UTILITY APPLICATION	Attorney Docket No.: **X1.002A** First Named Inventor: **Unknown** Title: **METHODS AND SYSTEMS FOR SEARCH INDEXING** Express Mail Label No.: **EV 319017669 US**
Direct all correspondence to Customer No.: 20995	Date: September 3, 2003 Page 1 of 2

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The following enclosures are transmitted herewith to be filed in the patent application of:

Inventor(s): Unknown

APPLICATION ELEMENTS:

(X) Specification in 51 pages.

(X) Drawings in 23 sheets.

CONTINUITY INFORMATION:

Application	Relationship	Parent App. No.	Filing Date	Status
This Application	Claims benefit of	60/408,015	9/3/02	Pending
This Application	Claims benefit of	60/413,013	9/23/02	Pending
This Application	Claims benefit of	60/448,923	2/20/03	Pending
This Application	Claims benefit of	60/470,903	5/14/03	Pending
This Application	Claims benefit of	60/478,690	6/13/03	Pending

OTHER APPLICATION PARTS:

(X) Return prepaid postcard.

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FILING FEES:

FEE CALCULATION				
FEE TYPE		**FEE CODE**	**CALCULATION**	**TOTAL**
Basic Utility		1001 ($750)		$750
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(X) **The total fees calculated above will be paid at a later date.**

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CERTIFICATE OF MAILING BY "EXPRESS MAIL"

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Applicant(s)	:	Unknown
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Attorney	:	David N. Weiss
"Express Mail" Mailing Label No.	:	EV 319017669 US EV319017669US
Date of Deposit	:	September 3, 2003

I hereby certify that the accompanying

Transmittal letter; specification in 51 pages; 23 sheets of Formal Drawings; Return Prepaid Postcard

are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and are addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Jayne Ozimok

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METHODS AND SYSTEMS FOR SEARCH INDEXING

Related Applications

This application is related to copending application entitled APPARATUS AND METHODS FOR LOCATING DATA, Serial Number [Unknown], Attorney Docket No. X1.001A, and copending application entitled METHODS AND SYSTEMS FOR WEB-BASED INCREMENTAL SEARCHES, Serial Number [Unknown], Attorney Docket No. X1.003A, filed on the same date as the present application, the entirety of which are hereby incorporated by reference.

PRIORITY CLAIM

This application claims the benefit under 35 U.S.C. 119(e) of U.S. Provisional Application No. 60/408,015, filed September 3, 2002, U.S. Provisional Application No. 60/413,013, filed September 23, 2002, U.S. Provisional Application No. 60/448,923, filed February 20, 2003, U.S. Provisional Application No. 60/470,903, filed May 14, 2003, and U.S. Provisional Application No. 60/478,690, filed June 13, 2003, the contents of which are incorporated herein in their entirety.

Background of the Invention

Field of the Invention

[0001] The present invention relates generally to data processing, and in particular to systems and methods for locating data.

Description of the Related Art

[0002] Conventional search application programs often are slow and cumbersome to use. For example, many search engines require the user to type in a search term, click on a search button, and review the results. If the user is not satisfied with the results, as might be the case if too many items or items that are not of interest are found, then the user needs to edit the search terms, click on an initiate search button, and again review the results. In addition, many search application programs only provide for limited search filtering, wherein the user is limited to filtering the search based on dates, file location, and file contents.

[0003] Another drawback of some search engines is that the actual search process takes an annoying amount of time to complete a search. Furthermore, some search engines do not include search features directed to specific types of search targets, such as email, Web pages, and files. Alternatively and inconveniently, separate tools may be needed to search for email, Web pages, and files if the user desires corresponding specific search features.

[0004] Further, with many Web-based search systems, the user types in a search phrase in a Web page search field presented via a browser on the user's computer screen, and then presses an Enter key or Search button to have the query transmitted to a remote server system that will perform the search. The server processes the query, generates a list of search results, and sends the list back to the user's browser. The user then clicks on one of the choices, whereupon a target page is displayed. The process from the time the user starts typing, until the user sees the target page, can take at least 5 seconds, and often takes 30 seconds or more.

[0005] Because of the turnaround time for typing in a search phrase to receiving search results, this conventional search procedure can demand a deliberative and tedious strategy from the user in order to search efficiently. First the user may think carefully regarding what search terms to use, the user then enters the search term, initiates the search, after several seconds receives and reviews the list of results, decides which, if any of the results seem relevant enough to click on, click on a selected list item, wait several seconds for the corresponding Web page to be returned and displayed on the user's browser, and finally reviews the Web page.

Summary of the Invention

[0006] One example embodiment of the present invention advantageously provides for incremental or reactive searching of a variety of search targets. For example, the search targets can include one or more of files, emails, email attachments, Web pages, specific databases, and/or the like. Because a search is performed incrementally, the search results are provided or narrowed substantially immediately after each character in a search string is entered by a user. Thus, the user is provided with substantially immediate feedback as the search string is being entered, and so can quickly decide on the desirability of entering additional search characters, entering a new search string, or deleting one or more search string characters.

[0007] An example search application generates one or more indexes corresponding to the search target types. An index optionally includes both content information and attribute information for potential search targets. The attribute information can be specific to the type of search target. For example, the index can include at least partially different attribute information for files as compared to emails. The indexing is optionally performed incrementally.

[0008] One embodiment is a method of performing a search comprising: receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field; and incrementally locating at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string.

[0009] Yet another embodiment is a search apparatus, comprising: a first instruction configured to read at least a first search string and a second search string entered into a same first search field; and a second instruction configured to incrementally filter search results to locate at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string.

[0010] Still another embodiment is a search index system comprising: scan code that determines at least in part what files to index; index code that indexes files based at least in part on the scan code determination, wherein the index code is further configured to locate punctuation marks in at least a first search string and to treat at least a portion of the

punctuation marks as string separators based at least in part on their location within the first search string.

[0011] One embodiment is a method of selectively performing a search and executing a command, the method comprising: receiving at least a first string in a search field; determining if the first string is a command; selectively initiating command execution in response to determining that the first string is a command; and selectively initiating a search if the first string is not a command.

[0012] Still another embodiment is a search apparatus, comprising: a first instruction configured to receive a first string entered into a search field; a second instruction configured to determine if the first string corresponds to a command; a third instruction configured to initiate command execution in response to determining that the first string corresponds to a command; and a fourth instruction configured to initiate a search if the first string is not a command.

Brief Description of the Drawings

[0013] Embodiments of the present invention will now be described with reference to the drawings summarized below. These drawings and the associated description are provided to illustrate example embodiments of the invention, and not to limit the scope of the invention.

[0014] Figure 1 illustrates an example computer system that can be used in accordance with one embodiment of the present invention.

[0015] Figure 2A illustrates an example index architecture.

[0016] Figure 2B illustrates an example search process using the index.

[0017] Figure 2C illustrates an example indexing process.

[0018] Figure 2D illustrates an example use of a pre-computed sort list.

[0019] Figures 3A-I illustrate example user interfaces in accordance with one embodiment of the present invention.

[0020] Figures 4A-4F illustrate example search processes.

[0021] Figure 5 illustrates an example computer system that can be used to provide a server based search system in accordance with one embodiment of the present invention.

[0022] Figure 6 illustrates an example search process using the server based search system.

[0023] Figure 7 illustrates an example process of scrolling through a search list.

[0024] Throughout the drawings, like reference numbers may be used to refer to items that are identical or functionally similar.

Detailed Description of Preferred Embodiments

[0025] Embodiments of the present invention provide systems and methods for searching, index, and presenting information. As will be described in greater detail below, in one example embodiment, a search apparatus provides multiple search fields corresponding to different search target characteristics. As a user enters in a search term into a field, the search results are refined incrementally with each entered character. Thus, the search results are shown as the user enters search characters or terms. To further refine or filter the search results, the user can enter other search terms into other fields. In one embodiment, the filtering process is performed substantially immediately upon the user entering addition search characters or terms.

[0026] Further, a user can incrementally broaden the search results by deleting or backspacing over previously entered search characters. The search results are broadened substantially immediately, in response to the user deleting or back spacing over a character, without requiring that the user click on or otherwise activate a "search" button or the like. A search, for example, can typically take 200 ms or less, though in some situations it can take longer, such as, for example, 300 ms, 400 ms, 600 ms, 1 second, or 2 seconds.

[0027] In one embodiment, a user interface includes a list area or pane, which lists the search results (optionally including headlines or summaries), and a view area or pane, which displays an item or contents of an item, such as an item selected in the list area. Advantageously, the user can customize an example search system in accordance with the user's preferences.

[0028] Throughout the following description, the term "Web site" is used to refer to a user-accessible server site that implements the basic World Wide Web standards for the coding and transmission of hypertextual documents. These standards currently include HTML (the Hypertext Markup Language) and HTTP (the Hypertext Transfer Protocol). In addition, reference is made to Java script (also referred to as JavaScript), though other types of script, programming languages, and code can be used as well. It should be understood that the term "site" is not intended to imply a single geographic location, as a Web or other network site can, for example, include multiple geographically distributed computer systems that are appropriately linked together. Furthermore, while the following description relates to an embodiment utilizing the Internet and related protocols, other networks, such as networked interactive televisions, and other protocols may be used as well.

[0029] In addition, unless otherwise indicated, the functions described herein are preferably performed by executable code and instructions running on one or more general-purpose computers. However, the present invention can also be implemented using special purpose computers, state machines, and/or hardwired electronic circuits. The example processes described herein do not necessarily have to be performed in the described sequence, and not all states have to be reached or performed.

[0030] Further, while the following description may refer to "clicking on" a link or button, or pressing a key in order to provide a command or make a selection, the commands or selections can also be made using other input techniques, such as using voice input, pen input, mousing or hovering over an input area, and/or the like.

[0031] One example search system provides for incremental searching across a plurality of attribute fields for files, emails, email attachments, the Internet, other networks, prior Internet or other network search results ("history"), favorites, specific databases, and/or the like. In one example embodiment, the search system includes a client-based search application. Other embodiments can utilize a server-based search application.

[0032] One example search application includes tabs corresponding to an email search interface, a files search interface, a Web search interface, a favorites search interface, an email attachment interface, a Web history search interface, and/or a specific database

search interface. Thus, in one example embodiment, a search application provides search specific interfaces for different types of search targets.

[0033] Optionally, all the tabs are efficiently displayed and selectable in a plurality screens. Thus, while viewing a first target search interface, a user can select a different search target interface by moving the cursor over a given tab and then clicking on the tab. In another embodiment, a list of interface links or a drop down menu can be used to select the target specific search interfaces. In addition, other methods of selecting the search target interfaces can be used as well. For ease of use, the different interfaces optionally have similar layouts with respect to the positioning of may of the interface elements, such as the list and view areas, the tabs, and main search field.

[0034] Figure 1 illustrates example hardware and software components on a physical and/or functional level that can be invoked or used when performing a search and/or an indexing operation. As depicted, one embodiment includes a search application 102 stored on and executed by a user terminal 104. As will be described in greater detail below, the search application 102, provides user interfaces for searching email, files, Web sites, cached Web pages, databases and the like. In addition, the search application 102 has a local index engine 103 that indexes email, files, cached Web pages, databases and the like, stored in a data repository or database 105. For example Web pages previously viewed in the search application's view pane or area, and optionally, stored Web pages previously viewed using other user browsers, or otherwise stored locally can be indexed. Separate indexes can be used for the email, files, cached Web pages, databases and the like, or a single index can be used for the foregoing.

[0035] The index engine 103 can further include code configured as a scan engine or module that is used to determine whether a file is to be indexed. Thus, the index engine 103 can also scan files to identify new targets, such as email, document files, Web pages, database entries, and the like, that have not yet been indexed, or targets that have been previously been indexed but have since been modified. Optionally, rather then re-index all corresponding targets each time an index operation is performed, the index engine 103 can incrementally index just the new or modified targets or documents.

[0036] The index engine 103 can utilize one or more indexing algorithms to create an index, such as a reverse or inverted index. The index includes a data structure that associates character strings with files, documents, and the like. In one example embodiment, for each word or character string found with a file or document, the index stores which fields of which documents or files contain that word or character string.

[0037] In one example embodiment, the index is constructed in blocks, which for convenience will be referred to as incremental index bulks or bulks. In this example, there is an incremental index bulk for each indexed target type, such as files, email, favorites, email attachments, stored Web pages. By way of example, a bulk can be 4 Mbytes in size, 16 Mbytes in size, or other sizes. A given bulk can be a memory mapped block of volatile memory, such as DRAM or SRAM, in which list structures for the corresponding index are built. The bulks can be stored on slower mass memory, such as a hard disk drive, and then read into faster RAM upon startup of the search application. Advantageously, having the bulk memory mapped into RAM allows for fast searches and updating, as compared with having to translate the information from a disk storage format to a different RAM format.

[0038] When the bulk fills up so that the allocated memory space for the bulk is filled or substantially filled by the index data, the bulk is stored in non-volatile mass memory, such as a magnetic drive, and is termed a fixed index. The complete index for a given target type can include several fixed indexes and the bulk. As new documents or files are added to the index, they add to the bulk, rather than directly to the fixed indexes. Optionally, the bulk can be stored in mass, non-volatile memory, such as a hard disk drive, and read into RAM as needed.

[0039] In the example embodiment, when a predetermined number of fixed indexes, such as 5, are created the multiple fixed indexes are optionally merged into a smaller number of indexes, such as single relatively larger fixed index. Advantageously, this permits searches to be completed in relatively less time, as fewer indexes, and optionally only one index, needs to be searched. Search speed is much more closely correlated with the number of indexes that need to be searched, as compared to the size of the index, and therefore it takes less time to search one large file as compared to 5 or 10 other files that are in aggregate the same size as the one large file.

[0040] After a merge process is performed, new items are indexed and added to the corresponding bulk, and additional indexes are stored in non-volatile mass memory, as similarly described above. Generally, the first fixed index is significantly larger than the other fixed indexes, as the first fixed index is the merged composite of previous fixed indexes, while the additional fixed indexes are each one bulk in size.

[0041] In one embodiment, a fixed index can include a plurality of separate files, though in other embodiments, a single file containing the same or equivalent data can be used. For example, a "col" file stores attribute data for the target files corresponding to the index. As will be discussed below, the attributes can be used as search criteria and can be displayed to the user in column format. For example, with respect to email a user interface for searching emails can include a from (sender) attribute column, a to (addressee) attribute column, date/time sent and/or received attribute columns, a folder path attribute column, a client attribute column, a cc attribute column, a size attribute column, and a bcc attribute.

[0042] The fixed index can further include an "occur" file, which is the main inverted index data file. A "occur-offsets" file can also be generated. The occur-offsets file stores pointers into the "occur" file. The fixed index additionally includes a "words" file that comprises a list of the words that occur in the target files. Additionally there is a "deletions" file that lists indexed documents or files that have since been deleted. A "body" file can also be generated which has the document text. The body file content is used for view pane display when the actual document or document is not available or may become unavailable when the content is needed for display in the view pane. The body file can be particularly useful for more transient files, such as emails. The example bulk includes a words file, an occur file, and an occur offsets file.

[0043] Figure 2A illustrates an example index configuration, though other index configurations, types and structures can be used in other embodiments. Each target type can be associated with its own corresponding set of fixed indexes and bulk. Advantageously, having separate sets of indexes for each target type, search and indexing can be performed faster. However, in other embodiments, the same index or index set can be used for all target types. The example index configuration illustrated in Figure 2A includes three fixed indexes 204A, 206A, 208A stored on mass storage media 202A, which can be, for example a magnetic or

optical disk drive. In this example, fixed index 204A is a merged index and is larger than indexes 206A, 208A which are non-merged index. Index 208A is the final index, that is, the index with the most recent additions and/or deletions. The final index 208A includes the information from the bulk 212A. The bulk 212A includes a words file, an occur file, and an occur offsets file. Advantageously, the bulk 212A is stored in RAM 210A so that additions and deletions can be made very quickly, without requiring constant modification of the final index 208A stored on slower mass storage media 204A. Optionally, all the indexes can be read into RAM 210A to increase search speed. Upon shut-down of the search application, the bulk 212A is written back to the index 208A for storage on the non-volatile mass memory media 204A.

[0044] Figure 2B illustrates an example search lookup operation. At state 202B one or more search characters or strings are received. At state 204B the character or character strings are located in the words file. At state 206B the pointer or pointers for the character or character strings in the occur-offsets file are located. At state 208B document-occurrence information is read from the occur file using the located pointers. At state 210B the search results are presented to the user. The search results are displayed in the list pane or area, and the view area or pane displays the contents of the first item or a selected item from the list area.

[0045] Optionally, the content displayed in the view area or pane is auto-scrolled down to the first matching character or character string, which may be highlighted or otherwise emphasized. The search term can be automatically displayed with multiple preceding and succeeding lines or sentences. For example, a search for "matisse" might find a document where the first appearance of "matisse" occurs at the 100th line down. The auto-scroll process automatically scrolls down to, or otherwise displays the content beginning at a certain point relative to the first appearance of "matisse." For example, the content can be displayed in the view pane from line 90 to line 110, substantially immediately upon selecting that page in the list pane, so that the user can immediately see the matching word "matisse" in context. Optionally, the user can specify how many sentences or lines are to be displayed before and after the search term.

[0046] Optionally, the view area or pane displays the content in a collapsed format, so that several matches that are distributed throughout a viewed document can be seen at once,

with one or more lines or sentences of context above and below each match displayed as well, and the remaining lines deleted or "collapsed" into ". . ." types of lines, with + symbols for expanding the collapsed section to view that section or the entire document in uncollapsed format, and with – symbols to recollapse a section as desired.

