the search engine user that those webpages are missing the first

search term element by annotating “USA” in strikethrough form, *e.g.*, treating results 516 and 520 as warned results. Pet., 89 (citing Bederson Decl. ¶ 314). But nothing in Wang or Mills places “USA” (or any other term) within an individual result’s search-result grouping as a warning comprising the missing term’s text, and Mills’ specification places the altered string “graphically associated with a group 153 of items”—not within any individual item. Ex. 1006 [Mills], 6:43–46.

Grounds 2A–2C therefore fail on the merits. The Wang-Mills-Brinson combination does not disclose or render obvious limitation [1D]/[15E]/[29D].

3. Brinson Does Not Disclose the Claimed Filtering Option ([1H]/[15I]/[29I]).

Limitation [1H] requires that the Internet search user interface provide “a filtering option,” and that the search engine user’s selection of that option “cause[] an updated Internet search user interface to be generated” in which “the updated Internet search user interface does not display the first Internet search result”—the result already displayed with a missing-term warning. Ex. 1001 [’937 Patent], cl. 1. Claim 15 recites the same requirement ([15I]). Claim 29 requires a first and a second filtering option, each “in connection with” the corresponding missing search term element ([29I]), and claim 39 requires that the updated interfaces display neither warned result. *Id.*, cls. 15, 29, 39. Every asserted ground maps this limitation to Brinson. Pet., 44–45; *id.*, 92.

Brinson does not disclose that filtering option. Brinson’s selectable terms are terms found in a displayed data product, offered to refine the query: “Further under each term is a list of the most heavily weighted significant terms *found in* that data product. The terms shown under a data product in the list 380 can be selected by the user to refine the present search, adding them to the query either as Required, Increase Decrease or Excluded.” Ex. 1007 [Brinson] [0073] (emphasis added). When a term is marked “Required,” Brinson’s refined search requires returned data products to include that term: “any data product included in the results must include this term.” *Id.* [0045]. Brinson then proceeds through a query-refinement workflow: after selected terms are added to the query, “a new search is ready to be run,” and activating the Go button performs “a new search.” *Id.* [0076]. That workflow matters not because [1H] excludes any implementation involving a subsequent search—Patent Owner takes no such position—but because Brinson does *not* identify a previously warned first result, does *not* tie any selectable option to a missing-term warning, and does *not* disclose an updated interface defined by no longer displaying a warned result.

The Petition’s own framing confirms the gap. The Petition does not contend that Brinson applies the required-term designation to the already-identified results. It instead invokes “[a] known technique for implementing what Brinson describes” that “would have applied the ‘required’-term designation to already-identified

search results (rather than execute an entirely new search).” Pet., 26-27 (citing Bederson Decl. ¶ 138). The Wang-Mills-Brinson ground makes the same hindsight-based move: “a known, beneficial, and obvious way to implement what Brinson describes was to filter already-identified results, without executing another search.” Pet., 92 (citing Bederson Decl. ¶ 319). Subpart B explains why Rule 42.104(b)(4) bars supplying the limitation that way. The point here is narrower: Brinson does not disclose the claimed filtering option whose selection yields an updated interface that “does not display the first Internet search result.” Ex. 1001 [’937 Patent], cls. [1H]/[15I]/[29I].

Petitioner’s own district-court construction contradicts its Brinson mapping. Google proposed that the filtering-option limitation be construed as “[a]n [option/function] that, when selected by the user, causes the system to display a narrowed set of search results by removing, from the original search results, references to webpages that are missing one or more terms from the user’s query.” Ex. 2002 [Joint CC Chart], 1. Brinson’s query refinement removes nothing “from the original search results”; it generates new results from a revised query. Ex. 1007 [Brinson] [0073], [0076]. Under Petitioner’s own construction, Brinson does not disclose limitation [1H]—and the Petition, which proposes no construction, never explains the inconsistency. *See supra* Section IV.A; 37 C.F.R. § 42.104(b)(3). Patent Owner does not adopt Petitioner’s construction here; the point is that the

Petition identifies no Brinson disclosure that satisfies the limitation under any construction—including Petitioner’s own.

The failure is compounded for claims 29 and 39. Those claims require filtering options “in connection with” the specific missing search term elements that the first and second warnings identify, and updated interfaces that do not display the warned results. Ex. 1001 [’937 Patent], cls. 29, 39. Brinson’s selectable terms are not connected to any missing-term warning; they are “significant terms *found in* that data product,” offered to refine the query. Ex. 1007 [Brinson] [0073]. (emphasis added.) A reference whose selectable terms are terms present (i.e., “found in”) the displayed results cannot supply filtering options tied to terms *missing from* them. Petitioner’s claim 29 and 39 mappings make the problem more acute, not less: they require filtering options tied to the very warning text that Petitioner first had to create through Dr. Bederson’s redesign of Bates and Mills.

Because no asserted reference other than Brinson is even alleged to disclose the filtering option, this defect independently defeats every ground as to every challenged claim.

B. The Petition’s Reliance on Dr. Bederson’s Testimony to Supply Limitations [1D] and [1H] Independently Fails Under 37 C.F.R. § 42.104(b)(4).

A petition for *inter partes* review “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37

C.F.R. § 42.104(b)(4). *See also Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990, 1001 (Fed. Cir. 2023) (“The IPR petition, thus, must provide an understandable explanation of the element-by-element specifics of the patentability challenges, including the identification of particular portions of prior art on which the petitioner is relying.”)

On July 31, 2025, the USPTO issued a memorandum reaffirming enforcement of that requirement.¹ The Director Memo states that:

[A] petition for *inter partes* review (IPR) “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” . . . [E]xpert testimony . . . and other evidence that is not “prior art consisting of patents or printed publications” (collectively, “general knowledge”) may not be used to supply a missing claim limitation. . . . Per 35 U.S.C. § 312(a)(4), the Board shall deny an IPR petition that fails to comply with Rule 104(b)(4).

Director Memo, 1-2. Thus, “general knowledge” in the form of expert testimony may not supply claim limitations that are missing from the prior art. Patent Owner does not dispute that expert testimony may support a motivation to combine or the knowledge of a POSITA. The defect here is different: the Petition uses Dr. Bederson as the first source of the claimed [1D] warning and [1H] filtering operation.

¹ The Director Memo applies by its terms to petitions filed on or after September 1, 2025. The Petition here was filed after that date.

As Subpart A demonstrates, none of the asserted combinations discloses limitation [1D]: no cited passage of Bates, Bhagat, Brinson, Wang, or Mills shows a warning, within an individual search result grouping, comprising “a text representing” the missing search term element. The Petition instead attempts to supply that element through the testimony of its expert, Dr. Bederson. For the Bates grounds, the Petition rests its [1D] mapping on Dr. Bederson’s opinion that “the warning for missing terms in Bates-Brinson and Bates-Bhagat-Brinson comprises a text representing the first (missing) search term element in a grayed-out font (Bates-Brinson) or strikethrough format (Bates-Bhagat-Brinson).” Pet., 39 (citing Bederson Decl. ¶¶ 159–160); *see also id.*, 18–25 (citing Bederson Decl. ¶¶ 96, 102–127). For the Wang-Mills-Brinson ground, the Petition rests its [1D] mapping on Dr. Bederson’s opinion that the interface’s annotations “each include a first warning to the search engine user that those webpages are missing the first search term element.” Pet., 89 (citing Bederson Decl. ¶ 314); *see also* Pet., 75–79 (citing Bederson Decl. ¶¶ 275–283, 292). In each instance, the cited expert declaration paragraphs do *not* identify the required disclosure in the references; they supply the missing limitation themselves.

