

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

ACCUSEARCH TECHNOLOGIES LLC,
Patent Owner.

Case No. IPR2026-00286
Patent No. 10,585,959

**PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.1 et seq**

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APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,585,959
1002	Prosecution History of U.S. Patent No. 10,585,959
1003	Declaration of Benjamin B. Bederson, Ph.D. (“Bederson-Decl.”)
1004	Curriculum Vitae of Benjamin B. Bederson, Ph.D.
1005	U.S. Patent Application Publication No. 20100145923A1 (“Wang”)
1006	U.S. Patent No. 8,880,547 (“Mills”)
1007	U.S. Patent Application Publication No. 20070168344A1 (“Brinson”)
1008	U.S. Patent Application Publication No. 20090248511A1 (“Mehta”)
1009	U.S. Patent Application Publication No. 20060059126A1 (“Naick”)
1010	U.S. Patent Application Publication No. 20020174118A1 (“Bates”)
1011	U.S. Patent No. 9,098,569 (“Bhagat”)
1012	U.S. Patent Application Publication No. 20090287676A1
1013	U.S. Patent Application Publication No. 20080091834A1 (“Norton”)
1014	U.S. Patent Application Publication No. 20160012050A1 (“Bursey”)
1015	U.S. Patent Application Publication No. 20120191531A1
1016	U.S. Patent Application Publication No. 20090292595A1
1017	U.S. Patent Application Publication No. 20110054998A1
1018	U.S. Patent No. 8,473,492
1019	U.S. Patent Application Publication No. 20070273708A1
1020	U.S. Patent Application Publication No. 20100138293A1
1021	U.S. Patent Application Publication No. 20080150901A1
1022	U.S. Patent Application Publication No. 20110246921A1
1023	U.S. Patent Application Publication No. 20080147638A1
1024	U.S. Patent Application Publication No. 20020057298A1
1025	U.S. Patent No. 7,152,064
1026	U.S. Patent No. 8,095,876
1027	U.S. Patent Application Publication No. 20080071738A1
1028	U.S. Patent No. 5,826,260
1029	U.S. Patent No. 7,200,820
1030	U.S. Patent No. 8,407,217
1031	U.S. Patent Application Publication No. 20080208819A1
1032	U.S. Patent Application Publication No. 20060253431A1
1033	U.S. Patent Application Publication No. 20030105744A1
1034	U.S. Patent No. 7,296,021
1035	U.S. Patent Application Publication No. 20030055810A1
1036	U.S. Patent Application Publication No. 20040162814A1

Exhibit	Description
1037	U.S. Patent No. 7,555,476
1038	U.S. Patent No. 7,693,833
1039	U.S. Patent No. 8,402,032
1040	U.S. Patent No. 8,938,463
1041	U.S. Patent No. 6,718,363
1042	International Application Publication No. WO2011035426A1
1043	U.S. Patent No. 6,012,053
1044	U.S. Patent Application Publication No. 20070112761A1
1045	U.S. Patent Application Publication No. 20080071739A1
1046	U.S. Patent Application Publication No. 20040177064A1
1047	U.S. Patent Application Publication No. 20090187554A1
1048	U.S. Patent No. 5,946,678
1049	U.S. Patent Application Publication No. 20060004734A1
1050	U.S. Patent Application Publication No. 20090276418A1
1051	U.S. Patent Application Publication No. 20080155411A1
1052	U.S. Patent Application Publication No. 20050021512A1
1053	U.S. Patent Application Publication No. 20050120016A1
1054	U.S. Patent Application Publication No. 20080010269A1
1055	U.S. Patent Application Publication No. 20070239662A1
1056	U.S. Patent Application Publication No. 20050177555A1
1057	U.S. Patent Application Publication No. 20080140712A1
1058	U.S. Patent Application Publication No. 20060136400A1
1059	U.S. Patent Application Publication No. 20080208835A1
1060	U.S. Patent Application Publication No. 20080155399A1
1061	U.S. Patent Application Publication No. 20170060856A1
1062	U.S. Patent Application Publication No. 20100262568A1
1063	U.S. Patent No. 5,659,732
1064	Plaintiff's Disclosure of Initial Infringement Contentions, in AccuSearch Techs. LLC v. Google LLC, 25-514-GBW (D. Del. Dec. 17, 2025)
1065	U.S. Patent Application Publication No. 2007/0100804A1
1066	Shneiderman, Designing the User Interface: Strategies for Effective Human-Computer Interaction (3d ed. 1998)
1067	U.S. Patent Application Publication No. 20080221887A1
1068	U.S. Patent Application Publication No. 20040111467A1
1069	U.S. Patent Application Publication No. 20040162814A1
1070	Declaration of Robert Osann, Jr., in AccuSearch Techs. LLC v. Google LLC, 25-514-GBW (D. Del. July 11, 2025)
1071	U.S. Patent Application Publication No. 20020156917A1

Exhibit	Description
1072	U.S. Patent Application Publication No. 20110119243A1
1073	U.S. Patent Application Publication No. 20100198821A1
1074	U.S. Patent No. 8,515,731
1075	U.S. Patent Application Publication No. 20090210404A1
1076	U.S. Patent Application Publication No. 20110035401A1
1077	U.S. Patent No. 8,165,972
1078	U.S. Patent No. 8,055,669
1079	U.S. Patent No. 6,999,959
1080	Chang, et al., “Search Engines’ Help Systems,” Fifth International Conference on Information Technology: New Generations (IEEE 2008)
1081	U.S. Patent Application Publication No. 20020194166A1 (“Fowler”)
1082	U.S. Patent Application Publication No. 20070239676A1 (“Stonehocker”)
1083	Chi, Ed H., et al. “Using information scent to model user information needs and actions and the Web,” Proceedings of the SIGCHI conference on Human factors in computing systems (2001)

MANDATORY NOTICES

A. Real Party-In-Interest

Petitioner Google LLC (“Google”) is the real party-in-interest.¹

B. Related Matters

1. United States Patent & Trademark Office

The application from which U.S. Patent No. 10,585,959 (“the ’959 patent”) issued (U.S. Patent Application No. 16/553,900) is a Continuation of U.S. Patent Application No. 16/199,192 (U.S. Patent No. 10,437,900) filed November 25, 2018, which is a Continuation of U.S. Patent Application No. 15/383,907 (U.S. Patent No. 10,140,374) filed December 19, 2016, which is a Continuation of U.S. Patent Application No. 14/820,433 (U.S. Patent No. 9,529,920) filed August 6, 2015, which is a Continuation of U.S. Patent Application No. 13/163,614 (U.S. Patent No. 9,104,765) filed June 17, 2011.

The following applications are Continuations of U.S. Patent Application No. 16/553,900 (U.S. Patent No. 10,585,959):

- U.S. Patent Application No. 16/790,057 (U.S. Patent No. 10,867,001) filed February 13, 2020;

¹ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

- U.S. Patent Application No. 17/114,305 (U.S. Patent No. 11,100,184) filed December 7, 2020;
- U.S. Patent Application No. 17/395,078 filed August 5, 2021 (*abandoned*);
- U.S. Patent Application No. 18/195,882 (U.S. Patent No. 11,971,937) filed May 10, 2023;
- U.S. Patent Application No. 18/600,949 (U.S. Patent No. 12,292,942) filed March 11, 2024;
- U.S. Patent Application No. 19/054,481 filed February 14, 2025 (*pending*).

2. U.S. District Court for the District of Delaware

The '959 patent is currently asserted in *AccuSearch Technologies LLC v. Google LLC*, Civil Action No. 1:25-cv-00514 (D. Del.).

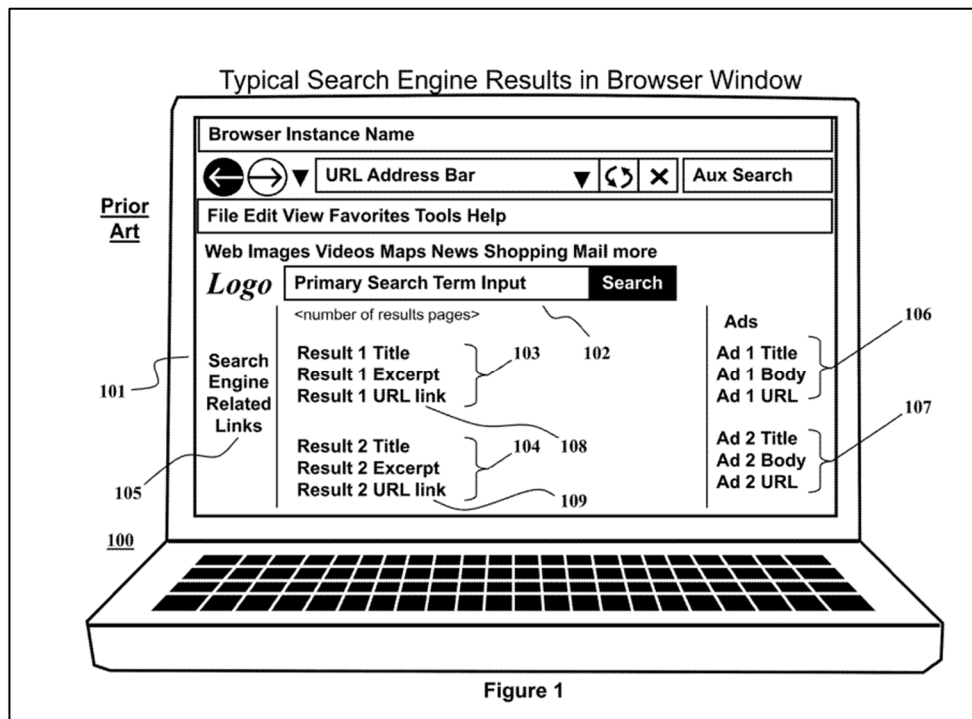
C. Counsel and Service Information - §42.8(b)(3) and (4)

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A power of attorney is submitted with the Petition. Counsel for Petitioner consents to service of all documents via electronic mail.

I. INTRODUCTION

The '959 patent concerns annotating search-engine results. The patent's Figure 1 (below) depicts a user interface for a prior-art search-engine webpage, which includes a search bar for entering search terms. Executing the search identifies search-result webpages related to the search terms.



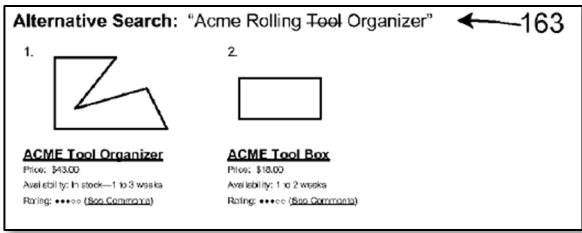
The '959 patent purports to improve this prior-art interface by annotating search results to indicate whether a search-result webpage includes each search term. That is, if the search query entered is “MANHATTAN CLAM CHOWDER,” annotations are added for each returned search result to indicate whether, *e.g.*, the word “MANHATTAN” is missing or included in that webpage.

The concept of annotating search-result listings to indicate the presence or absence of search terms was known before 2011. For example, Internet search providers have long **bolded** search terms that are present in a search-result listing, *e.g.*, in a result’s title, URL, or summary. *See* EX1003 (“Bederson-Decl.”), ¶¶38-42. It was also known to annotate search-result listings to indicate the *absence* of a term. Bederson-Decl., ¶¶43-48. For example, the prior-art Bates reference displays color-coded bars to indicate the presence or absence of each search term in each search result. *See infra* §VI.A. Other prior-art references disclose similar annotations used for the same purpose. *See, e.g.*, EX1027-EX1028, EX1048-EX1049.

The only plausible distinction between the annotation system recited in the ’959 patent’s challenged independent claims and those disclosed years earlier in Bates (and others) is the limitation reciting that the annotation itself “*comprises one or more search term elements missing in the referenced webpage.*”² Put simply, for missing search terms, the claims require the annotation to include the search term’s text itself, whereas Bates’s example uses color-coded bars, without text, to indicate missing (and present) search terms. Bederson-Decl., ¶48.

² Claim language italicized and bold-italic emphasis added throughout.

But ordinary artisans had already used search-term text to indicate which search terms were missing (and present) in search results. For example, the prior-art Mills and Bhagat references both disclose systems in which a search term missing from search results is shown with a strikethrough (*e.g.*, “~~Tool~~” (below left); “~~adventures~~” or “ ~~racing~~” (below right)):

 Alternative Search: "Acme Rolling ~~Tool~~ Organizer" ← 163 1.  ACME Tool Organizer Price: \$43.00 Availability: In stock—1 to 3 weeks Rating: ★★★★★ (See Comments) 2.  ACME Tool Box Price: \$18.00 Availability: 1 to 2 weeks Rating: ★★★★★ (See Comments)	fast racing ~~adventures~~ (See all 1,443 results) fast racing game \$54.95 fast racing 3D \$64.95 fast racing t-shirt \$14.95 fast <del> racing</del> adventures (See all 180 results) fast adventures DVD \$14.95 fast adventures survival kit \$130.95 fast adventures tent \$87.95
Mills (EX1006), FIG. 2 (excerpt)	Bhagat (EX1011), FIG. 2 (excerpt)

Other text-based annotation systems were known too. Bederson-Decl., ¶¶48-51 (citing, *e.g.*, EX1012, EX1045). The challenged claims are thus merely a predictable combination of known types and uses of text-based annotations to indicate the presence or absence of a search term in a given result (*e.g.*, as in Bhagat and Mills) with known interface configurations for displaying search results (*e.g.*, as in Bates and Wang).

II. CERTIFICATION

Google certifies that the '959 patent is available for, and Google is not barred or estopped from requesting, *inter partes* review. 37 C.F.R. §42.104(a).

III. GROUNDS FOR UNPATENTABILITY

Google requests cancellation of claims 1-25 as follows:

Ground	Reference(s)	Claim(s)	Basis
1A	Bates-Bhagat	1, 8-11, 18-20, 24-25	§103
1B	Bates-Bhagat-Naick	2, 5, 12, 15, 21	
1C	Bates-Bhagat-Naick-Brinson	3, 6, 13, 16, 22	
1D	Bates-Bhagat-Naick-Mehta	4, 7, 14, 17, 23	
2A	Wang-Mills	1, 8-11, 18-20, 24-25	
2B	Wang-Mills-Naick	2, 5, 12, 15, 21	
2C	Wang-Mills-Naick-Brinson	3, 6, 13, 16, 22	
2D	Wang-Mills-Naick-Mehta	4, 7, 14, 17, 23	

Bates, Wang, Naick, Brinson, and Mehta are prior art under pre-AIA §102(b). Mills and Bhagat are prior art under pre-AIA §102(e). None were cited during prosecution.

IV. THE '959 PATENT

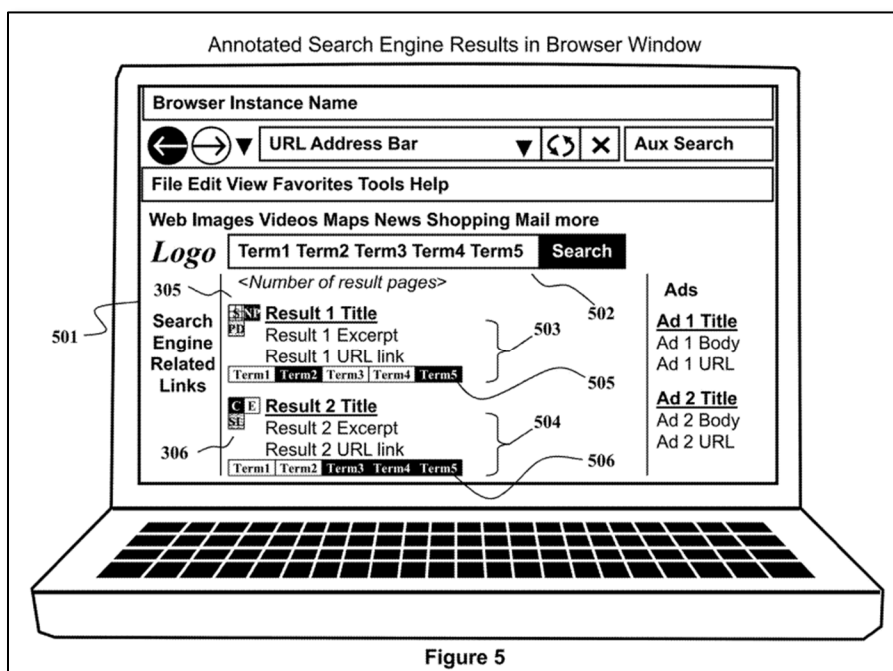
A. Overview

The '959 patent claims priority to June 2011. The patent alleges that then-existing search engines caused users to waste their time clicking on search-result websites that were “irrelevant or of little inherent use with regard to what the user seeks.” EX1001, 1:49-52. For example, then-existing search engines allegedly

returned webpages that did not “contain the search terms that [the user] had specified.” *Id.*, 2:12-19.

The patent says it would be beneficial if users knew “in advance which [search-result] webpages contain which search term elements.” *Id.*, 2:31-34. “This foreknowledge...could prevent the user from wasting their time reviewing pages that are not relevant to their search.” *Id.*, 2:52-59.

To provide that “foreknowledge,” the patent describes annotating each search-result grouping “to indicate which search term elements are present in the webpage referenced by the search result.” *Id.*, 4:32-39. Figure 5 (below) shows an exemplary “search engine results webpage” with “separate annotations [505, 506] adjacent each search result grouping to indicate which search term elements are present in the webpage referenced by the search result URL link.” *Id.*, 4:26-32.



As shown above, each search-result grouping includes “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.*, 10:6-10. In Figure 5, “search term elements which are present [are] 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.*, 10:10-13.

B. Challenged Claims

The challenged claims are reproduced in Section XV. Independent claim 1 recites a system that aligns with Figure 5’s embodiment. Bederson-Decl., ¶59. Independent claims 11 (method) and 20 (apparatus) mirror claim 1. Each independent claim requires, *inter alia*, a search result with an “*annotation*” that “*comprises one or more search term elements missing in the referenced webpage.*”

Certain dependent claims (*e.g.*, claim 2) require providing “*the annotation*” in response to the presence or absence of a term in “*one or more descendant webpages of the referenced webpage.*” That is, the system identifies whether another webpage—one *linked directly one level from the referenced webpage*—includes the search term. Bederson-Decl., ¶60 (identifying www.uspto.gov/patents as an example of a *descendant webpage* that is *directly linked one level* from www.uspto.gov). The patent’s Figure 6 illustrates such a system. EX1001, 4:32-

40; 10:25-44. Searching descendant webpages for search terms was known before 2011. Bederson-Decl., ¶¶61-64 (citing, *e.g.*, EX1009, EX1041-EX1042).

The remaining dependent claims recite other functionality that was common in prior-art search engines, like displaying advertisements related to the search terms (*e.g.*, claim 4). These dependent claims are also unpatentable. Bederson-Decl., ¶65.

C. Person of Ordinary Skill in the Art (POSA)

POSAs 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. Bederson-Decl., ¶¶33-37.

D. Prosecution History

The as-filed independent claims were rejected as obvious over Norton (EX1013) and Bursey (EX1014). EX1002, 148-150. Three as-filed dependent claims, however, were found allowable if rewritten into independent form. EX1002, 150. Those claims each required “*the annotation*” to “*comprise[] one or more search term elements **missing***” from a search result. EX1002, 132-138. While Norton and Bursey annotated search results, neither reference's annotation identified search terms missing from search results. Bederson-Decl., ¶¶66-67.

Rather than defend its originally-filed independent claims, the applicant canceled those claims and re-wrote the three allowable dependent claims into

independent form, and the amended claims were subsequently allowed. EX1002, 181-203.

V. CLAIM INTERPRETATION

Claim terms are given their ordinary meaning in light of the specification and prosecution history. 37 C.F.R. §42.100(b).

VI. GROUND 1A: BATES, BY ITSELF OR COMBINED WITH BHAGAT, RENDERS OBVIOUS CLAIMS 1, 8-11, 18-20, AND 24-25

A. Bates (EX1010)³

Bates discloses an annotated search-engine interface that uses color to indicate the “occurrence of each keyword” (*i.e.*, search term) in each displayed search result. Abstract. Bates teaches that “color coding search results” allows users to conveniently “interpret[] search output.” [0001].

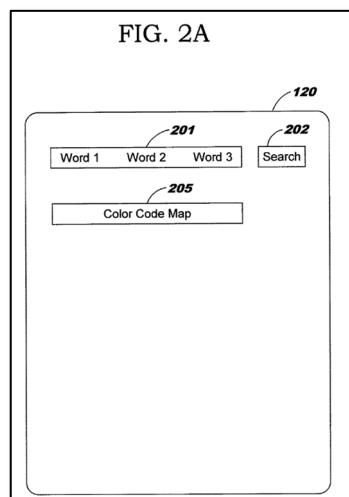
Bates explains that keyword-based searches are “often interpret[ed]” by search engines “as requests to find web pages that contain any one or more of the keywords,” which may “return[] an unusably large number of sources.” [0004]; Bederson-Decl., ¶¶71-73 (discussing Boolean “OR” operator). “For example, a searcher might enter three keywords,” but instead of displaying only results that include all three keywords, the “search engine would” “find sources that include” just one keyword “in isolation,” or two of the keywords, or “all three keywords.”

³ In §VI.A, cites are to Bates unless indicated otherwise.

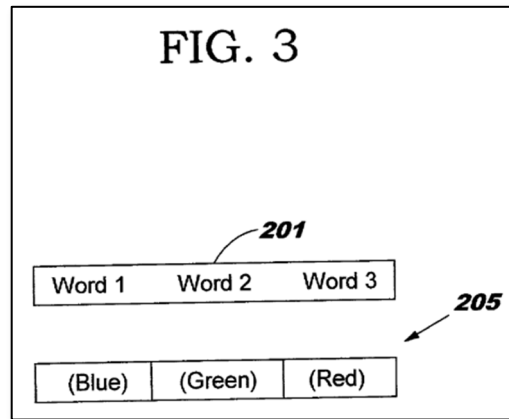
[0006]. The user, however, may only “judge[]” a source to be “relevant to the search” if it matches “at least two of the [three] keywords,” *i.e.*, the user may not want results that match only one keyword. *Id.*

Bates therefore identifies “a need for...presenting the results of a search so that the searcher may form an effective picture of the relevance of the sources found by the search engine” without having to “examine sources that lack relevant information” but are nevertheless displayed “in the list of sources.” [0009]. Bates addresses this need by collecting “occurrence data that report, for example, whether each keyword is present *or absent in each web page*,” and displaying within each search result “a correlation indicator” that “includes a visual area that is colored according to [a] color code and the occurrence data.” [0011]-[0012].