[0047] In one optional embodiment, the index stores "prefix" entries, which further enhances the speed of incremental filtering or searching. For example, in addition to bare or complete words, such as "dog," common prefixes, such as "d" or "do", are stored as well. The "d" prefix entry contains information indicating which documents or files contain a word or character string starting with "d". By preparing this information during indexing, the response for the first letter or two of a filtering or search operation is greatly enhanced as compared to a standard inverted index, which would have to locate thousands of matches at the time of receiving the user query, thereby resulting in slow filtering operations.

[0048] Optionally, a "sort" file is provided for each attribute column. The sort files are cached sort orders for the documents or files in the fixed index, when sorted by that column. In one embodiment, the sort order for each column is pre-computed before receiving a user sort instruction, so that when the user provides a sort order, such as by clicking on a column header to sort, the sort operation is performed almost instantly, in a few seconds or a fraction of a second, rather than in minutes. Optionally, the sort files can be cached in local RAM to speed up access of the sort files. The user can optionally specify that a particular attribute is to be used as a default sort key when presenting a document list. Thus, for example, the user can specify that as a default sort for email, emails should be automatically sorted and ordered according to date/time received. In this example, the pre-computed default sort list, also referred to as a master sort list, would then be sorted according to date/time, and the master sort list would be almost instantly presented with the pre-computed sort list when the user clicks on the email tab.

[0049] Optionally, a pre-computed sort list for a plurality of documents or files, or for every document or file in a selected search tab or interface is stored in high speed local memory RAM, sorted by the current sort order. The search engine can then search through this list when additional search terms are added. Advantageously, this enables the substantially instant redisplay of a given search result list in the selected order when the search results change

as the result of a letter being typed or removed from the filtering phrase. Without the master sort list the incremental filtering might appear to operate much more slowly. In another embodiment, the column information is compressed so that all or a large portion of the column information fits in RAM. The column information can then be sorted using memory-sort algorithms, rather than pre-computing the sort order. In one example embodiment, the column information is compressed using a unique-string dictionary that includes each unique value that occurs in each attribute column file. The attribute column file contains pointers to items within this unique-string dictionary, rather than the strings themselves.

[0050] In one example embodiment, the pre-computed sort list is generated and used as follows. Referring to Figure 2D, a sort process begins at state 202D, where a matching item list is retrieved or accessed from memory. At state 204D certain information in the matching item list is stored using a bit mask that optionally contains a bit for every item in a corresponding master sort list, that is for each indexed item for a given target type. The bit indicates whether the item in the master sort list is a matching item or not, that is, whether the item is included in the matching item list. For example, each bit can be set to either a "1" to indicate the item is a match, or a "0" to indicate no match. For example, if there are 1,000,000 indexed items in the master sort list, then the bit mask would use 1,000,000/8 bytes = 125k. Advantageously, use of the bit mask often significantly reduces that time it takes to locate matches as a quick bit-check operation can be performed on a given bit mask bit position, rather than necessitating a search through all or a large portion of the master sort list.

[0051] At state 206D the bit for an item in the bit mask is read to determine whether the master sort list item corresponding to the bit is a matching item or not. If the item is a matching item, the process proceeds to state 208D at which the item is added to the sorted list results and the process proceeds to state 210D. Otherwise, the process from state 206D to state 210D. At state 210D a determination is made as to whether the end of the master sort list has been reached. If not, the process proceeds back to state 206D and examines the next bit in the bit mask corresponding to the next item in the master sort list. If the end of the master sort list has been reached, the process proceeds from state 210D to state 212D.

[0052] In one embodiment, a bit mask is generated using the index file information. For example, there can be one bit per document, indicating which documents

contain each word in the search phrase. Then Boolean operations (for example, AND, OR, NOT, XOR, etc.) can be used to combine the bit masks for some or all of the fixed indexes, and for some or all the different words or character string, to get a bit mask of the matching results.

[0053] Referring back to Figure 1, the database or repository 105 may be configured as multiple files and/or databases stored on an internal or external storage device of the user terminal 104. A given index can include the item content, and the time, date, item size, or other attributes from when the index entry was created and/or last updated. The some or all of the foregoing index information can be used to determine if a file has been previously indexed or modified since it was last indexed, therefore needs to be indexed or re-indexed.

[0054] The search application 102 further includes a local search engine 107 that utilizes one or more of the indexes created by the index engine 103 to locate email, files, cached Web pages, databases and the like in response to a user query. For example, in response to a query the local search engine 107 accesses the index 105 and locates corresponding matches. The search engine 107 returns excerpts or headlines from relevant matches, and also returns links to the matches. In addition, the search application 102 optionally passes user queries to one or more remote search engines, receives the results, and displays the results to the user. In one embodiment, the search application 102 includes command line code that determines whether a user has entered a command into a search field, and if so, causes the command to be executed. While the search engine 107 and the index engine 103 are illustrated as separate entities, in one embodiment, they are combined in a single engine or module.

[0055] The search application 102 can be downloaded or accessed from a remote Web site, loaded via removable, optical, magnetic, or semiconductor memory, pre-loaded on the terminal's mass storage apparatus, or otherwise stored and/or made accessible to the terminal 104.

[0056] The terminal 104 can be a personal computer, an interactive television, a networkable programmable digital assistant, a computer networkable wireless phone, and the like, that optionally has access to the Internet via a network interface. The terminal 104 can include a display, keyboard, mouse, trackball, electronic pen, microphone (which can accept

voice commands), other user interfaces, speakers, semiconductor, magnetic, and/or optical storage devices.

[0057] In addition to the search application 102, the user terminal 104 can run one or more commercially-available Web browser applications 106 such as Microsoft Internet Explorer® or Netscape Navigator®, which implement the basic World Wide Web standards such as HTTP and HTML.

[0058] The terminal 104 can also host and/or execute a commercially available e-mail application 109, such as Microsoft Outlook® which may be used to receive, send, and display emails. The e-mail application 109 and the browser 106 may be integrated with one another, and/or may be integrated with other application programs or the terminal operating system.

[0059] In the embodiment described herein, a Web site 108 hosts a remote search engine 110 executing on a computer system 111. The computer system 111 includes one or more content and index databases 112. The Web site 108 and search engine 110 are accessible to the search application 102 via the Internet 113. The Web site 108 may optionally include content that spans multiple Internet domains, and/or may be implemented using physical servers that are geographically remote from one another. In other embodiments, the Web site 108 may be in the form of an intranet site, in which case the terminal 104 may be coupled to the site by a private network. For example, Web site 108 may be in the form of an internal corporate store site for company employees.

[0060] In other embodiments, the Web site 108 may be replaced with another type of network site. For example, the various services described herein could alternatively be implemented on a hypertextual site or browsing area of an online services network such as America Online® or MSN®, in which case users may access the site using software that implements non-standard document formats and transfer protocols.

[0061] In addition, there can be several independent search engines associated with different Web sites, accessible to the terminal 104 via one or more computer networks.

[0062] As further depicted by Figure 1, the Web site 108 includes a commercially-available Web server application 114. The Web server application 114 accesses databases used to generate Web pages in response to queries from end users, including queries submitted via

the search application 102. In addition, the Web server application 114 can respond to the browser's request for a page, and deliver the page to the Web browser 106 through the Internet 113.

[0063] By way of example, the search engine 110 may search server-based databases, such as databases 112, of the full text of Web pages selected from selected Web pages. By way of example, the databases 112 can be generated using a spider or the like that "crawls" the Internet searching for Web pages, which are then stored in the databases 112, and that follow the links in those Web pages to other Web pages, which are then stored in the databases. Because the databases 112, or portions thereof, may have been generated before a user submits a search query, these databases may not be fully current. When the search engine 110 performs a Web search in response to a user query, the search engine returns excerpts from relevant Web pages as stored in a corresponding database, and also returns links to the current version of the Web pages, if such exists.

[0064] In addition, a Web page may be added to the search engine databases 112 by directly entering a URL. Optionally, the URL may be submitted by a user or someone associated with the URL. Once a Web page is stored, the Web page is then indexed by the index engine 113. The indexing process may include Web page text, links, and other content. The index is stored in or in association with the search engine database 112. When a user submit a query or search terms, the search engine 110 searches the index based on the query or search terms, including Boolean terms. The search engine 110 locates matches, and links to the corresponding Web pages are transmitted to the user terminal 104 for display. While the search engine 110 and the index engine 113 are illustrated as separate entities, in one embodiment, they are combined in a single engine or module.

[0065] Optionally, certain types of Web pages and links can be excluded from being indexed. For example, optionally a Web site owner can request that the Web site pages are not to be included in the search engine database.

[0066] In addition the search application 102 includes a search application options form, via which the user can select the search application 102 to be configured in one of a docked mode, docked with auto-hide mode, and a "normal" Windows mode. If docked mode is selected, and assuming the search application 102 has been launched, a portion of the

search application interface, such as a control bar, will constantly be visible at a fixed location of the user's display, such as on the top, left, right, or bottom of the user display. The control bar can include the search tabs discussed above, a main search field, a clear entry button, used to clear the main search field in response to a single click or activation, and a "go" button, used to initiate a search in those applications where the actual typing in of the search characters does not initiate the search. For example, when performing a search over the Internet, the user may optionally need to click on the go button to initiate the search. An example control bar is illustrated in Figure 3I.

[0067] If the docked with auto-hide mode is selected, a portion of the search application interface will be at fixed location of the user's display, wherein the portion will visibly appear as a control bar when the user causes the cursor to point to the portion of the screen where the portion is docked for longer then a predetermined amount of time, such as 0.5 seconds. If the user moves the cursor off the control bar without performing a search, the control bar disappears, freeing screen space for use by other programs. If Windows mode is selected, the search application 102 operates as a conventional Windows program, wherein there is a non-docked, non-autohide window associated with the search application 102.

[0068] The option form also allows the user to set the search application 102 to start in email, files, Web, history, favorites, or database search mode.

[0069] Example search interfaces for different search targets, such as emails, files, the Web, and the like, will now be described. By way of example, the email search fields can include one or more of a content field, a from (sender) field, a to (addressee) field, date/time sent and/or received fields, a folder path field, a client field, a cc field, a size field, a bcc field, and a subject field. An example email search page or form is illustrated in Figure 3A.

[0070] By way of further example, the file search fields can include one or more of a content field, a file name field, a file type field, a date field, a file size field, a path field, an author field, a subject field, and so on. An example files search page or form is illustrated in Figure 3B.

[0071] By way of example, the history search fields can include one or more of a content field, a date/time (last viewed) field, a title field, a size field, a URL field, a format field, a category field, a domain field, a links field, a media type field, a language field,

and/or a search term field. An example history search page or form is illustrated in Figure 3D. The Internet search fields can include a content field, a URL field, a title or Web site name field, a size field, a date field, a format field, a category field, a site field, a links field, and a language field, and/or a media type field. The favorites search fields can include one or more of a content field, a URL or address field, a last refresh field, a title field, and/or the fields discussed above with respect to the Internet search fields. An example favorites search page or form is illustrated in Figure 3E.

[0072] Example email attachment search fields can include one or more of a content field, a name field, a date/time field, a from field, a size field, a MIME tag field, an extension field, and/or path field. An example email attachment search page or form is illustrated in Figure 3F.

[0073] Optionally, incremental indexing can be performed for files, emails, email attachments, Internet (or other network) search results, favorites, specific databases, and/or the like. Incremental indexing can be performed in direct response to a user command, continuously, periodically, and/or upon the occurrence of one or more specified conditions, generates and/or updates a corresponding index. For example, Web pages can be indexed as soon as they are stored or cached. Advantageously, incremental indexing can be used to provide consistently current search indexes.

[0074] For example, with respect to emails an email index can be incrementally updated upon the receipt of new emails, at a specified recurring period (for example, every 60 seconds), at one or more specific times during the day, or when the host computer system is idle. In one embodiment, the host computer system is considered idle when one or more of the following conditions are met: when central processor usage falls below a first threshold; when the host computer bus utilization falls below a second threshold, when a user interface device, such as a keyboard, has not been activated for a first period of time. In other embodiments, different criteria can be used to determine with a computer system is idle. In addition, the user can manually specify that indexing of new email shall be immediately performed, or that all email should be re-indexed.

[0075] By way of further example, with respect to files, a files index can be updated upon the creation, editing, or saving of a file, at a specified recurring period (for

example, every 60 seconds), at one or more specific times during the day, or when the host computer system is idle. In addition, the user can manually specify that indexing of new files shall be immediately performed, or that all files should be re-indexed. An example files incremental indexing options form is illustrated in Figure 3J. Advantageously, the user can optionally specify different indexing trigger conditions for different target types, such as for email and files. In one embodiment, the user can optionally specify different indexing trigger conditions for history, favorites, and attachments as well. Optionally, a server hosting a database can be configured to notify the search application of database changes, and the search application's index engine can index the changes substantially immediately after such notification.

[0076] Advantageously, an embodiment of the search application 102 can be customized by a user to meet the user's particular needs or preferences. For example, the user can select which email application or applications the email search is to be performed in conjunction with. For example, the user can select Microsoft Outlook®, Outlook Express, Netscape® Mail, Eudora® and/or other email applications. In addition, in one embodiment, the user can select one or more Internet search engines to be used in performing a search. As described above, the search engines can be executed by the host computer, or by a remote server. For example, in one embodiment the user can specify the Internet or other network searches are to be performed using one or more of Google™, Teoma™, and AltaVista® search engines.

[0077] With respect to Internet, email, file, or other searches, the user can optionally specify that only search results that are likely to be relevant are to be displayed. For example, if the user requests that only search results that are likely to be relevant are to be displayed, then only the higher ranked search results are displayed to the user. For example, only the top 20, 50, 100, 500, or 1000 search results may be displayed. Relevancy can be determine using one or more techniques, such as whether an exact match is found for the search terms, how many times the search terms are found in a document, the spacing of search terms in a document from each other, Optionally, the relevancy of each found document or file is scored, and the score for one or more of the files or documents are displayed to the user adjacent to the corresponding search results.

[0078] In addition, the user can optionally specify which local and/or network folders are to be indexed. Further, the user can optionally specify, on a global or file-by-file basis, that the file contents and all attributes are to be indexed, or only specified attributes, such as file name and/or size, are to be indexed. The user can also specify, on a global or file-by-file basis, that only certain types of files, or files with certain extensions, are to be indexed. For example, a user can specify that only .txt, .doc, .avi, .pdf., and .mpg are to be indexed.

[0079] Figure 2C illustrates an example indexing process for a given target that can be performed using the indexing/scanning module. As discussed above, the target can be a document, email, file, Web pages, or the like. Optionally, the user can specify that one or more of the following are to be included in the history index and/or search: Web pages located using the Web search interface corresponding to Web tab 310A, Web pages corresponding to the user's favorites, Web pages directly addressed using the address fields on any of the search interfaces, Web pages accessed via a separate browser, such as Microsoft Explorer.

[0080] In this example, the user has specified that indexing is to be performed when the host computer is idle. Beginning at state 202C, an indexing/scanning module determines if the host computer is idle. If the host computer is idle, the process proceeds to state 204C, where the scan process begins. At state 204C index item entries are marked, via a bit or flag associated with a given item, as unseen. As will be discussed below, the "unseen" bit is used to determine if a given item has been deleted and so is to be removed from the index. At state 206C a first item located in an appropriate directory on the mass storage device, which can be a disk drive, is located. At state 208C, because the first item was located, the corresponding index entry is now marked as seen by setting the corresponding flag or bit.

[0081] At state 210C the modification date and time, and/or creation date and time, of a given item is compared to the date and time the index was created or last updated to determine if the file needs to be indexed or re-indexed. For, example, if a file has been modified or created since the last time the index was updated, then those files are to be indexed.

[0082] Optionally, for email files and/or other file types, the indexing/scanning module generates its own "change ID" for each appropriate file. For example, for emails the change ID is generated based on email characteristics or attributes, such as subject, sender name, and/or date. By way of example, and not limitation, the change ID ("uid") can be an aggregate of two or more of the receive time, size, subject, and sender name, as well as the containing folder id, and message-store ID as follows.

[0083] uid = entryid + '|' + fullpathtocontainingfolder + '|' + folderid + '|' + storeid '|' + client.

entryid:
for the Outlook client, entryid = the MAPI entryid.
for other clients, entryid = the "message id" that can be found in the email headers,
and if that's not present, entryid is generated as follows:
entryid = receiveddata + '|' + size + '|' + subject + '|' + sendername

folderid:
for Outlook, folderid = the MAPI entryid of the containing folder
for OE (Outlook Express), use an id from its store
for other email clients, use the full path to containing folder

storeid:
for Outlook, storeid = the MAPI store id of the containing message store
for other clients, storeid is an empty string.

[0084] When performing state 210C during a scan operation, the index module examines the previously calculated change ID for each document or file, generates a new change ID for the documents or files, and compares the previous and new change IDs. If the change IDs are different for a file, then that file will be re-indexed.

[0085] At state 212C, the new and/or modified item indexed or re-indexed. At state 214C a determination is made as to whether there are additional items in the appropriate disk directories. If there are, the process proceeds from state 214C to state 206C, where the index process is repeated for the next item. Once all items have been indexed, the process proceeds to 216C. The index item entries are examined to determine if any of the entries are still designated as unseen, indicating that the item was not found during the scan and index

process. If the item is designated as unseen then it is inferred that the item has been deleted, and those unseen items are deleted from the index.