1. The Petition Supplies Its [1H] Filtering Implementation Through Dr. Bederson and Unasserted References.

The same defect defeats the filtering-option mapping. As Subpart A.3

demonstrates, the Petition does not contend that Brinson itself applies its required-term designation to already-identified results. The implementation on which Petitioner’s [1H] mapping depends comes from Dr. Bederson: a “known technique” that “would have applied the ‘required’-term designation to already-identified search results.” Pet., 26 (citing Bederson Decl. ¶ 138). No passage of Brinson is cited for that technique—because Brinson does not disclose it. The Wang-Mills-Brinson ground improperly rests on the same expert testimony. Pet., 92 (citing Bederson Decl. ¶ 319).

2. The Petition Also Deploys Unasserted References Through “Corroboration” Testimony to Supply the Same Missing Element.

The Petition compounds its reliance on Dr. Bederson with prior-art references Petitioner did not assert in any ground. For the filtering operation, the Petition cites Fowler (Ex. 1081) as “corroborat[ing] POSAs’ knowledge of a ‘sifting operation’” that “will exclude results that are missing the term, without running a new search,” and Stonehocker (Ex. 1082) as “similarly corroborat[ing] the known technique of providing an option to exclude results that are missing a required term from already-identified search results.” Pet., 27 (citing Bederson Decl. ¶¶ 139–140). Fowler and Stonehocker are not asserted as § 103 references in any ground. *See* Pet., 4. Petitioner deploys them only through Dr. Bederson’s “corroboration” testimony. Patent Owner does not contend that a petitioner can

never cite background references to show POSITA knowledge or motivation. The problem is that Fowler and Stonehocker are the only cited sources for the alleged post-display sifting implementation on which Petitioner's [1H] mapping depends. In other words, Petitioner relies on Fowler and Stonehocker for claim-mapping, not background context.

The Director Memo's prohibition applies with equal force to that pleading technique. The rule that "[g]eneral knowledge, including expert testimony, may not be used to supply a missing claim limitation," Director Memo, 1, is not limited to expert testimony standing alone. Petitioner cannot evade Rule 42.104(b)(4) by deploying an unasserted reference through an expert's "corroboration" testimony when the asserted references themselves do not disclose the claim element. *See Qualcomm Inc. v. Apple Inc.*, 134 F.4th 1355, 1364–65 (Fed. Cir. 2025). If Petitioner believed Fowler or Stonehocker disclosed the claimed filtering option, the remedy was to assert them as grounds. It did not.

3. Petitioner's Supply-Through-Bederson Approach Is Not Limited to [1D] and [1H].

The same pattern appears elsewhere, although the Board need not reach these additional examples to deny institution. For the operation of the filtering option, the Petition posits that "[i]f claim 1 requires updating in response to a single click, that would have been obvious as a simple, convenient design

option”—supplied by Dr. Bederson citing, among other things, two more unasserted references. Pet., 45 (citing Bederson Decl. ¶¶ 175–182, citing Ex. 1031, Ex. 1068). And for limitation [1E]’s requirement that the first search result grouping comprise “a first excerpt,” the Petition identifies no Bates disclosure and supplies excerpts because “POSAs had reason and would have found it obvious also to include an excerpt for each webpage,” again resting on Dr. Bederson and four more unasserted references. Pet., 41–42 (citing Ex. 1045; Bederson Decl. ¶¶ 162–167, citing Exs. 1012, 1030, 1055). Each element of each claim must be found “in the prior art patents or printed publications relied upon,” not in expert testimony corroborated by art Petitioner declined to assert. 37 C.F.R. § 42.104(b)(4); Director Memo, 1–2.

That is precisely what Rule 42.104(b)(4) forbids. Because the Petition identifies no passage of the asserted references that discloses the [1D] warning or the [1H] filtering option, and instead relies on Dr. Bederson’s general knowledge—corroborated only by unasserted references—to supply them, the Petition fails to “specify where each element of the claim is found in the prior art,” and the Board “shall deny” institution under 35 U.S.C. § 312(a)(4). 37 C.F.R. § 42.104(b)(4); Director Memo, 1–2. This threshold defect is independent of the likelihood of success on the merits and supports denial before the Board reaches the Petition’s merits showing under § 314(a).

C. The Asserted Combinations Also Fail Because Petitioner Has Not Shown That a Person of Ordinary Skill Would Have Combined the References With a Reasonable Expectation of Success.

Even setting aside the limitation-mapping failures developed above, the Petition fails on motivation-to-combine and reasonable-expectation-of-success grounds. Petitioner has not articulated a record-supported reason a POSITA would have combined the references in the manner proposed, nor identified the evidence required to support that reason. “A determination of obviousness cannot be reached where the record lacks ‘explanation as to how or why the references would be combined to produce the claimed invention.’” *Hyundai Motor Co. v. Blitzsafe Texas, LLC*, IPR2016-01476, Paper 12, 33 (PTAB Jan. 24, 2017) (*citing* *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016)).

1. The Asserted References Address Different User-Interface Problems and Provide No Suggestion to Annotate Individual Results with Missing Terms or to Filter Them.

Each of Bates, Brinson, Bhagat, Wang, and Mills addresses a different user-interface problem and provides no reason a POSITA would have arrived at the claimed per-result missing-term warning or the claimed filtering option.

For example, Bhagat addresses how to suggest alternative queries when a user’s initial query yields few or no results. Ex. 1011 [Bhagat], 1:58–2:4; *id.*, Title. Bhagat’s strikethrough is a UI element showing that Bhagat created a new search

term. *Id.*, 8:16–34. Wang addresses a backend search problem of how to identify documents that match a subset of the user’s keywords when no documents match all of them. Ex. 1005 [Wang], Abstract; [0004]–[0005], [0014]–[0015]. Wang’s invention sits at the inverted-index layer; it teaches no user-interface technique, no annotation, and no per-page signal of keyword absence. Mills addresses a third problem of how to present alternative queries and corresponding groups of items to a user whose original search string yielded no results. Ex. 1006 [Mills], 1:6–10; 6:38–46. Mills’ altered-search-string display is a group-header label identifying which alternative query produced the corresponding result group. *Id.* Bates is the only reference that is even arguably directed to per-result annotation. And yet, as developed in Subpart A, Bates teaches a colored-bar correlation indicator that does *not* comprise missing search-term text. A POSITA modifying Bates to produce the [1D] warning would have to redesign the indicator in a manner Bates does not teach. *See Shopkick Inc. v. Novitaz, Inc.*, IPR2015-00279, Paper 7, 29–30 (PTAB May 29, 2015).