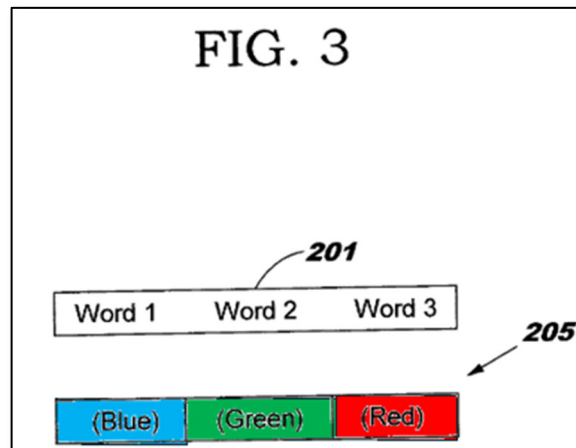
Bates’s Figure 2A (below) depicts an interface with “an input line 201, wherein keywords may appear as they are entered [by a searcher].” [0018], [0026]. In Figure 2A, three keywords are shown: “word1, word2, and word3.” *Id.*



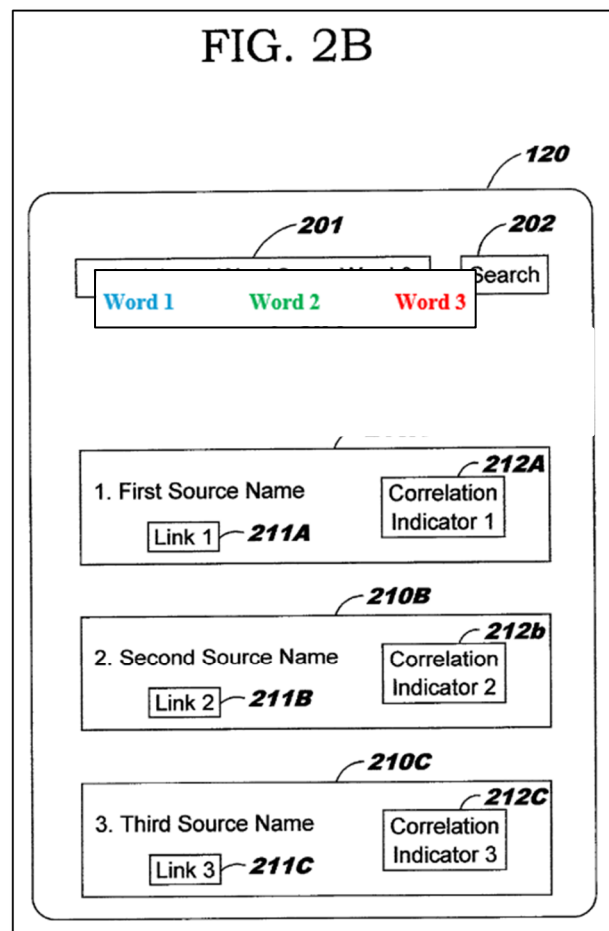
A “color code map 205” beneath the input line “provide[s] the searcher” “with a visual association between colors and keywords.” *Id.* Bates’s Figure 3 (below) “shows an exemplary configuration of the color code map” below the input line. [0029].



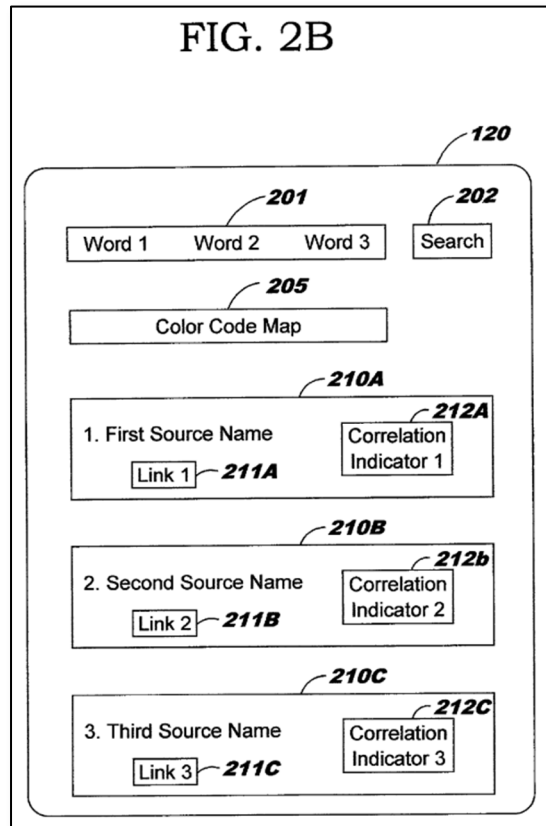
The color-code map “visually associate[s] colors with the keywords that appear on the input line 201. For example, keywords word1, word2, and word3 might appear on the input line 201 as shown in FIG. 3, and be associated with the colors blue, green, and red, respectively.” *Id.* This is seen in the colorized version of Figure 3 below:



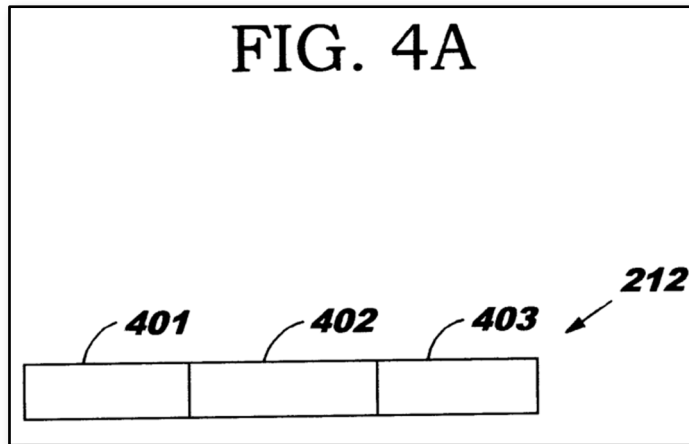
In one embodiment, Bates does not use a separate color-code map (like the color bar 205 depicted in Figure 3) but instead changes the font color of each search term as it is typed into input line 201. For example, “word1 might appear in blue characters in the input line 201, word2 might appear in green characters, and word3 in red.” [0031]. Bates refers to using a different color font for each search term as an “implicit” color code map. *Id.* The demonstrative below uses Bates’s FIG. 2B to illustrate an implementation of Bates’s “implicit”-color-code embodiment (Bederson-Decl., ¶¶74-79).



Like Figure 2A, Bates's Figure 2B (below) depicts an interface for Bates's system. [0018]. The input line and color-code map are displayed with an "exemplary presentation of search results," which includes information about webpages 210A-210C that were "found by the search." [0027].



Each search result 210 includes a correlation indicator 212 in "the form of a horizontal bar as shown in FIG. 2B, divided into a number of segments according to the number of keywords on the display line 201. For example, if there are three keywords, the horizontal bar correlation indicator may have three segments 401, 402, and 403 as shown in FIG. 4A, associated respectively with the keywords and their colors." [0033]. Figure 4A's correlation indicator is shown below:



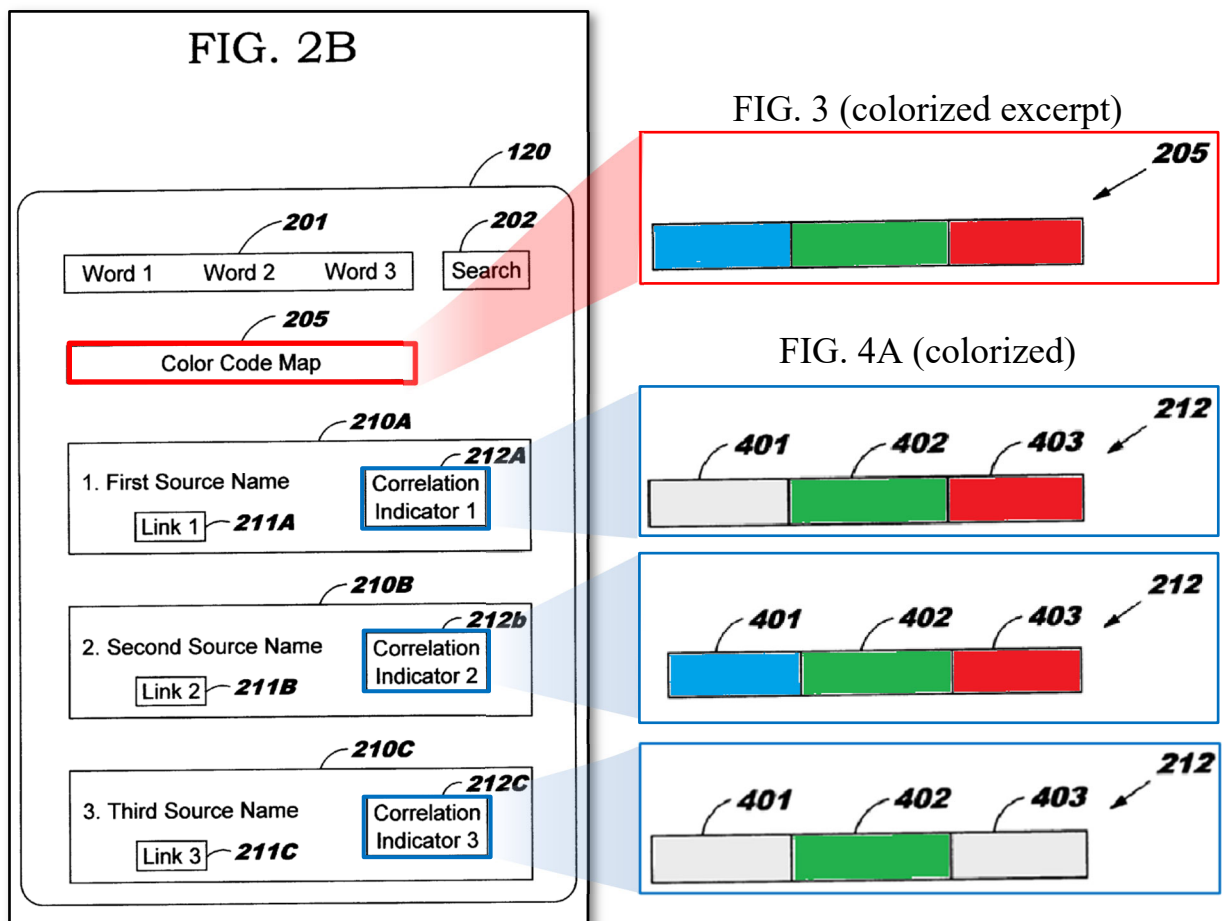
Bates explains how this embodiment works as follows:

When a URL returned by the search engine 180 contains keyword word1, for example, the first segment 401 of the horizontal bar correlation indicator may be colored blue. If the web page that is identified by the URL returned by the search engine does not contain keyword word1, then the first segment 401 of the horizontal bar may be left uncolored, or colored according to a background color not associated with any keyword by the color code map 205. When the web page contains keyword word2, the second segment 402 of the bar may be colored green, or left uncolored if the web page does not contain keyword word2, and likewise in kind for keyword word3.

Id.

The demonstrative below illustrates an example of Bates's system where webpage 210B contains all three keywords, but webpage 210A is missing word1 and webpage 210C is missing word1 and word3 as indicated by the segments shaded gray (a "background color not associated with any keyword" (*id.*)). Bederson-Decl.,

¶¶80-82. “Thus, by glancing at the colors of the correlation indicator 212, the searcher 100 may readily grasp the relevance of the URL to the search.” [0033].



The correlation indicators above are segmented horizontal bars of colors (*id.*), but Bates teaches that the indicator “may be *any* visual presentation that uses a color code to convey the presence or absence...of keywords” ([0036]). Bates thus encourages POSAs to consider alternative designs for its correlation indicators 212. Bederson-Decl., ¶¶83-84.

Moreover, as the annotated Figures 2-4 above illustrate, Bates designs its correlation indicators 212 for the search results 210 to mirror the color-code map

205 for the input field 201. POSAs would thus have recognized that in the embodiment in which an “implicit” color-code map is utilized—*i.e.*, each search term entered into field 201 is coded using a different color font rather than a colored bar—a straightforward matching implementation of the correlation indicator for each search result would have been to use the color-coded search terms themselves as correlation indicators. This obvious implementation of Bates’s “implicit”-color-code embodiment is discussed in more detail *infra* §VI.C.1.

B. Bhagat (EX1011)

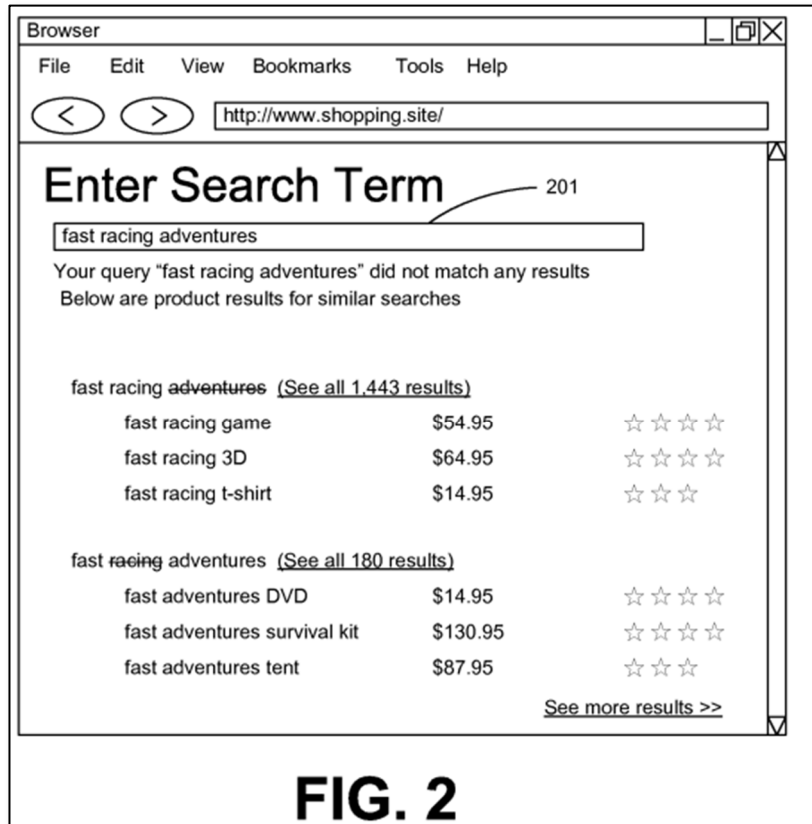
While Bates describes a color-based approach to indicating the presence or absence of search terms, POSAs would have known that there are other ways to visually indicate such information. Bederson-Decl., ¶¶85-86. Bhagat provides one example.

Like Bates, Bhagat discloses a user interface for a search engine that is based on, *e.g.*, “keyword matching.” Bhagat, 1:6-10; FIGS. 2-4. Bhagat discusses examples where the search is “locat[ing] products in an electronic commerce system,” but explains that the described techniques are applicable more generally, *e.g.*, for “a general purpose search engine, etc.” Bhagat, 1:54-58, 2:50-67, 4:6-25.

Bhagat explains that some “search queries submitted by a user to a search engine may yield few and/or no search results.” Bhagat, 1:58-62. Rather than leave the user to believe that there are few or no search results available, Bhagat says it

would be beneficial to generate “suggested queries.” Bhagat, 1:62-2:4; Bederson-Decl., ¶¶87-88. Suggested queries can be generated, in part, “by removing one or more search term[s] from [a] search query” to determine if a revised search query matches a “historical search query” that Bhagat’s system knows yielded relevant results. Bhagat, 6:4-22; *see also* Bhagat, 6:23-37.

In Figure 2’s example (below), the three-word search query “fast racing adventures” typed into a search input line “yields no search results.” Bhagat, 8:16-22. In response, Bhagat’s system identifies two historical queries related to the initial query by “remov[ing] a search term from the user supplied search query.” Bhagat, 8:29-34.



POSAs understood that the strikethrough text “~~adventures~~” and “~~raeing~~” in the first and second sets of search results above indicates that those search results are missing the stricken term, but include the search term(s) that are not stricken. Bederson-Decl., ¶¶89-90. Thus, Bhagat taught POSAs that one way to visually indicate to a user that a search term is missing in a search result is to display the search term next to the search result in strikethrough text. Bederson-Decl., ¶91.

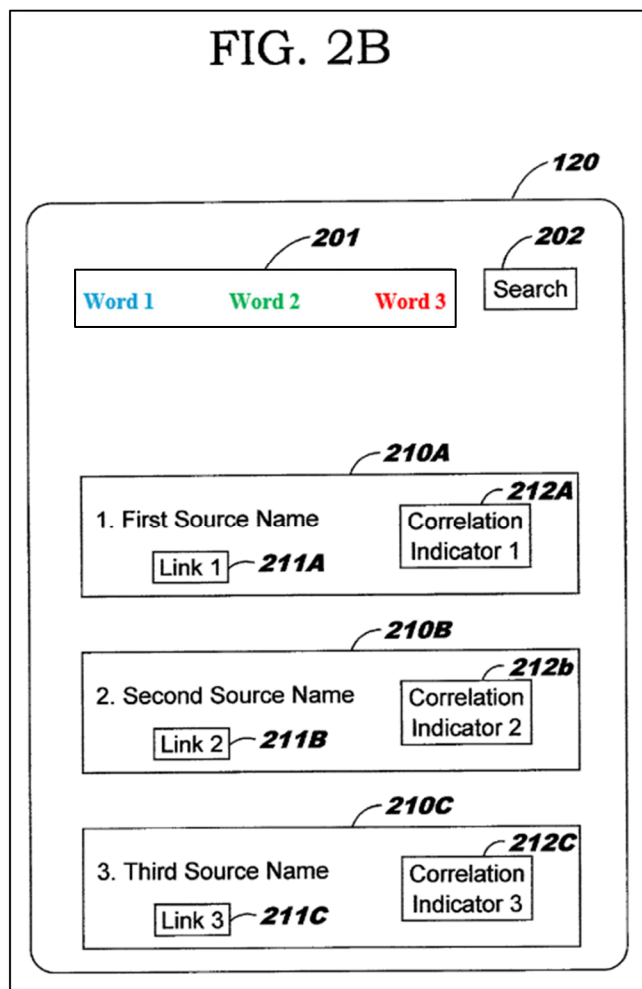
C. Obvious Implementations of Bates and Bates-Bhagat

In Bates’s examples, each correlation indicator segments a horizontal bar of colors to indicate the presence or absence of search terms. Bates, [0033]. Bates expressly teaches, however, that its indicator “may be *any visual presentation* that uses a color code to convey the presence or absence...of keywords in a web page.” Bates, [0036]. Bates thus encourages POSAs to consider alternative techniques for visually indicating that search terms are present or absent. Bates itself plainly suggests one alternative technique (font color), and Bhagat discloses another alternative technique (stricken text). Implementing Bates’s system using either technique would have been obvious.

1. Bates Alone

As discussed above in §VI.A and illustrated below, Bates discloses an embodiment in which its color-code map is displayed not as a bar of colors, but rather in an “implicit” manner using font color. Bates, [0031]. In this embodiment,

each search term is displayed using different colored text corresponding to an “implicit” color-code map. For example, as illustrated below, “word1 might appear in blue characters in the input line 201, word2 might appear in green characters, and word3 in red.” Bates, [0031]; FIG. 2B; Bederson-Decl., ¶¶92-95.



As seen above, each search term entered into input line 201 is assigned a color and the explicit color-code map 205 is not displayed. Bates, [0031] (“It is not necessary, however, that the color code map 205 be a horizontal bar...[instead] the color code map 205 may be implicit rather than explicit.”); Bederson-Decl., ¶96.

And while the correlation indicators for search results in the “implicit”-color-code embodiment *could* still take the form of segmented horizontal bars of color, another obvious implementation would have been to simply use the color-coded search terms themselves as correlation indicators. *Id.* Indeed, Bates’s Figures 3 and 4 depict an exemplary correlation indicator that uses essentially the same format as an explicit color-code map, and therefore when an “implicit” color-code map is used it would have made sense to POSAs to use the format of that implicit mapping—*i.e.*, different colored fonts—as correlation indicators. *Id.*

Beyond being a logical implementation of Bates’s own explicit teachings, POSAs had several additional reasons to make this implementation.

First, remembering what search term corresponds to each color in Bates’s horizontal bar could be unnecessarily cumbersome, and this added mental burden would be beneficially avoided by simply displaying the colored search terms themselves as the correlation indicators. For example, while a user *could* memorize the color-code map, that could be challenging for long queries and/or when a user is rapidly revising search terms. *Bederson-Decl.*, ¶97. Alternatively, while a user *could* repeatedly look up at (or scroll to) the top of Bates’s search-results webpage to re-review the color-code map, that could be time-consuming, needlessly annoying, and/or potentially cause users to lose their place in a long list of search results. *Id.* POSAs would thus have recognized that using the text of the search

terms directly as correlation indicators would convey the same information but beneficially avoid the need to memorize or repeatedly reference the color-code map. Bederson-Decl., ¶98. POSAs knew that in user interface design there are benefits to reducing users' mental-processing load, including by eliminating even small mental tasks elicited by the interface design. Bederson-Decl., ¶¶98-99 (citing EX1066, 73-75, 80).

Second, using color-coded font rather than merely color-coded horizontal bars would have beneficially conveyed the presence or absence of search terms using two compatible forms of visual information: text and color. POSAs knew that “using *multiple visual features to represent the same data attribute*” beneficially “provides redundant coding and results in an increase in the ease, speed, and accuracy in which the users are able to perceive and interpret the information.” EX1023, [0063]; *see also* Bederson-Decl., ¶100. That Bates's “implicit”-color-code embodiment already uses a combination of text and color (*i.e.*, different font colors for the text of different search terms) would have further encouraged POSAs to use both forms of visual communication as a correlation indicator too. Bederson-Decl., ¶100.

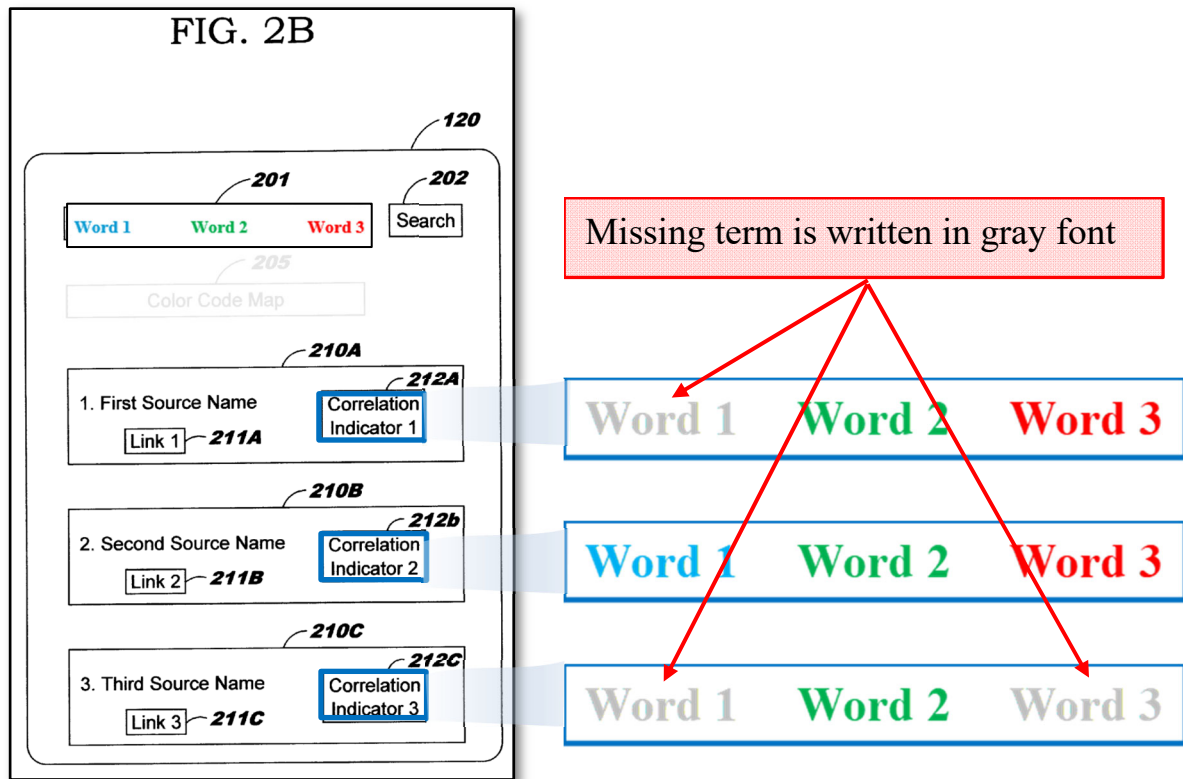
Third, using color-coded text as Bates's correlation indicator would have been an obvious combination of prior-art search-result annotations (color- and text-based annotations) with Bates's known annotation method to yield the predictable result of using color-coding *and* search-term text to indicate the presence/absence of

search terms in Internet search results. *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007); Bederson-Decl., ¶101.