[0086] As illustrated in Figure 3A, one example search application interface includes a control bar 302A, including search mode tabs for files 304A, email 306A, email attachments 308A, the Internet World Wide Web ("Web") 310A, prior Web search results ("History") 312A, and favorites 314A. There is also an options button 316A that, if selected, provides the user with a variety of forms that allow the user to customize the search application 102 in accordance with the user's preferences and needs. In addition, there is a help button 318A, and a suggestion button 320A, which can be activated when the user wants to submit a suggestion regarding the search application 102 or improvements thereto. Advantageously, having the suggestion button 320A located on a main interface makes it more likely users will provide helpful suggestions, as compared to having such a suggestion button located on a buried menu or rarely accessed interface.

[0087] The tabbed interfaces can have a main search field 322A, wherein the user can enter a search string of one or more alphanumeric characters. The main search field is used to search for a string corresponding to one or more of the search fields associated with the search mode, and optionally other attributes. Thus, for example, with respect to the email tab 306A, the search application 102 will incrementally search for the main search field string in the email contents, from (sender) field, to (addressee) field, date/time sent or received fields, folder path field, client field, cc field, size field, and bcc field.

[0088] As illustrated in Figure 3A, the search results are displayed in a list area or pane 324A, which includes a list of the search results, including relevant attributes in column format. In the example illustrated in Figure 3A, the attributes include a from (sender) attribute column, a to (addressee) attribute column, date/time sent and/or received attribute columns, a folder path attribute column, a client attribute column, a cc attribute column, a size attribute column, a bcc attribute column, and a subject field. In this example, each of the columns has a corresponding search field 330A-348A.

[0089] In addition, a view area or pane 326A is provided that displays the content of the first item or user-selected item from the list pane or area 324A. The user can print the

search results displayed in the list pane or area 324A, as well as the document, email, Web page, file, and the like, displayed in the view pane or area 324A.

[0090] Further, when the user clicks on a list pane entry, the corresponding contents are displayed in the view pane 326A. If the user double-clicks, or presses the Enter button, on the list pane entry, the search application causes the entry to launch in its native application. For example, if the user double-clicks on a list pane entry corresponding to a Word file, the file will open in Word. Similarly, if the user double-clicks on a Web page entry in the list pane 324A, the Web page will open in the user's default browser. If the user double-clicks an email entry, the email will open in the user's default email application, such as Microsoft Outlook®.

[0091] The user can also open the folder containing a file listed in the list pane by right-clicking on the file name in the list area 324A and selecting "View Folder". Similarly, the user can open the folder containing an email listed in the list area 324A by right-clicking on the email name in the list pane and selecting "Locate On Disk". The user can right-click to mark email listed in the list area 324A as read or unread by using the corresponding "mark read" or "mark unread" buttons at the top of the view area 326A. Further, the user can activate the plus and minus keys (+/-) to move from one highlighted search term to the next (or previous) in the view area 326A.

[0092] In one embodiment, the user can adjust the width of the list and view areas or panes 324A, 326A by dragging a divider bar 328A located between them to the left or right. In addition, rather than having the list and view areas 324A, 326A visually joined, the list and view areas 324A, 326A can optionally float separately from one another, and the user can separately drag the areas as desired on the user's display device. The user can move up, down, and between the list and view panes 324A, 326A using appropriate controls, such as, by of example, up, down, left, right arrow buttons, the tab button, and/or the PgUp (page up) and PgDn (page down) buttons.

[0093] In addition, the user can adjust the column widths in the list pane or area 324A by dragging a corresponding column side. Further, the user can reorder the column placement by grabbing a corresponding column header, using, for example, the left mouse button, and then dragging the column to a new location. Optionally, the user can also delete

columns. The user can cause the system to reverse a search sort order by clicking on a user selected column header.

[0094] Example searches will now be described. The searches can be performed using an index, such as that illustrated in Figure 2A, and using the search process as similarly described above with respect to Figure 2B.

[0095] By way of example, in order to perform an email search, a user can click on the email tab 306A and bring up the email search interface page, illustrated in Figure 3A. As illustrated in Figure 4A, at state 401A the search system waits for a user input. The user input can be, for example, a search character string or strings entered into the main search field 322A, a search character string or strings entered into an attribute search field, a sort command, or an inverse sort command. The search character or strings can include one or more alpha characters, numeric characters, words and/or phrases that appear in the email contents, from (addresser) field, to (addressee) field, date/time sent or received fields, folder path field, client field, cc field, size field, a bcc field, and a subject field of the email(s), that the user is searching for.

[0096] If the user has entered one or more characters or strings into the main search field 322A the process proceeds to state 402A where the search string is received. The characters or strings can be typed in one at a time by the user or a string or strings of multiple characters can be pasted in with a paste operation. Proceeding to state 404A, a search is incrementally performed using each entered character by the search application's local search engine, and the list pane or area 324A displays incrementally narrowed down search results. Thus, states 402A and 404A take place at almost the same time. For example, state 404A may take place a fraction of a second or a very few seconds after state 402A. Similarly, a user can incrementally broaden the search results by deleting or backspacing over previously entered search characters. The search results are broadened substantially immediately in response to the user deleting or back spacing over a character, without requiring that the user click on or otherwise activate a "search" button or the like.

[0097] If the user entered one or more characters or strings into one or more corresponding column fields 330A-348A the process proceeds from state 401A to state 406A where the search characters or strings are received. For example, if the user is looking for an

email that was received in April of 2003, the user can enter"2003-04" or a portion thereof into the date/time field 332A. At state 408A, as the user enters characters into a column search field, the search is further incrementally performed by the search application's local search engine, and the list pane or area 324A displays incrementally narrowed down search results. Thus, the user can enter or delete search terms in the search fields above each of the attribute data columns to incrementally limit or broaden the results based on matches in that column for the search term entered. The search is performed using the email index, including bulk and fixed indexes.

[0098] The user can optionally select a highlight process, wherein search terms will be highlighted in the list pane or area search results and/or in the view pane or area content display. The highlighting can be in the form of a different coloring, the use of different fonts, blinking text, and/or the like.

[0099] At state 410A, by clicking on an appropriate column header, the user can command the system to sort the search results based on a selected column. For example, the user can click on the Size header to sort the results based on size. The sort can have been pre-computed as similarly described above so that the sort can be immediately displayed. At state 412 the search results are accordingly sorted. In one embodiment, the default sort orders displays the smallest size email first and the largest size email last.

[0100] At state 414A, clicking on the column header a second time reverses the sort order displayed to the user. For example, if the user believes that the email being searched for is large in size, the user can click on the Size column header so that the larger files are displayed at the top of the column.

[0101] Figures 3G-H illustrate the email search interface during two different stages of an incremental search. The main search field 322A has the character string "2003-0" entered, the from field 330A has the character string "KU" entered, and folder field 334A has the character string "IN" entered, and the to field 338A has the character string "KM" entered with the NOT argument (-) preceding it. The search engine has narrowed the emails listed in list pane or area 324A to the twelve that have the character string "2003-0" in any of the emails' attributes or content, have "KU" in the from field, are located in a folder having the character string "IN" in the folder name, and that does not have the character string "KM"

in the to field. The character strings are identically entered in Figure 3H, except the character string ("2003-07") entered in the main search field 322A now has one additional search character (a "7"). Substantially immediately after the "7" was entered, the search application incrementally narrowed the number of emails listed in the list pane 324A from the twelve illustrated in Figure 3G to the four emails listed in Figure 3H.

[0102] By way of further example, in order to perform a file search, a user can click on the file tab 304A and bring up the files search interface page, illustrated in Figure 3B. As illustrated in Figure 4B at state 401B the search system waits for a user input. The user input can be, for example, a search character string or strings entered into the main search field 322A, a search character string or strings entered into an attribute search field, a sort command, or an inverse sort command. If the user entered search characters or strings into the main file search field 306B, the entry is received at state 402B. For example, the entry can include one or more of alpha characters, numeric characters, words and/or phrases that appear in the file contents, the file name, the file type, the file modification date field, the file size, or the file path. At state 404B, as the user enters characters into the main search field the search is incrementally performed by the search application's local search engine, and the list pane or area 308B displays incrementally narrowed down search results.

[0103] If the user has entered one or more characters or strings into one or more corresponding column attribute fields the process proceeds from state 401B to state 406B where the search characters or strings are received. For example, the user can provide a relevant string of characters in a corresponding column attributes field, such as a file name field 312B, a file type field 314B, a date field 316B, a file size field 318B, and a path field 320B. By way of example, if the user is looking for a document located in a "Documents" file on the user's computer "C" drive, the user can enter "C: Documents" or a portion thereof in the path field 320B. At state 408B, as the user enters characters into a column search field, the search is further incrementally performed by the search application's search engine, and the list pane or area 308B displays incrementally narrowed down search results. The search is performed using the file index, including corresponding bulk and fixed indexes.

[0104] At states 410B, 412B by clicking on an appropriate column header, the user can command the system to sort the search results based on a selected column. For

example, the user can click on the Size header to sort the results based on size. In one embodiment, the default sort order displays the smallest size file first, and the largest size file last. At states 414B, 416B clicking on the column header a second time reverses the sort order displayed to the user. As discussed above, the search terms can optionally be highlighted in either or both the list pane or area 308B and the view pane or area 310B.

[0105] When searching the Internet and/or Web sites, a user can click on the Web site tab and bring up the Web search interface page, illustrated in Figure 3C. As illustrated in Figure 4C, at state 402C, the user enter a search query into a main search field 304C, including alpha characters, numeric characters, words and/or phrases that the user wants to search for in the Web site contents, the Web site name, and/or the Web site URL. At state 404C, the user initiates the search, such as by activating the "Go" button or pressing the Enter button and the initiation command is received by the search application.

[0106] At state 406C, the query is transmitted over a network, such as the Internet, to one or more search engines, such as Google™, Teoma™, and AltaVista®, which perform searches in parallel based at least in part on the user entry. At state 408C, the search results from the one or more search engines are returned to the search application, and the search results are displayed in the list area or pane 306C and the Web page contents of a selected or highest ranked search result is displayed in the view pane or area 308C. Optionally, some or all of the Web pages corresponding to the search results are pre-cached on the user's terminal 104 or on other storage local to the user. For example, the Web pages of the first twenty (or other predetermined quantity) listed search results can be pre-cached. In one embodiment, the maximum number of pre-cached Web pages corresponding to the search results is set to be equal to the number of search results that can be displayed in the list pane.

[0107] At state 410C the search system waits for a user input. The user input can be, for example, a search character string entered into the main search field, a search character string entered into an attribute search field, a sort command, or an inverse sort command. If the user entered search characters or strings into the main file search field, the entry is received at state 412C. At state 414C, as the user enters characters into the main

search field the search is incrementally performed by the search application's local search engine, and the list pane or area 308B displays incrementally narrowed down search results.

[0108] At state 416C, the user can narrow the search results displayed by entering a relevant string of characters in a corresponding column attributes field. The illustrated example includes a "results" column field 310C that can be used to search for all indexed attributes and/or content. Other embodiments can include additional or different columns and fields, such as a URL column and field, a title or Web site name column and field, a size column and field, a date column and field, a format column and fields, a category column and field, a site column and field, a links column and field, and a language column and field, a media type column and field corresponding to the type of media used on the page, and/or the like.

[0109] The format field and column are used to search for and categorize pages according to the page or document type and/or extension. For example, the format can be a Word document (.doc), an Acrobat document (.pdf), or a PowerPoint document (.ppt). The site field and column are used to search for and categorize pages according to a Web sites top-level domain name (for example, www.zzzzzzz.com).

[0110] The category field and column are used to search for and categorize pages according to their genre or type, which can have descriptive labels such as "hubs", "personal home page", "commercial", and/or the like. The search system can examine certain Web page and site characteristics during the crawling of the Internet or thereafter, and based at least in part on those characteristics, identify the Web page as belonging to one or more categories. If the categorization is performed before a user requests a search, a user search request, including a category term, can be performed much faster than if the categorization was performed at the time of, or in response to the user search request.

[0111] For example, the category "hubs" or "directory" can correspond to Web pages that have many different links to other Web pages. In addition to the quantity of links, the quality of links can also be taken into account by the search system in categorizing a Web page as a hub or directory. The quality of the links can be scored based on a variety of parameters, including the number of different domains the links link to, how many links are alive or broken (a broken link is a hyperlink that does not work), and/or other parameters.

Thus, for example, in one embodiment, the higher the number of different domains the links link to and/or the greater the number or percentage of alive links, the higher the quality score. If the score exceeds a predetermined threshold, the search system will categorize the page as a hub page.

[0112] With respect to the "personal home page" category, by way of example, the search system can look for certain key words or phrases, such a "family," "children," and/or "personal home page." In addition, the search system can determine how many pictures or JPEG files are on the page, and the level of sophistication of the HTML or other formatting code used to create the page. Thus, for example, based on the number of key words, the number of pictures, and/or the sophistication of the HTML code, a determination is made as to whether a page is likely to be a personal home page. In one embodiment, the greater the quantity of personal-oriented key words and pictures, and the lower the code sophistication (for example, the absence or low level of script files, in line IFRAMES, custom tags), the greater the likelihood that the page is a personal web page. A score can be assigned by the search system based on such properties, and if the score exceeds a predetermined threshold, the search system will categorize the page as a personal home page.

[0113] With respect to the "commercial" or business category, by way of example, the search system can look for certain key words or phrases, such a "price," "quantity," "stock," "ship," "corporation," and/or "shopping cart." In addition, the search system can determine the level of sophistication of the HTML or other formatting code used to create the page. For example, the greater the use of script files, in line IFRAMES, custom tags, and the like, the greater the probable sophistication of the code. By way of example, based on the number of key words and/or the sophistication of the HTML code, a determination is made as to whether a page is likely to be a commercial or business page. In one embodiment, the greater the quantity of business-oriented key words, and the greater the code sophistication, the greater the likelihood that the page is a commercial or business web page. A score can be assigned by the search system based on such properties, and if the score exceeds a predetermined threshold, the search system will categorize the page as a commercial or business web page.

[0114] With respect to the links category, by way of example, the search system can rank pages based on the number of links and/or the quality of links that contain the search characters or strings. For example, if the user was interested in searching for information on Idealab, the user can enter the term Idealab in the links field, the greater the number of links a page has to the Idealab.com domain, the higher the search ranking. By way of example, the quality of the link can be based on how many links are alive or not broken and/or the quality of links on the linked pages.

[0115] At state 418C, as the user enters characters or strings into one or more column search fields, the search results displayed to the user are incrementally limited to those that contain the characters or strings entered by the user. In one embodiment, this narrowing process does not need to access remote search engines, as the search result information and Web pages are already cached locally. At state 420C, by clicking on an appropriate column header, the user can command the system to sort the search results at state 422C based on a selected column. At state 424C, clicking on the column header a second time reverses the sort order displayed to the user at state 426C.

[0116] The user can optionally print the information contained in the list pane or area 306C, as well as the Web pages displayed in the view pane or field 308C. In addition, the user can enter a Web address directly in the Address Field in the address field 312C, and then press the keyboard Enter button or the displayed Go button 312C to go to that page. As described below with respect to the favorites function, the user can cause the search application to add the address or URL to the user's favorites list by activating the plus (+) button 320C. Advantageously, the user can navigate through the found Web pages using the Forward and Backward control buttons 314C, 316C, and can refresh a Web page using a Refresh button 318C. The Backward control is configured to navigate to a previously viewed favorites Web page and the Forward control is configured to navigate a next favorites Web page.

[0117] To search the results or history of prior Internet and/or Web searches, a user can click on the History tab 312A and bring up the history search interface page, illustrated in Figure 3D. The history process copies Web sites visited by the user, and indexes content and attributes for substantially instant searching of those historical Web

pages. When the History interface is presented to the user, stored Web pages previously viewed in the search application's view pane or area 308D, and optionally, stored Web pages previously viewed using other user browsers, are listed in the history list pane or area 306D. Optionally, based on a user-selected option, the view pane or area 308D either shows page corresponding to a select item as the user saw it when on the date/time it was added to the history or the most recent version of the page in Internet Explorer's cache. These pages can be displayed in the view pane or area 308D even when the user is offline.

[0118] As illustrated in Figure 4D, at state 401D the search system waits for a user input. The user input can be, for example, a search character string entered into the main search field, a search character string entered into an attribute search field, a sort command, or an inverse sort command.

[0119] At state 402D, alpha characters, numeric characters, words and/or phrases, such as those that may appear in the Web page contents, the Web site name or title, the Web page URL, the Web page size, the page category, the page domain, the page language, the links on the page, the data/time the Web page was last viewed, the search terms entered when the Web page was originally located by the search application, the name of the browser or other tool used to originally locate the Web page, and/or the media type used on the page that are entered by the user into the main search field 304D are received.

[0120] At state 404D, as the user enters characters into the main search field 304D the search of the listed items is incrementally performed by the search application's search engine, and the list pane or area 306D displays incrementally narrowed down search results. The view pane or area 308D displays the selected page. The user can optionally specify whether the view pane or area 308D will display the stored Web page, as the user saw it when the Web page was added to the history, or the most recent version of the page stored in a local cache, such as Microsoft's Internet Explorer's cache. Because, in one embodiment, the Web pages are cached, the previously viewed Web pages can be displayed in the view pane or area 308 even when the user's terminal is offline.

[0121] The user can also provide a relevant string or strings of characters in a corresponding column field to specify certain search result attributes, such as a content field, a date/time (last viewed) field 310D, a URL field, 312D, a title field 314D, a size field 316D,

a media type field (not shown), a search term field 318D, and/or the browser originally used field (not shown), a Web page size field, a page category field, a page domain field, a page language field, and a links field, which are received at state 406D. At state 408D, as the user enters characters or strings into a column search field, the search is further incrementally performed by the search application's search engine, and the list pane or area 306D displays incrementally narrowed down search results. At states 410D, 412D, by clicking on an appropriate column header, the user can command the system to sort the search results based on a selected column. At states 414D, 416D clicking on the column header a second time reverses the sort order displayed to the user.