Brinson likewise solves a different problem: query refinement. Brinson lets a user adjust the weight of terms “*found in*” the results—Required, Increase, Decrease, or Excluded—to revise the search itself. Ex. 1007 [Brinson] [0045], [0073]. Nothing in Brinson is directed to filtering tied to a *missing*-term warning. And the Petition’s asserted benefit for that operation—that it “would have

beneficially avoided the need to re-run an entire search”—appears nowhere in Brinson; it is Dr. Bederson’s rationale. Pet., 27 (citing Bederson Decl. ¶ 138). A motivation sourced in the expert rather than the art cannot carry the combination. *See Hyundai Motor Co.*, IPR2016-01476, Paper 12, 33.

2. Petitioner’s Combinations Are Not Supported by a Sufficient Reason to Modify the References as Required.

Bates expressly characterizes its correlation indicator as a “visual presentation that *uses a color code* to convey the presence or absence . . . of keywords in a web page.” Ex. 1010 [Bates] [0036]. (Emphasis added.) That color-code framing undercuts Petitioner’s rationale for substituting Bhagat’s non-color-code strikethrough text format for Bates’ indicator. The Petition needed to explain why a POSITA reading Bates would have abandoned or materially altered Bates’ color-coded mechanism to create a textual missing-term annotation within the search result grouping. The Petition does not.

Rather, the Petition offers generic design rationales—that text reduces users’ mental-processing load, aids colorblind users, suits black-and-white displays, and is a “simple substitution” of one known element for another. Pet., 19–25; Bederson Decl. ¶¶ 101–127. It adds that Bates and Bhagat address the same problem, “how to provide users with helpful information regarding their searches,” Pet., 28 (citing Bederson Decl. ¶ 142), and that Bhagat’s strikethrough is “another alternative

technique” available to a POSITA implementing Bates, Pet., 18 (citing Bederson Decl. ¶ 96). Those rationales operate at the wrong level of generality. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), permits combining references that perform their actual disclosed functions in a predictable way. It does not authorize importing Bhagat’s strikethrough out of its actual disclosed context (the suggested-query header presented after a zero-results search) into a different context (a per-result indicator placed in each individual search result grouping) where Bhagat does not place it. The two interfaces are doing *different things on different display elements*. Petitioner’s same-general-goal framing erases that distinction without identifying any reference-grounded reason a POSITA would have made the relocation.

The Wang-Mills-Brinson grounds fare no better. For the warning limitation, the Petition asserts that, “[g]iven Mills, POSAs had reason to modify Wang’s interface to annotate each search result with the user’s keywords and to identify the keyword(s) (if any) missing in each corresponding webpage”—by “crossing out keyword(s) missing in the associated webpage.” Pet., 75, 78 (citing Bederson Decl. ¶¶ 275, 283). But that rationale presupposes the very capability the references lack. The Petition itself concedes that, in Wang’s Figure 5, “it is unclear whether any result’s webpage also includes ‘USA’ because even though ‘USA’ is not displayed in the search-result grouping it could still be present somewhere in the webpage.”

Pet., 77. Neither reference resolves that uncertainty: Wang’s relaxation operates on the query and Mills’ altered search strings label each group of results with the altered query that produced the group, information Mills derives from the query itself, not from inspecting any webpage. Ex. 1005 [Wang], Abstract, [0014]; Ex. 1006 [Mills], 6:43–46, 7:25–31. As Subpart A develops, “removed from the query” and “missing from the referenced webpage” are not the same data, and a relaxed query may return documents that contain the relaxed term. The Petition supplies the missing capability—and the per-result placement that Mills’ Figure 2 group header does not show—through Dr. Bederson and background examples asserted in no ground. Pet., 78 (citing Bederson Decl. ¶¶ 284–292).

The Wang-Mills combination depends on three independent transformations:

- (i) importing Mills’ altered-search-string display into Wang’s relaxation backend;
- (ii) treating Mills’ altered-string display in a strikethrough form that, on Mills Figure 2’s depiction, sits in a group header rather than in a per-result grouping; and
- (iii) relocating or recharacterizing that altered-string display as a per-result annotation indicating that each individual referenced webpage lacks the stricken term. The only support the Petition identifies for these transformations is Dr. Bederson’s testimony and unasserted background examples—not Wang, not Mills, and not any reference asserted in the grounds. Pet., 78 (citing Bederson Decl. ¶¶ 284–292); *supra* Subpart B.

Brinson does not alter this analysis. Petitioner adds Brinson to every ground for the filtering option, not the warning, and the asserted reason for implementing Brinson's required-term designation on already-identified results is Dr. Bederson's, not Brinson's. *Supra* Sections V.A.3, V.C.1.

3. Petitioner's Reasonable-Expectation-of-Success Showing Is Conclusory.

Even where the Petition uses the language of reasonable expectation of success, it does so without record-grounded analysis tied to the specific claimed outcome. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017). Petitioner's reasonable-expectation-of-success showing, at most, addresses the mechanical feasibility of changing a search-results interface. Pet., 28 (citing Bederson Decl. ¶ 142); *id.*, 79 (citing Bederson Decl. ¶ 293). It does not explain why a POSITA, modifying Bates or combining Wang with Mills, would have expected the modification to produce the claimed warning, within an individual search result grouping, comprising a text representing a search term missing from the referenced webpage. Nor does the Petition explain why a POSITA would have expected the asserted references to produce the claimed warning-and-filtering workflow (*i.e.*, warning the user that a specific referenced webpage is missing a specific search term, and then providing a filtering option whose selection results in an updated interface that no longer displays that warned result). Mechanical

feasibility is not the same as a reasonable expectation of success for the claimed result. In other words, the Petition's reasonable expectation of success showing addresses only whether a programmer could alter a display, not whether the result would have the claimed result, *i.e.*, a per-result warning comprising a term determined missing from the referenced webpage. The proposed modification succeeds at the wrong task.

4. Petitioner's Combination Theories Result from Reading the Claims in Hindsight.

Petitioner's combination theories use the challenged claim as a roadmap rather than identifying a contemporaneous reason a POSITA would have made the combination. *See InTouch Techs., Inc. v. VGO Comm'ns, Inc.*, 751 F.3d 1327 (Fed. Cir. 2014). The asserted reason to combine Bates with Bhagat is that a POSITA “would have used the text of the search terms as correlation indicators, with missing terms formatted with a strikethrough”—the very [1D] feature. Pet., 22. The asserted reason to combine Wang with Mills is that doing so would produce a warning in each result grouping comprising the missing term's text. And the asserted reason to add Brinson is that applying its “required”-term designation to already-identified results would yield updated results pages no longer displaying warned results—the very [1H] feature. Pet., 26–27. In each case, the reason offered

is that the combination would yield the claimed feature. This is the definition of hindsight reconstruction.

D. Grounds 1B–1C and 2B–2C Add Secondary References for Dependent-Claim Features and Fail to Cure the Independent-Claim Failures.