POSAs would have recognized that a straightforward implementation of Bates’s “implicit”-color-code embodiment would change Bates’s correlation indicators from color-coded segmented horizontal bars to color-coded text of the search terms themselves, making the format of each search result’s correlation indicator match the format Bates expressly describes for the search input field (analogous to how the original color-bar correlation indicator 212 matched the color-bar map 205 in the explicit-color-code embodiment).⁴ Bederson-Decl., ¶102. Similar to Bates’s horizontal bar, each search term’s text would be displayed using its assigned color when the term is present in the search result, and using an unassigned color (*e.g.*, muted-gray) when the term is not present in the search result. Bates, [0028]. Using gray font was a known, beneficial, and easily understood way to indicate the absence of search terms in search results. EX1046, [0047] (“gray is allocated to a keyword that has a hit ratio of 0.0000”), FIG. 6 (depicting same); *see also* Bederson-Decl., ¶¶101-106 (citing EX1024, [0005]).

⁴ Another obvious implementation would have maintained Bates’s bars of color, but written the search terms within those bars, *e.g.*, in white or black font. Bederson-Decl., ¶107.

The following demonstrative depicts this obvious implementation:



2. Bates-Bhagat Combination

In view of Bhagat, an alternative obvious implementation of Bates's system would have changed Bates's correlation indicators from segmented horizontal bars of colors to text-based indicators of whether search terms are present or missing. For example, POSAs would have used the text of the search terms as correlation indicators, with any term missing from a search result being formatted with a strikethrough as Bhagat teaches. POSAs had several reasons to make this change. Bederson-Decl., ¶108.

First, as explained for the Bates-alone implementation, using text-based annotation would make Bates's system more user-friendly as a user would not need to memorize a color-code map or scroll up to remind themselves what color corresponds to what search term. *Supra* §VI.C.1 (citing corroboration). Bederson-Decl., ¶109.

Second, POSAs would have recognized that colorblind users could have difficulty interpreting Bates's color coding because as the number of search terms increased it would become harder to display easy-to-distinguish colors. Bederson-Decl., ¶110; EX1019, [0002]-[0005] ("red-green color blindness" struggles with distinguishing red and green and/or sees them as another color (*e.g.*, yellow)), [0010]. Therefore, using search-term text as Bates's correlation indicator would have made the indicator easier to understand for colorblind users. Bederson-Decl., ¶¶111-113 (citing EX1022, [0012] (non-color-based visual indicators benefit colorblind users); EX1051, [0026]-[0028] (web accessibility standards advise to "[p]rovide equivalent alternatives to...visual content" and "[d]on't rely on color alone")).

Third, POSAs would have known that some devices had black-and-white-only displays, which made differentiating between more than two colors difficult. Bederson-Decl., ¶114 (citing corroborating EX1020, [0044], [0048]; EX1021, [0030], [0042]). POSAs would have recognized that for black-and-white-only

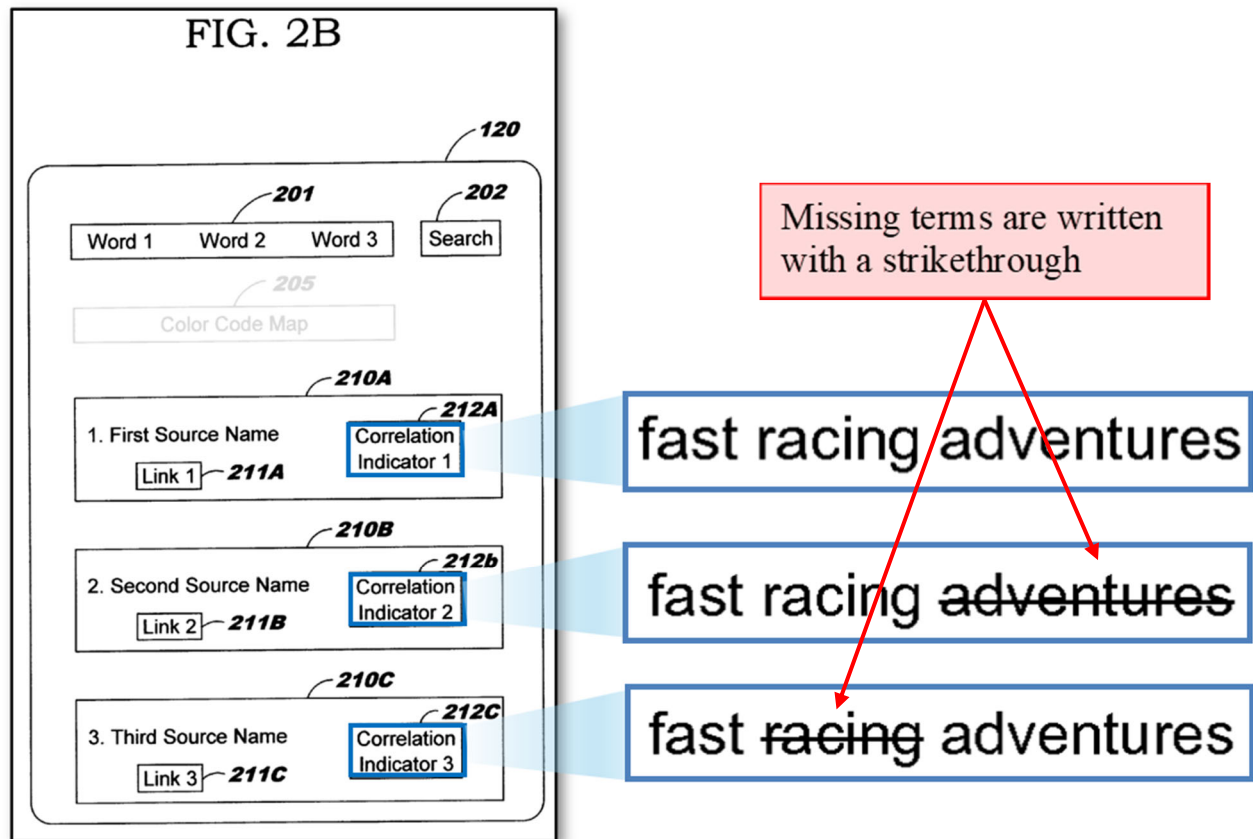
displays, using search-term text as the correlation indicator would have made the indicator easier to display and understand. Bederson-Decl., ¶115.

Fourth, using text rather than color to convey information regarding a search result would have been the simple substitution of one known element for another to obtain predictable results. *KSR*, 550 U.S. at 417. Using text to convey information about the contents of a search result was well known. Bederson-Decl., ¶¶116-119 (citing examples, including EX1030 and EX1045). Using text rather than color to convey information would have been a routine design choice for POSAs as both options accomplish the same predictable result: visually conveying the same information regarding presence/absence of search terms to users. Bederson-Decl., ¶120.

Finally, while Bates may prefer color coding (Bates, [0036]), POSAs would not have been discouraged from pursuing known alternative techniques for indicating the same information, like Bhagat's text-based annotations. Bederson-Decl., ¶121 (highlighting similarities between indicating a missing term using white/gray color (Bates) and using strikethrough text (Bhagat)). As explained above, POSAs would have known that there were several benefits to using text-based correlation indicators; POSAs thus would not have been discouraged from using such indicators simply because Bates expresses a general preference for color. Bederson-Decl., ¶122; *UCB, Inc. v. Actavis Laby's UT, Inc.*, 65 F.4th 679, 692 (Fed.

Cir. 2023). Indeed, POSAs would also have known that Bhagat’s text annotations could easily be implemented using color font (as Bates, [0031] suggests) with added strikethroughs rather than black font with added strikethroughs, further confirming that Bates’s preference for color would not have discouraged POSAs from pursuing the proposed combination. Bederson-Decl., ¶122.

In the Bates-Bhagat combination, rather than color-coded horizontal bars, the correlation indicators would use the text of search terms, where (based on Bhagat) strikethrough indicates a search term is absent from a search result. Using Bates’s Figure 2B (annotated below left) as an example based on the search query and annotations illustrated in Bhagat’s Figure 2 (excerpted below right), the correlation indicators in Bates-Bhagat would display search terms (in black font or different colored fonts), using strikethrough format for a term missing from a search result. For example, in response to the user’s search for “fast racing adventures,” the second and third correlation indicators below indicate that “adventures” is missing from the second result 210B and “racing” is missing from the third result 210C. Bederson-Decl., ¶123.



POSAs would have reasonably expected success in the two implementations discussed above because Bates ([0031]) explicitly teaches how to replace color-bar coding with text-color coding, Bates ([0033]) explicitly collects search-term occurrence data like that used to generate Bhagat's strikethroughs, and both references rely on conventional search-computing technologies, like web browsers and search engines (Bates, [0024]; Bhagat, 2:15-17). Bederson-Decl., ¶124. Thus, it would have required only POSAs' ordinary programming skill to implement Bates-alone and Bates-Bhagat as discussed above. *Id.* That Bates and Bhagat are in the same field (search-result interfaces) and address the same problem (how to

provide users with helpful information regarding their searches) further underscores the references' compatibility. *Id.*

D. Mapping to Claims

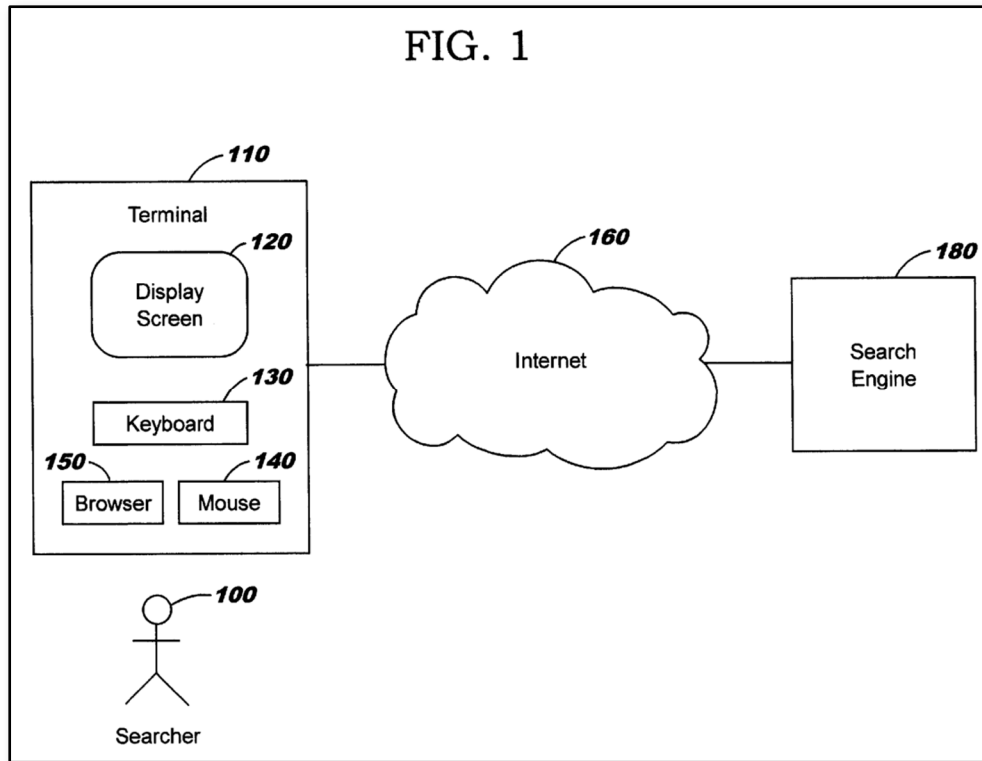
1. Claim 1

- a. [1PRE] “A system for providing annotated Internet search results suitable for display to a user of a computing device connected to an Internet, wherein the system comprises:”**

Bates discloses a system for “coding search results” when “Internet users conduct searches to find pages on the Word World Web.” Bates, [0001]-[0002]. As discussed *supra* §VI.A, Bates uses color-coded correlation indicators, which are *annotations* that Bates’s system adds to *Internet search results*. Bederson-Decl., ¶125.

Bates’s FIG. 1 “shows an exemplary search environment,” *i.e.*, *a system*, where “a searcher [*user*] employs a terminal 110” having a “browser 150” (Bates, [0023]) that “displays on the display 120 links to the sources [*e.g.*, webpages]” (Bates, [0039]). As depicted in Figures 2A and 2B, search results are displayed to a user viewing the display screen 120, *i.e.*, the *annotated Internet search results* are *suitable for display to a user*. Bates, [0026]-[0027].

As shown below, terminal 110 (“a computer terminal”) and search engine 180 are connected via “the Internet 160.” Bates, [0024], [0039]. Thus, the terminal is *a computer device connected to the Internet*. Bederson-Decl., ¶¶126-127.

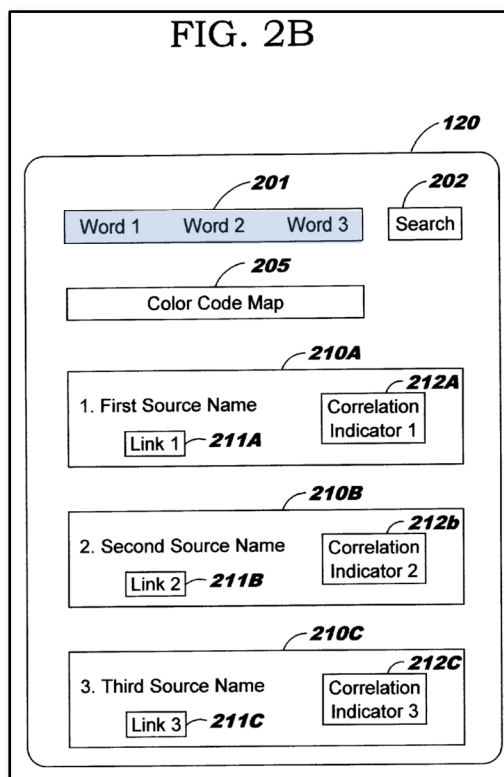


- b. **[1A] “one or more servers comprising one or more processors, wherein at least one of the one or more servers is connected to the Internet”**

As Figure 1 (above) shows, Bates’s search engine 180 is *connected to the Internet*. Bates, [0024]. Because Bates’s search engine processes search terms received over the Internet to “execute[] a search” (Bates, [0011]), it would have been conventional, beneficial, and obvious for the search engine to be implemented as *one or more servers comprising one or more processors*. Bederson-Decl., ¶¶128-129 (citing EX1032, [0067] (“***Search engines are server-based software*** products which...identify web pages relevant to a user’s query.”); EX1033, [0023] (“***search engine server 108 is typically a processor-based device***...to receive search queries and process them”)).

- c. [1B] “wherein the system receives a search request provided from the user of the computing device, the search request comprising one or more search term elements”;

As Figure 1 shows, Bates’s “terminal 110” (*computing device*) includes a “browser 150.” Bates, [0024]. “To conduct a search, the searcher [*user*] 100 may enter keywords” (*i.e., a search request*) “into the browser.” *Id.* Bates’s Figure 2B (highlighted below) shows an example search request (blue) comprising three “keywords word1, word2, and word3,” *i.e., three search term elements*. Bates, [0026]-[0027]. Bederson-Decl., ¶130.



- d. **[1C] “wherein in response to the user’s provision of the search request the system causes an Internet search to be performed based at least in part on the search request”;**

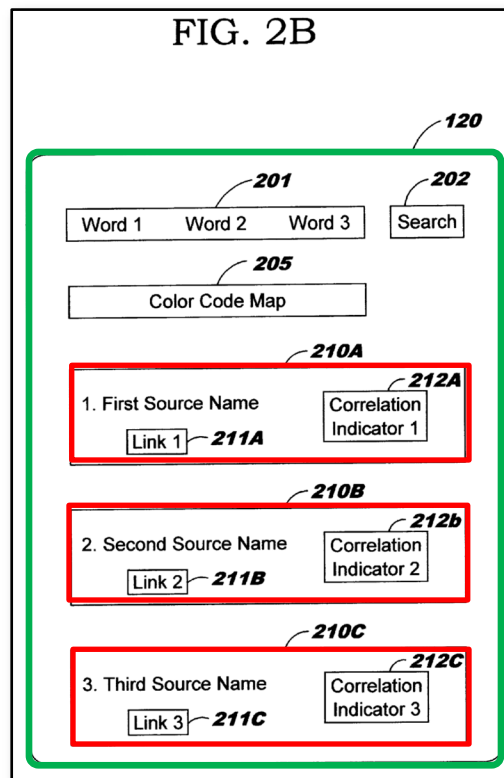
In response to Bates’s user entering a search request, “[t]he browser [] sends the keywords over the Internet to [the] search engine.” Bates, [0010]. This causes “[t]he search engine [to] execute[] a search” “that identif[ies] web pages purportedly relevant to the search.” Bates, [0011]. For example, if “a searcher” “enter[s] three keywords, the words ‘alpha,’ ‘beta,’ and ‘gamma,’” “[t]he search engine would then find sources that include the keyword[s]” and thus the *Internet search* that returns the identified sources (web pages) is *performed based at least in part on the search request*. Bates, [0006], [0030]. Bederson-Decl., ¶131.

- e. **[1D] “wherein the system transmits to the computing device, via the Internet, information comprising at least one automatically annotated Internet search result, and wherein the transmitted information is suitable for display on a search results webpage on the computing device;”**

In Bates’s system, the “search engine executes [the] search, and sends to the browser a set of uniform resource locators (URLs) that identify web pages purportedly relevant to the search, along with occurrence data that report, for example, whether each keyword is present or absent in each web page.” Bates, [0011]; FIG. 1. “For each URL, the browser formulates a correlation indicator” and “displays links to the URLs and the associated correlation indicators to the searcher.”

Bates, [0012]. Thus, *the transmitted information is suitable for display on a search results webpage on the computing device's browser.*

Bates's Figure 2B (highlighted below) “shows...an image” of Internet search results (211A-211C; red boxes) that “appear on” terminal 110's “display screen 120” (green box) with correlation indicators 212 (Bates, [0027]), which, as discussed below (§§VI.D.1.f-g, [1E]-[1F]), are *annotations* that are *automatically* added to each *search result*, *i.e.*, the *information comprises at least one automatically annotated Internet search result*. Bederson-Decl., ¶¶132-133.



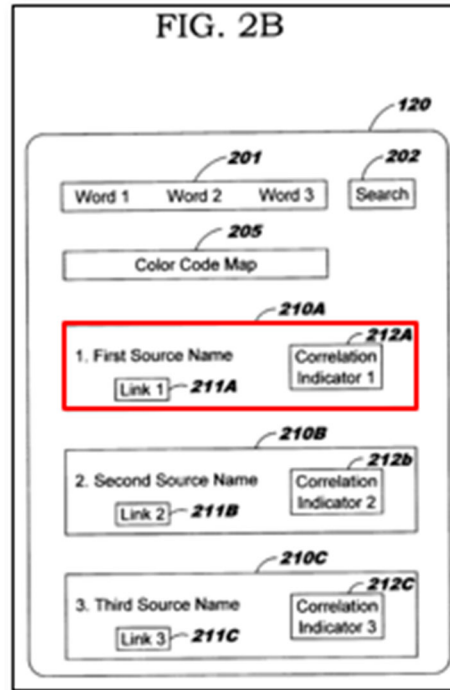
Thus, as explained above, the *Internet search results* that will be *automatically annotated* in Bates-alone and Bates-Bhagat are *transmitted to the computing device via the Internet*.

If limitation [1D] requires that the correlation indicators themselves must be within the page (*e.g.*, html code) transmitted to the computing device via the Internet (as opposed to being generated by the browser based on the transmitted occurrence data and inserted in the displayed webpage), that would have been an obvious alternative implementation of Bates-alone and Bates-Bhagat as a matter of design choice. Bates itself says the “elements” of its system “may be combined in various combinations and may be either external or internal to the terminal 110.” Bates, [0025]. Moreover, it was common in the prior art for annotations to be generated by a server connected to the user computing devices via the Internet, which beneficially reduced the processing load on user computing devices. Bederson-Decl., ¶¶134-138 (citing EX1012, [0029]; EX1034, FIGS. 1 & 3-4, 6:52-7:21; EX1049, FIGS. 1, 3-4, [0031], [0040]).

- f. **[1E] “wherein the automatically annotated Internet search result is provided for display on the search results webpage as a search result grouping referencing a webpage associated with the automatically annotated Internet search result;”**

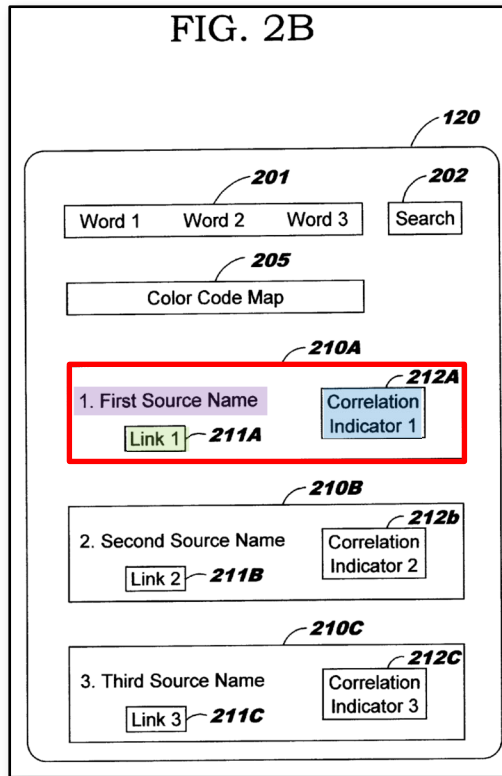
Bates’s FIG. 2B (highlighted below) shows “an image...on the display screen” as the search-results webpage. Bates, [0027]. “The exemplary presentation

includes information about a first web page 210A” (red), which is provided as a *search result grouping referencing that webpage* (e.g., its “Source Name” and Link 211A) that is *associated with the automatically annotated Internet search result*. Bates, [0027]-[0028]; Bederson-Decl., ¶139.



- g. [1F] “wherein the search result grouping comprises an annotation and at least one of: a title, an Internet link, an excerpt, or a URL”;

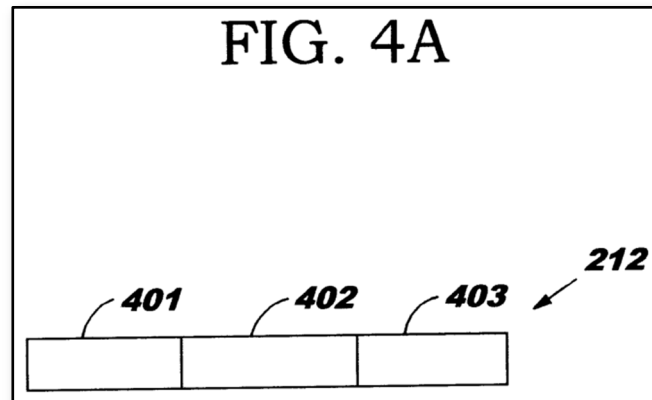
Bates’s search result grouping (red box below) comprises a correlation indicator (blue) (*i.e., an annotation*), the Source Name for the webpage (purple) (*i.e., a title*), and a “URL 211A that identifies the first web page” (green), which is both *an Internet link* (“**Link** 1” in FIG. 2B) and a *URL*. Bates, [0028]. Bederson-Decl., ¶140.



- h. [1G] “wherein the annotation is provided in response to a presence or absence of the one or more search term elements in the referenced webpage”;**

As discussed above (§VI.D.1.e, [1D]), Bates’s search engine transmits to the browser “occurrence data that report...whether each keyword is present or absent in each source [*i.e.*, webpage].” Bates, [0024], [0010]. “For each URL that the search engine 180 returns to the browser 150, a correlation indicator 212 is formulated,” which “includes a visual area that is colored according to the color code of the color code map 205 and according to the occurrence data for each keyword that occurs in the web page identified by the URL.” Bates, [0032]; Bederson-Decl., ¶141.

“For example, if there are three keywords the horizontal bar correlation indicator may have three segments 401, 402, and 403 as shown in FIG. 4A [below], associated respectively with the keywords and their colors.” Bates, [0033].