[0122] Optionally, the size of the history index can be limited based on size or date, which can be specified by the user. In one embodiment, the history functionality can integrated with the Web search tab, so that a user can search his/her history directly from the Web tab in addition to live Web searches. Optionally, the user can also enter a URL or address into the address field 320D to browse to a new URL and have that page added to the history. As described below with respect to the favorites function, the user can cause the search application to add the address or URL to the user's favorites list by activating the plus (+) button 322D.

[0123] With reference to Figure 3E, the favorites function is used to select and display Web pages that the user often refers to and so wants to access quickly. The user can select an add favorites button, such as the plus (+) symbol in the history or Web interfaces, as illustrated in Figures 3C and 3D, above a Web page to cause the search application to add it to the user's favorites. In addition, the user can enter the desired address or URL of a Web page into address field 316E, and click the plus (+) button 318E to add the address to the user's favorites list, or click the minus (-) button 320E to remove the address displayed in the address field 316E from the user's favorites list. The Web pages included in the user's favorites are cached, attribute and content indexed, and once indexed, instantly searchable.

[0124] To search the cached favorites Web pages, a user can click on the favorites tab 314A and bring up the favorites search interface page, illustrated in Figure 3E. In response to the user selecting the favorites search mode, user favorites are listed in the favorites list pane or area 306E. The view pane or area 308E either shows that page as the

user saw it when on the date/time it was added to the favorites or the most recent version of the page in Internet Explorer's cache. These pages can be displayed in the view pane or area 308D even when the user is offline.

[0125] As illustrated in Figure 4E, at state 401E the search system waits for a user input. If the user provides an entry into a main search field 304E, such as alpha characters, numeric characters, words and/or phrases that the user thinks may appear in the favorites Web page contents, the Web site name or title, and/or the Web page URL, the entries are received at state 402E. At state 404E, as the user enters characters into the main search field 304E the search is incrementally performed by the search application's search engine, and the list pane or area 306E displays incrementally narrowed down search results. The view pane or area 308E displays the selected page. The user can optionally specify whether the view pane or area 308E will display the stored Web page, as the user saw it when the Web page was added to the favorites, or the most recent version of the page stored in a local cache, such as Microsoft's Internet Explorer's cache. Because, in one embodiment, the Web pages are cached, the previously viewed Web pages can be displayed in the view pane or area 308 even when the user's terminal is offline.

[0126] The user can also provide a relevant string of characters in a corresponding column field, to specify certain search result attributes, such as a content field, a date/time (last viewed) field 310E, a URL field, 312E, a title field 314E, a size field 316E, a media type field (not shown), a search term field 318E, and/or the browser originally used field (not shown), a page category field, a page domain field, a page language field, and a links field, which are received at state 406E. At state 408E, as the user enters characters into a column search field, the search is further incrementally performed by the search application's search engine, and the list pane or area 306E displays incrementally narrowed down search results. At states 410E, 412E, by clicking on an appropriate column header, the user can command the system to sort the search results based on a selected column. At states 414E, 416E clicking on the column header a second time reverses the sort order displayed to the user.

[0127] With reference to Figure 3F, the attachment function is used to locate email attachments. To search for email attachments a user can click on the attachments tab 308A and bring up the attachments search interface page which lists attachments in the

attachments list pane or area 306F. As illustrated in Figure 4F, at state 401F the search system waits for a user input. The user can enter into a main search field 304F, alpha characters, numeric characters, words and/or phrases that the user thinks may appear in the desired attachment contents, name, date/time created, date/time received, from (sender) field, size, MIME tag, extension, and/or path, which are received at state 402F.

[0128] At state 404F, as the user enters characters into the main search field 304F the search is incrementally performed by the search application's search engine, and the list pane or area 306F displays incrementally narrowed down search results. The view pane or area 308F displays the selected page.

[0129] The user can also provide a relevant string of characters in a corresponding column field to specify certain search result attributes, such as a content field (now shown), a name field 310F, a date/time field 312F, a from (sender) field 314F, a size field 316F, a MIME tag field 318F, an extension field 320F, and/or a path field 322F which are received at state 406F. At state 412F, as the user enters characters into a column search field, the search is further incrementally performed by the search application's local search engine, and the list pane or area 306F displays incrementally narrowed down search results.

[0130] At states 410F, 412F, by clicking on an appropriate column header, the user can command the system to sort the search results based on a selected column. At states 414F, 416F clicking on the column header a second time reverses the sort order displayed to the user.

[0131] In one embodiment, a search interface page includes a selection menu that specifies which of email, attachments, files, the Web, favorites, and/or history (previously accessed and stored Web pages) targets, are to be searched. In accordance with the user selection one or more of the email, attachments, files, the Web, favorites, and/or history, or corresponding indexes will be searched. In this embodiment, the column attribute search fields optionally will correspond to the selected search targets. Thus, for example, if the user selects both email and files as search targets, the column attribute fields can include one or more of a from (sender) field, a to (addressee) field, date/time sent and/or received fields, a email folder path field, a client field, a cc field, a size field, and a bcc field, wherein the

foregoing fields are appropriate for email searches, and one or more of a file name field, a file type field, a date last modified or created field, a file size field, and a file path field.

[0132] The search application 102 optionally ignores punctuation of a first set of punctuation when indexing and performing a search, such as an email or files search, and includes punctuation of a second set of punctuation in indexing and search operations. For example, the first set of punctuation can include hyphens, commas and/or semicolons. The second set of punctuation includes punctuation marks that are more likely to be useful when performing a search, such as the period or dot (.), commonly used in file extensions, and the "at" sign (@), which is commonly used in email addresses. Optionally, the user can specify which punctuation marks are to be included when indexing and performing searches, and which punctuation marks are to be ignored.

[0133] In one embodiment, when using a string of one or more characters as a search string on which to perform a search, such as an email or file content search, the search string is treated as a prefix. That is, the search string should match the initial characters and/or words in a potential matching string for the file or email to be displayed in the list pane or area. For example, if the search string is "act", the search application 102 will list a file containing the word "actual", but will not list a file if the only appearance of "act" is "fact."

[0134] The user can enter multiple separate search words or strings and each one will optionally be treated as a prefix. For example, searching "Joh Do" can be used to locate the strings "John Doe". Thus, one embodiment of the present invention provides multiword separate prefix searching. The searching can be performed incrementally. For example, if the user enter "Jo D" documents with the strings ("Jon" and "David"), ("Joe" and "Daniel"), ("John" and "Doe") will be located. If user then adds an "h" to "Jo" so that the search strings are now "Joh D" then the list of search results will be substantially immediately narrowed to present only documents having at least one string beginning with "Joh" and one string beginning with "D", such as a document containing ("John" and "Doe"). Further, the user can enter one or more additional search strings into one or more other search fields, such as one or more column search fields and the search system will incrementally search for

documents that have strings that correspondingly begin with the search strings or that are exact matches for the search strings.

[0135] Optionally, when certain standard characters are present in a given attribute, such as the standard "www." in a URL, the search application treats the character following the standard characters as the first character. Thus, for example, when searching for the string "loc" by entering it in the URL field 310E in Figure 3D, the URL "www.loc.gov.com" would be identified as a match. Optionally, the user can specify that the search application 102 should look for the search string no matter where it appears in a file or in email content.

[0136] In one embodiment, the main search field and/or attribute fields discussed above can act as a command line interface, in addition to acting as search fields. Thus, before executing or applying a search operation on one or more search strings, a determination is made as to whether the first search string corresponds to a command or is included in a list of command words. If the first word or string does correspond to a command word then a corresponding command file is read, and the corresponding command is executed. If there is more than one word or string entered into a search field, if the first word or string corresponds to a command word, then the subsequent words or strings are optionally treated as command arguments or terms, if appropriate. In addition, command files can call other command files by including the called command file name and relevant arguments. The list of command word can grow or shrink as the user adds or deletes commands. The present invention is not limited to receiving commands into a search filed. In other embodiments, other data entry fields can be used to enter commands as well as data.

[0137] By way of example, the command words can include email (corresponding to a command to create an email using the following term to determine who the addressee is), shop (corresponding to a command for finding the lowest online price for the product named in the following term), book (corresponding to a command for finding a book at a named Web site), movies (corresponding to a command for finding a listing of show times at a named Web site), web (corresponding to a command for launching a browser, and if there is a URL following the "web" then the browser is launched to that URL), convert (corresponding to a command used to convert from one set of units or currency to another),

msword (corresponding to a command to launch msword, and if there is a following term, open or create a document with a name corresponding to the term), programname (corresponding to a command to launch the program having the name programname), semail (corresponding to a command to search the email index using the following string(s)), sfiles (corresponding to a command to search the files index using the following string(s)), and so on with respect to the other search targets.

[0138] The command names can correspond to command files, which for example, can have the extension ".do," though other extensions can be used as well. The command files can optionally be programmed, created and/or edited by an end user, thereby providing for significant customizing by users and without requiring sophisticated programming skills. Further, the user can add additional commands as desired. In addition, the command names can be names selected by the user that are easy for the user to remember, as opposed to arbitrary names, or difficult to remember names. The instructions included in the command files can be instructions unique to the search application, instructions corresponding to other applications, and/or instructions that correspond to operating system instructions. Thus, a search field can also be used as a DOS, UNIX, LINUX, or other operating system command line. The command file can also include a URL.

[0139] For example, if the user types "president bush" in the files search mode main search field, then the search application searches for a file that includes the terms "president" and "bush." But if the user types "email samantha jones" the search application compares the first string, "email", with the command list, recognizes that email is on the command list and that email is a command, retrieves an "email.do" command file that specifies how the command is to be processed, accordingly processes the term "samantha jones", and generates a blank email to samantha jones by looking up the email address for samantha jones in the user's email application.

[0140] By way of another example, if the user types in "semail samantha jones" the search application compares the first string, "semail", with the command list, recognizes that semail is on the command list and that semail is a command, processes the rest of the

line as an "semail" command, in this case a search within the user's indexed email for the strings "samantha" and "jones".

[0141] Optionally, some of the commands can be built into the search application, and do not utilize a separate command file. For example, the semail, sfiles, and/or web commands can be built in and not use a separate command file.

[0142] Optionally, the results of the command are displayed using the list area and/or the view area. For example, with respect to the "semail" command, the list and view areas are employed as similarly described above with respect to Figure 3A.

[0143] At times, the arguments following a user-entered command may result in ambiguity in one of the arguments that are to be processed. For example, with respect to the convert command, where there is ambiguity, the user can be presented with several options from which the user can select. By way of example, if the user types "convert 5 miles" then the list area can be used to display user selectable choices, such as "meters", "feet", and "kilometers". If the user selects one of the choices, the search application will display the results in the view area. Thus, if the user selects "kilometers" the convert command with convert 5 miles into corresponding kilometers, and displays the results in the view area.

[0144] In another example, a command can be used to quickly retrieve information from a specific URL via the search application. For example, the book command file can include the following:

web http://search.barnesandnoble.com/booksearch/results.asp?WRD=$1

[0145] By way of further example, the movies command file can include the following:

web http://movies.yahoo.com/showtimes/showtimes.html?z=$1

[0146] The parameter "$1" in the above examples is filled in by the following string entered by the user. For example if the user typed in the entry "movies lord" the movies command would launch a browser, access the yahoo movie show time site, submit the string "lord", and the show times for movies that include the string "lord", such as "Lord of the Rings" would be displayed to the user. If the string(s) following the command word are not HTML compliant, such as containing a space, HTML-escaping is performed, and the

string(s) that are in violation will optionally be converted into an HTML compliant string, such a by replacing the space with a +sign. Thus, "lord rings" is optionally converted into "lord+rings."

[0147] Advantageously, in certain embodiments, indexing of multiple forms of a word is performed, and where punctuation marks are in a word or character string, the word and character string can be selectively broken into multiple words or strings which can reduce index size and facilitate searching. For example, when indexing, a set of punctuation is optionally declared non-word symbols and are treated as spaces to separate words. For example, this set can include: < ([{ ". The foregoing example set members are selected because the included symbols are often used as open-parentheses and thus, a following character string can often be considered to be a new word. In addition, the double-quote is rarely used as a word joiner. Some characters, such as the < characters, are treated as a non-word symbol because they appear very frequently in HTML code used to used to generate Web pages. By excluding such characters, strings such as word are advantageously not treated as a word.

[0148] Optionally, punctuation not included in the set of excluded punctuation discussed above will be treated as the same as punctuation in the set only if the punctuation is within N characters of the start of the word. For example, N can be set at 2 or at another value. Optionally, punctuation not included in the set of excluded punctuation will be treated as a space if the punctuation is after P characters of the start of the word. For example, P can be set at 3, or 5, or at another value. By way of further example, if N=2 and M=3, xy.com would be indexed as one word because the period is not within 2 characters of the start of the string and is not more than 3 characters after the string. In another example, if N=2 and M=3, nbc.org is treated as two words, nbc and org because the period is more than 3 positions away from the start of the string.

[0149] The values of M and P are selected so that the portion of a word or character string before the punctuation is long enough, such that even if the string is treated as two separate words or strings each string will be sufficiently unique or identifiable for searching purposes. However, if the punctuation occurs too near the beginning of a word or string, treating the prefix as a separate word or string may not provide enough characters for a

user to recognize the word or string. For example, if "a.m." were broken into two one word strings, "a" and "m", the search results would not be as useful or may not be useful at all.

[0150] Optionally, the index process indexes the individual words separated by punctuation, so that for xy.com, xy and com are separately indexed.

[0151] By way of further examples, if N = 2 and P = 5, then for johndoe@zxcv.ca, all the punctuation marks are treated as spaces and the following strings are separately indexed: johndoe, zxvc, ca. Similarly, the string me@mnbvcxza.net is treated as a word or a single string. For the string 1,234,467, 1,234 is treated as a word or single character string, and 467 is treated as a word or character string.

[0152] Further, a user can exclude files, emails, and the like that contain a specified string from appearing in search results displayed to the user. For example, in one embodiment, the user can exclude files or email containing a particular string by putting a minus sign at the beginning of the character string when entering it into the main search field or other relevant column field. If a user wants to search for a file that does not contain a first string as a prefix or exact match, and does contain a second string as a prefix or exact match, the user can put a minus sign in front of the string to be excluded, then follow that string by one or more spaces, and then the character string to be included. For example, if the user searches for an email that does not contain, as a prefix or exact match, the string "Fred" (or "Frederick", "Frederica", or other string or word with "Fred") and does include the string "Sol" (or "Solly", Sole, or Solomon"), the user would enter "-Fred Sol".

[0153] Thus, as described above, certain embodiments of the present invention provide advantageously provide for incremental searching for a variety of search targets. For example, the search targets can include one or more of files, emails, email attachments, Web pages, specific databases, and/or the like. Because a search is performed incrementally, the search results are provided or narrowed substantially immediately after each character is a search string is entered by a user. Thus, the user is provided with substantially immediate feedback as the search string is being entered, and so can quickly decide on the desirability of entering additional search characters, or of entering a new search string.

[0154] In addition, the user can specify that an exact word match is to be performed. In one example embodiment, if a selected punctuation symbol, such as =, follows

a word or character string directly, and is followed by a space, as in "mark= ", then the word is searched as an exact match. In addition, optionally, if a selected punctuation symbol, which can be a !, @, #, $, %, ^, &, *,), ;, :, ', ", ?, >, and/or other punctuation symbol, follows a word or character string directly, and is followed by a space, as in "mark$ " or "mark. " or "mark- ", then optionally the word is searched as an exact match including the punctuation. So "mark- " will not match "market" or "mark. However, "mark-" will match "mark-down."

[0155] In another embodiment, the search system described above is server-based, and the user can access the search functionally using a thin client. Thus, for example, the user does not need to download to or otherwise store the search application on the user's terminal. Instead, the user can access over a network a remote search system and engine using a browser. The remote search system can be used to incrementally search content original to a Web site or database associated with the remote search system, and/or to search data that resides or originally resided on another Web site or network site. Nonetheless, even though the search engine is remotely located, once initial search results are transmitted to the thin client, the used can quickly scroll down and view the content corresponding to the items in the search results as if the search application was hosted by the thin client.

[0156] Figure 5 illustrates an example computer system that can be used to provide a server based incremental search system. As depicted, one embodiment includes a browser 504 stored on and executed by a user terminal 502. While in the illustrated embodiment the terminal 502 is a thin client, it can optionally include a local index engine, local search engine, and email application similar or identical to those discussed above with reference to terminal 104 illustrated in Figure 1. In the example embodiment, the browser 504 can interpret HTML tags, handle IFRAMES, and execute JavaScript. The terminal 502 is coupled to a remote site 508 via a network 506, which can be, by way of example, the Internet. The terminal 502 can be coupled to the Internet using a network interface circuit and port.

[0157] The remote site 508 includes a computer server 515 that executes and hosts a search engine 510, an index engine 513, and a Web server 514. The computer server 515 includes one or more content and index databases 512 and JavaScript, which will be

discussed in greater detail below. The search and index engines 510, 513 can be the same as or similar to the search engine 107, index engine 103, search engine 110, and index engine 103 discussed above, and can provide the same or similar functionality. The Web site 108 and search engine 110 are accessible to the search application 102 via the Internet 113. The remote site 508 can be coupled to the Internet using a network interface circuit and port. The Web site 108 may optionally include content that spans multiple Internet domains, and/or may be implemented using physical servers that are geographically remote from one another. In other embodiments, the Web site 108 may be in the form of an intranet site, in which case the terminal 502 may be coupled to the site by a private network. For example, Web site 508 may be in the form of an internal corporate store site for company employees.