Grounds 1B–1C and 2B–2C challenge only dependent claims. Each ground adds Mehta (Grounds 1B and 2B, for the advertisement, warning-format, and adjacency features of claims 2–8, 13–14, 16–22, 27–28, and 30–38) or Mehta and Naick (Grounds 1C and 2C, for the descendant-webpage features of claims 9–12 and 23–26) to the corresponding independent-claim ground. Pet., 54–69, 98–108. Petitioner adds each secondary reference for a discrete dependent-claim feature, but does not contend that Mehta or Naick cures the [1D] or [1H] failures. *See* Pet., 4, 54–69, 98–108. Grounds 1B–1C and 2B–2C therefore fail for the same reasons Grounds 1A and 2A fail. Patent Owner does not concede Petitioner’s dependent-claim mappings—including the Naick theory for the descendant-webpage claims, which rests on Dr. Bederson’s “linked directly one level” reasoning rather than on any disclosure of Naick—and will address them if trial is instituted. *See In re Fine*, 837 F.2d at 1076.

VI. OBJECTIVE INDICIA CONFIRM THE CHALLENGED CLAIMS OF THE '937 PATENT ARE NOT OBVIOUS

The Board need not reach objective evidence to deny institution, the Petition fails for the independent reasons set forth above. Objective evidence nevertheless corroborates nonobviousness. The '937 Patent demonstrates objective indicia of non-obviousness, including long-felt need and commercial success. Before the first application in the '937 Patent family was filed on June 17, 2011, when a user ran a query on search engines like Google, the search engine often returned vast numbers of search results, many of which were irrelevant or lacked one or more of the search terms requested by the user. Ex. 1001 ['937 Patent], 1:60-65. This often left users confused as to which search results were actually relevant and forced the user to waste considerable time reviewing search results that do not contain required search terms. *Id.* Thus, there was a long-felt need for users to be able to quickly and efficiently determine which search results were actually relevant.

To address this long-felt need, inventor Robert Osann Jr. invented user-interface functionality that warns users, within individual search result groupings, when referenced webpages are missing search terms, and that provides filtering options that yield updated interfaces no longer displaying the warned results. This innovation resulted in the applications that issued as the '937 Patent and its

relatives. The claims of the '937 Patent are directed to providing these search result annotations and the related filtering option.

The claimed search result annotations have proved highly successful. By December 2012, Google was using the same sort of annotations for at least some search results by showing missing terms crossed out. Google has continued using the claimed invention through the present. Competitors such as Microsoft Bing also use similar search result annotations in their search results. Accordingly, the claimed search result annotations have demonstrated broad commercial success through their continuous use in leading search engines like Google and Bing.

The objective indicia identified herein are based largely on publicly-available information. As discussed in Patent Owner's discretionary denial brief, Patent Owner expects discovery will identify further information regarding objective indicia, including the long felt need for, and commercial success of, the claimed invention. For example, discovery will be required into the proprietary bases for decisions by Microsoft, Google, and possibly others to copy the claimed inventions. That will include more specific financial analyses and assessments of user impact—none of which are publicly available.

These objective indicia corroborate nonobviousness and reinforce the failures of proof described above. Because every ground in the Petition is based on obviousness, the Petition must be denied.

1. Legal Standard

“The objective indicia analysis is . . . a fundamental part of the overall § 103 inquiry.” *Liqwd, Inc. v. L’Oreal USA, Inc.*, 941 F.3d 1133, 1137 (Fed. Cir. 2019) (citation omitted). It is an essential safeguard that protects against hindsight bias. *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Pat. Litig.*, 676 F.3d 1063, 1079 (Fed. Cir. 2012). In fact, objective indicia “may often be the most probative and cogent evidence of nonobviousness.” *Advanced Display Sys. v. Kent State Univ.*, 212 F.3d 1272, 1285 (Fed. Cir. 2000) (citation omitted).

Evidence showing objective indicia of nonobviousness constitutes “independent evidence of nonobviousness” and “must always be considered en route to a determination of obviousness.” *Intri-Plex Techs., Inc. v. Saint-Gobain Performance Plastics Rencol Ltd.*, IPR2014–00309, Paper 83, 35 (PTAB Mar. 23, 2014) (citation omitted). “Such evidence can establish that ‘an invention appearing to have been obvious in light of the prior art was not.’” *Id.* (citation omitted). Consequently, a trial court should not “defer examination of the objective considerations until after the fact finder makes an obviousness finding.” *In re Cyclobenzaprine*, 676 F.3d 1063, 1075–76 (Fed. Cir. 2012) (citation omitted). “Instead, fact finders must withhold judgment on an obviousness challenge until it considers all relevant evidence, including that relating to the objective considerations.” *Id.*, 1079.

To be accorded substantial weight, objective indicia evidence must have a “nexus” or “legally and factually sufficient connection” to the commercial product. *See, e.g., Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). A presumption of nexus is established “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33, 32 (PTAB Jan. 24, 2020) (precedential) (*citing Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019)). “However, even absent a presumption of nexus, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the direct result of the unique characteristics of the claimed invention.” *Volvo Penta of the Ams., LLC v. Brunswick Corp.*, 81 F.4th 1202, 1210 (Fed. Cir. 2023) (internal quotations omitted).

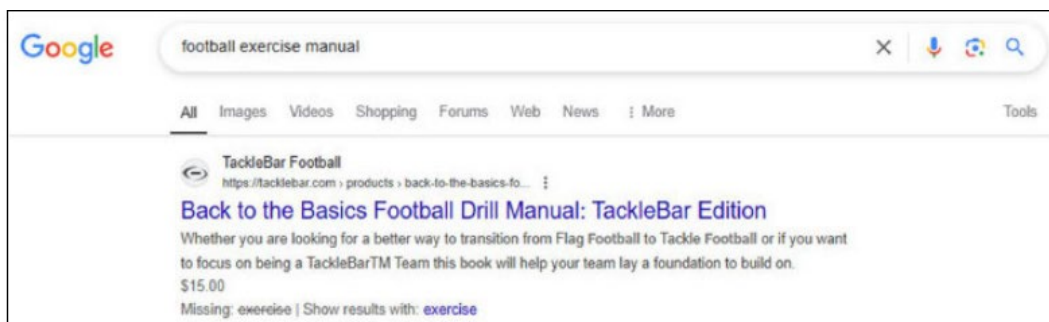
Objective indicia can include, for example, commercial success, industry praise, long felt but unsolved needs, failure of others and unexpected results. *See, e.g., Graham v. John Deere Co.*, 383 U.S. 1, 17 (1965). Moreover, “the success of an infringing product is considered to be evidence of the commercial success of the claimed invention.” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000). At least long felt need and commercial success

are present here for the claimed invention and demonstrate that the challenged claims are not obvious.

2. A Nexus Exists Between the Objective Indicia and Google's Search Engine

The objective evidence discussed below is tied to Google's (and Microsoft's) search engine's adoption and continued use of the missing-term annotation feature that embodies the core limitation of the challenged claims.