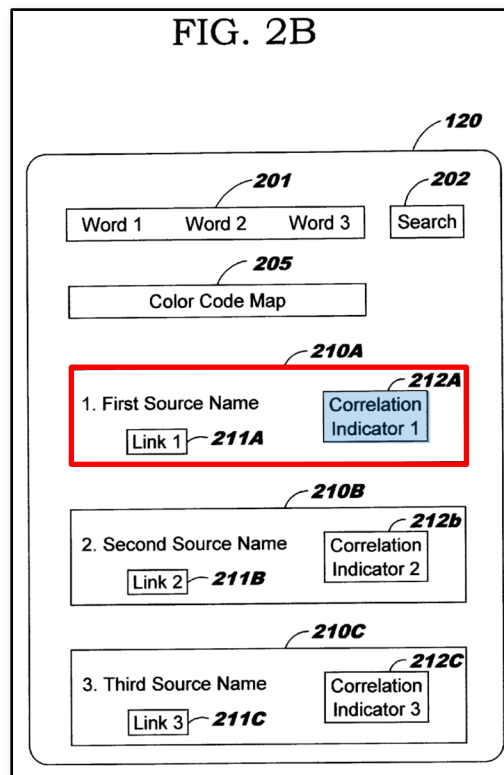


When a search-result webpage “contains keyword word1, for example, the first segment 401 of the horizontal bar correlation indicator may be colored blue,” but when the webpage “does not contain keyword word1, then the first segment 401 of the horizontal bar may be left uncolored, or colored according to a background color not associated with any keyword by the color code map 205.” Bates, [0033]. Bederson-Decl., ¶142.

Thus, the *annotation* provided by Bates’s correlation indicator *is provided in response to a presence or absence of the one or more search term elements in the referenced webpage*. As discussed above (§VI.C) and further below (§VI.D.1.j, [11]), in Bates-alone and Bates-Bhagat, each correlation indicator provides a text-based annotation *in response to the presence or absence of search term elements*. Bederson-Decl., ¶143.

- i. [1H] “wherein the annotation is automatically placed in the search result grouping so that it is associated with the automatically annotated Internet search result; and”

As Bates’s Figure 2B (highlighted below) shows, “[t]he information about the first web page 210A includes...a first correlation indicator 212A.” Bates, [0028]. These annotations occur *automatically*, *e.g.*, without user input beyond entering search terms. Bederson-Decl., ¶144. And, as illustrated below, the annotation is *placed in the search result grouping* (red-outlined box) *so that it is associated with the automatically annotated Internet search result*. *Id.*



- j. [1I] “wherein the annotation comprises one or more search term elements missing in the referenced webpage and provides an indication that the automatically annotated Internet search result is less relevant with regard to what the user seeks.”

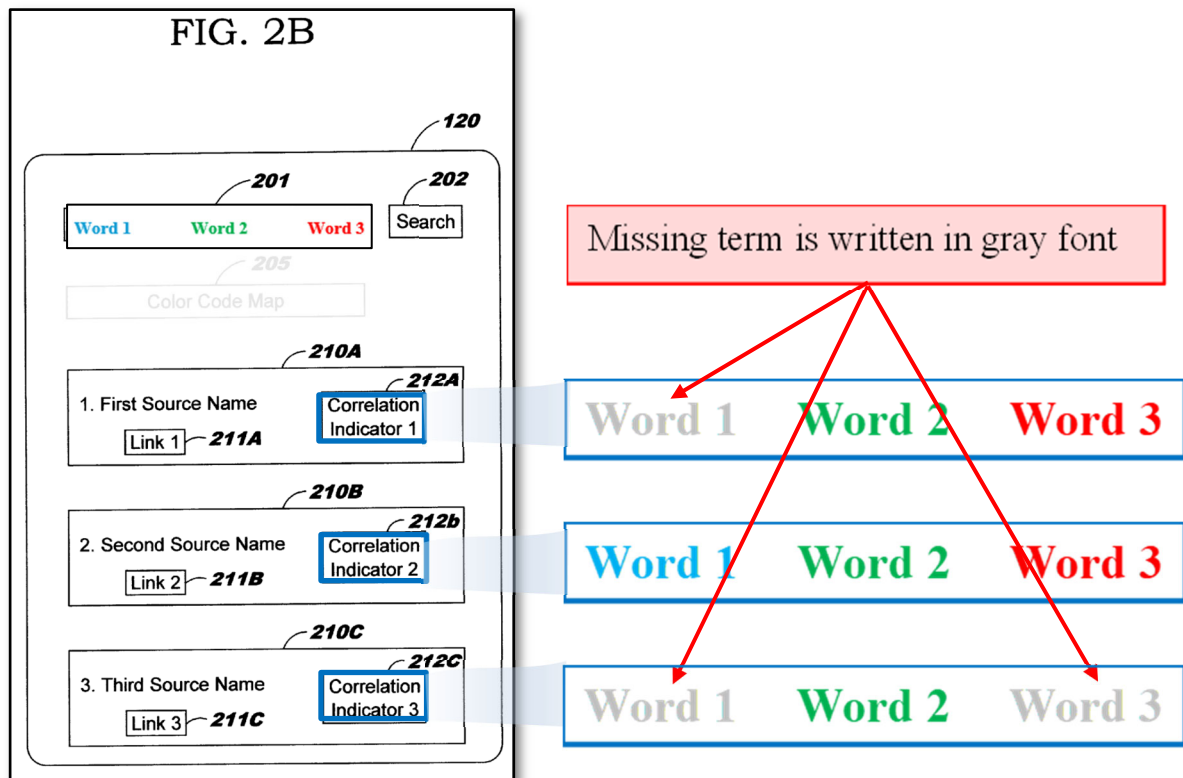
As discussed above (§VI.D.h), Bates’s system presents each search result with a correlation indicator (*the annotation*) that allows “the searcher” to “readily grasp the **relevance** of the URL to the search.” Bates, [0033], [0015], [0009], [0040]. For example, when “the web page that is identified by the URL...does not contain keyword word1, then the first segment 401 of the horizontal bar may be left uncolored, or colored according to a background color not associated with any keyword by the color code map.” Bates, [0033]. Thus, Bates’s correlation indicator *provides an indication that the automatically annotated Internet search result is less relevant with regard to what the user seeks* because the correlation indicator will indicate when any search term is missing from a search result. Bederson-Decl., ¶¶145-146.

As discussed above (§§VI.C.1-2), based on either Bates’s own teachings or Bhagat’s teachings, the correlation indicators in Bates-alone or Bates-Bhagat *comprise one or more search term elements missing in the referenced webpage, e.g.,* the missing search term’s text is written in grayed-out font (Bates-alone) or is written with a strikethrough (Bates-Bhagat). *See also infra* §VI.D.2 (**claim 8**); Bederson-Decl., ¶147.

2. **Claim 8:** “...the annotation comprises...(i) a font representing the text has been altered; (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon....”

As discussed below, Bates-alone and Bates-Bhagat meet claim 8 because their correlation indicators *comprise text representing at least one search term element in at least one of the formats* recited in claim 8. Bederson-Decl., ¶148.

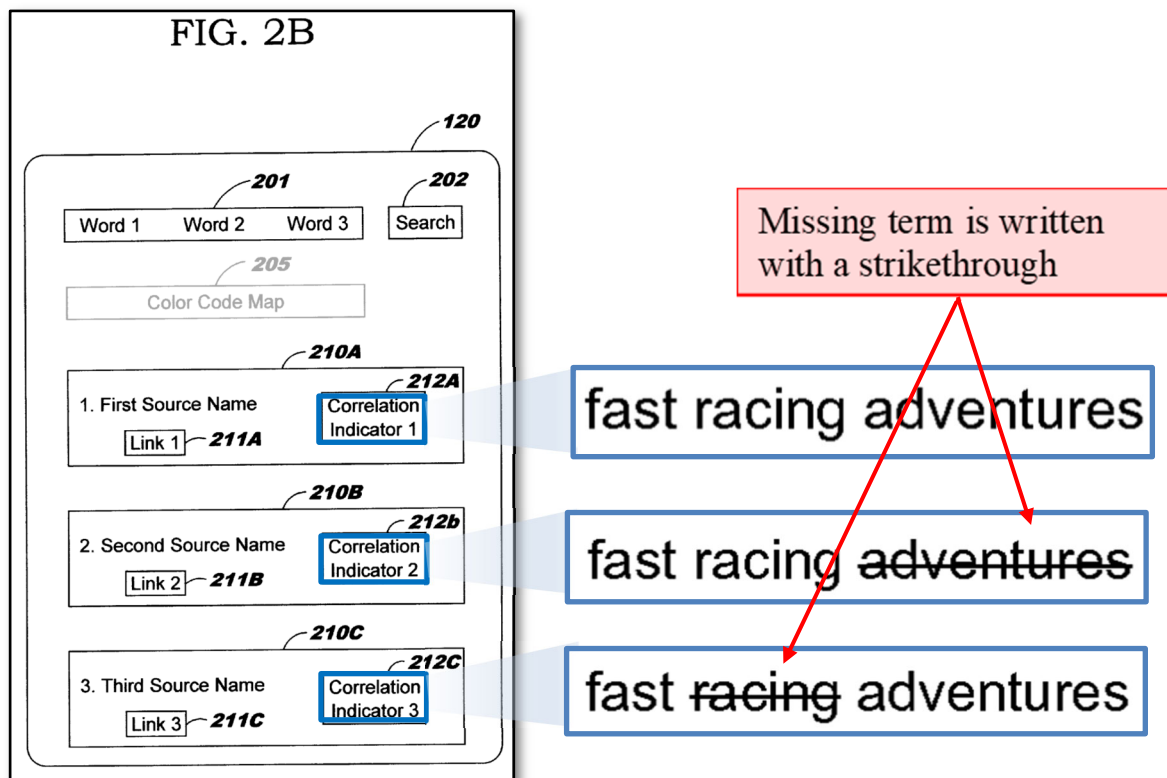
In Bates-alone, illustrated below, each missing *search term element* is written in a font “color not associated with any keyword by the color code map 205” (Bates, [0033]) (*e.g.*, muted-gray).



This meets (i) *a font representing the text has been altered* because the font for the element has been *altered* from its initially assigned color (*e.g.*, from blue or

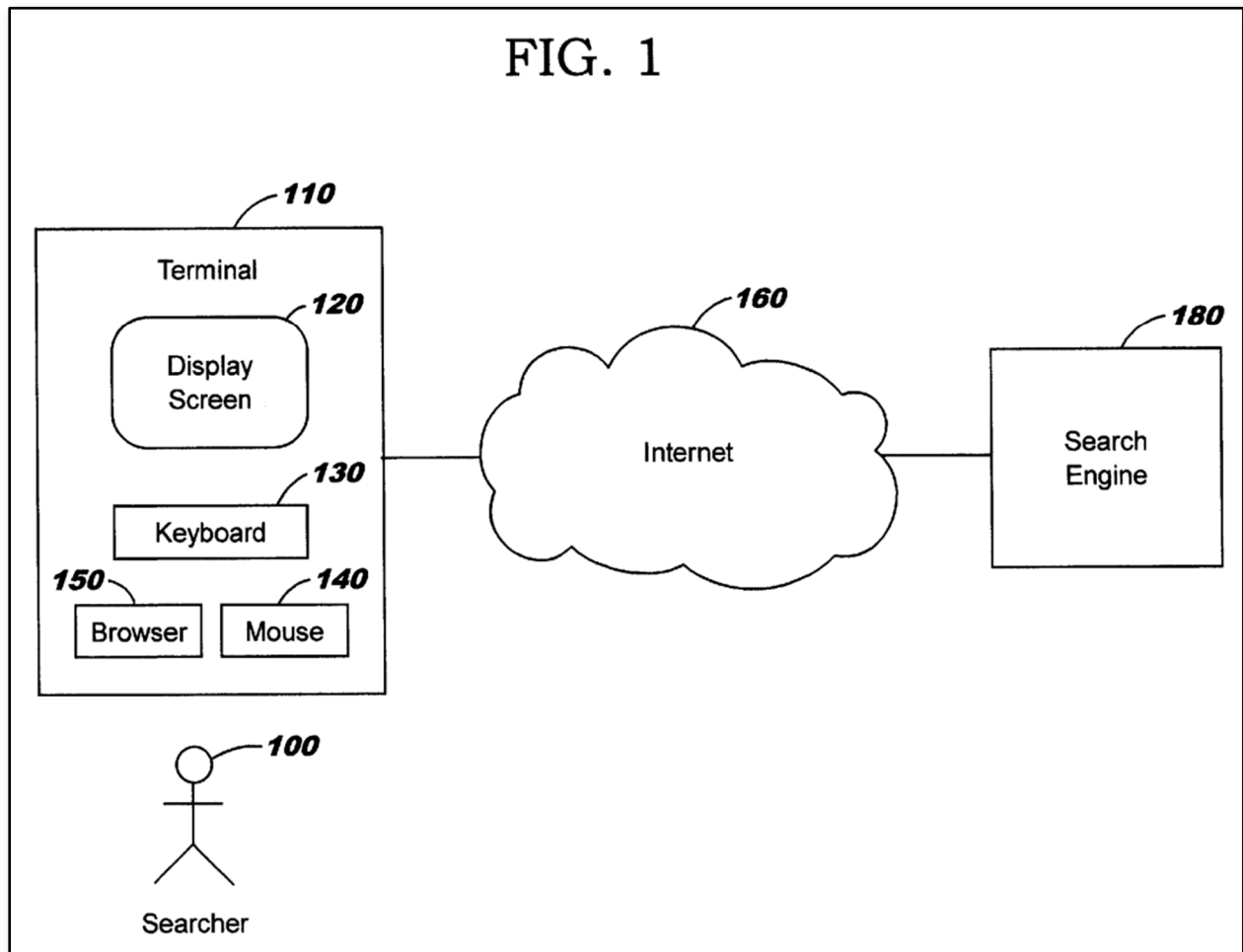
red to gray). Bederson-Decl., ¶¶149-150 (citing EX1046, FIG. 6, [0046]-[0047]; EX1024, [0005]).

In Bates-Bhagat, illustrated below, each missing *search term element* is written with a strikethrough, which meets the *formats* of (i) a font representing the text has been altered; (ii) ...text...with one or more lines merged with the text and/or (iii) ...text...with one or more lines superimposed thereupon. Bederson-Decl., ¶151.



3. **Claim 9: “...the system also includes the computing device.”**

As discussed above (§VI.D.1.a, [1PRE]) and illustrated in Bates’s Figure 1 (below), Bates’s “search environment” (*system*) *includes* user “terminal 110 [left],” *the computing device*. Bates, [0023]; Bederson-Decl., ¶152.



4. **Claim 10: “...the annotation enables the user to reduce lost time, thereby speeding an Internet search process.”**

As discussed above (§VI.D.1.j), Bates’s correlation indicator (*the annotation*) allows “the searcher [*user*]” to “readily grasp the *relevance* of the URL to the

search” (Bates, [0033], [0015], [0040]) and, thus, *enables the user to reduce lost time, thereby speeding an Internet search process* because it indicates which search-term element is missing from and which are present in each search result, thereby allowing a user to ascertain that information without clicking on each website. Bederson-Decl., ¶¶153-155 (citing corroborating EX1027, [0005]-[0006]; EX1048, 5:18-6:7).

5. Claim 11

Independent claim 11 recites a method that mirrors the actions performed by the system recited in independent claim 1. Bates-alone and Bates-Bhagat meet the following limitations of claim 11 for the reasons discussed in the corresponding sections above. Bederson-Decl., ¶156.

Limitation	Addressed in Section:
[11PRE]	§VI.D.1.a ([1PRE])
[11A]	§VI.D.1.c ([1B])
[11B]	§VI.D.1.d ([1C])
[11C]	§VI.D.1.e ([1D])
[11D]	§VI.D.1.f ([1E])
[11E]	§VI.D.1.g ([1F])

[11F]	§VI.D.1.h ([1G])
[11G]	§VI.D.1.i ([1H])
[11H]	§VI.D.1.j ([1I])

6. Claim 20

Independent claim 20 recites an apparatus that largely mirrors the system recited in independent claim 1. Bates-alone and Bates-Bhagat meet the following limitations of claim 20 for the reasons discussed in the corresponding sections above. Bederson-Decl., ¶157.

Limitation	Addressed in Section:
[20PRE]	§VI.D.1.a ([1PRE])
[20A]	§VI.D.1.a ([1PRE]; demonstrating that <i>the computing device is connected to an Internet</i>), §VI.D.1.c ([1B]; demonstrating that the <i>computing device communicates with a user</i> by receiving a search request provided by the user), §VI.D.1.e ([1D]; demonstrating that <i>the computing device receives and displays information</i> (from the server) <i>related to the Internet search</i>)

[20B]	§VI.D.1.c ([1B])
[20C]	§VI.D.1.d ([1C]; demonstrating that <i>the computing device causes the Internet search to be performed</i> at the server)
[20D]	§VI.D.1.e ([1D])
[20E]	§VI.D.1.f ([1E])
[20F]	§VI.D.1.g ([1F])
[20G]	§VI.D.1.h ([1G])
[20H]	§VI.D.1.i ([1H])
[20I]	§VI.D.1.j ([1I])

7. Claims 18-19, 24-25

Bates-alone and Bates-Bhagat meet the limitations added by the claims below for the reasons discussed in the corresponding sections above. Bederson-Decl., ¶158.

Claims	Addressed in Section:
18, 24	§VI.D.2 ([claim 8])
19, 25	§VI.D.4 ([claim 10])

VII. GROUND 1B: THE GROUND 1A COMBINATIONS IN VIEW OF NAICK RENDER OBVIOUS CLAIMS 2, 5, 12, 15, AND 21

Ground 1B challenges dependent claims 2, 12, and 21 (and their dependent claims 5 and 15), which each require that *the annotation is provided also in response to a presence or absence of the one or more search term elements in one or more descendant webpages of the referenced webpage, and wherein each descendant of the referenced webpage is a webpage linked directly one level from the referenced webpage* (hereinafter “the *descendant-webpage* limitation”). A “*descendant webpage*” is a webpage to which a search-result webpage links; for example, if www.uspto.gov is the search-result webpage, then www.uspto.gov/patent is a “*descendant webpage*” because a link to this webpage is found at www.uspto.gov. EX1001, 10:25-11:15, FIGS. 6-7; *see also* Bederson-Decl., ¶159.

Searching descendant webpages based on a user’s keyword search was known. Bederson-Decl., ¶¶160-161 (citing, *e.g.*, EX1041, 3:14-32; EX1042, p. 9). As discussed below, POSAs had reason to incorporate such known functionality into Bates-alone and Bates-Bhagat.

A. Naick (EX1009)

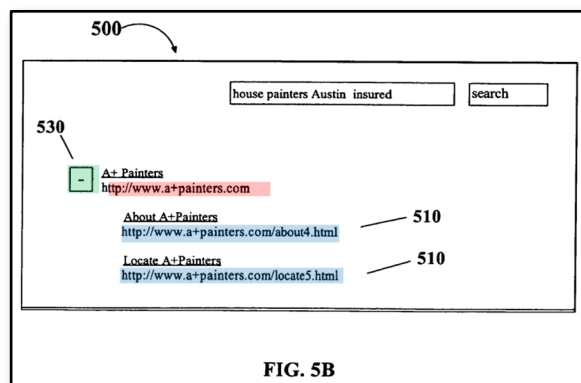
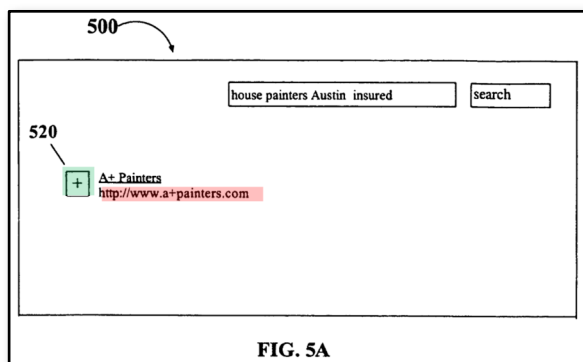
Naick concerns “query based Internet searching.” Naick, [0001]. Naick teaches that some “conventional search systems fail to return web sites that may contain the requested information” because the website “do[es] not have all search terms located on *a single page* of the site.” Naick, [0004]. A website may be

relevant to the user's query, but because no single page on the website includes all the search terms, it is not returned as a search result, which prevents the user "from receiving possibl[y] relevant information." Naick, [0004]; [0023]; Bederson-Decl., ¶¶162-163.

Naick addresses this potential deficiency by disclosing "query based searches that provide results wherein at least one of the query terms...may appear on a different page of a web site or domain." Naick, [0005], [0018] ("A web site...is generally assigned a domain name, such as 'www.ibm.com.'"). With Naick's search, "grouped pages may be evaluated as a single searchable entity, and search results may be grouped according to domain." Naick, [0006]. Naick's search technique evaluates a keyword index that "hold[s] and compare[s] domain information *i.e.* web site information rather than web page information." Naick, [0021]. Thus, rather than indexing search terms only for individual webpages, Naick indexes search terms based on their presence in at least one of multiple, related webpages from the same website. Bederson-Decl., ¶¶164-165.

In Naick's Figure 5A (highlighted below left), search results initially display only the relevant website's homepage/top-level domain (*e.g.*, "http://www.a+painters.com" highlighted red). Naick, [0025]-[0026], [0018]-[0019] (explaining that "other pages within a web site" are identified by "follow[ing] links to other pages on a home page"). Clicking the "+/- icon" (green) shows

descendant webpages (highlighted blue in Figure 5B below right) that contributed to the top-level website being identified in the results, *i.e.*, Naick can display the descendant webpages that contained one or more of the search terms. Naick, [0002].



B. Bates-Naick and Bates-Bhagat-Naick Combinations

Naick teaches that providing search results based only on matching keywords for individual webpages, rather than considering related webpages within the same website, may miss “possibl[y] relevant information.” Naick, [0004]. Thus, POSAs had motivation to include in the systems in Ground 1A’s Bates-alone and Bates-Bhagat combinations the ability to identify potentially relevant results based on search terms found on both a webpage and its related webpages (*e.g.*, a website’s homepage and descendant webpages). *Bederson-Decl.*, ¶166. In these Ground 1B combinations, based on Naick, Bates’s search engine would have identified a webpage as relevant based on the presence of keywords in the webpage itself and/or in its descendant webpage(s). *Id.*

Naick also teaches that “[a] user may set search parameters to include or discard results based on distance between search terms within a domain.” Naick, [0027]. POSAs understood that means that the number of descendant-webpage levels to search for a term missing from the initial page was a design option (*e.g.*, searching just descendant webpages one link away from the parent page versus including multiple descendant levels). In Ground 1B’s Bates-Naick and Bates-Bhagat-Naick combinations, POSAs would have been motivated to provide implementations that consider only one descendant level, as POSAs knew this was a design tradeoff that may be desirable in situations where speed (*i.e.*, reducing the number of levels to aggregate and search) was prioritized over finding all relevant webpages at all possible levels. Bederson-Decl., ¶¶167-170 (citing corroborating EX1058). This implementation is also consistent with Naick’s Figure 5B which only depicts descendant webpages (*e.g.*, “<http://www.a+painters.com/about4.html>”) that are linked directly one level from the referenced webpage (“<http://www.a+painters.com/>”). Naick, [0024]-[0025]; Bederson-Decl., ¶171.

POSAs would have reasonably expected success because Naick’s “[s]earch logic may be substantially similar to that of conventional search systems” (Naick, [0026]) and only requires a “search engine,” like Bates’s, with “conventional components” (Naick, [0027]-[0029]). Bederson-Decl., ¶172.