[0158] By way of example, the search engine 510 may search local server-based databases of the full text of Web pages selected from selected Web pages. The databases can optionally be generated using a spider or the like that search for Web pages on other Web sites, such as Web sites 518, 520, which are then stored in the databases, and that follow the links in those Web pages to other Web pages, which are then stored in the databases. Because the Web page databases, or portions thereof, may have been generated before a user submits a search query, these databases may not be fully current. When the search engine 510 performs a Web search in response to a user query, the search engine returns excerpts from relevant Web pages as stored in a corresponding database, and also returns links to the current version of the Web pages, if such exists.

[0159] By way of further example, as similarly discussed above with reference to Figure 1, the server system can create indexes such as those illustrated in Figure 2A using the process illustrated in Figure 2C, can create prefix indexes, and can pre-compute sort lists.

[0160] Figure 6 illustrates an example search process using the server based search system. At state 602, the user accesses via the browser 504 the server based system 508 over the Internet 506. At state 504, the server system 508 transmits HTML, and/or other formatting code, text, and JavaScript to the browser 504. JavaScript is a client-side scripting language that runs inside an Internet browser or Web client. JavaScript can be embedded in Web pages or in other HTML documents. JavaScript can be used to enhance Web page dynamics and interactivity, and can be used to perform calculations, check forms, generate

new HTML pages using variable information, open and close windows and frames, and the like. When the browser loads a page that includes JavaScript code, the browser's interpreter reads and executes the JavaScript code.

[0161] At state 606 the HTML code is rendered by the browser 504, the JavaScript is executed, and the browser 504 displays the search interface as similarly discussed above with reference to Figures 3A-I. Thus, for example, the search interface can include a list pane or area and a view pane or area, and well as the search area, including a main search field and column attribute fields. As similarly discussed above, the user can select a particular target search interface by clicking on an appropriate tab or link. For example, a given target search interface can include a plurality of search fields, including a main search field and a plurality of search fields. Thus, as similarly discussed above, an Internet search interface can include one or more of a content field, a URL field, a title or Web site name field, a size field, a date field, a format field, a category field, a site field, a links field, and a language field, and a media type field.

[0162] At state 608, the browser, via the executed JavaScript, monitors user inputs or deletions from the interface fields. For example, the user can enter into the main search field and/or into one or more attribute search fields one or more alpha characters, numeric characters, words and/or phrases that the user thinks may appear in the target content or attributes. In addition, the browser monitors and detects whether the user is paging up or down, or is scrolling off the page. Optionally, the browser continuously monitors and detects user inputs, deletions, scrolling, and/or paging up or down (collectively and individually also referred to as "user changes") during states 610-622, and if such is detected, the process proceeds or returns to state 610. At state 610 the browser transmits the user changes to the server system 508.

[0163] At state 612 the server system 508 incrementally searches for Web pages, documents, or other files in accordance with the search character, characters, string, or strings received by the server system 508. Thus, with each additional character entered by the user and detected at state 608, the search engine 510 will further refine the search. Similarly, with each deletion of a search string character, the search engine 510 will reduce the amount of search filtering to broaden the search. For example, when the user types "fast", four separate

searches are optionally sent to the server, one for "f", one for "fa", one for "fas", and one for "fast". Each time, the server finds all documents containing words starting with that sequence of letters, and returns a list of the top matches. At state 614 the server system 508 transmits a list of search results to the browser 504.

[0164] In one embodiment, the JavaScript optionally instructs the server system 508 how many results to return, so that only as many results as are needed to fill the list pane are transmitted. Advantageously, this reduces the load on the server system 508, increases the speed of presentation, and yet provides to the user the illusion that the list goes on further. In such an embodiment, when the user presses the PgDn button, clicks a More button, or scrolls down the list, an additional request is sent to the server for the next pagefull of results.

[0165] Optionally, to determine how long the transmitted search result list should be, the server system 508 autodetects the number of lines the browser 504 can display at a time. Optionally, the user can instruct the server system 508 on how long the list should be.

[0166] At state 616 the browser 504 displays the list in the list pane or area. At state 618, the browser 504 automatically selects the first item in the search result list to be displayed in the content pane or area. At state 620 to accelerate the presentation of content in the view pane for a selected item in the list pane, the pages or documents corresponding to the search result entries in the list pane are preloaded as soon as the list is received from the server system 508. The JavaScript loads IFRAMEs for each of the Web pages corresponding to the list entries. An inline floating frame or IFRAME is a construct which embeds a document into an HTML document so that embedded data can be displayed inside a subwindow of the browser's window. The IFRAME tag creates a floating frame at its location in the HTML file. The SRC attribute, which sets or retrieves a URL to be loaded, specifies the content to be displayed within the frame.

[0167] Thus, the Web page content loaded onto user's computer 502, while keeping hidden the display of the Web page content. Then, to present the content or Web page corresponding to a selected search list entry, the JavaScript renders the corresponding IFRAME visible in the view pane.

[0168] Figure 7 illustrates an example process of scrolling through a search list loaded via a browser as described above with reference to Figures 5 and 6. At state 702, the

JavaScript detects when the user is scrolling up and down the list displayed in the browser 504. At state 704, the browser selects the corresponding search list item for display in the view pane. At state 706 the browser 504 displays the selected search result content that had already been stored in an IFRAME in the view pane. Advantageously, because the content for each item in the list has already been preloaded, the scrolling and content display takes place substantially instantaneously and the Internet does not have to be accessed.

[0169] Thus, as described above, certain embodiments of the present invention provide an efficient user interface, and advantageously provides for incremental searching for a variety of search targets using client-based or server-based search applications. Because search can be performed incrementally, the user is provided with substantially immediate feedback as the search string is being entered, and so can quickly decide on the desirability of entering additional search characters. Advantageously, the user interface provides target specific attribute search fields, thereby enabling a user to efficiently locate the desired email, files, attachments, Web pages, and the like. In addition, in certain embodiments, incremental indexing is performed, thereby providing consistently current search indexes. Advantageously, in certain embodiments indexing of multiple forms of a word is performed, and where punctuation marks are in a word or character string, the word and character string can be selectively broken into multiple words or strings which can reduce index size and facilitate searching.

[0170] It should be understood that certain variations and modifications of this invention would suggest themselves to one of ordinary skill in the art. The scope of the present invention is not to be limited by the illustrations or the foregoing descriptions thereof.

WHAT IS CLAIMED IS:

1. A method of performing a search comprising:

receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field; and

incrementally locating at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string.

2. The method as defined in Claim 1 further comprising:

receiving at least a third search string in a second search field; and

incrementally locating at least a first document that has a least a first word that begins with the first string, a second word that begins with the second string, and a third word that begins with the third string.

3. The method as defined in Claim 1 further comprising automatically presenting a first occurrence of the first word in the first document.

4. The method as defined in Claim 1 further comprising presenting at the same time a plurality of occurrences of the first word in the first document while excluding portions of text between occurrences of the first word.

5. The method as defined in Claim 1, further comprising:

indexing a first file including a third search string, the third string including a punctuation mark at a first location;

determining the position of the punctuation mark in the third string;

based at least in part on the first location, treating a first portion of the third string before the punctuation mark as a fourth string and treating a second portion of the third string after the punctuation mark as a fifth string.

6. The method as defined in Claim 1, further comprising:

indexing a first file including a third search string, the third string including a punctuation mark at a first location;

determining the location of the punctuation mark in the third string; and

based at least in part on the location, treating the punctuation mark as a space.

7. The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at a first location within the third search string;

determining the position of the punctuation mark in the third string; and

based at least in part on the first location, locating a document that has a fourth string that includes at least said third string.

8. The method as defined in Claim 1, further comprising:

receiving a third string, the third string including a first punctuation mark;

determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks; and

determining how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to.

9. The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at the end of the third string; and

locating at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark.

10. The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at the end of the third string; and

locating at least a first document that includes an exact match for the third string.

11. A search apparatus, comprising:

a first instruction configured to read at least a first search string and a second search string entered into a same first search field; and

a second instruction configured to incrementally filter search results to locate at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string.

12. The search apparatus as defined in Claim 11, further configured to:

read a third search string, the third string including a punctuation mark at a first location;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, treat a first portion of the third string before the punctuation mark as a fourth string and treat a second portion of the third string after the punctuation mark as a fifth string.

13. The search apparatus as defined in Claim 11, further configured to:

receive a third string, the third string including a punctuation mark at a first location;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, treat the punctuation mark as a space.

14. The search apparatus as defined in Claim 11, further configured to:

receive a third string, the third string including a punctuation mark at a first location within the third search string;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, determine if the third string should be indexed as more than one string.

15. The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a first punctuation mark;

determine if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks; and

determine how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to.

16. The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a first punctuation mark at the end of the third string; and

locate at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark based at least in part on detecting the first punctuation mark.

17. The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a punctuation mark at the end of the third string; and

locate at least a first document that includes an exact match for the third string based at least in part on detecting the punctuation mark at the end of the third string.

18. An search index system comprising:

scan code that determines at least in part what files to index;

index code that indexes files based at least in part on the scan code determination, wherein the index code is further configured to locate punctuation marks in at least a first search string and to treat at least a portion of the punctuation marks as string separators based at least in part on their location within the first search string.

19. The search apparatus as defined in Claim 18, wherein the punctuation marks "<", "(", "[", and "{" are treated as string separators when indexing regardless of their position between a first character and a last character within the first string.

20. The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a predetermined number of characters from the beginning of the first string.

21. The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned after a predetermined number of characters from the beginning of the first string.

22. The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string.

23. The search apparatus as defined in Claim 22, where the first predetermined number is 2 and the second predetermined number is 4.

24. A method of selectively performing a search and executing a command, the method comprising:

receiving at least a first string in a search field;

determining if the first string is a command;

selectively initiating command execution in response to determining that the first string is a command; and

selectively initiating a search if the first string is not a command.

25. The method as defined in Claim 24, wherein determining if the first string is a command further comprises:

comparing the first string to a list of commands; and

determining if the first string corresponds to a command in the list of commands.

26. The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user.

27. The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a search application command.

28. The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a command using as a command argument a second string entered into the search field.

29. The method as defined in Claim 24, further comprising determining if a second string and a third string entered into the search field are command arguments, and if so, determining if there is an HTML violation.

30. The method as defined in Claim 24, further comprising presenting information retrieved by at least a first command entered into the search field using a search application interface.

31. The method as defined in Claim 24, further comprising:

determining if there is an ambiguity with respect to at least a first command entered by a user; and

presenting a list of user selectable options in order to resolve the ambiguity.

32. A search apparatus, comprising:

a first instruction configured to receive a first string entered into a search field;

a second instruction configured to determine if the first string corresponds to a command;

a third instruction configured to initiate command execution in response to determining that the first string corresponds to a command; and

a fourth instruction configured to initiate a search if the first string is not a command.

33. The search apparatus as defined in Claim 32, further comprising user-editable command files corresponding to commands that are executed when entered into the search field.

34. The search apparatus as defined in Claim 32, further comprising a list of commands corresponding to commands that are executed when entered into the search field.

35. The search apparatus as defined in Claim 32, further comprising a command that accesses movie listings.

36. The search apparatus as defined in Claim 32, further comprising a command that accesses price information.

37. The search apparatus as defined in Claim 32, further comprising a command that launches an application program.

METHODS AND SYSTEMS FOR SEARCH INDEXING

Abstract of the Disclosure

The present invention provides for quick and efficient searching. One embodiment includes a first instruction configured to read at least a first search string and a second search string entered into a same first search field, and a second instruction configured to incrementally filter search results to locate at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string.

PATENT

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090303

1/23

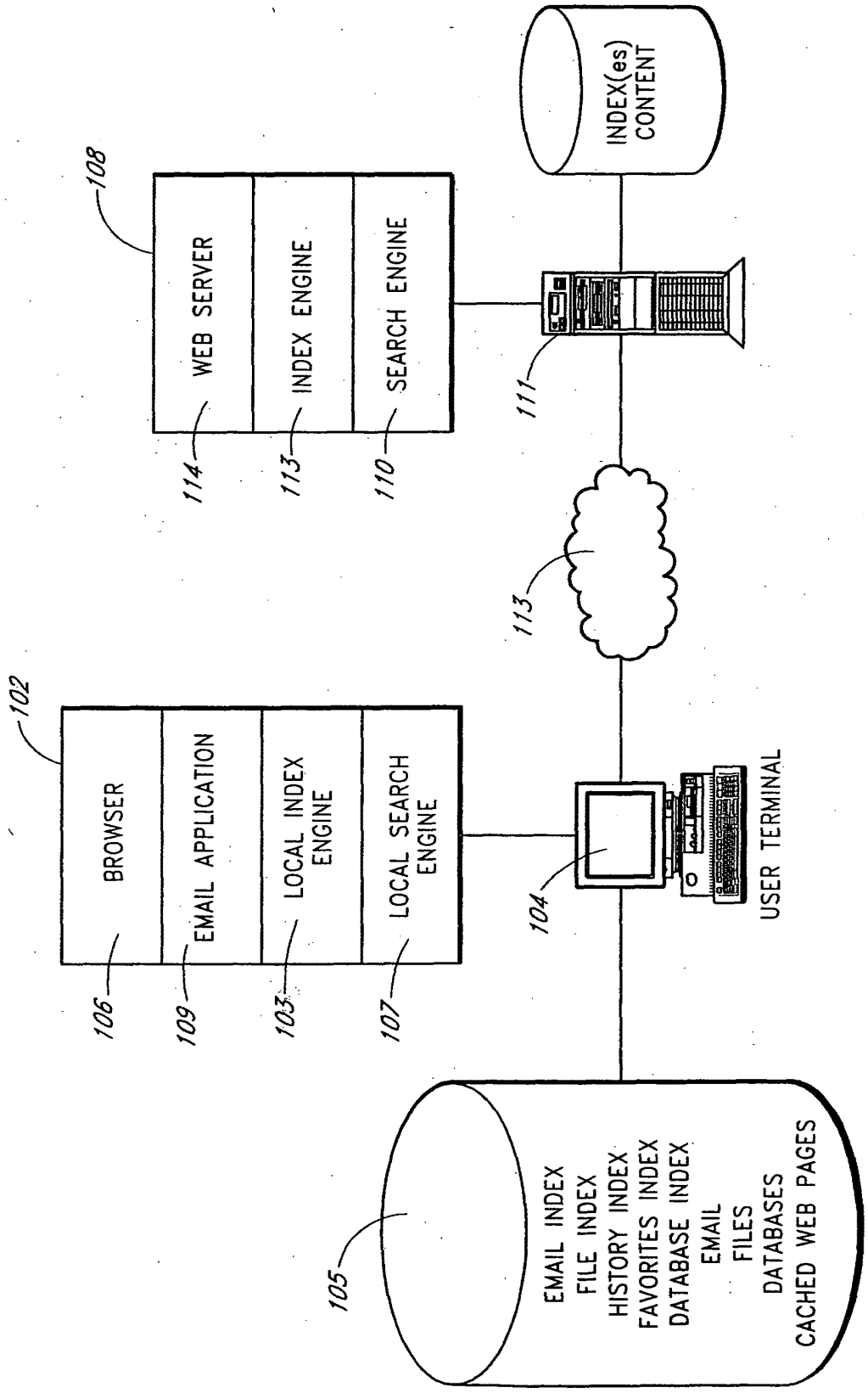

INDEX(es) CONTENT
108
WEB SERVER
INDEX ENGINE
SEARCH ENGINE
114
113
110
111
113
102
BROWSER
EMAIL APPLICATION
LOCAL INDEX ENGINE
LOCAL SEARCH ENGINE
106
109
103
107
104
USER TERMINAL
105
EMAIL INDEX
FILE INDEX
HISTORY INDEX
FAVORITES INDEX
DATABASE INDEX
EMAIL
FILES
DATABASES
CACHED WEB PAGES