Google's search engine uses the claimed annotations because it annotates search results to show which terms are missing by including the term "Missing:" followed by the missing term crossed out:



The screenshot above shows Google Search results for the query "football exercise manual," annotating the result "Missing:~~exercise~~ / Show results with: exercise." The claims are directed to annotating search results with warnings to show missing search terms, and Google's search engine performs precisely that annotation. That feature-level correspondence establishes the requisite nexus between the objective evidence and the specific claimed feature, independent of

any presumption. The claim chart at Ex. 2026 demonstrates that Google’s search engine embodies the claimed invention of the ’937 Patent.

The “Missing:” line is the claimed warning—a text representing the missing search term element ([1D])—and the “Show results with:” hyperlink is the claimed filtering option ([1H]): the search engine user’s selection of it causes an updated Internet search user interface that no longer displays the warned result. *See* Ex. 2025, 35–37 ([15.9]–[15.10]). The relevant evidence concerns the user-facing missing-term warning and filtering functionality itself—the same characteristics recited in [1D]/[15E]/[29D] and [1H]/[15I]/[29I].

A nexus exists because Patent Owner’s evidence of secondary considerations is a “direct result of the unique characteristics of the claimed invention.” *Volvo Penta*, 81 F.4th at 1210. As discussed below, the claimed features were implemented in Google’s search engine in 2012 or 2013 and have consistently been present since. The persistence of the feature in Google’s interface supports an inference of practical value and commercial success, particularly given Google’s public emphasis on a simple, streamlined interface.

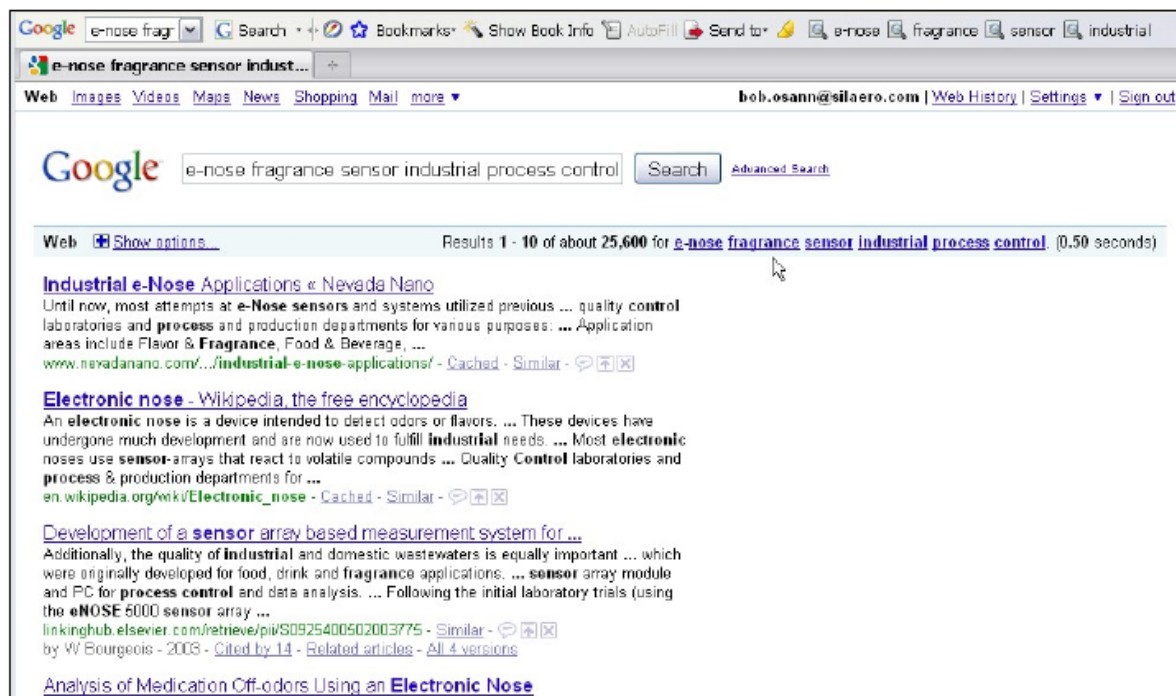
Google’s public filings reflect the commercial importance of the claimed invention. “Advertising is [Google’s] principal source of revenue.” Ex. 2017 [Google S-1], 33. Google’s S-1 identifies “the relevance, objectivity and quality of [its] search results,” as well as “the number of searches initiated” at Google

websites, as factors that influence the success of its advertising programs. Ex. 2017 [Google S-1], 57. The claimed search engine annotation functionality makes search results more relevant and higher quality by reducing the time users have to spend looking for relevant results. Google itself recognizes the commercial importance of search-result quality, and the claimed annotation is directed to improving a user's ability to evaluate search-result relevance by identifying missing query terms.

To this day, advertising from Google's Internet search page continues to be the central source of revenue for Google. Ex. 2018 [How our business works] ("Advertising is what makes it possible to offer our products to everyone. ... we make the vast majority of our money from advertising."). Thus, a nexus exists between the objective evidence and the claimed features of the '937 Patent.

3. There Was a Long-Felt Need for the Claimed Internet Search Result Annotations

Before the June 11, 2011 priority date, the primary method of conducting searches across the Internet was through the use of Internet search webpages, including Google, Bing, Yahoo and DuckDuckGo. Ex. 2016 [Osann Decl.], ¶11. An example Google search run on September 16, 2009 is shown below:



Ex. 2016 [Osann Decl.], ¶ 12.

Many of the searches conducted by these search webpages returned resulting linked webpages that lacked one or more of the search terms entered by the user.

Ex. 2016 [Osann Decl.], ¶¶ 14-16. These inaccurate results made searching a less productive, frustrating, and time-consuming task. *Id.* And no Internet search results webpages in or before 2011 indicated whether each returned search result was missing a particular search term the user had entered in a specific query. Ex. 2016 [Osann Decl.], ¶¶ 22.

During this timeframe, many Internet users raised this issue, complaining about search results on www.google.com not including key search term elements.:

GOOGLE, SEARCH STRATEGIES
DEAR GOOGLE, STOP MESSING WITH MY SEARCH
NOVEMBER 8, 2011 | KAREN BLAKEMAN | 11 COMMENTS

I have been complaining for several months that Google does not always "AND" your search terms and delivers results that do not contain all of your terms, or their synonyms, in the page itself or in links to the page. There was a time when you could force Google to deliver exactly what you wanted by prefixing your

See, e.g., Ex. 2019 [Karen Blakeman Blog], 1.

 **overgoogle**
NOVEMBER 9, 2011 AT 2:04 AM

I have been saying the exact same thing for months now – I think they're just interested in sending you to pages featuring google ads

Id., 3.

 ★ **Karen Blakeman**
NOVEMBER 9, 2011 AT 7:51 AM

Hi to you both and thanks for the comments and feedback.

This has been going on for 6-8 months and from the feedback I've had at conferences and via Twitter it is really beginning to annoy people. I could understand Google doing it for searches that return zero results but it seems to be doing it for most searches now (I have started checking random entries in my results pages). And there is no longer any way someone conducting scientific or business research can force Google to look for all of the terms.

Id.