C. Mapping to Claims

1. Claims 2, 12, 21

Claims 2, 12, and 21 depend, respectively, from independent claims 1, 11, and 20. Ground 1B's combinations build on Ground 1A's combinations (*i.e.*, Bates-alone and Bates-Bhagat), and meet those independent claims for the same reasons Ground 1A's combinations do. *Supra* Ground 1A; Bederson-Decl., ¶¶173-174.

As discussed above (§VII.B), each Ground 1B combination includes the *annotations* used in either the Bates-alone or the Bates-Bhagat combination. *Supra* Ground 1A, [1D]. Based on Naick, these *annotations* for a webpage also consider the presence or absence of search-term elements in the webpage's descendant webpage(s). Naick, [0004]-[0006], [0022]-[0023]. As discussed *supra* §VII.B, POSAs had reason to limit the search to only search descendant webpages that are linked directly one level from the referenced webpage. Bederson-Decl., ¶175.

2. Claims 5, 15

Claims 5 and 15, which depend from claims 2 and 12, respectively, add the same limitation that claim 8 adds to independent claim 1. *Supra* Ground 1A. Ground 1B's combinations maintain the same *annotations* discussed for Ground 1A, and thus meet claims 5 and 15 for the same reasons discussed in Ground 1A for claim 8. Bederson-Decl., ¶¶176-178.

VIII. GROUND 1C: THE GROUND 1A AND GROUND 1B COMBINATIONS IN VIEW OF BRINSON RENDER OBVIOUS CLAIMS 3, 6, 13, 16, AND 22.

Ground 1C challenges claims that require *a selectable filtering function that, when selected by the user, causes the search-result webpages missing one or more search term elements to be removed from being displayed* (hereinafter “the *selectable-filtering-function* limitation”).

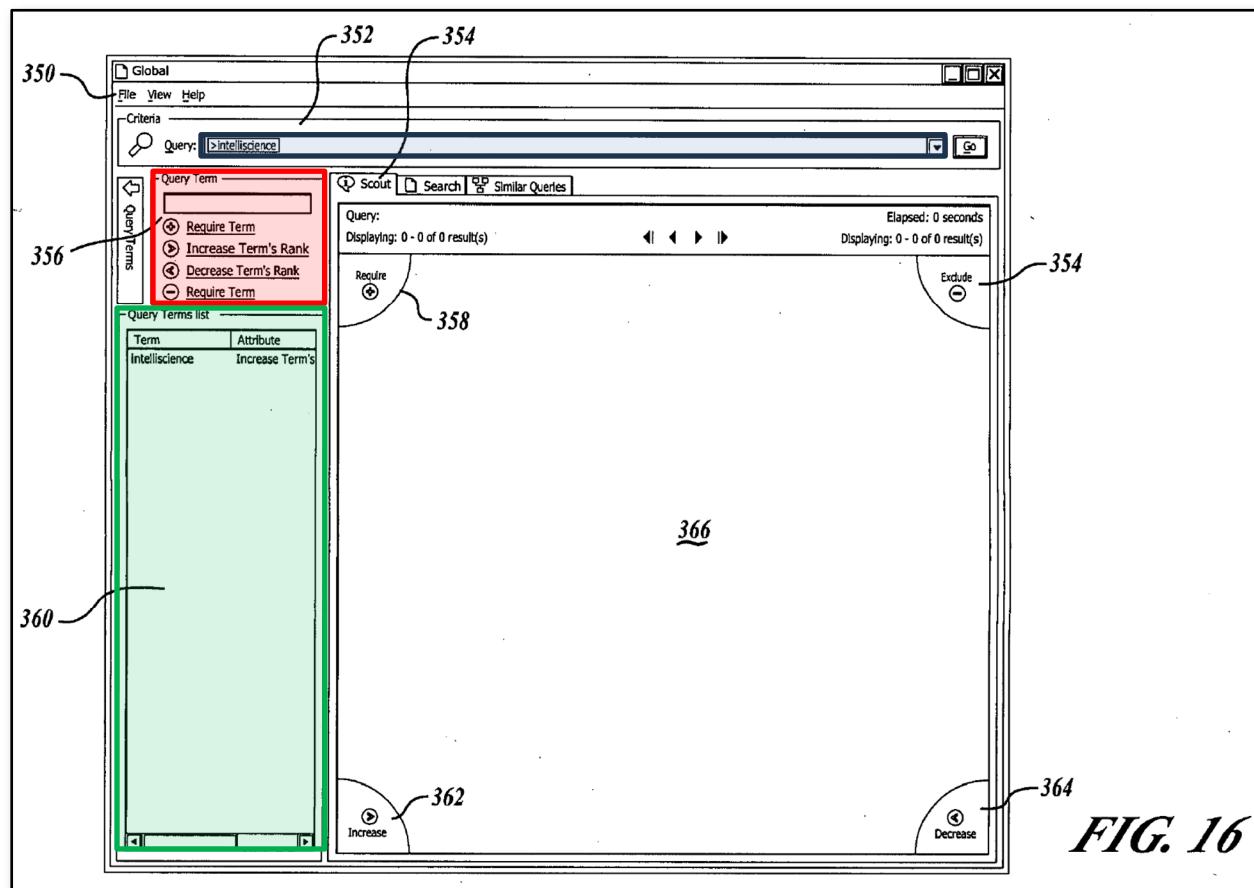
As discussed below, POSAs had reason to incorporate such known filtering functionality into Ground 1A’s combinations (Bates-alone or Bates-Bhagat) and Ground 1B’s combinations (Bates-Naick or Bates-Bhagat-Naick). Bederson-Decl., ¶¶179-181.

A. Brinson (EX1007)

Brinson discloses a graphical user interface (GUI) for search engines that allows users to designate a search term’s “weight” to indicate its “significance” to a search. Brinson, [0044]. If a term is designated “required” as its “weight value,” then “any data product [*e.g.*, a webpage] included in the results *must* include this term.” Brinson, [0045]; [0030] (“data products...includ[e]...web page[s]”).

In one example (depicted in Figure 16 below), search terms entered into “query text box 352” [blue] are also displayed in “list box 360” [green]. Brinson, [0069]-[0071]. After Brinson executes a search, the “display area 366” provides a list of data products (webpages) relevant to the search. Brinson, [0072]. The user

can then subsequently designate one of the initial search terms as a required term by selecting it from the list box 360 which sends the term to “text box 356” [red] where the term’s weight can be designated, *e.g.*, making it a required term. Brinson, [0071]; *see also id.*, claims 7, 24; Bederson-Decl., ¶¶182-185.



A similar example is depicted in Figure 18 (below). In this example, certain terms that appear in each data product (website) are listed below each data product and a user can select a listed term to designate its weight, *e.g.*, to make it a required term. Brinson, [0073] (“The terms shown under a data product in list 380 can be selected by the user to refine the present search....”); Bederson-Decl., ¶186.

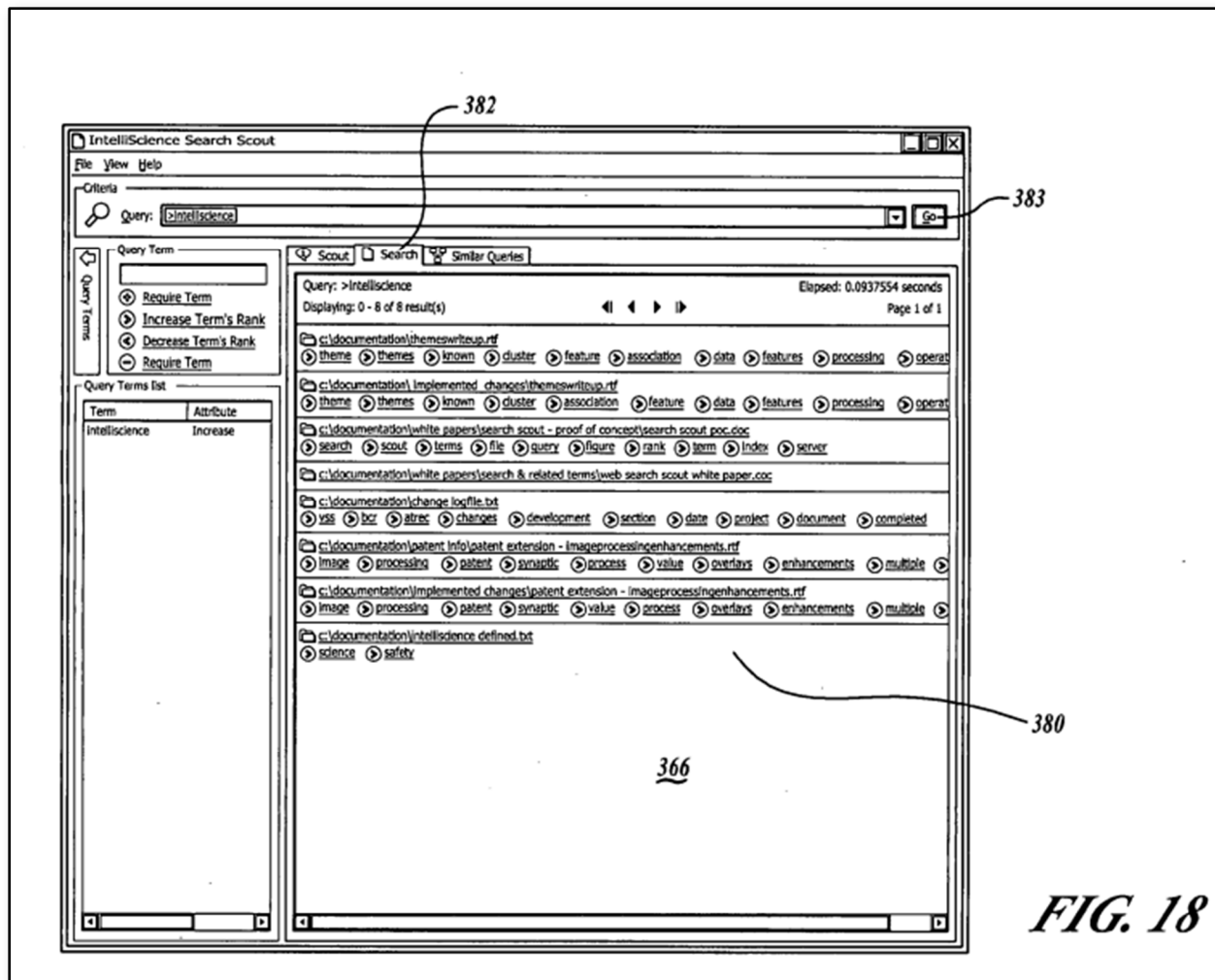


FIG. 18

B. The Bates-Based Brinson Combinations

As discussed in Ground 1A, Bates's search engine may return search results missing search terms. POSAs knew, however, that users may want results that include (or exclude) a particular term, and therefore it was conventional for "search engines" to "support 'include'...Boolean operators," which required search results to include a search term(s). EX1035, [0009]; *see also* EX1036, [0024]; Bederson-Decl., ¶187.

Brinson discloses a search-engine GUI that includes a user-friendly way—*i.e.*, user-selectable GUI elements—to indicate that a search term is ““required”” so that “the results must include this term.” Brinson, [0045]; *see also* Brinson, FIGS. 16 & 18, [0069]-[0071], [0073]; Bederson-Decl., ¶188.

In view of Brinson, POSAs had reason to augment Bates’s search-engine interface in Bates-alone and Bates-Bhagat to include user-selectable GUI elements to allow the user to designate a search term as required. Doing so would have also been applying aspects of Brinson’s known GUI elements for making a search term required, to a known search-engine interface ready for the improvement to yield the predictable result of Bates’s interface allowing users to designate a search term as required. *KSR*, 550 U.S. at 417. Adding Brinson’s functionality to Bates would have furthered Bates’s goal of providing an interface that allows a user to “form an effective picture of the relevance of the sources found by the search engine” (Bates, [0009]), by allowing users to refine their initial searches to eliminate irrelevant results. Bederson-Decl., ¶189.

One obvious way to apply Brinson’s teachings to Bates-alone and Bates-Bhagat would have been to make the individual search terms presented next to each search result selectable so that an individual term could be designated as required. Bederson-Decl., ¶190. This implementation would have been similar to how Brinson’s Figure 18 example allows individual terms presented next to individual

search results to be selected and designated as required. Brinson, [0073]; Bederson-Decl., ¶¶190-197 (citing, *e.g.*, EX1060 as additional examples).

A known technique for implementing what Brinson describes would have applied the “required”-term designation to already-identified search results, rather than execute an entirely new search, thereby causing the system to display an updated set of search results by removing, from the already-identified search results, references to webpages that are missing one or more terms from the user’s query. Bederson-Decl., ¶198. For example, Fowler (EX1081) corroborates POSAs’ knowledge of a “sifting operation” for a search engine in which—after conducting an initial search—a user can designate keywords as “include” (*i.e.*, required) and the sifting operation will exclude results that are missing the term, without running a new search. Fowler, FIGS. 1-2, [0022], [0038]-[0041]. Stonehocker (EX1082) similarly corroborates the known technique of providing an option to exclude results that are missing a required term from already-identified search results. Stonehocker, FIG. 6, [0005], [0041]-[0043]. Bederson-Decl., ¶¶199-200. Beyond being a routine, known design choice, this implementation would have beneficially avoided the need to re-run an entire search, which would require additional time and server computations. Bederson-Decl., ¶198.

The above-described implementation uses the same Bates-alone and Bates-Bhagat interface illustrated previously except the text of the search terms in each

search-result grouping would be selectable so each term can be designated as required. Bederson-Decl., ¶201. POSAs would have reasonably expected success because it required only ordinary programming skill to adapt the term-requiring aspects of Brinson’s GUI (*e.g.*, conventional user-selectable GUI elements, like clickable text) to be implemented in the search engines of the Ground 1A combinations. Bederson-Decl., ¶202.

C. Mapping to Claims

1. Claims 3, 13

Claims 3 and 13 depend from claims 2 and 12, respectively. Ground 1C’s combinations build on Ground 1B’s combinations (Bates-Naick and Bates-Bhagat-Naick) and meet claims 2 and 12 for the same reasons Ground 1B’s combinations do. *Supra* Ground 1B; Bederson-Decl., ¶203.

Claims 3 and 13 add the *selectable-filtering-function* limitation to claims 2 and 12. As discussed above, POSAs had motivation to augment Ground 1B’s combinations (Bates-Naick and Bates-Bhagat-Naick) to include, based on Brinson, user-selectable GUI elements (*e.g.*, clickable buttons or text) that allow users to designate a search term as mandatory. Bederson-Decl., ¶204. Once augmented in this manner, the combinations meet the *selectable-filtering-function* limitation because selecting the GUI element to designate a search term as “required” *causes*

the search-result webpages *missing* that search term *to be removed from being displayed*. Bederson-Decl., ¶205.

If claims 3 and 13 require the search results to be updated in response to a single click by the user, that would have been obvious as a simple, beneficial design option for user convenience of, *e.g.*, not requiring the user to select multiple filter buttons before updating search results. Bederson-Decl., ¶¶206-213 (citing Bhagat, FIG. 2, 8:16-19, 9:1-16; Wang, FIG. 2, 6:6:53-58; EX1031, [0042]; EX1068, [0194]-[0196]).

2. Claims 6, 16, 22

Claims 6, 16, and 22 depend from independent claims 1, 11, and 20, respectively, and add the *selectable-filtering-function* limitation. Ground 1C's combinations meet the independent claims for the same reasons Ground 1A's combinations (Bates-alone and Bates-Bhagat) do, and further meet the *selectable-filtering-function* limitation as discussed above for claims 3 and 13. Bederson-Decl., ¶214.

IX. GROUND 1D: THE GROUND 1A AND 1B COMBINATIONS IN VIEW OF MEHTA RENDER OBVIOUS CLAIMS 4, 7, 14, 17, AND 23

Ground 1D challenges claims that require including, on a search-results webpage, *one or more advertisements related to...the search term elements* (hereinafter “the *search-term-advertisement* limitation”). The '959 patent concedes these ads were “common” in the art. EX1001, 2:47-51, FIG. 1.

As discussed below, POSAs had reason to incorporate such common functionality into Ground 1A's combinations (Bates-alone and Bates-Bhagat) and Ground 1B's combinations (Bates-Naick and Bates-Bhagat-Naick). Bederson-Decl., ¶¶215-216.

A. Mehta (EX1008)

Mehta explains that advertisers “lure a consumer to the advertiser’s website...by strategically placing [an] advertisement in [a] search results webpage.” Mehta, [0005]. Mehta says “advertisers define their advertisements based on one or more keywords that they believe will be used by consumers searching for products/services similar to the ones offered by the advertisers.” *Id.* “The search engine” “searches an ad inventory to determine if the [consumer’s] keywords match keywords that define an advertisement” and “the relevant advertisement[s] will be included in with search results” by “appear[ing] next to or above the search results webpage.” *Id.*

Mehta’s Figure 3A (highlighted below) depicts a search-result webpage with “sponsored advertisements” (red) displayed “along with a plurality of search results.” Mehta, [0033]. The webpage includes both “sponsored advertisements that match the search parameters” (*i.e.*, the user’s search query) and search results that match the query. *Id.* Bederson-Decl., ¶¶217-220.

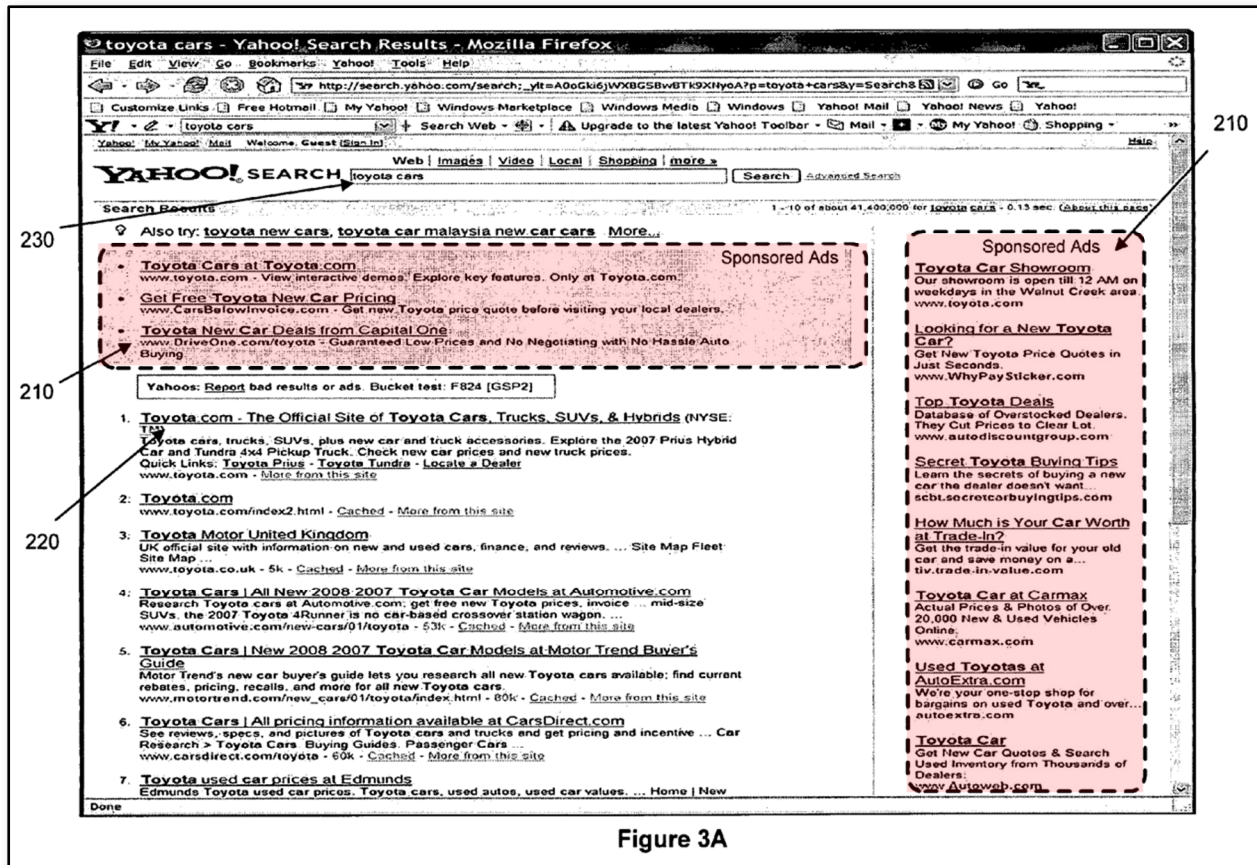


Figure 3A

B. The Bates-based Mehta Combinations

Mehta demonstrates that displaying “relevant advertisement[s]” alongside search results was known. Mehta, [0005]. The ’959 patent recognizes this fact too. EX1001, 2:48-50, FIG. 1. And POSAs knew that search-engine providers displayed ads to generate revenue. Bederson-Decl., ¶221 (citing corroborating EX1015, [0004]; EX1016, [0006]).

In view of Mehta, POSAs would have had motivation—*i.e.*, to generate revenue—to implement the combinations set forth in Ground 1A (Bates-alone and Bates-Bhagat) and Ground 1B (Bates-Naick and Bates-Bhagat-Naick) such that each combination’s search-engine interface (*i.e.*, an interface like the one depicted in

Bates's Figure 2B) displays advertisements related to the user's search terms. Bederson-Decl., ¶222.

These implementations would have been using a known technique (*i.e.*, search-term-based advertisements) to improve similar systems (*i.e.*, search engines) in the same way (*i.e.*, allowing for the search-engine provider to generate revenue). Bederson-Decl., ¶223. POSAs would have expected success because it would have required only ordinary programming skill to incorporate Mehta's conventional advertising functionality into Bates's user interface. *Id.*

C. Mapping to Claims

1. Claims 4, 14

Claims 4 and 14 depend from claims 2 and 12, respectively. Ground 1D's combinations build on Ground 1B's combinations (*i.e.*, Bates-Naick and Bates-Bhagat-Naick) and meet claims 2 and 12 for the same reasons that Ground 1B's combinations do. *Supra* Ground 1B; Bederson-Decl., ¶224.

Dependent claims 4 and 14 add the *search-term-advertisement* limitation to claims 2 and 12. As discussed above, Mehta provides POSAs with motivation to augment Ground 1B's combinations to display advertisements related to the user's search terms. Bederson-Decl., ¶225. Once augmented in this manner, the combinations meet the *search-term-advertisement* limitation. *Id.*

2. Claims 7, 17, 23

Claims 7, 17, and 23 depend from independent claims 1, 11, and 20, respectively, and add the *search-term-advertisement* limitation.

Ground 1D's combinations meet the independent claims for the same reasons Ground 1A's combinations (Bates-alone and Bates-Bhagat) meet those claims, and Ground 1D's combinations meet the additional *search-term advertisement* limitation for the reasons discussed above for claims 4 and 14. Bederson-Decl., ¶¶226-227.

X. GROUND 2A: WANG-MILLS RENDERS OBVIOUS CLAIMS 1, 8-11, 18-20, 24-25

A. Wang (EX1005)

Wang concerns keyword-based search engines. Wang, [0001], [0014], [0016]. Wang says “[m]ost keyword-based search engines operate on the assumption that the user intends to only find documents that contain all of the [user-selected] search terms.” Wang, [0002]. Wang calls this “and-based searching.” *Id.*; Bederson-Decl., ¶¶228-229 (discussing Boolean “AND” operator).