FIG. 1

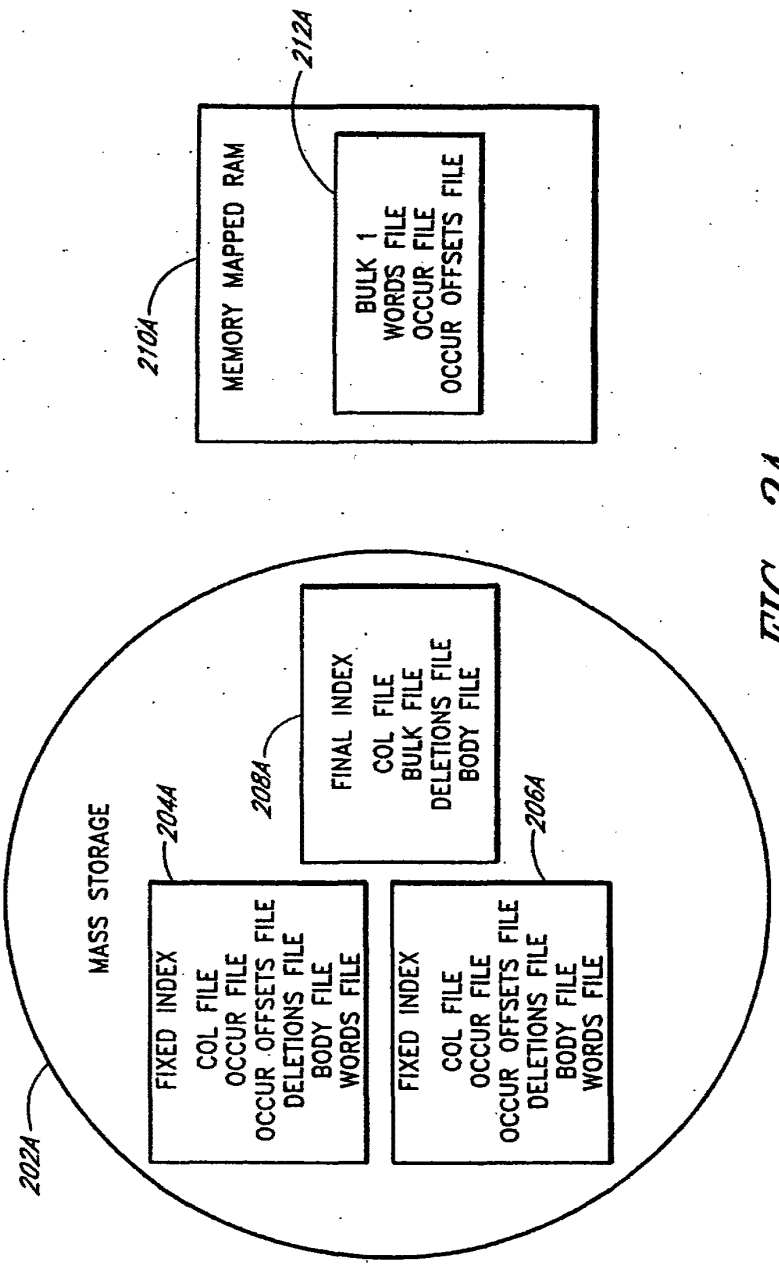

212A
210A
MEMORY MAPPED RAM
BULK 1
WORDS FILE
OCCUR FILE
OCCUR OFFSETS FILE
MASS STORAGE
202A
208A
FINAL INDEX
COL FILE
BULK FILE
DELETIONS FILE
BODY FILE
204A
FIXED INDEX
COL FILE
OCCUR FILE
OCCUR OFFSETS FILE
DELETIONS FILE
BODY FILE
WORDS FILE
206A
FIXED INDEX
COL FILE
OCCUR FILE
OCCUR OFFSETS FILE
DELETIONS FILE
BODY FILE
WORDS FILE

FIG. 2A

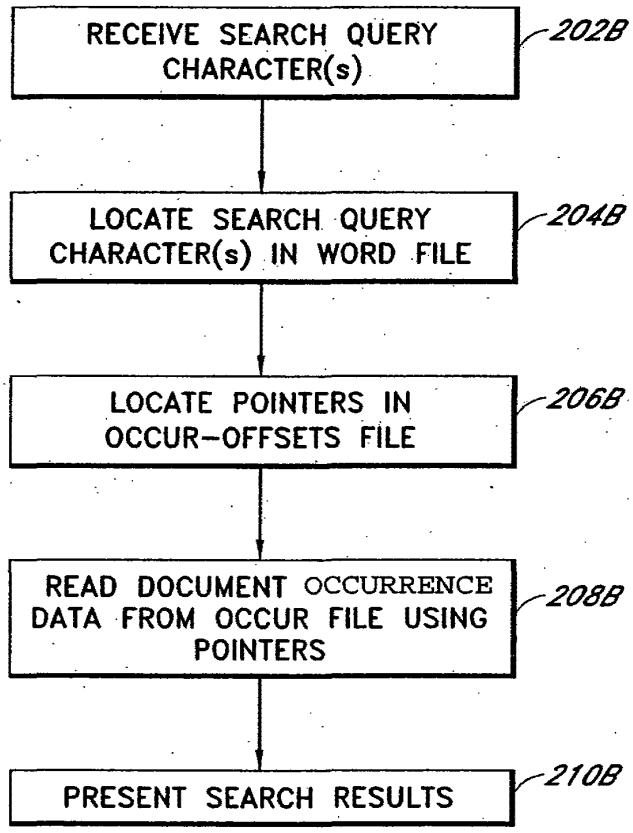

RECEIVE SEARCH QUERY CHARACTER(s)
202B
LOCATE SEARCH QUERY CHARACTER(s) IN WORD FILE
204B
LOCATE POINTERS IN OCCUR-OFFSETS FILE
206B
READ DOCUMENT OCCURRENCE DATA FROM OCCUR FILE USING POINTERS
208B
PRESENT SEARCH RESULTS
210B

FIG. 2B

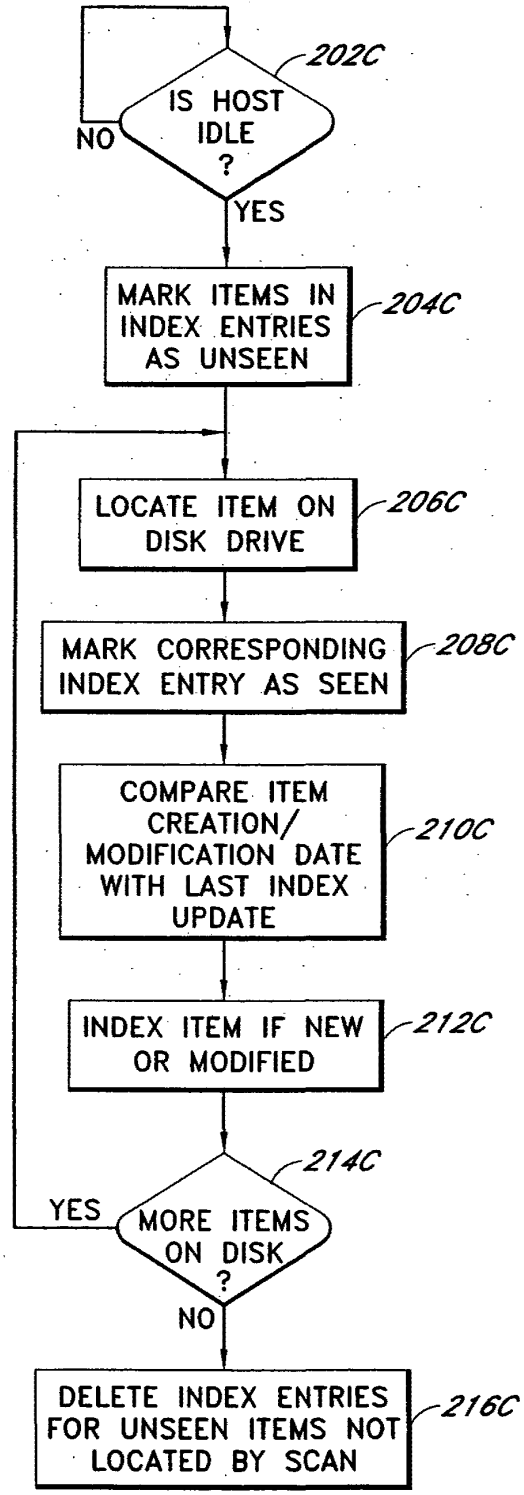

202C
IS HOST IDLE ?
NO
YES
MARK ITEMS IN INDEX ENTRIES AS UNSEEN
204C
LOCATE ITEM ON DISK DRIVE
206C
MARK CORRESPONDING INDEX ENTRY AS SEEN
208C
COMPARE ITEM CREATION/ MODIFICATION DATE WITH LAST INDEX UPDATE
210C
INDEX ITEM IF NEW OR MODIFIED
212C
214C
MORE ITEMS ON DISK ?
YES
NO
DELETE INDEX ENTRIES FOR UNSEEN ITEMS NOT LOCATED BY SCAN
216C

FIG. 2C

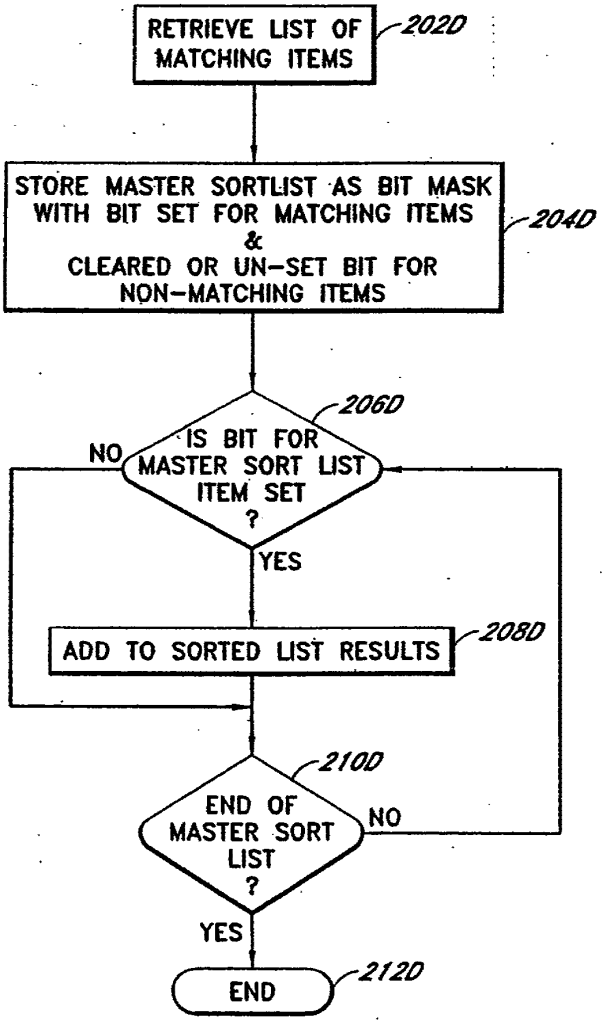

RETRIEVE LIST OF MATCHING ITEMS
202D
STORE MASTER SORTLIST AS BIT MASK WITH BIT SET FOR MATCHING ITEMS & CLEARED OR UN-SET BIT FOR NON-MATCHING ITEMS
204D
206D
IS BIT FOR MASTER SORT LIST ITEM SET ?
NO
YES
ADD TO SORTED LIST RESULTS
208D
210D
END OF MASTER SORT LIST ?
NO
YES
END
212D

FIG. 2D

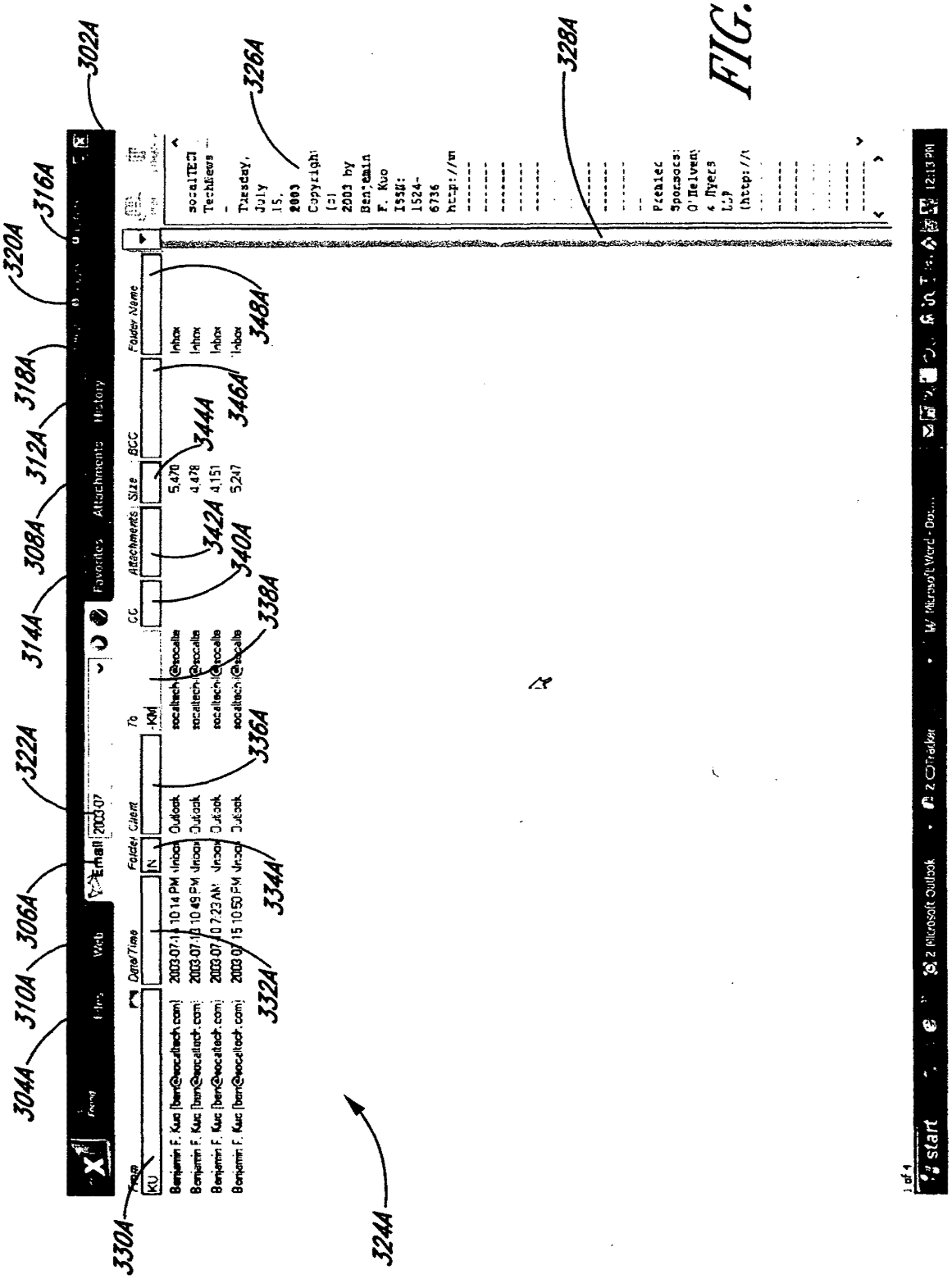

302A
316A
320A
318A
312A
308A
314A
322A
306A
310A
304A
324A
334A
336A
338A
340A
342A
344A
346A
348A
326A
328A
330A
344A
Favorites
Attachments
History
Folder Name
Inbox
Outlook
start

FIG. 3A

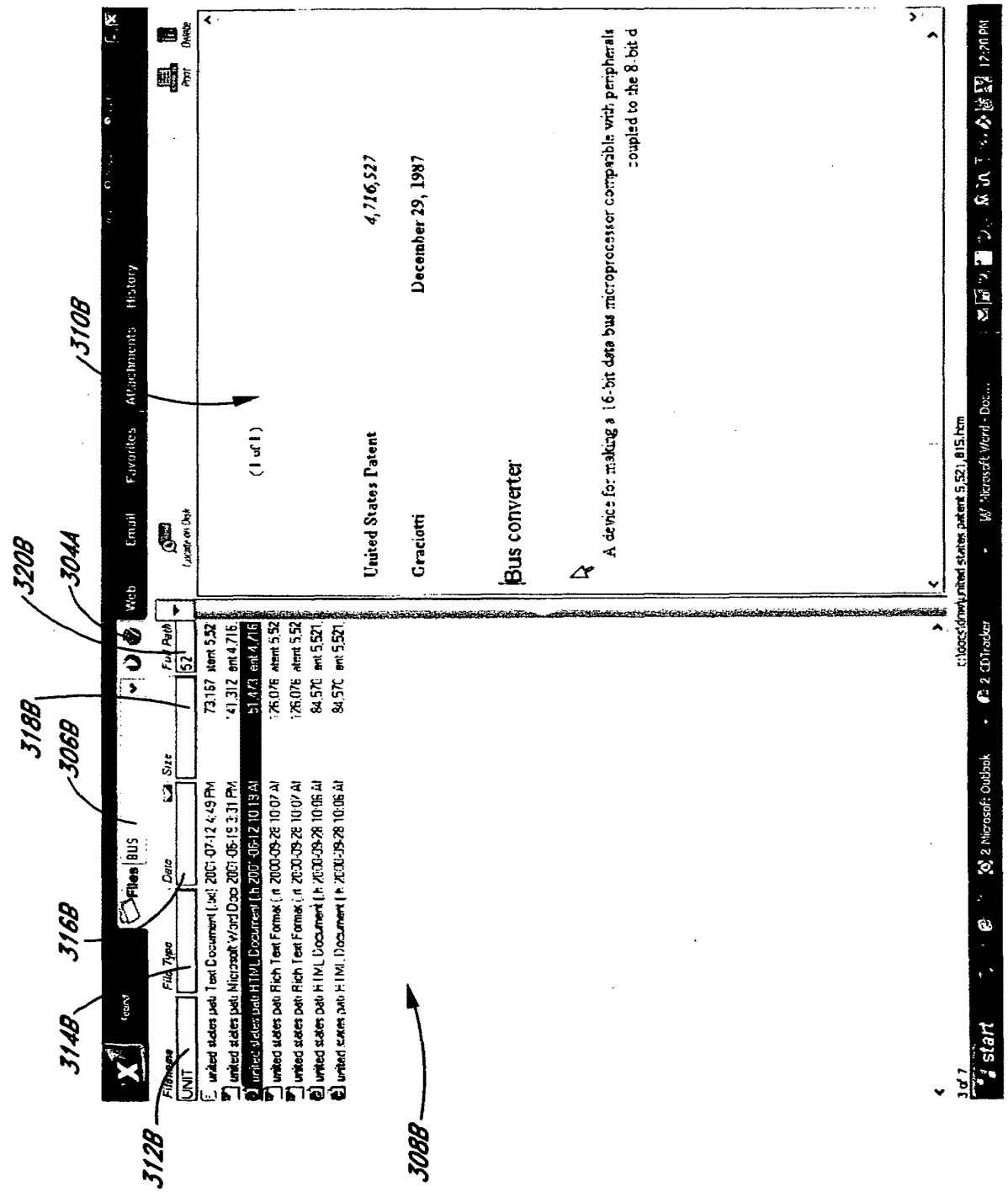

3108
3208
304A
318B
306B
316B
314B
312B
308B
Web
Email
Favorites
Attachments
History
Print
Delete
Locate on Disk
Files BUS
Found
File Types
Date
Size
File Path
UNIT
(1 of 1)
United States Patent
4,716,527
Graciotti
December 29, 1987
Bus converter
A device for making a 16-bit data bus microprocessor compatible with peripherals coupled to the 8-bit d
start
2 Microsoft Outlook
2 CDTracker
Microsoft Word - Doc...
12:20 PM