 **Wilf Staton**
JANUARY 22, 2012 AT 1:01 AM

Yes I am also getting very frustrated with google ignoring what I want. It didn't realize but it also appears to be ignoring [exact match] now. When I do one it returns the same result as a broad match.

Id., 4.

The challenge when searching online is to find only relevant information or - in other words - avoid irrelevant results on Google search. In this article I will show you 6

Ex. 2020 [www.makeuseof.com].

No kidding. I experience anxiety and confusion every day when searching for information, much more so when I'm using Google. The signal-to-noise ratio is much, much worse, as content chop-shops flood Google with repetitive dross. And while older databases are tightly controlled by genres of publication, Google lumps everything in the world together, requiring searchers to be more instinctually discerning:

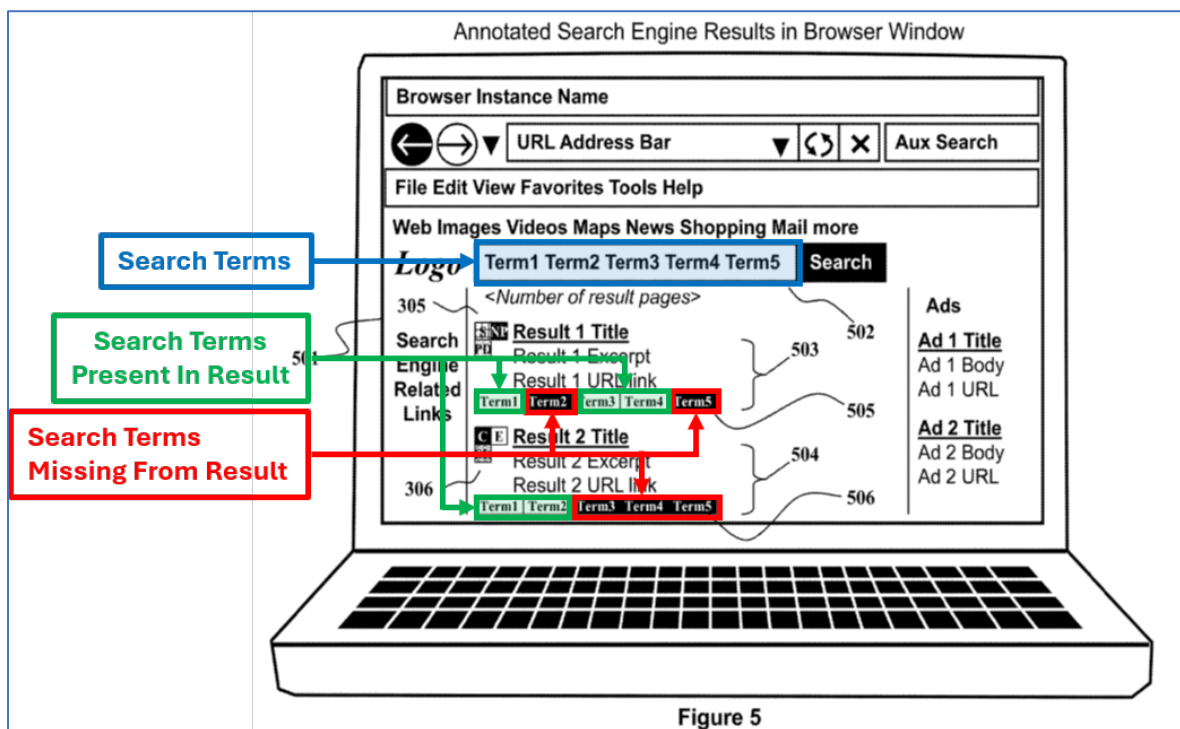
Ex. 2021 [www.chicagomag.com]. *See also* Ex. 2016 [Osann Decl.], ¶ 15 (“I frequently found that critical keywords from my searches were missing on some webpages referenced by the returned search results webpage.”); *see generally id.*, ¶¶ 14-16. Thus, there was a long-felt need for Internet search results to convey which results were relevant to the user without the user having to dig through voluminous irrelevant results.

4. The '937 Patent Solved the Long-Felt Need by Annotating Search Results to Show Which Search Terms Are Missing

The '937 Patent (and its relatives) solved this long-felt need by claiming and disclosing annotations of missing terms in internet search results. Ex. 1001 ['937 Patent], Title, Abstract, cl. 1. *See generally supra* Section II. Inventor Robert Osann, Jr. found he could improve the user-facing portion of Internet search webpages, the graphical user interface (or GUI) by adding limited, specific components to those interfaces. Ex. 2016 [Osann Decl.], ¶ 23. The goal was to provide a means for the user to review all relevant returned content but to do so in

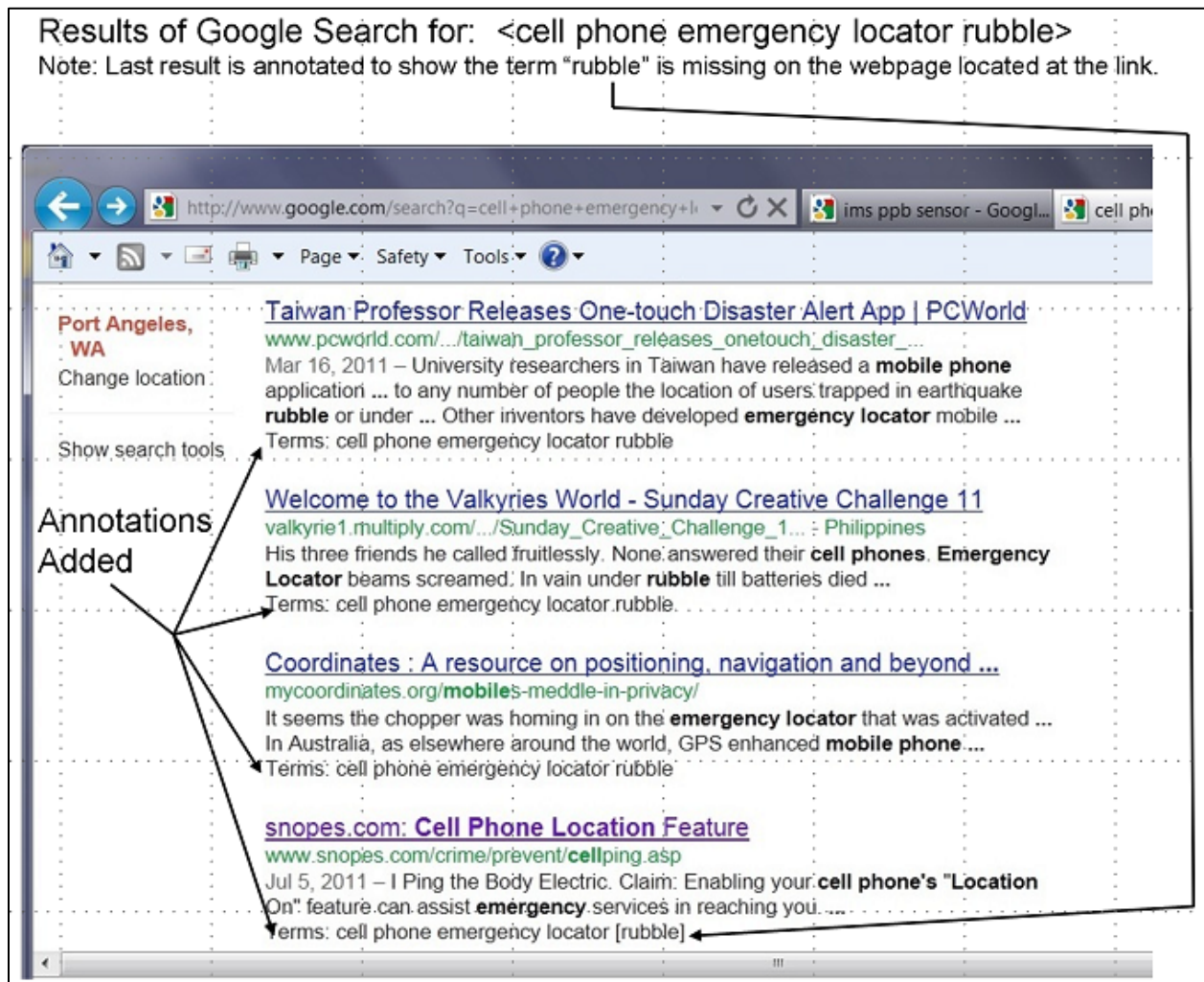
a quick and efficient manner. *Id.*, ¶ 28. Thus, Mr. Osann designed an interface that “would allow the user to determine whether each of the returned search results included or excluded one or more of the keywords from the user’s initial search request ... by annotating each of the search results in real time.” Ex. 2016 [Osann Decl.], ¶ 30 (citing ’959 patent, 5:7-36).