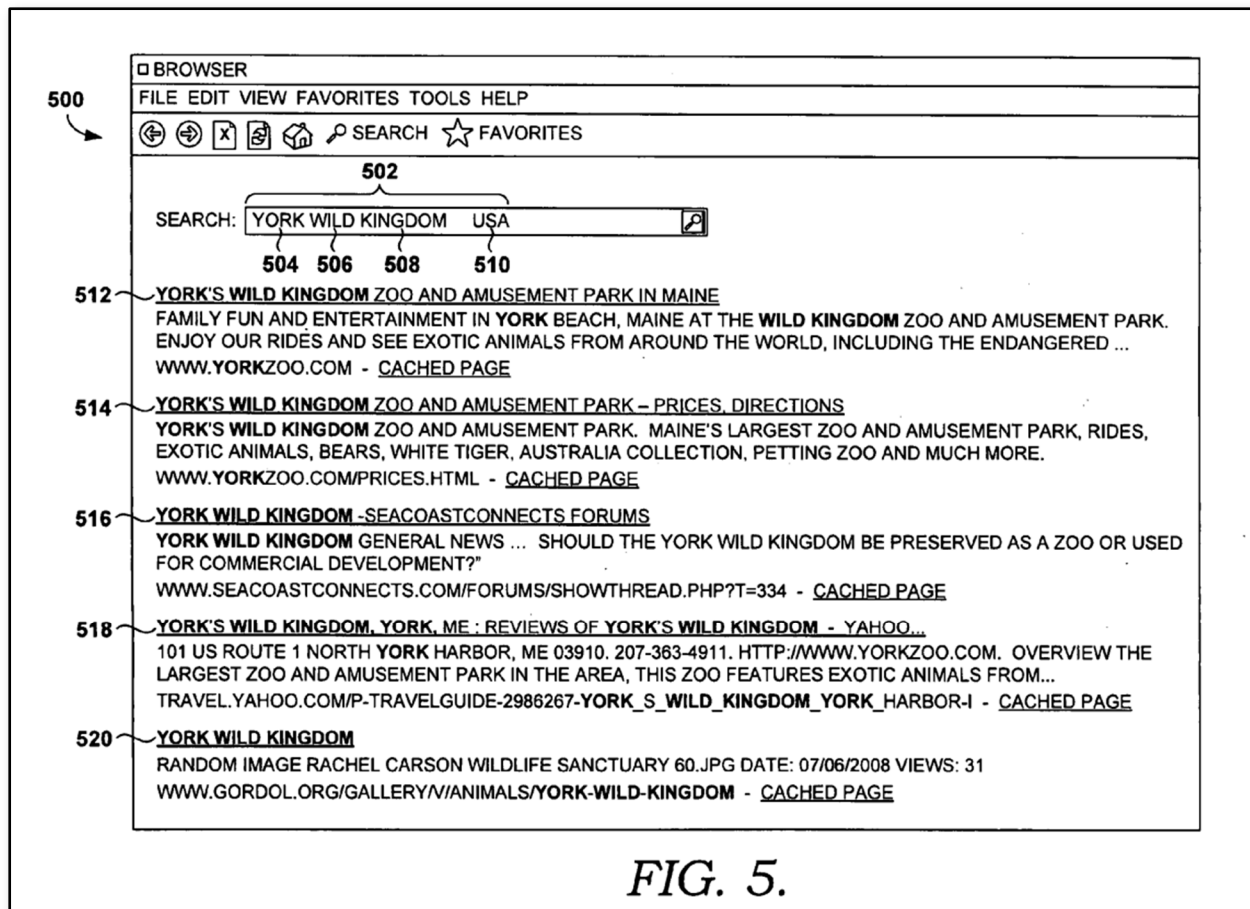
A problem with “and-based searching” occurs when a user “over-specifies a query by including unnecessary terms.” Wang, [0002]. When this happens, relevant search results “missing one or more of the extra terms will not be located.” *Id.* For example, if a user enters a four-keyword query, the search engine “will not return documents that do not include all four keywords” even though there may be relevant

webpages that hit only some of those keywords.⁵ Wang, [0001]-[0002]; Bederson-Decl., ¶230.

To reduce the risk of excluding potentially relevant documents, Wang teaches “relaxed searching” where a search engine identifies search results “that include only a subset of the keywords submitted by a user.” Wang, [0014], [0031]. “The subset of keywords equals the total number of keywords (N) minus a given number (K) less than N.” Wang, [0014]. “For example, if a query” contained four keywords “and K was equal to 1, documents would only have to include any three of the above words to be included on the results list.” Wang, [0014], [0031]. Bederson-Decl., ¶231.

Wang’s Figure 5 (below) illustrates “a search-results list from a search engine performing relaxed searching.” Wang, [0053]. In the example, a user submitted a four-word query (“york,” “wild,” “kingdom,” and “USA”), and the search engine “returned a list of results that contained N-K keywords” where N=4 and K=1. *Id.* “The resulting documents thus have at least 3 of the 4 keywords.” *Id.*; Bederson-Decl., ¶232.

⁵ In Wang, “documents” include Internet webpages. Wang, [0030].



As shown above, Wang emphasizes (in bold) search terms that *appear* in each search-result grouping, explicitly informing the user that those search terms are present in the corresponding search result, and thereby *suggesting* which search term(s) is/are missing. Bederson-Decl., ¶¶233-236. POSAs would have been motivated to extend Wang by making explicit which search terms are missing. *Infra* §X.C. Bederson-Decl., ¶237.

B. Mills (EX1006)

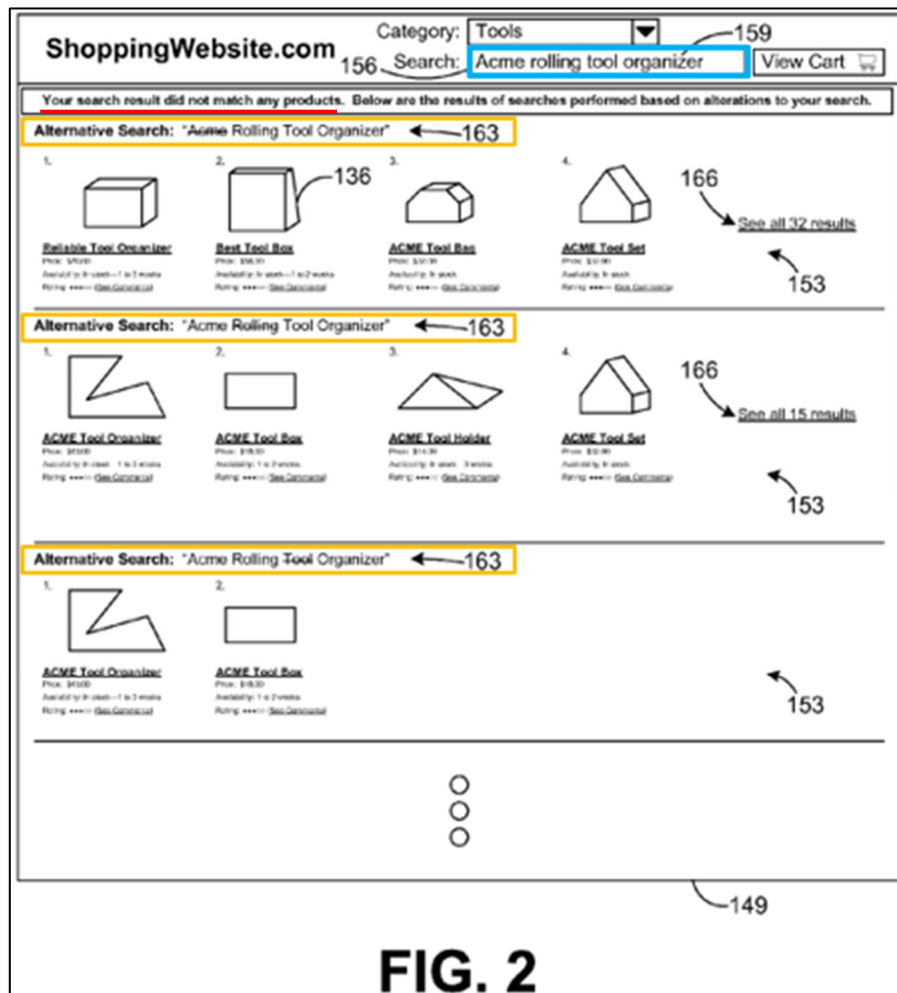
Mills relates to keyword searching. Mills, 1:39-45, 3:26-28, 4:16-19. Mills discusses examples of searching “to identify...products for purchase,” but says this

is just “one example” and the described techniques are applicable more generally, such as “to perform a web search.” Mills, 2:40-44, 4:16-19.

Like Wang, Mills observes a problem when a “customer...enter[s] a word search that has too many terms”: the search engine may return few (if any) results because of the “overly constrained” search parameters. Mills, 1:8-11; *see also id.* 3:29-56. Bederson-Decl., ¶¶238-240.

To address this problem, Mills’s search engine “detects [that] a query” “generated from a search string fail[ed] to identify at least a predefined threshold number of items,” *e.g.*, at least 10 “items,” which in a web-search embodiment would be search results from a “web search.” Mills, 4:39-47; *see also id.*, 2:40-44, 4:16-19; Bederson-Decl., ¶241. When this happens, “the search engine” “is configured to generate one or more altered versions of the search string by making various modifications to the search string.” Mills, 4:48-53. Mills’s “altered” search strings can be generated by removing one or more keywords from the original search string. Mills, 5:60-63.

Figure 2 (annotated below) illustrates an interface for Mills’s search engine. Mills, 1:25-27. As seen below, the user inputs a search string into a search box. Mills, 6:29-33. The example search string—“acme rolling tool organizer”—is highlighted blue below.



In this example, the four-word search string “does not provide any results for a search” (see notification underlined red above). Mills, 6:33-36. Because no results were found for the original search string, the search engine “generates a plurality of altered versions of the search string 159 that are displayed as altered search strings 163.” Mills, 6:38-46. Each of the three altered search strings (orange boxes above) is the original four-word search string with one word removed. Bederson-Decl., ¶¶242-243. For example, the second altered search string is “Acme ~~Rolling~~ Tool

Organizer,” which indicates that the original search string was altered by removing “Rolling.” Bederson-Decl., ¶243.

“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.” Mills, 6:43-46. For example, the second resulting “group 153” identifies results that matched the three-word search “acme tool organizer.” Bederson-Decl., ¶244. The strikethrough annotation (“~~Rolling~~”) indicates that in each result in the second group the search engine found three search terms – “Acme,” “Tool,” and “Organizer” – but did *not* find “Rolling” in any of those results because, otherwise, the original search *would* have found products that matched all four terms. Bederson-Decl., ¶244.

Mills ensures that a “user advantageously receives results to a search even though the search string 159 that they entered would result in no identified items” and “educate[s] users...as they can compare and contrast” the results of their original search with the results from various altered searches. Mills, 7:32-40. Bederson-Decl., ¶¶245-250.

C. Wang-Mills Combination

Given 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. Bederson-Decl., ¶251.

Wang and Mills relate to a common problem: preparing search results based on over-constrained search strings. Bederson-Decl., ¶252. They address that problem in similar ways: displaying search results of altered (and broadened) versions of the user’s original search string (*e.g.*, with one of the user’s original keywords removed). *Id.*

Mills, however, recognizes a potential problem: “irrelevant items [] may be included in a search result generated based upon part [*i.e.*, a subset] of [an] entire search string.” Mills, 3:61-64. That may cause a user to “lose faith that” the search engine “will reveal relevant results,” which may “discourage further user participation.” Mills, 3:64-4:4. Bederson-Decl., ¶253.

To mitigate that problem, Mills annotates search results by “graphically associat[ing]” the search results with the altered search strings that yielded those results. Mills, 6:43-46. Mills identifies at least two principal benefits to its annotations. Bederson-Decl., ¶254.

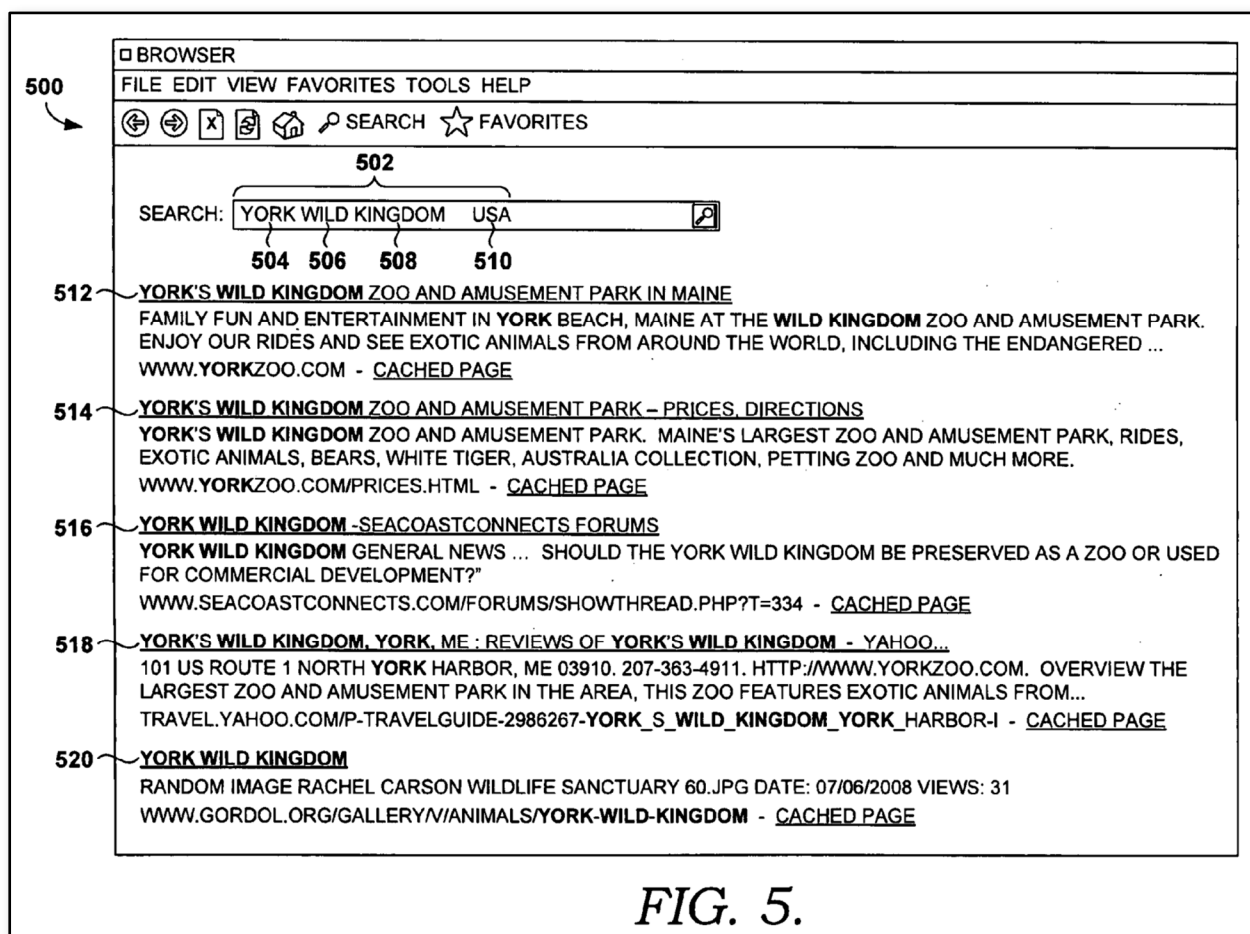
First, displaying search results “along with the associated altered search strings 163 allows a user to see how other permutations of the original search string” yielded results whereas the original search string did not. Mills, 7:18-23. This “disabuse[s]” the user of the belief that there are no search results relevant to the user’s original search string. Mills, 7:23-25. Bederson-Decl., ¶255.

Second, because “the altered search strings 163 are displayed in association with” their respective search results, “a user can see how the alteration made to the respective altered search string 163 may have resulted in” results “that are not particularly relevant” to the user’s original search string. Mills, 7:25-31. That is, the annotations inform the user what term was removed to identify a result and thus what term is missing, which may affect the result’s relevance to the user. Bederson-Decl., ¶256; *see also* Mills 7:35-40 (search-term annotations “serve[] to educate users”), 5:18-28 (search-term annotations help users identify results that “appear to be more relevant”).

POSAs would have recognized that Mills’s search-term annotations are applicable to any search system that displays results that can match only a subset of a user’s search terms. As discussed above, Wang is such a system and thus suffers the potential problems Mills identified: some of Wang’s search results might match only a subset of user-supplied search terms but (without Mills) Wang does not indicate which search terms have been removed for each broadened search result. Bederson-Decl., ¶257.

Wang’s Figure 5 example (below) includes four keywords—YORK WILD KINGDOM USA. Wang says “[t]he resulting documents...have at least 3 of the 4 keywords.” Wang, [0053]. Each search-result grouping includes in **bold** “YORK,” “WILD,” and “KINGDOM,” and thus each corresponding result clearly includes

those keywords. Bederson-Decl., ¶258. However, it is unclear to the user 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, (e.g., somewhere other than in the title, URL, or excerpt displayed by the search engine). Wang, [0053] ("*As is shown*,...all [results] contain at least 3 of [the] keywords."). Bederson-Decl., ¶258, ¶¶234-236 (citing EX1055-EX1057).



Because it is unclear whether any un-displayed keyword is actually missing from each webpage (and which webpages are missing the keyword and which are

not), POSAs would have recognized that Wang's system is ready for improvement via the above-described benefits of Mills's annotations (*e.g.*, helping the user identify and ignore potentially irrelevant results), which would have been achieved in Wang's system by displaying the specific keywords that Wang used to identify each search result and crossing out keywords that are missing in the associated webpage. Bederson-Decl., ¶259. The combination would have thus been using a known technique (Mills's displayed altered search strings) to improve a similar device (Wang's search engine) in the same way (providing users with additional information that improves their searching experience). *Id.*; *KSR*, 550 U.S. at 417.

Using Wang's Figure 5 example, the interface in Wang-Mills would have displayed the altered search string adjacent to (or below) each search result, with a strikethrough applied to any term(s) missing from the corresponding search result. Bederson-Decl., ¶¶260-261. Including the annotations adjacent/below each search result is consistent with Wang's FIG. 5 which already bolds search terms present in each search result and would be consistent with how known search engines annotated search results. Bederson-Decl., ¶¶261-267 (citing, as examples of per-search-result annotations, EX1029, FIG. 3, 5:63-6:49; EX1043, FIGS. 7-9, 13:9-31; EX1044, FIG. 10, [0095]).

As discussed above, Wang's FIG. 5 is consistent with one or more search results missing "USA" on their corresponding webpage. In the hypothetical example

below, “USA” is missing from the webpages of results 516 and 520 (as indicated by the strikethrough to “USA”) but “USA” is present in the webpages of results 512, 514, and 518. Bederson-Decl., ¶268.

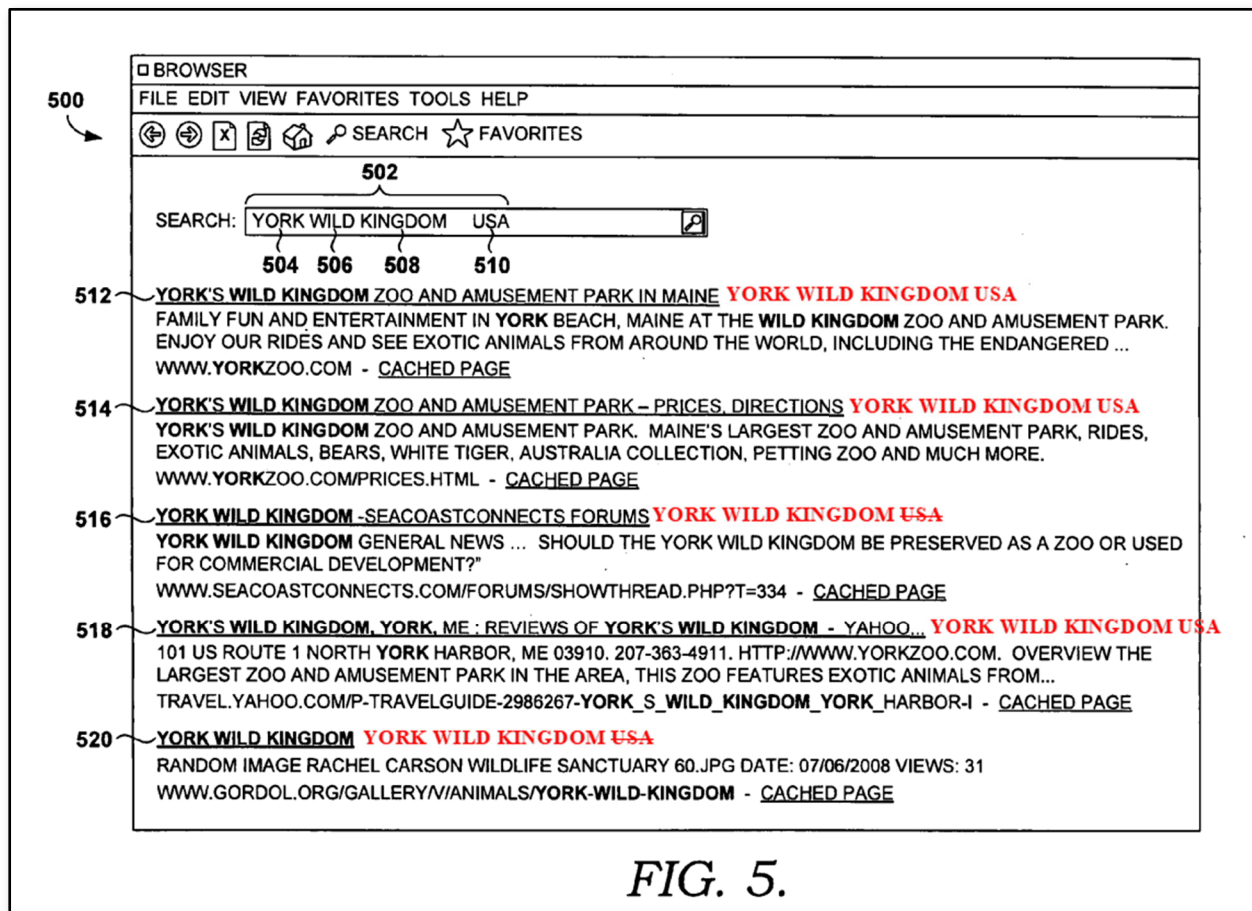


FIG. 5.

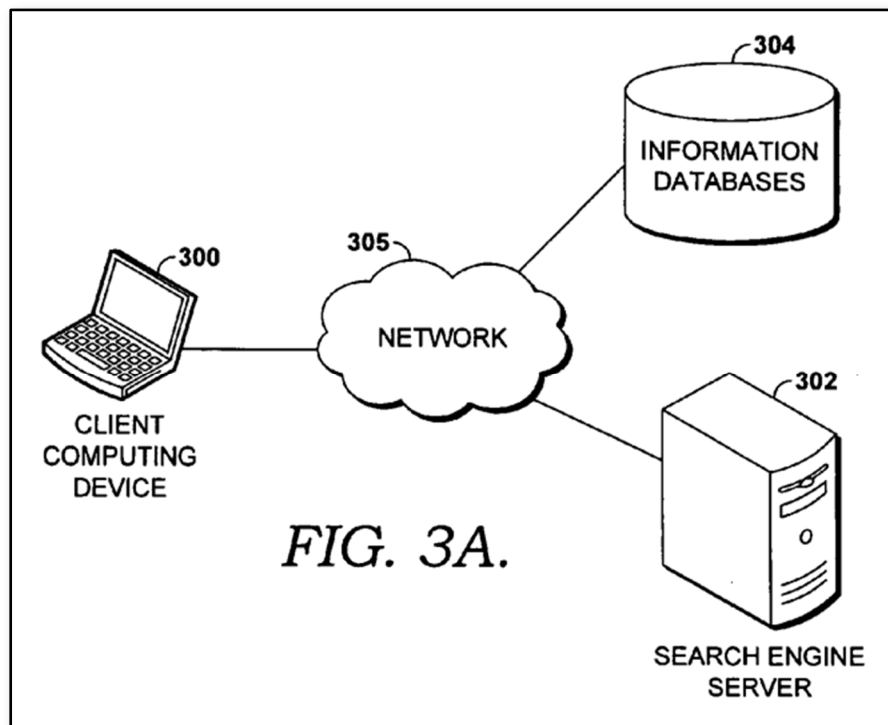
POSAs would have reasonably expected success in Wang-Mills. Wang and Mills both relate to search engines that identify search results that match a subset of a user’s multi-word search query; modifying Wang’s interface to display keywords used in an altered query with each search result would have required only routine software programming skills. Bederson-Decl., ¶269; Mills, 10:26-45.