FIG. 3B

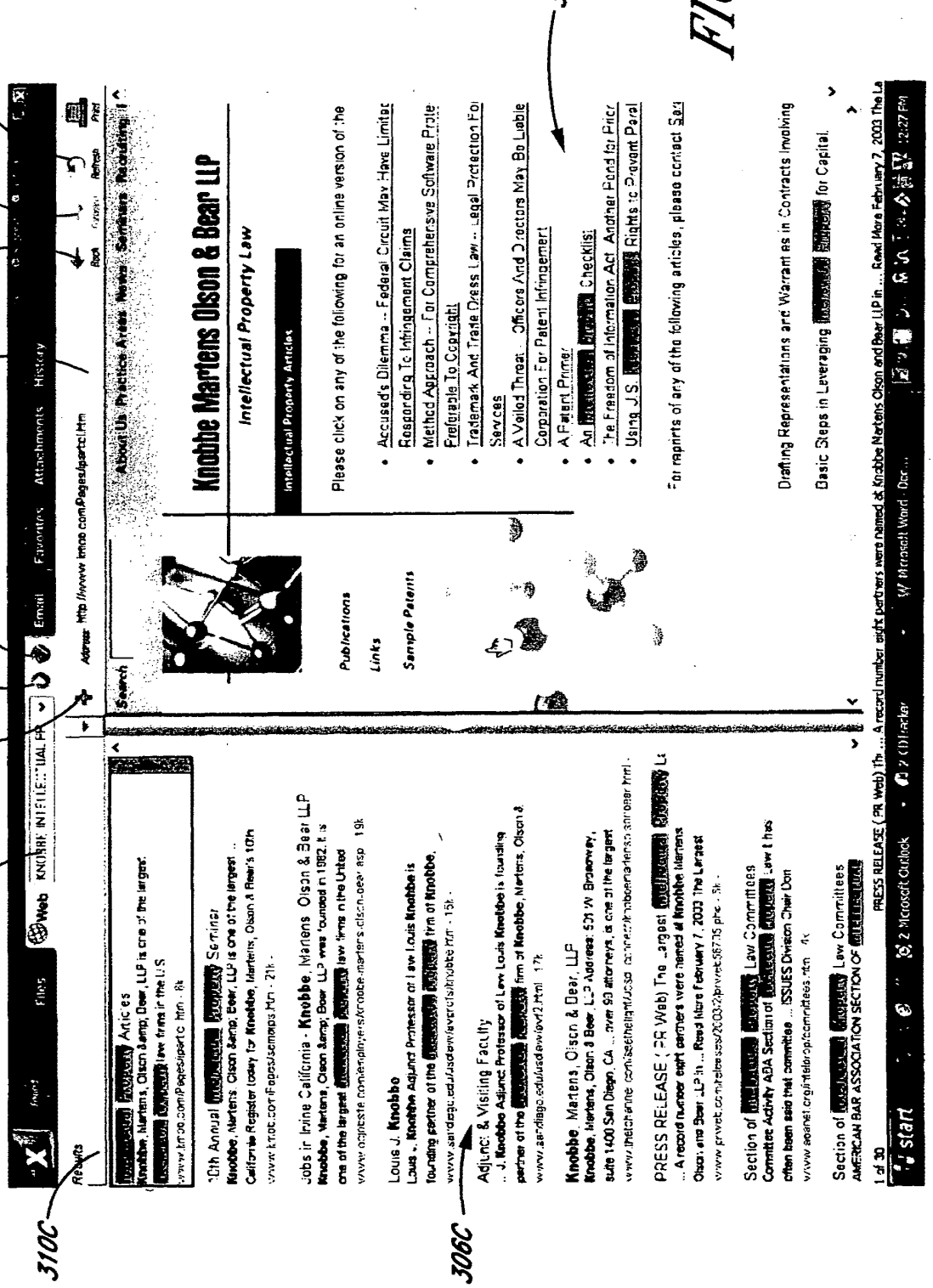

310C
304C
320C
310A
312C
312C
314C
316C
318C
306C
308C
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The Freedom of Information Act: Another Road for Pricr
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Knobbe, Martens, Olson & Bear, LLP
PRESS RELEASE (PR Web) The ...largest Intellectual Property Law
Section of Intellectual Property Law Committees
AMERICAN BAR ASSOCIATION SECTION OF INTELLECTUAL
start

FIG. 3C

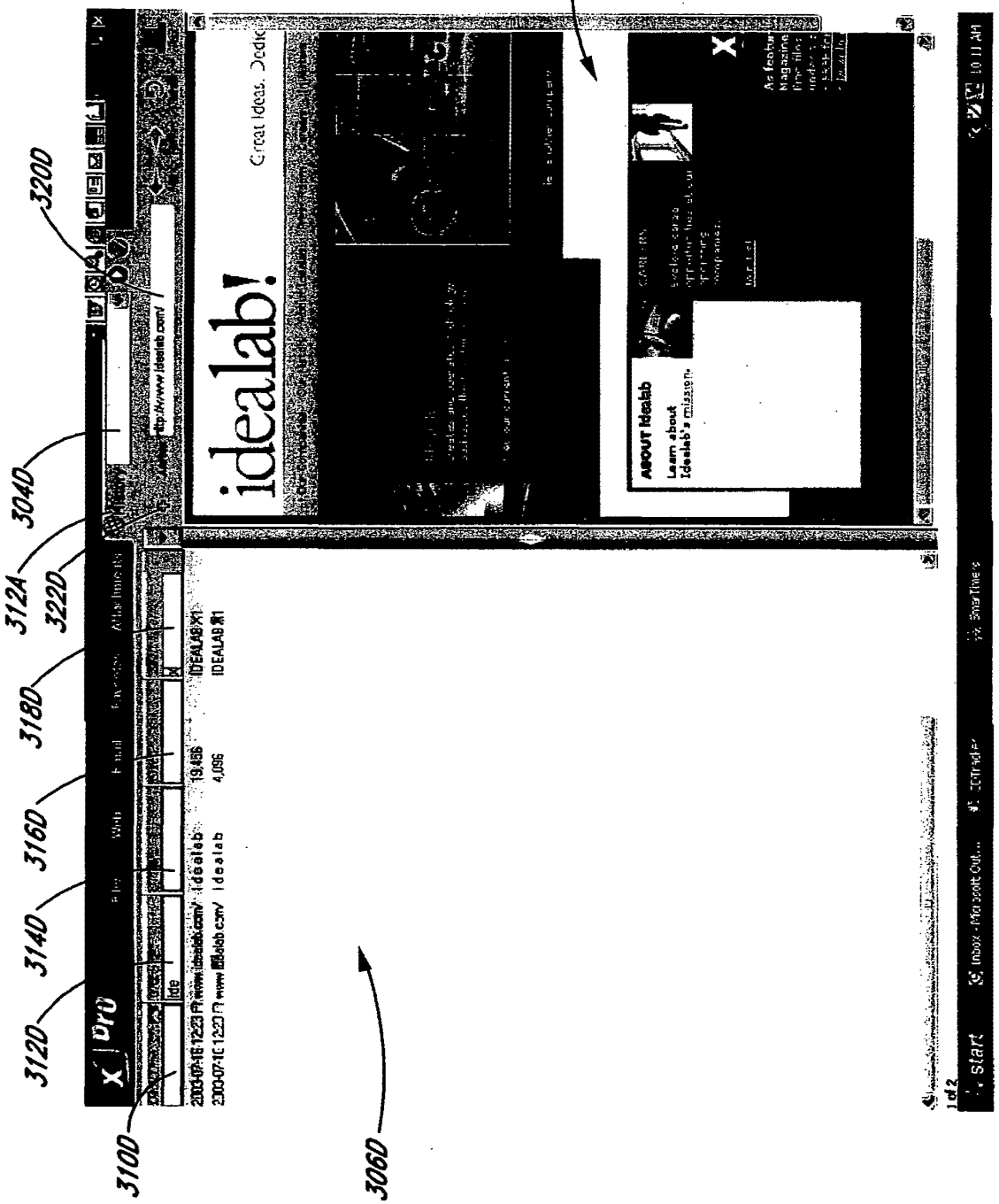

3200
3040
312A
3220
3180
3160
3140
3120
3100
3060
3080
idealab!
Great Ideas. Dedic
ABOUT Idealab
Learn about
Idealab's mission
Start

FIG. 3D

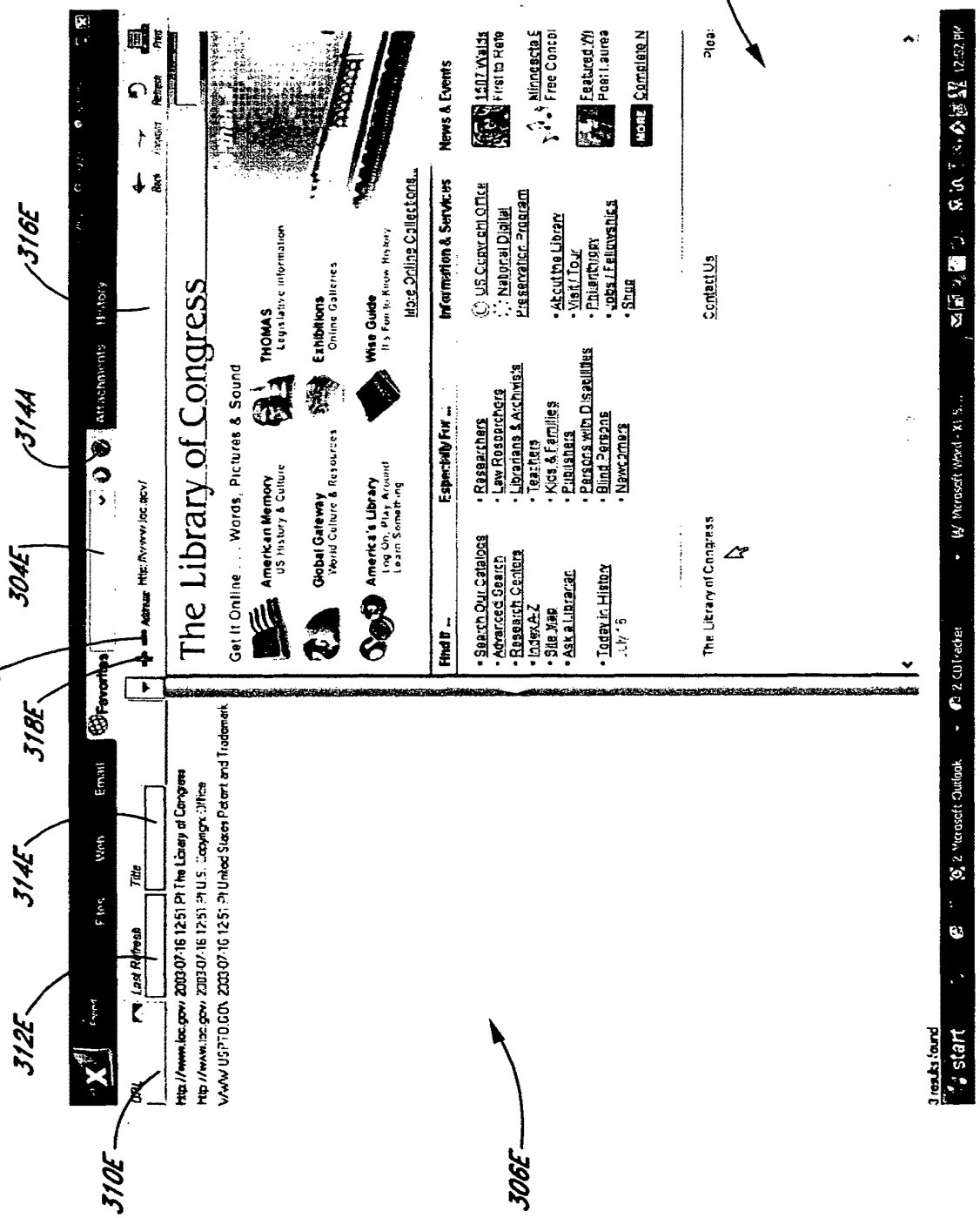
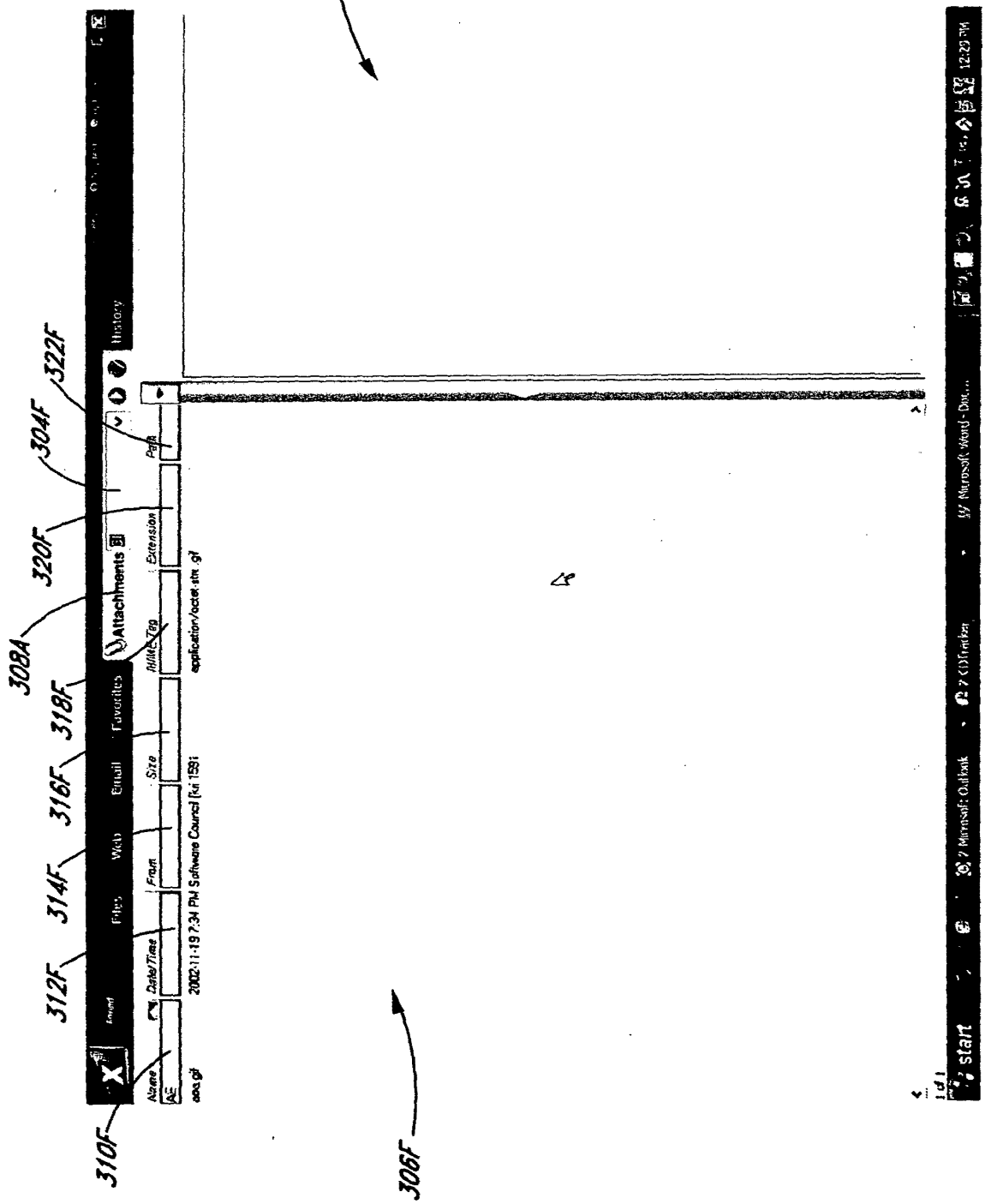

310E
312E
314E
316E
318E
320E
304E
314A
306E
308E
The Library of Congress
Get It Online . . . Words, Pictures & Sound
American Memory
US History & Culture
THOMAS
Legislative Information
Global Gateway
World Culture & Resources
Exhibitions
Online Galleries
America's Library
Log On, Play Around
Learn Something
Wise Guide
More Online Collections...
Find It ...
Especially For ...
Information & Services
News & Events
Search Our Catalogs
Advanced Search
Research Centers
Index A-Z
Site Map
Ask a Librarian
Today in History
Researchers
Law Researchers
Librarians & Archivists
Teachers
Kids & Families
Publishers
Persons with Disabilities
Blind Persons
Newcomers
US Copyright Office
National Digital Preservation Program
About the Library
Visit / Tour
Philanthropy
Jobs / Fellowships
Shop
1507 Waldseemüller Map
Minnesota S
Free Concer
Featured Wi
Poet Laurea
MORE
Complete N
The Library of Congress
Contact Us
Favorites
Last Refresh
Title
start

FIG. 3E

FIG. 3F


308F
304F
322F
320F
308A
318F
316F
314F
312F
310F
306F
Attachments
Favorites
Web
Email
Size
From
Date/Time
Name
Extension
MIME Type
start