Figure 5 of the ’937 Patent illustrates one embodiment of these annotations. As shown below, after the user enters search terms 1 through 5 in search input bar 502 and clicks search, the search engine returns result groupings 503 and 504. Ex. 1001 [’937 Patent], 10:27-30. Each of result groupings 503 and 504 contains each search term highlighted to indicate whether it is present in the result or not. *Id.*, 10:6-14:



Ex. 1001 ['937 Patent], Fig. 5.

On June 17, 2011, Mr. Osann filed patent application no. 13/163,614 to protect his invention. The '614 Application is the original application in a series of eight continuation applications that resulted in the '937 Patent. In or around November 2011, Mr. Osann developed an operating prototype demonstrating the annotating functionality of his invention. Ex. 2016 [Osann Decl.], ¶ 33. A screenshot of an annotated search results screen using Mr. Osann's prototype is shown below:



Id. As shown in the screenshot, each result has annotations that show which terms are present in the result (the words following the “Terms:” annotation) and which terms are missing (terms in brackets []—in this case, [rubble]).

Accordingly, the '937 Patent's annotated search engine results solved the long-felt need to convey which results were relevant to the user without the user having to dig through voluminous irrelevant results.

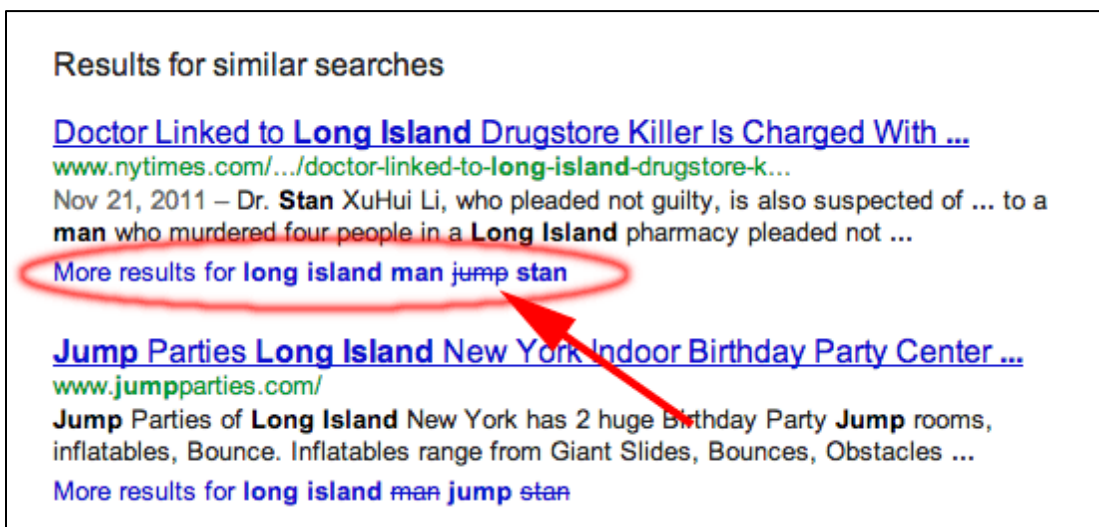
5. The Claimed Annotation of Internet Search Results Has Been Highly Commercially Successful.

The claimed invention was quickly adopted by leading search engines.

Google and others have implemented the claimed invention and retained it for over a decade.

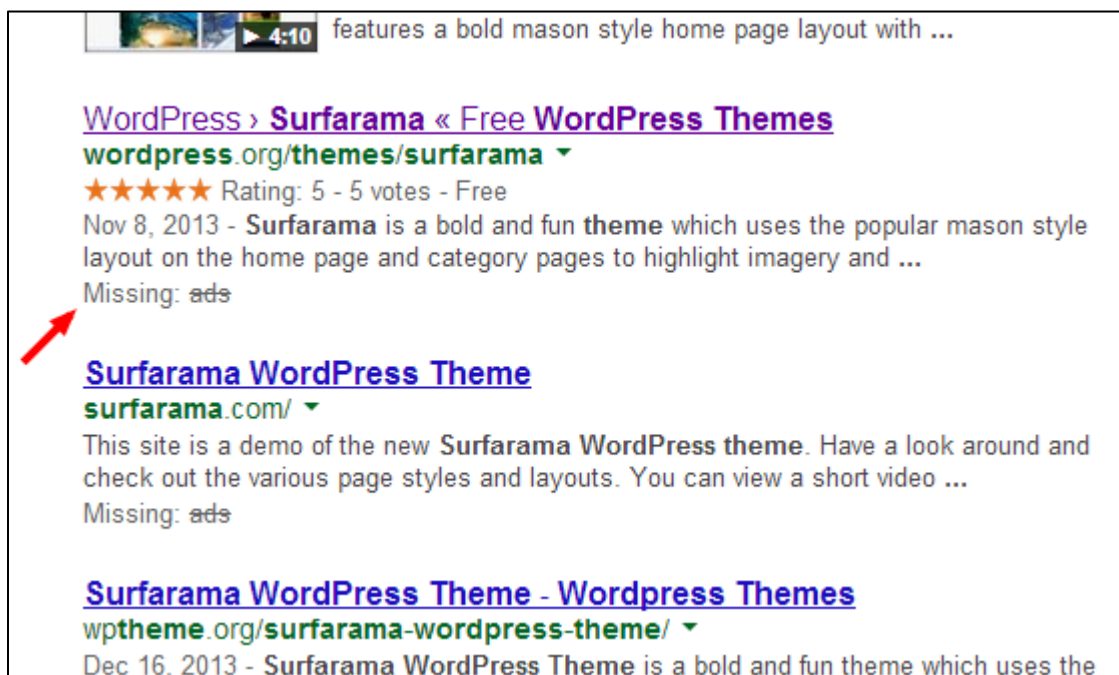
Google's search engine has had tremendous commercial success. Google has been the leading search engine in the world since the first application in the family was filed on June 17, 2011, with roughly a 90% market share since at least 2012. Ex. 2022 [Statcounter], 2. Google's search engine has maintained this dominant market share while featuring missing search term annotations in its search results.