D. Mapping to Claims

1. Claim 1

- a. [1PRE] “A system for providing annotated Internet search results...:”

Wang discloses “a networked environment,” *i.e.*, a *system*, “for performing relaxed searching on a search engine.” Wang, [0009], [0020], [0032], FIG. 3A (below). Wang’s system includes “client computing device 300” that is “connected to a network 305,” *e.g.*, “the Internet.” Wang, [0032], [0042].



Wang’s “search engine” “creates a list of results for a search-engine query by identifying documents that include only a subset of the keywords submitted by a user.” Wang, [0013]; *see also* [0035]. “Once the web pages are located, their URLs

are transmitted back to the client computing device” “and displayed as hyperlinks.” Wang, [0035]; *see also* FIG. 5; Bederson-Decl., ¶¶270-271.

As discussed above (§X.C) and further below (§X.D.1.g, [1F]), in Wang-Mills, the search results that Wang’s system provides to a user’s client computing device are *annotated Internet search results* because each result is annotated with the user’s keywords, where a missing keyword is further annotated with a strikethrough (*infra* §X.D.1.j, [1I]). Bederson-Decl., ¶272.

b. [1A] “...servers...”

Wang’s system includes a “search-engine *server* 302” that “hosts a search engine designed to receive queries from remote computing devices (such as the client computing device 300) and locate information on the Web...that satisfy the query.” Wang, [0035]. As shown in Wang’s Figure 3A (above), Wang’s server is “connected to a network,” *e.g.*, “the Internet.” Wang, [0032], [0042]; Bederson-Decl., ¶273.

Wang explains that a “server” is a computing device (Wang, [0021]), and that a computing device “includes *one or more processors*” (Wang, [0023]). *See also* Wang, [0033]. Bederson-Decl., ¶274.

c. [1B] “...receives a search request...”;

In Wang, the user’s computing device is “equipped with a web browser” that “communicates with the search-engine server.” Wang, [0038]. “The user may

navigate to the search engine's web site using the web browser. Once at the web site, the user can submit keywords to the search engine, and the client computing device 300, in turn, transmits the keywords to the search engine server 302." Wang, [0039]. "[T]he search engine server 302 receives the query and parses the query into one or more keywords. The search engine server 302 searches one or more inverted indexes for documents that contain N-K keywords." Wang, [0040].

Wang's "query" is *a search request*, and Wang's "keywords" are *search term elements*. Wang, [0035], [0002], [0004]; *see also* Bederson-Decl., ¶¶275-276.

d. [1C] "...causes an Internet search to be performed...";

After a user submits a search query, Wang's "search engine server 302 receives the query and parses the query into one or more keywords" and "searches one or more inverted indexes for documents that contain" at least a subset of the search query's "keywords." Wang, [0040], FIG. 5 (search request 502).

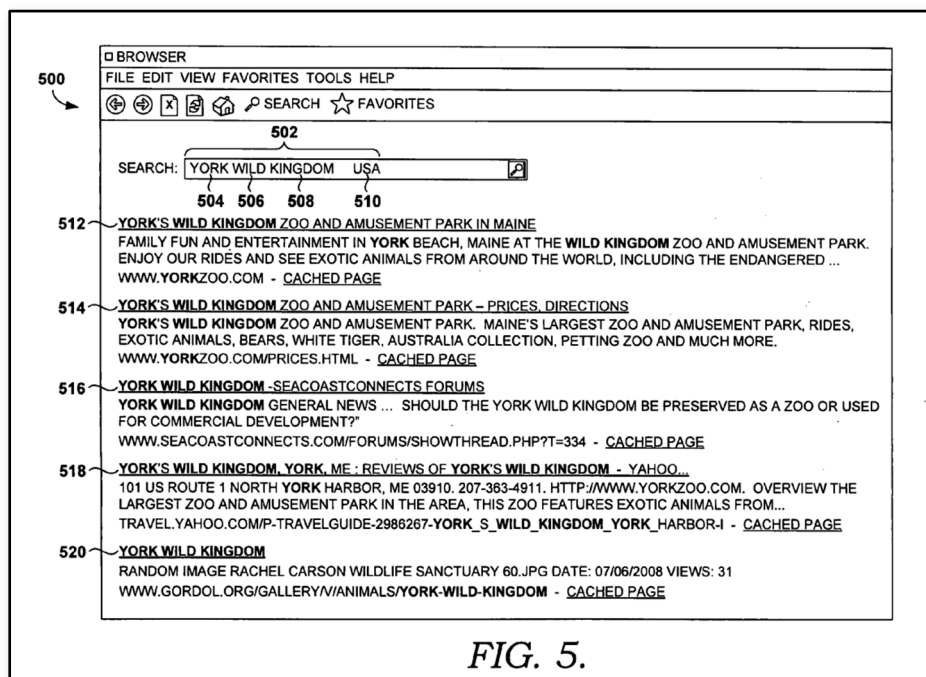
Searching inverted indexes, as in Wang, is *an Internet search* because each "inverted index is prepared by web [*i.e.*, *Internet*] crawlers browsing documents stored in the information databases 304," which "may be hosting a web page comprising numerous online documents." Wang, [0041], [0035] ("search-engine server 302 hosts a search engine designed to receive queries from remote computing devices...and locate information on the Web...to satisfy the queries"), [0016]

(“accessing web pages via the Internet”); Bederson-Decl., ¶¶277-278 (citing EX1014, EX1018).

- e. [1D] “...transmits...information comprising at least one automatically annotated Internet search result...suitable for display...”;

In Wang-Mills, “web documents that have been known to contain at least a portion of the query’s keywords” “are identified” by the system and “transmitted back to the client computer device” “for presentation to the user.” Wang, [0052], [0035] (“Once the web pages are located, their URLs are transmitted back to the client computing device 202 and displayed as hyperlinks.”).

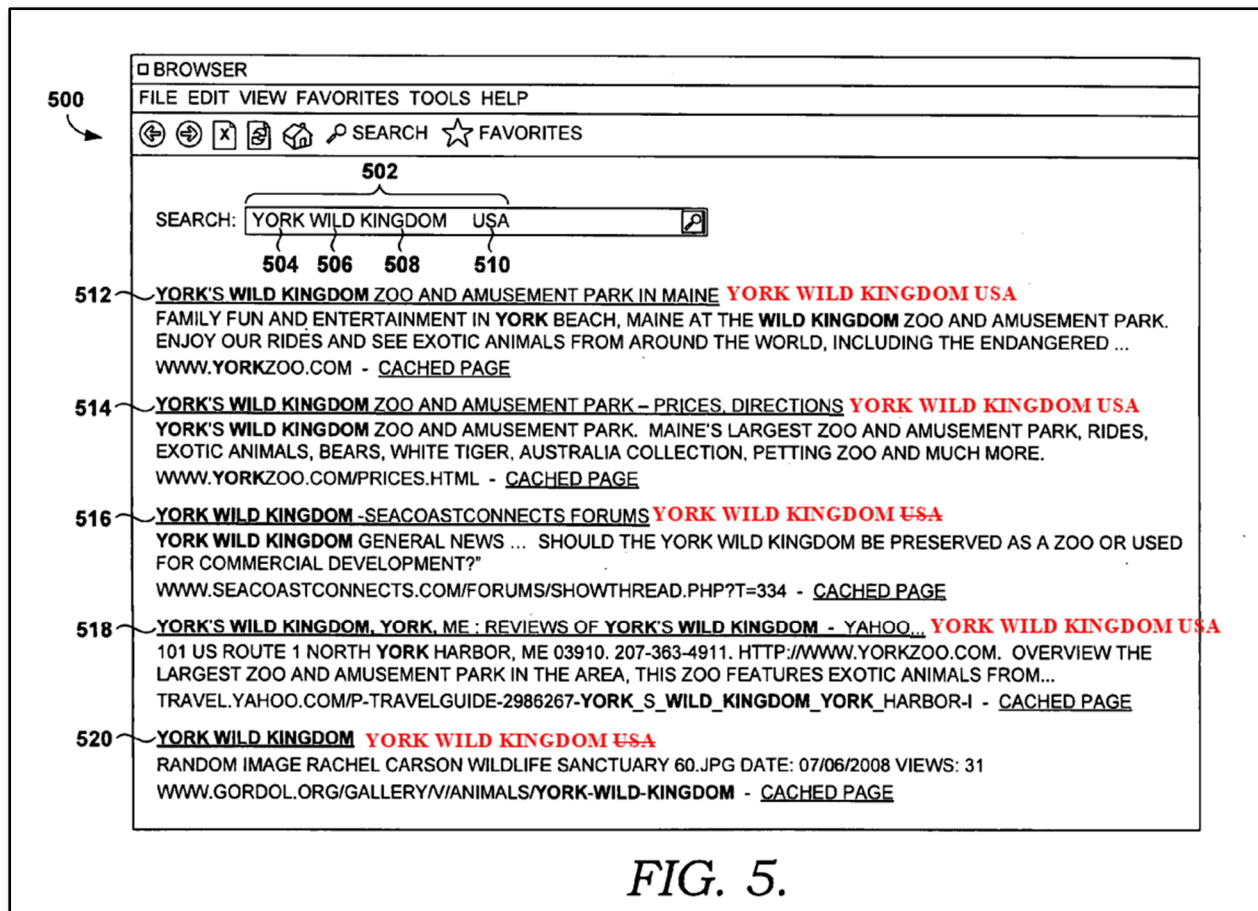
Wang’s Figure 5 (below) depicts “web browser window 500 rendering a web site for the search engine” that displays the illustrated search-results webpage on the user’s computing device. Wang, [0053]; Bederson-Decl., ¶¶279-280.



In this example, the “user submitted a search-engine query 502 with [four] keywords ‘york,’ ‘wild,’ ‘kingdom,’ and ‘USA.’” Wang, [0053]. Wang’s “relaxed search[]” has identified “documents,” *i.e.*, websites, that “have at least 3 of the 4 keywords.” *Id.* As discussed (§X.A), POSAs understood that each result shown above includes at least the search-term keywords “york,” “wild,” and “kingdom” because those keywords are bolded in each search result, but may or may not include “USA.” Bederson-Decl., ¶281.

As discussed above (§X.C), in Wang-Mills, Wang’s search results are augmented with search-term annotations based on Mills. As illustrated based on Wang’s Figure 5 (annotated below), each search result is *automatically annotated* (red) as shown below.⁶ Bederson-Decl., ¶282.

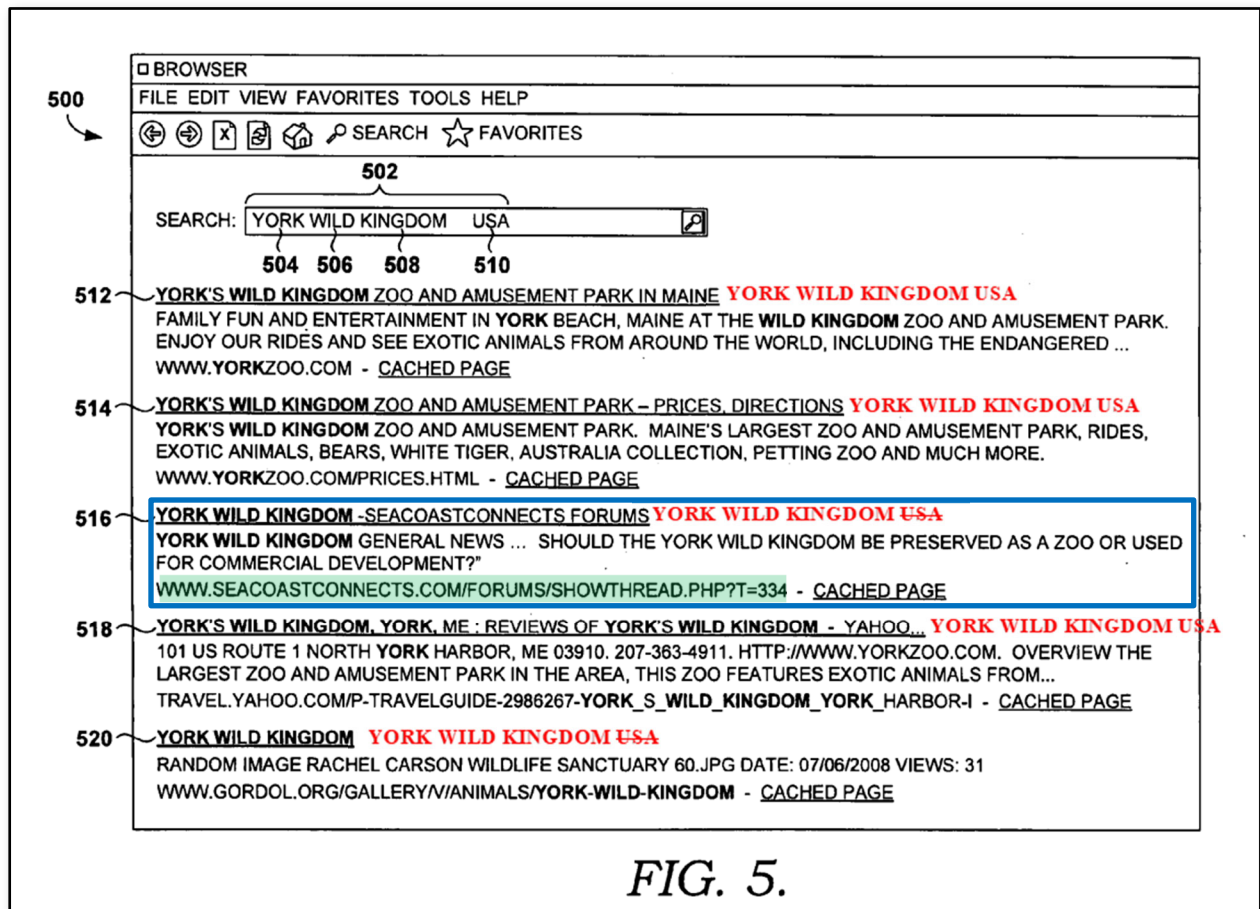
⁶ The example annotations are shown in red font and next to each result’s title; the annotation’s color and location in each search-result grouping would have been a conventional design choice to POSAs. Bederson-Decl., ¶282.



In Mills, “search engine 129 generates” the “altered versions of the search string 159 that are displayed as altered search strings 163,” *i.e.*, *annotations*. Mills, 6:39-41, FIG. 1. That is, the search engine generates the annotated Internet search results and transmits them via the Internet to the user’s computing device. Bederson-Decl., ¶283. Based on Mills, it would have thus been obvious for Wang-Mills to likewise *transmit to the computing device, via the Internet, information comprising the at least one automatically annotated Internet search result. Id.*

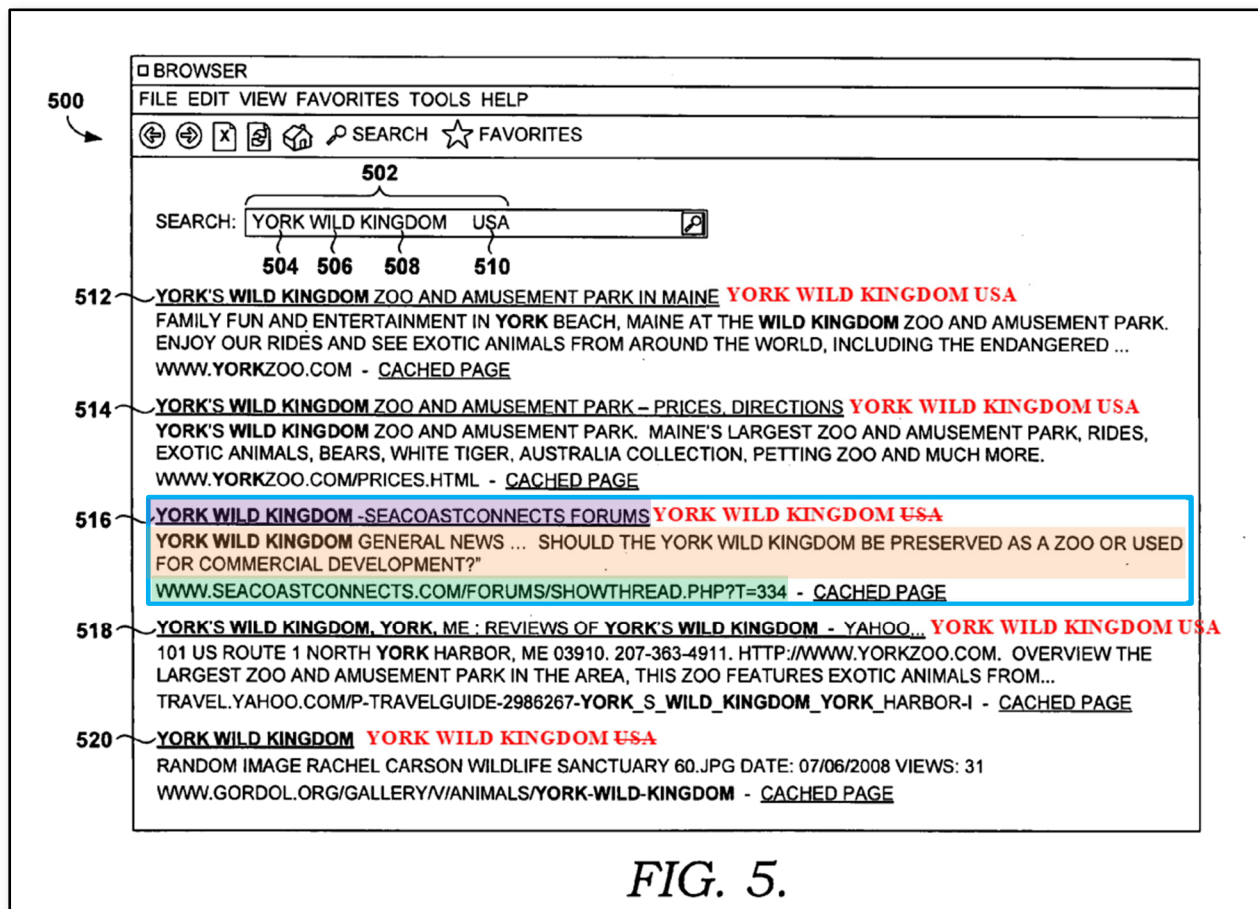
- f. [1E] “...the automatically annotated Internet search result is provided for display...as a search result grouping...”

As illustrated using Wang’s Figure 5 (annotated below), each *automatically annotated Internet search result* discussed above (§X.D.1.e, [1D]) is provided by Wang’s system as a distinct *search result grouping*, like the one highlighted with a blue box, which consists of the webpage’s URL, its title, and a short summary. Bederson-Decl., ¶284. As seen below, each search-result grouping *references a webpage associated with the automatically annotated Internet search result*, e.g., the webpage at the green-highlighted URL below for grouping 516. *Id.*



- g. [1F] “...the search result grouping comprises an annotation and at least one of: a title, an Internet link, an excerpt, or a URL”;

Using the example Wang-Mills search-results page highlighted below, the example *search result grouping comprises an annotation (red) and at least one of a title (highlighted purple below), an Internet link with a URL (green), and an excerpt (orange)*. Bederson-Decl., ¶285; *see also* Wang, [0035] (“URLs are transmitted back to the client computing device 202 and displayed as hyperlinks”).



h. [1G] “...the annotation is provided in response to a presence or absence of...search term elements...”;

Wang’s “relaxed searching” can return “documents,” *i.e.*, *webpages*, “that match a subset of the total number of keywords submitted in a search-engine query” and thus include webpages where some, but possibly not all, of the search term elements are present (*i.e.*, at least one search term may be absent). Wang, [0031], [0016].

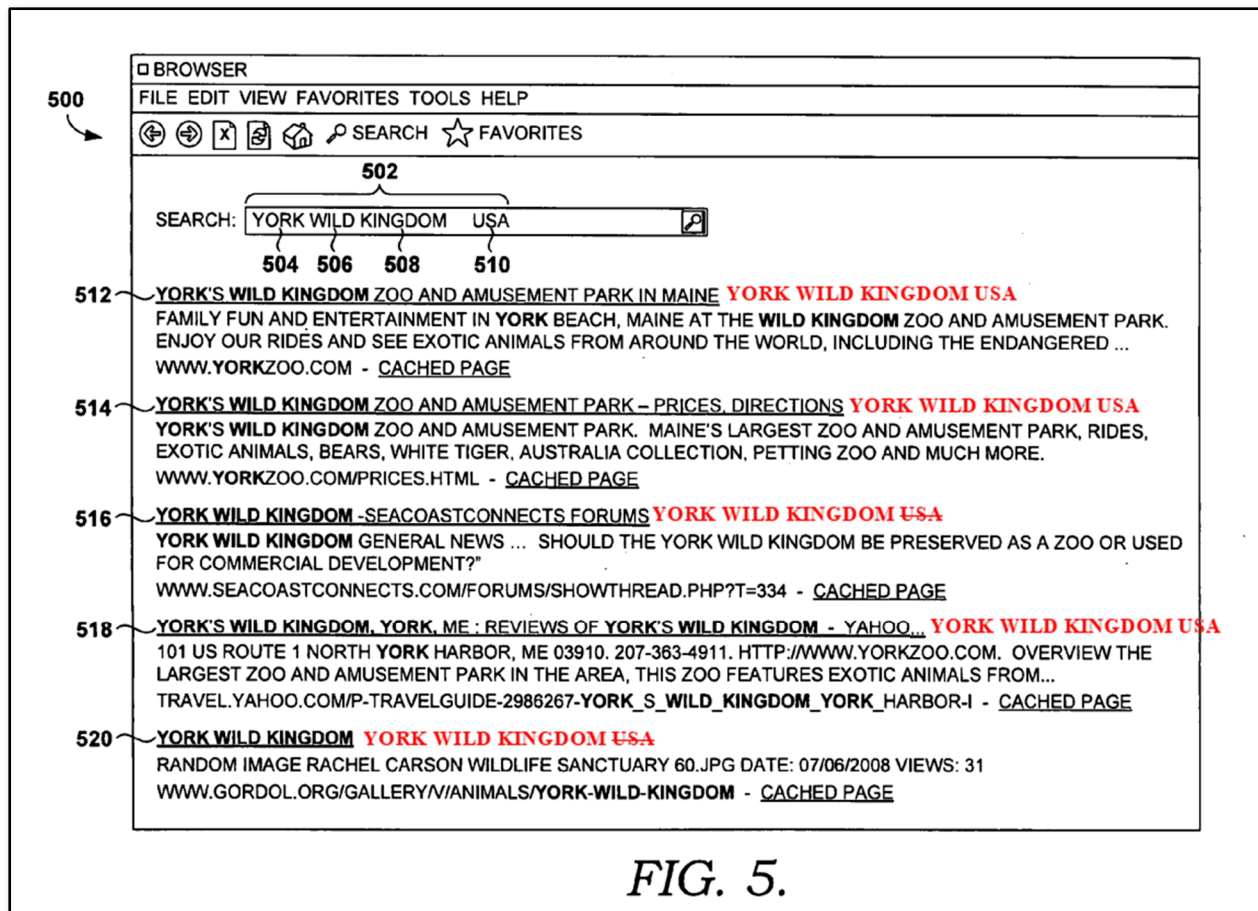
In the Wang-Mills example illustrated above for limitation [1F], “[t]he resulting document[...ha[s] at least 3 of the 4 keywords” (Wang, [0053]) and, in response to those keywords being matched, *the annotation* displays the text of each *search term element* and further annotates with a strikethrough a *search term element* that is missing from a corresponding *referenced webpage*. Bederson-Decl., ¶¶286-287.

i. [1H] “...the annotation...is associated with the automatically annotated Internet search result”

As illustrated above (§X.C, §§X.D.1.f-g), Wang-Mills’s *annotation* is *automatically placed in the search result grouping*, *e.g.*, placed next to the webpage title without any action required by a human after submitting the search, *so that it is associated with the automatically annotated Internet search result*, *e.g.*, the annotation indicates the presence/absence of search terms in the result. Bederson-Decl., ¶288.

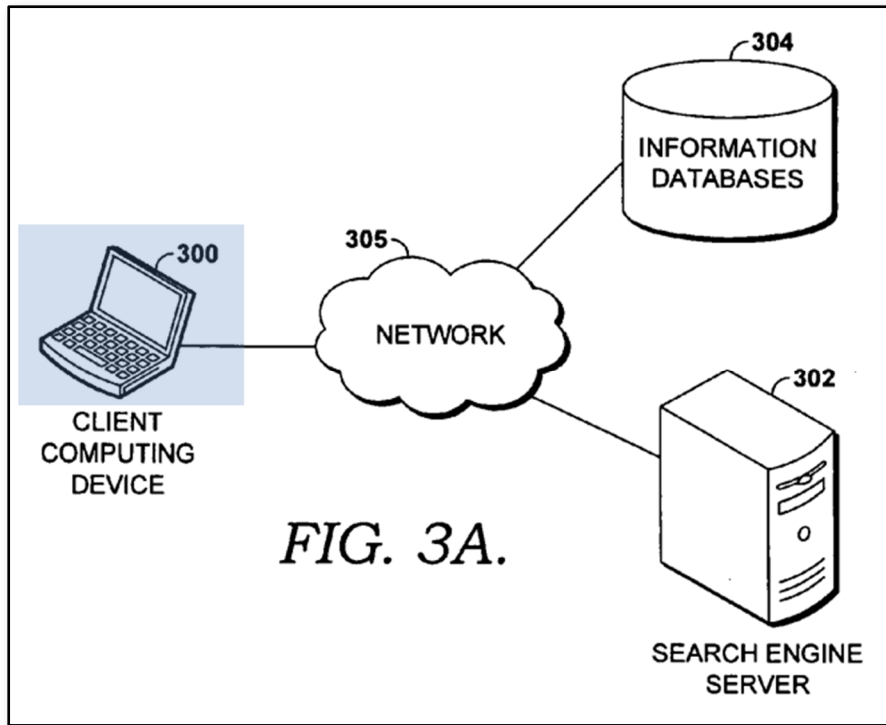
j. [1I] “...the annotation comprises...search term elements missing....”

As discussed above (§X.D.1.e, [1D]), Wang-Mills’s *annotation* (red below) *comprises one or more search term elements* that are *missing in the referenced webpage*, e.g., “USA” is missing from the second and third *referenced webpages* in results 516 and 520. This annotation *provides an indication that those automatically annotated Internet search results are less relevant with regard to what the user seeks*, because, e.g., “USA” indicates that the resulting webpages are less relevant to the user than webpages that explicitly include “USA” and the other user-specified keywords. Bederson-Decl., ¶289; *see also* Mills, 5:25-26 (explaining that search-term annotations allow user to “not select such a group [of results] where other groups appear to be more *relevant*”).



3. Claim 9: "...computing device."

As discussed above (§X.D.1.a, [1PRE]) and illustrated in Wang's Figure 3A (highlighted below) the "networked environment" *system also includes* the "*client computing device 300*" (blue). Wang, [0032]; Bederson-Decl., ¶291.



4. Claim 10: “...reduce lost time....”

As discussed above (§X.D.1.h, [1G]), Wang-Mills’s *annotation enables the user to reduce lost time, thereby speeding an Internet search process* because the *annotation* indicates which search-term elements are present and missing from each search result and some users want to review results that include all the terms and/or a particular term before reviewing (or ignoring entirely) results that are missing that term. Bederson-Decl., ¶¶292-293 (citing corroborating EX1030, 18:26-48; Bates, [0008]-[0009]); Mills, 5:25-26 (search-term annotation allows user to “not select such a group [of results] where other groups appear to be more relevant”).

5. Claim 11

Independent claim 11 recites a method that mirrors the actions performed by the system recited in independent claim 1. Wang-Mills meets the following limitations of claim 11 for the reasons discussed in the corresponding sections above. Bederson-Decl., ¶294.

Limitation	Addressed in Section:
[11PRE]	§X.D.1.a ([1PRE])
[11A]	§X.D.1.c ([1B])
[11B]	§X.D.1.d ([1C])
[11C]	§X.D.1.e ([1D])
[11D]	§X.D.1.f ([1E])
[11E]	§X.D.1.g ([1F])
[11F]	§X.D.1.h ([1G])
[11G]	§X.D.1.i ([1H])
[11H]	§X.D.1.j ([1I])

6. Claim 20

Independent claim 20 recites an apparatus that largely mirrors the system recited in independent claim 1. Wang-Mills meets the following limitations of claim

20 for the reasons discussed in the corresponding section(s) above. Bederson-Decl., ¶295.

Limitation	Addressed in Section(s):
[20PRE]	§X.D.1.a ([1PRE])
[20A]	§X.D.1.a ([1PRE]; demonstrating that <i>the computing device is connected to an Internet</i>) §X.D.1.c ([1B]; demonstrating that the <i>computing device communicates with a user</i> by receiving a search request provided by the user) §X.D.1.e ([1D]; demonstrating that <i>the computing device receives and displays information</i> (from the server) <i>related to the Internet search</i>)
[20B]	§X.D.1.c ([1B])
[20C]	§X.D.1.d ([1C]; demonstrating that <i>the computing device causes the Internet search to be performed</i> at the server)
[20D]	§X.D.1.e ([1D])
[20E]	§X.D.1.f ([1E])
[20F]	§X.D.1.g ([1F])

[20G]	§X.D.1.h ([1G])
[20H]	§X.D.1.i ([1H])
[20I]	§X.D.1.j ([1I])

7. Claims 18-19, 24-25

Wang-Mills meets the limitations added by the claims below for the reasons discussed in the corresponding sections above. Bederson-Decl., ¶296.

Claims	Addressed in Section:
18, 24	§X.D.2 ([claim 8])
19, 25	§X.D.4 ([claim 10])

XI. **GROUND 2B: GROUND 2A’S WANG-MILLS COMBINATION IN VIEW OF NAICK RENDERS OBVIOUS CLAIMS 2, 5, 12, 15, AND 21**

Ground 2B challenges claims that recite the *descendant-webpage* limitation discussed in Ground 1B.

A. Wang-Mills-Naick Combination

As discussed in Ground 1B, Naick’s search technique considers whether search terms are found on a webpage or its descendant webpage(s) because doing so better ensures that the search engine identifies “possible relevant information.” Naick, [0004]-[0005]; Bederson-Decl., ¶¶297-298.

Thus, POSAs had the same reasons to augment Wang-Mills based on Naick in the same way discussed above in Ground 1B that POSAs had reason to augment Bates-Bhagat and Bates-alone based on Naick. Bederson-Decl., ¶299.

The search engine in Wang-Mills-Naick would have searched only one descendant level as a design choice for the same reason discussed in Ground 1B that Bates-Bhagat and Bates-alone would search one descendant level. Bederson-Decl., ¶300.

POSAs would have reasonably expected success because Naick says its “[s]earch logic may be substantially similar to that of conventional search systems” (Naick, [0026]) and only requires a “search engine” with “conventional components” (Naick, [0028]-[0029]). Bederson-Decl., ¶301.

B. Mapping to Claims

1. Claims 2, 12, 21

Claims 2, 12, and 21 depend from independent claims 1, 11, and 20. Ground 2B’s Wang-Mills-Naick combination builds on Ground 2A’s Wang-Mills combination, and meets those independent claims for the same reasons Wang-Mills does. *Supra* Ground 2A; Bederson-Decl., ¶302.

As discussed above (§XI.A), Wang-Mills-Naick includes the *annotations* used in Wang-Mills. *Supra* Ground 2A, [1D]. Based on Naick, these *annotations* also consider the presence or absence of search-term elements in the webpage’s

descendant webpage(s). Naick, [0004]-[0006], [0022]-[0023]. As discussed (*supra* §XIII.A, §VII.B), POSAs had reason to limit the search to only search descendant webpages that are linked directly one level from the referenced webpage. Bederson-Decl., ¶303.

2. Claims 5, 15

Claims 5 and 15 depend from claims 2 and 12, and add the same limitation that claim 8 adds to independent claim 1. The added limitation requires that *the annotation* take a particular format. *Supra* Ground 2A (claim 8).

Ground 2B’s Wang-Mills-Naick combination maintains the same *annotations* discussed for Wang-Mills in Ground 2A; thus Wang-Mills-Naick meets claims 5 and 15 for the reasons discussed in Ground 2A for claim 8 and as discussed above for claims 2 and 12. Bederson-Decl., ¶¶304-305.

XII. GROUND 2C: THE GROUND 2A AND GROUND 2B COMBINATIONS IN VIEW OF BRINSON RENDER OBVIOUS CLAIMS 3, 6, 13, 16, AND 22

Ground 2C challenges claims that recite the *selectable-filtering-function* limitation discussed above in Ground 1C.

A. Wang-Mills-Brinson and Wang-Mills-Naick-Brinson Combinations

As discussed in Ground 2A, Wang-Mills uses Wang’s relaxed search, which identifies search results containing a subset, but potentially not all, of the user’s search terms. But Wang also says “certain keywords in the search-engine query may

be designated not to be relaxed, meaning all retrieved documents *must include* the non-relaxed word.” Wang, [0045]. However, Wang does not say how the user can identify a mandatory term, *i.e.*, a term that cannot be absent from a search result. Bederson-Decl., ¶¶306-307.

As discussed for Ground 1C, Brinson discloses a user-friendly GUI that allows a user to identify a search term as a “Require[d] Term,” which means search “results must include this term.” Brinson, [0045], [0070]-[0071], [0075]. Bederson-Decl., ¶308.

Thus, in view of Brinson, POSAs had reason to augment Wang-Mills (Ground 2A) and Wang-Mills-Naick (Ground 2B) to include user-selectable GUI elements (*e.g.*, clickable search-term text) for “designat[ing]” that a search term “must [be] include[d]” in the search results. Wang, [0045]. Doing so would have also been applying aspects of Brinson’s known GUI for beneficially making a search term mandatory to known search engines ready for that improvement to yield the predictable result of Wang’s search engine providing an interface that lets users make a search term mandatory (as Wang says to do). *KSR*, 550 U.S. at 417. Bederson-Decl., ¶309.

In Wang-Mills-Brinson and Wang-Mills-Naick-Brinson, the search engine is augmented to include a user-selectable GUI element that allows a user to select a search term and make it a “Require[d] Term” that must be included in each search

result. Bederson-Decl., ¶310 (citing EX1068, EX1047, EX1050); §VIII.B. As discussed above (§VIII.B; citing corroboration), a known, beneficial way to implement what Brinson describes was to filter already-identified results, without executing another search. Bederson-Decl., ¶308.

POSAs would have reasonably expected success because, as discussed above, Wang expressly supports the ability to make a search term mandatory, and it would have required only ordinary programming skill to adapt weight-selecting aspects of Brinson's GUI (which used conventional webpage elements, like clickable text and buttons) to be implemented in Wang-Mills's and Wang-Mills-Naick's search engines. Bederson-Decl., ¶311.

B. Mapping to Claims

1. Claims 3, 13

Claims 3 and 13 depend from claims 2 and 12. Ground 2C's Wang-Mills-Naick-Brinson combination builds on Ground 2B's Wang-Mills-Naick combination and meets claims 2 and 12 for the same reasons Wang-Mills-Naick does. *Supra* Ground 2B; Bederson-Decl., ¶312.

Claims 3 and 13 add the *selectable-filtering-function* limitation to claims 2 and 12. As discussed above, POSAs had motivation to augment Wang-Mills-Naick to include, based on Brinson, user-selectable GUI elements (*e.g.*, clickable buttons or text) that allow users to designate a search term as mandatory. Bederson-Decl.,

¶313. Once augmented in this manner, Wang-Mills-Naick-Brinson meets the *selectable-filtering-function* limitation because selecting the GUI element to designate a search term as “required” *causes* the search-result webpages *missing* that search term *to be removed from being displayed*. *Id.*

If claims 3 and 13 require the search results to be updated in response to a single click by the user, that would have been obvious as a simple, beneficial design option for user convenience (*e.g.*, the added convenience of not requiring the user to select multiple filter buttons before updating the search results). Bederson-Decl., ¶314 (citing corroboration).

2. Claims 6, 16, 22

Claims 6, 16, and 22 depend from independent claims 1, 11, and 20, respectively, and add the *selectable-filtering-function* limitation. Ground 2C’s Wang-Mills-Brinson meets the independent claims for the same reasons Wang-Mills does (*supra* Ground 2A), and further meets the *selectable-filtering-function* limitation as discussed above for claims 3 and 13. Bederson-Decl., ¶315.

XIII. GROUND 2D: THE GROUND 2A AND 2B COMBINATIONS IN VIEW OF MEHTA RENDER OBVIOUS CLAIMS 4, 7, 14, 17, AND 23

Ground 2D challenges claims reciting the *search-term-advertisement* limitation discussed above in Ground 1D.

A. Wang-Mills-Mehta and Wang-Mills-Naick-Mehta Combinations

As discussed in Ground 1D, Mehta teaches displaying “relevant advertisement[s]” alongside Internet search results. Mehta, [0005]. *See also* EX1001, 2:47-51. For the same reasons discussed in Ground 1D (*e.g.*, generating revenue), POSAs had reasons to display advertisements based on Mehta in Wang-Mills (Ground 2A) and Wang-Mills-Naick (Ground 2B). Bederson-Decl., ¶¶316-317 (citing EX1015, [0004]; EX1016, [0006]).

Based on Mehta, the search-engine interfaces in Wang-Mills-Mehta and Wang-Mills-Naick-Mehta each display an advertisement that is “relevant to [the user’s] search criteria.” Mehta, [0005]-[0006]; Bederson-Decl., ¶318 (citing EX1017-EX1018). POSAs would have reasonably expected success because, as discussed above (§IX.B, Ground 1D), displaying such advertisements was conventional. Bederson-Decl., ¶319.

B. Mapping to Claims

1. Claims 4, 14

Claims 4 and 14 depend from dependent claims 2 and 12. Ground 2D’s Wang-Mills-Naick-Mehta builds on Ground 2B’s Wang-Mills-Naick combination and meets claims 2 and 12 for the reasons Wang-Mills-Naick does. *Supra* Ground 2B; Bederson-Decl., ¶320.

Dependent claims 4 and 14 add the *search-term-advertisement* limitation to claims 2 and 12. As discussed above, Mehta provides motivation to augment Wang-Mills-Naick to display advertisements related to the user's search terms. Bederson-Decl., ¶321. Once augmented in this manner, Wang-Mills-Naick-Mehta meets the *search-term-advertisement* limitation. *Id.*

2. Claims 7, 17, 23

Ground 2D's Wang-Mills-Mehta combination meets independent claims 1, 11, and 20 for the same reasons that Ground 2A's Wang-Mills combination does, and Wang-Mills-Mehta meets the additional *search-term-advertisement* limitation added by dependent claims 7, 17, and 23 for the reasons discussed above for claims 4 and 14. Bederson-Decl., ¶322.

XIV. CONCLUSION

The Board should institute review and cancel claims 1-25.

Dated: March 6, 2026

Respectfully submitted,
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XV. CLAIM LISTING APPENDIX

Claim 1
[1PRE] 1. A system for providing annotated Internet search results suitable for display to a user of a computing device connected to an Internet, wherein the system comprises:
[1A] one or more servers comprising one or more processors, wherein at least one of the one or more servers is connected to the Internet; and
[1B] wherein the system receives a search request provided from the user of the computing device, the search request comprising one or more search term elements;
[1C] wherein in response to the user's provision of the search request the system causes an Internet search to be performed based at least in part on the search request;
[1D] wherein the system transmits to the computing device, via the Internet, information comprising at least one automatically annotated Internet search result, and wherein the transmitted information is suitable for display on a search results webpage on the computing device;
[1E] wherein the automatically annotated Internet search result is provided for display on the search results webpage as a search result grouping referencing a webpage associated with the automatically annotated Internet search result;
[1F] wherein the search result grouping comprises an annotation and at least one of: a title, an Internet link, an excerpt, or a URL;
[1G] wherein the annotation is provided in response to a presence or absence of the one or more search term elements in the referenced webpage;
[1H] wherein the annotation is automatically placed in the search result grouping so that it is associated with the automatically annotated Internet search result; and
[1I] wherein the annotation comprises one or more search term elements missing in the referenced webpage and provides an indication that the automatically annotated Internet search result is less relevant with regard to what the user seeks.

Claim 2

2. The system of claim 1, wherein the annotation is provided also in response to a presence or absence of the one or more search term elements in one or more descendant webpages of the referenced webpage, and wherein each descendant of the referenced webpage is a webpage linked directly one level from the referenced webpage.

Claim 3

3. The system of claim 2, wherein the system further provides a selectable filtering function that, when selected by the user, causes one or more Internet search results referencing webpages that are missing one or more search term elements to be removed from being displayed on the search results webpage on the computing device.

Claim 4

4. The system of claim 2, wherein the automatically annotated Internet search result is placed on the search results webpage with one or more advertisements related to one or more of the search term elements.

Claim 5

5. The system of claim 2, wherein the annotation comprises text representing at least one search term element in at least one of the following formats: (i) a font representing the text has been altered; or (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon; or (iv) the text is shown within a shaded area; or (v) the text is shown with a reversed format.

Claim 6

6. The system of claim 1, wherein the system further provides a selectable filtering function that, when selected by the user, causes one or more Internet search results referencing webpages that are missing one or more search term elements to be removed from being displayed on the search results webpage on the computing device.

Claim 7

7. The system of claim 1, wherein the automatically annotated Internet search result is placed on the search results webpage with one or more advertisements related to one or more of the search term elements.

Claim 8

8. The system of claim 1, wherein the annotation comprises text representing at least one search term element in at least one of the following formats: (i) a font representing the text has been altered; or (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon; or (iv) the text is shown within a shaded area; or (v) the text is shown with a reversed format.

Claim 9

9. The system of claim 1, wherein the system also includes the computing device.

Claim 10

10. The system of claim 1 wherein the annotation enables the user to reduce lost time, thereby speeding an Internet search process.

Claim 11

[11PRE] 11. A method for providing annotated Internet search results suitable for display to a user on a computing device, wherein the method comprises:

[11A] receiving a search request provided by the user from the computing device, the search request comprising one or more search term elements;

[11B] causing an Internet search to be performed based at least in part on the search request in response to the user's provision of the search request;

[11C] transmitting to the computing device, via an Internet, information comprising at least one automatically annotated Internet search result; wherein the transmitted information is suitable for display on a search results webpage on the computing device;

[11D] wherein the automatically annotated Internet search result is provided for display on the search results webpage as a search result grouping referencing a webpage associated with the automatically annotated Internet search result;

[11E] wherein the search result grouping comprises an annotation and at least one of: a title, an Internet link, an excerpt, or a URL;

[11F] wherein the annotation is provided in response to a presence or absence of the one or more search term elements in the referenced webpage;

[11G] wherein the annotation is automatically placed in the search result grouping so that it is associated with the automatically annotated Internet search result; and

[11H] wherein the annotation comprises one or more search term elements missing in the referenced webpage and provides an indication that the automatically annotated Internet search result is less relevant with regard to what the user seeks.

Claim 12

12. The method of claim 11, wherein the annotation is provided also in response to a presence or absence of the one or more search term elements in one or more descendant webpages of the referenced webpage, and wherein each descendant of the referenced webpage is a webpage linked directly one level from the referenced webpage.

Claim 13

13. The method of claim 12, wherein the system further provides a selectable filtering function that, when selected by the user, causes one or more Internet search results referencing webpages that are missing one or more search term elements to be removed from being displayed on the search results webpage on the computing device.

Claim 14

14. The method of claim 12 wherein the automatically annotated Internet search result is placed on the search results webpage with one or more advertisements related to one or more of the search term elements.

Claim 15

15. The method of claim 12 wherein the annotation comprises text representing at least one search term element in at least one of the following formats: (i) a font representing the text has been altered; or (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon; or (iv) the text is shown within a shaded area; or (v) the text is shown with a reversed format.

Claim 16

16. The method of claim 11, wherein the system further provides a selectable filtering function that, when selected by the user, causes one or more Internet search results referencing webpages that are missing one or more search term elements to be removed from being displayed on the search results webpage on the computing device.

Claim 17

17. The method of claim 11 wherein the automatically annotated Internet search result is placed on the search results webpage with one or more advertisements related to one or more of the search term elements.

Claim 18

8. The method of claim 11 wherein the annotation comprises text representing at least one search term element in at least one of the following formats: (i) a font representing the text has been altered; or (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon; or (iv) the text is shown within a shaded area; or (v) the text is shown with a reversed format.

Claim 19

19. The method of claim 11 wherein the annotation enables the user to reduce lost time, thereby speeding an Internet search process.

Claim 20

[20PRE] 20. A computing device apparatus for initiating an Internet search and for providing annotated Internet search results for display on the computing device, wherein the apparatus comprises:

[20A] a computing device having a connection to an Internet, and enabled for communicating with a user and a remote server, wherein the computing device sends, receives, and displays information related to the Internet search; and

[20B] wherein the computing device receives a search request from the user of the computing device, the search request comprising one or more search term elements;

[20C] wherein the computing device causes an Internet search to be performed based at least in part on the search request;

[20D] wherein the computing device receives from the remote server, via the Internet, information comprising at least one automatically annotated Internet search result; wherein the computing device displays the received information on a search results webpage shown on the computing device;

[20E] wherein the automatically annotated Internet search result is provided for display on the search results webpage as a search result grouping referencing a webpage associated with the automatically annotated Internet search result;

[20F] wherein the search result grouping comprises an annotation and at least one of: a title, an Internet link, an excerpt, or a URL;

[20G] wherein the annotation is provided in response to a presence or absence of the one or more search term elements in the referenced webpage;

[20H] wherein the annotation is automatically placed in the search result grouping so that it is associated with the automatically annotated Internet search result; and

[20I] wherein the annotation comprises one or more search term elements missing in the referenced webpage and provides an indication that the automatically annotated Internet search result is less relevant with regard to what the user seeks.

Claim 21

21. The apparatus of claim 20, wherein the annotation is provided also in response to a presence or absence of the one or more search term elements in one or more descendant webpages of the referenced webpage, and wherein each descendant of the referenced webpage is a webpage linked directly one level from the referenced webpage.

Claim 22

22. The apparatus of claim 20, wherein the system further provides a selectable filtering function that, when selected by the user, causes one or more Internet search results referencing webpages that are missing one or more search term elements to be removed from being displayed on the search results webpage on the computing device.

Claim 23

23. The apparatus of claim 20, wherein the automatically annotated Internet search result is placed on the search results webpage with one or more advertisements related to one or more of the search term elements.

Claim 24

24. The apparatus of claim 20, wherein the annotation comprises text representing at least one search term element in at least one of the following formats: (i) a font representing the text has been altered; or (ii) the text is shown with one or more lines merged with the text; or (iii) the text is shown with one or more lines superimposed thereupon; or (iv) the text is shown within a shaded area; or (v) the text is shown with a reversed format.

Claim 25

25. The apparatus of claim 20 wherein the annotation enables the user to reduce lost time, thereby speeding an Internet search process.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, the undersigned certifies that the foregoing Petition for *Inter Partes* Review contains 13,971 words excluding a table of contents, a table of authorities, Mandatory Notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioner has relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: March 6, 2026

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CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (E)(4)

I certify that on March 6, 2026, a copy of the foregoing document, including any exhibits or appendices filed therewith, is being served via Overnight FedEx at the following correspondence address of record for the patent:

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