Google was one of the first search engines to include missing search term annotations. At least by December 12, 2012, Google had begun returning results for similar searches that displayed search terms missing from a result crossed out:



Ex. 2023 [Search Engine Roundtable]. The above image shows search results returned when the user searched for “long island man jump stan,” and the circled result shows that “jump” is shown crossed out because it is missing from the first webpage result. *Id.*

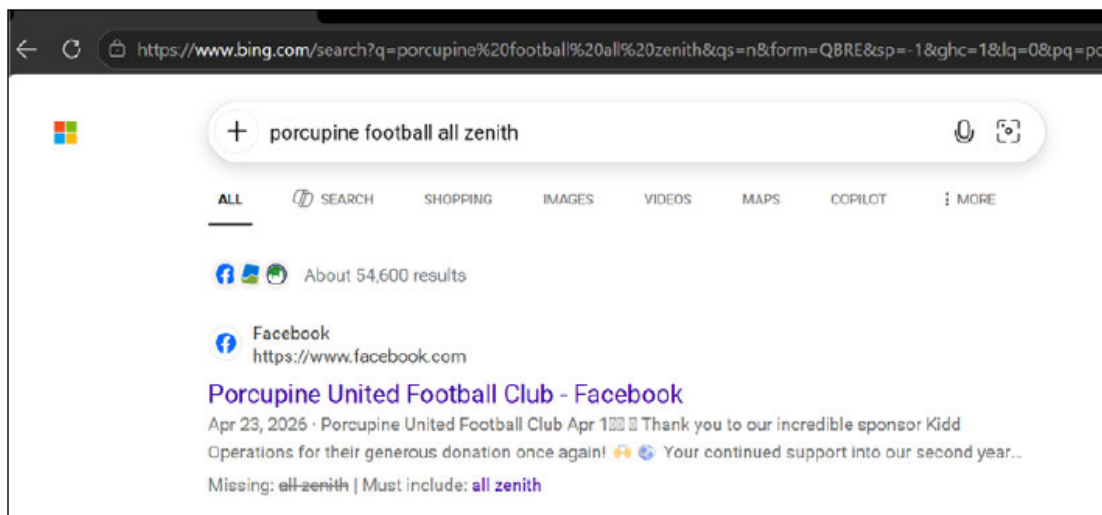
On information and belief, Google withdrew this functionality shortly afterwards, before it reappeared in a slightly different format in or around December 2013. As seen in the screenshot from December 2013, Google search results included the text “Missing:” followed by the missing search term crossed out:



Ex. 2024 [www.aaronrobb.ca] (“This looks like it just popped up today, but in Google’s search results, there is now a line under what looks like the first two or

three results that says ‘missing:’ and shows what search term you had that these sites didn’t show.”).

Other search engines followed suit after Google. One example was Microsoft’s Bing search engine. It deployed a similar function by at least in or around the year 2020:



The implementation and retention of these features by leading search engines demonstrate the commercial success of the patented technology. Search engine designers are selective about what content and information they disclose on search results pages. And Google has maintained these annotations since at least 2013 because they improve the functionality of Google’s Internet search results page.

That Google has retained the claimed annotation for over a decade is especially probative in light of how Google itself describes the design of its search

interface. Google publicly represents that its “homepage interface is clear and simple,” that it designs each feature to “ultimately serve [the user], rather than [Google’s] own internal goal or bottom line,” and that it improves performance by “shaving excess bits and bytes from [its] pages.” Ex. 2027 [Google, “Ten Things We Know to Be True”]. A company that so deliberately pares its results page—and whose stated goal is “to have people leave [its] website as quickly as possible,” *id.*—does not devote that scarce interface space to a feature unless it is valuable. Yet the missing-term annotation has appeared on Google’s results pages since 2012, survived Google’s December 2013 redesign, and remains in use today. *See* Exs. 2023, 2024, 2026. The feature’s persistence through Google’s repeated streamlining is objective evidence that the claimed annotation is important to the market-leading search engine, which reinforces both the nexus and the commercial success of the claimed invention.

Moreover, the claimed invention contributes to the commercial success of Google’s advertising business. “Advertising is [Google’s] principal source of revenue.” Ex. 2017 [Google S-1], 33. Public filings bear this out. For example, Google’s parent company, Alphabet Inc., reported \$116 billion in advertising revenue for 2018 out of nearly \$137 billion in total revenue, meaning advertising accounted for approximately 85% of 2018 revenues:

	Year Ended December 31,		
	2016	2017	2018
Google segment			
Google properties revenues	\$ 63,785	\$ 77,788	\$ 96,336
Google Network Members' properties revenues	15,598	17,587	19,982
Google advertising revenues	79,383	95,375	116,318
Google other revenues	10,601	15,003	19,906
Google segment revenues	\$ 89,984	\$110,378	\$136,224
Other Bets			
Other Bets revenues	\$ 288	\$ 477	\$ 595
Revenues	\$ 90,272	\$110,855	\$136,819

Ex. 2025 [2018 Alphabet 10k], 29. 2016 and 2017 reported similar revenue splits.

Id. Thus, advertising is by far the largest source of revenue for Google.

“[F]actors that influence the success of [Google’s] advertising programs include [] the relevance, objectivity and quality of our search results” as well as “the number of searches initiated” at Google websites. Ex. 2017 [Google S-1], 57. The claimed search engine annotation functionality makes search results more relevant and higher quality by reducing the time users have to spend looking for relevant results. Ex. 2016 [Osann Decl.], ¶¶35-39. This in turn leads to more users using Google for searches and more searches initiated on Google websites, which in turn leads to more success for Google’s advertising programs.

Accordingly, the commercial success of the claimed invention further demonstrates the claims were not obvious. Because the Petition cannot demonstrate a reasonable likelihood that any of the challenged claims are obvious, the Board should deny institution.

VII. CONCLUSION

For all of the foregoing reasons, Petitioner has failed to demonstrate a reasonable likelihood that any of the challenged claims 1-39 of the '937 Patent are unpatentable. Thus, institution of this *inter partes* review must be denied.

Dated: June 16, 2026

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that this Patent Owner's Preliminary Response has 13,841 words as counted by the word-processing system used to prepare this document. This word count complies with the 14,000 word limit under 37 C.F.R. § 42.24(b)(1).

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE was served electronically via email on June 16, 2026, on the following counsel of record for Petitioners:

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