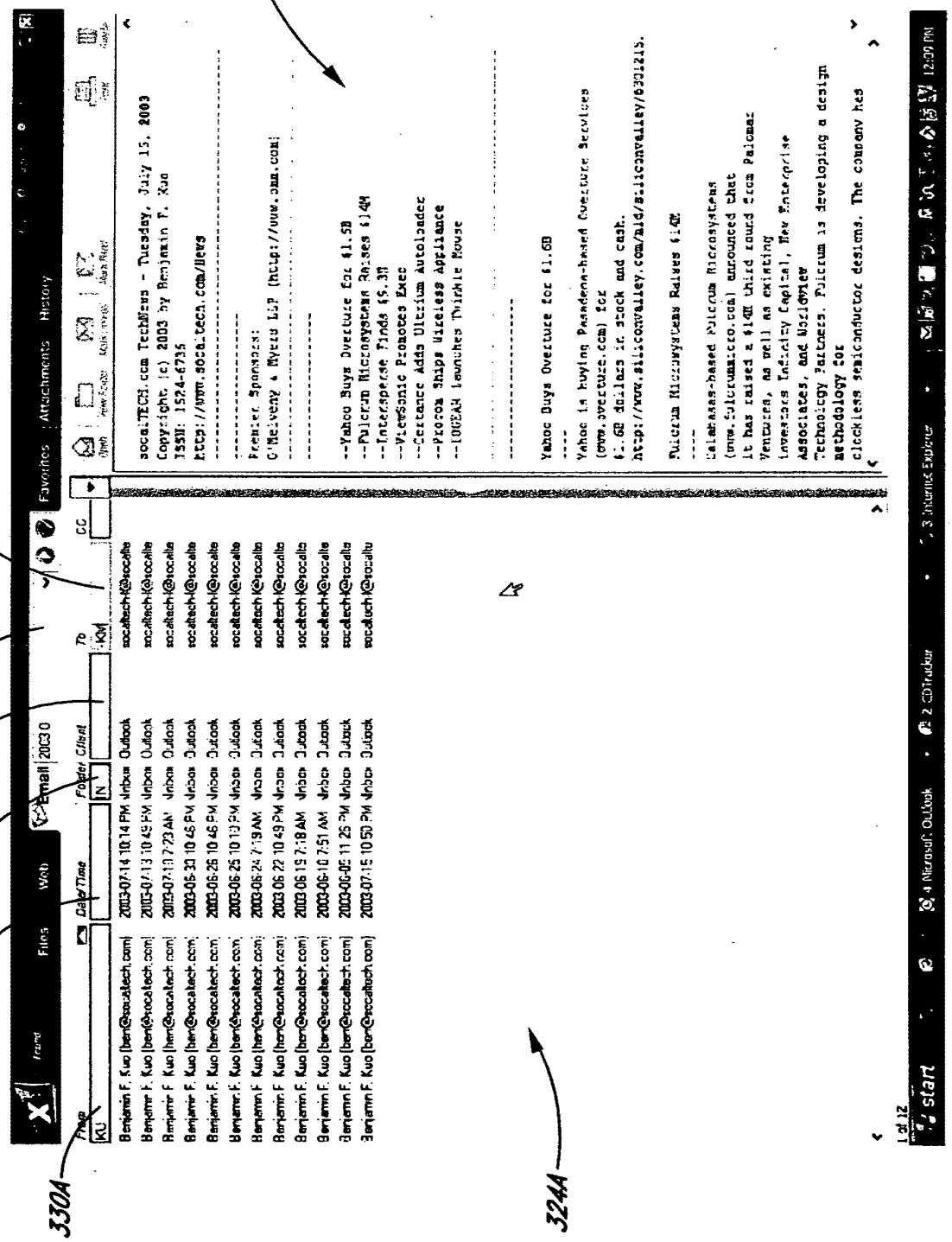

330A
332A
334A
336A
322A
338A
326A
324A
socalTECH.com TechNews - Tuesday, July 15, 2003
Yahoo Buys Overture for $1.6B
Fulcrum Microsystems Raises $14M
start

FIG. 3G

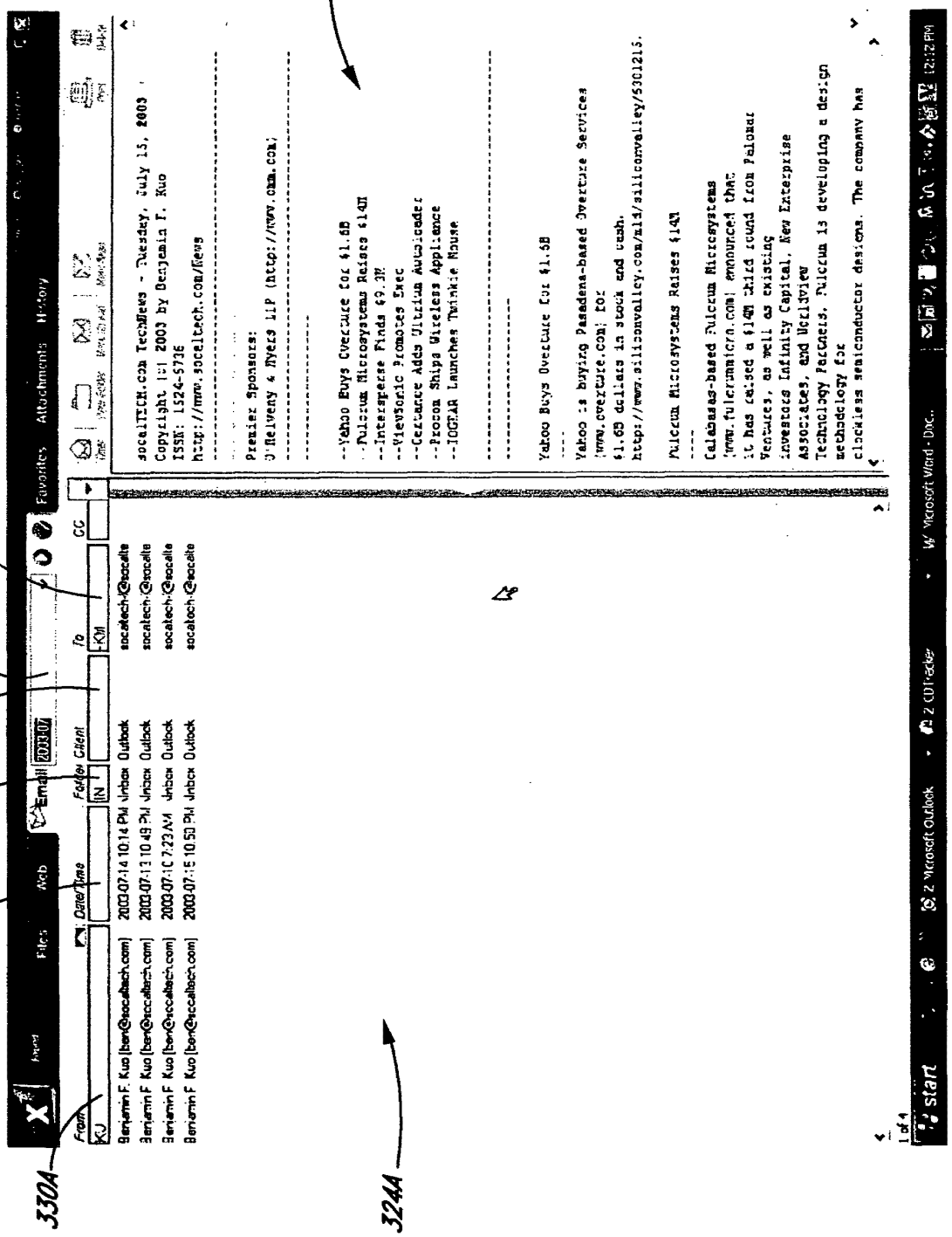

330A
332A
334A
336A
322A
338A
326A
324A
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--Procom Ships Wireless Appliance
--IOGEAR Launches Twinkie Mouse
Yahoo Buys Overture for $1.6B
Yahoo is buying Pasadena-based Overture Services
(www.overture.com) for
$1.63 dollars in stock and cash.
https://www.siliconvalley.com/mld/siliconvalley/5301215.
Fulcrum Microsystems Raises $14M
Calabasas-based Fulcrum Microsystems
(www.fulcrummicro.com) announced that
it has raised a $14M third round from Paloma
Ventures, as well as existing
investors Infinity Capital, New Enterprise
Associates, and WorldView
Technology Partners. Fulcrum is developing a design
methodology for
clockless semiconductor designs. The company has

FIG. 3H

14/23



FIG. 3I

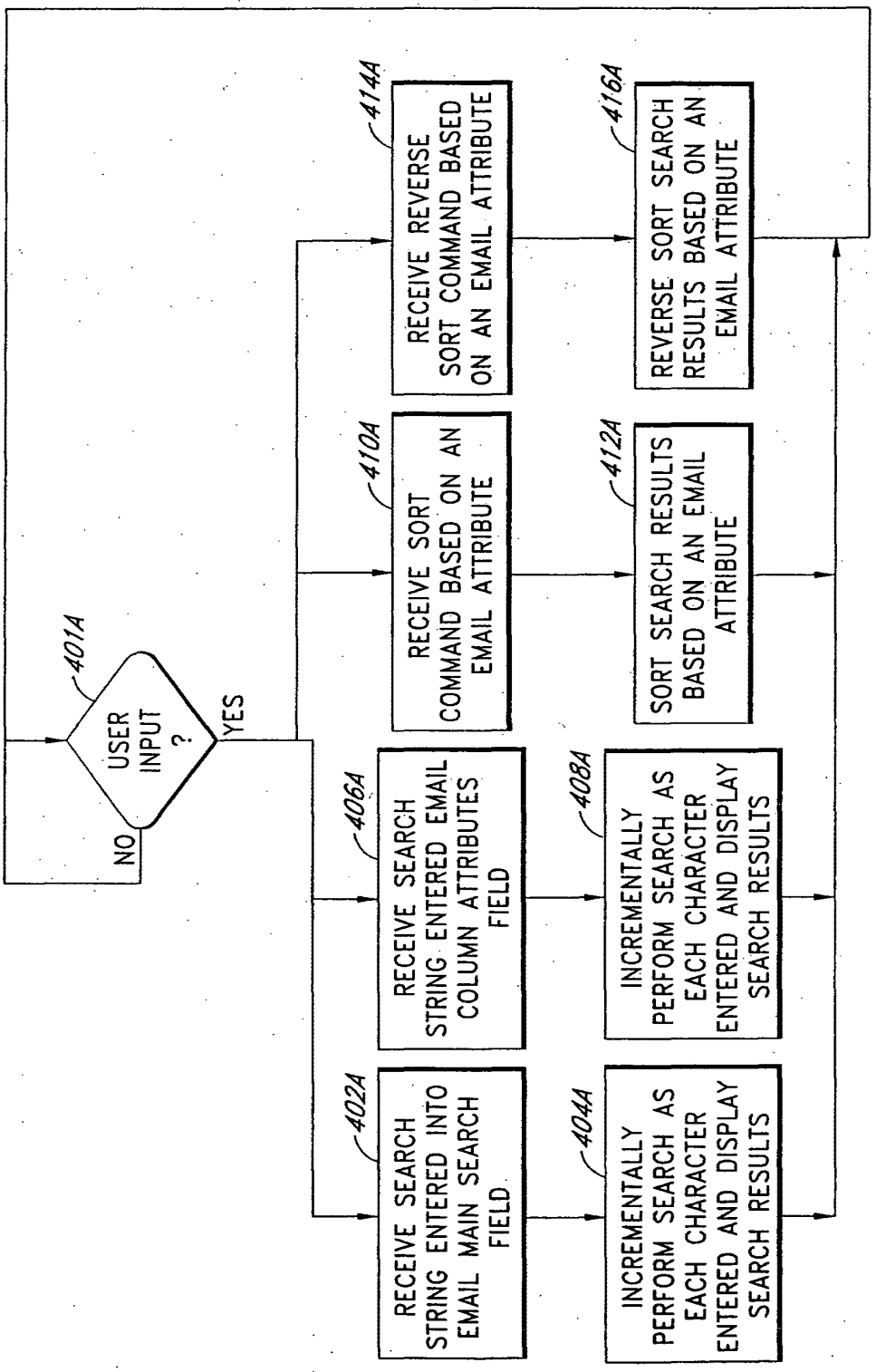

401A
USER INPUT ?
NO
YES
402A
RECEIVE SEARCH STRING ENTERED INTO EMAIL MAIN SEARCH FIELD
404A
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
406A
RECEIVE SEARCH STRING ENTERED EMAIL COLUMN ATTRIBUTES FIELD
408A
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
410A
RECEIVE SORT COMMAND BASED ON AN EMAIL ATTRIBUTE
412A
SORT SEARCH RESULTS BASED ON AN EMAIL ATTRIBUTE
414A
RECEIVE REVERSE SORT COMMAND BASED ON AN EMAIL ATTRIBUTE
416A
REVERSE SORT SEARCH RESULTS BASED ON AN EMAIL ATTRIBUTE

FIG. 4A

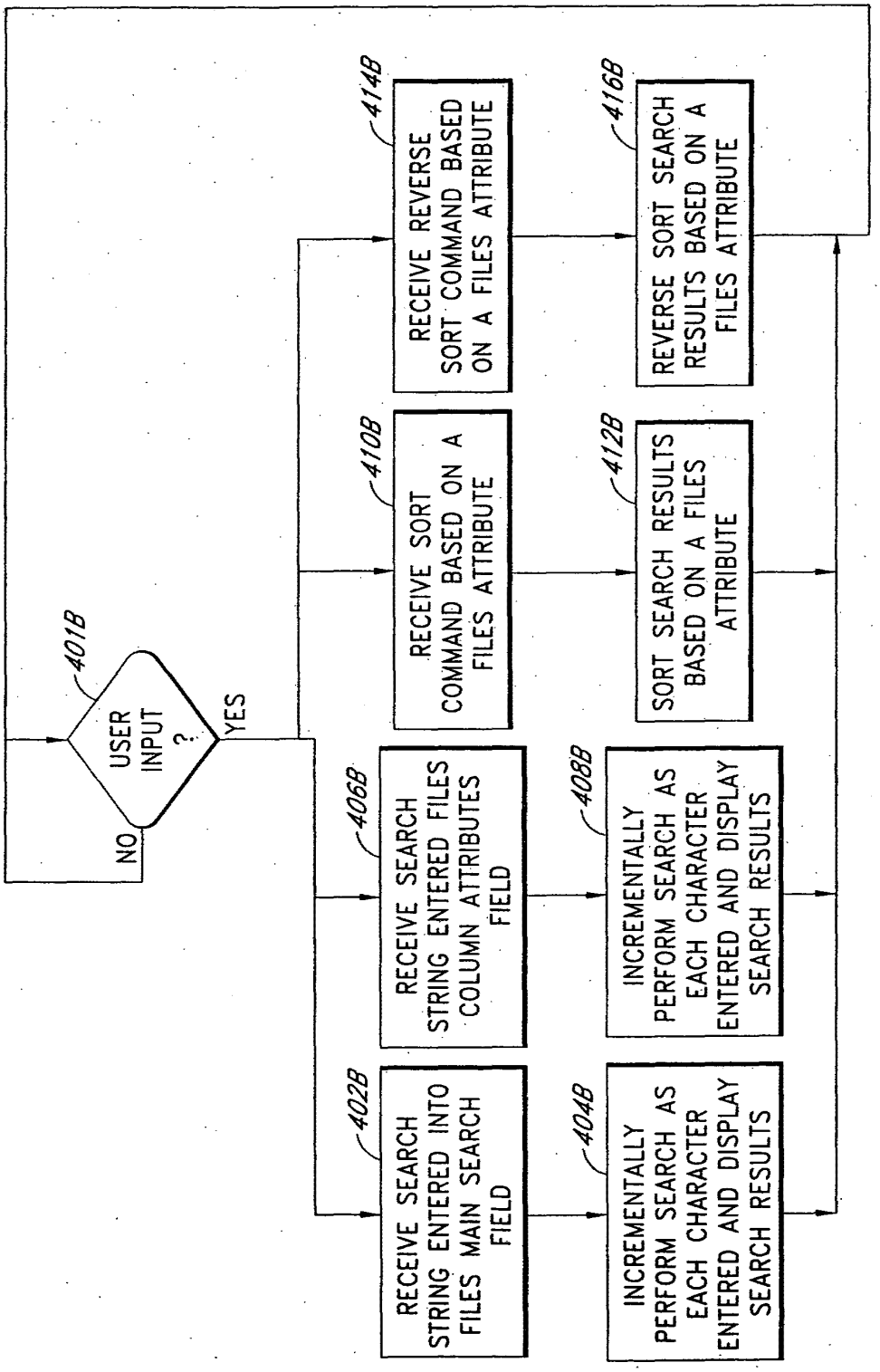

401B
USER INPUT ?
NO
YES
402B
RECEIVE SEARCH STRING ENTERED INTO FILES MAIN SEARCH FIELD
404B
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
406B
RECEIVE SEARCH STRING ENTERED FILES COLUMN ATTRIBUTES FIELD
408B
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
410B
RECEIVE SORT COMMAND BASED ON A FILES ATTRIBUTE
412B
SORT SEARCH RESULTS BASED ON A FILES ATTRIBUTE
414B
RECEIVE REVERSE SORT COMMAND BASED ON A FILES ATTRIBUTE
416B
REVERSE SORT SEARCH RESULTS BASED ON A FILES ATTRIBUTE

FIG. 4B

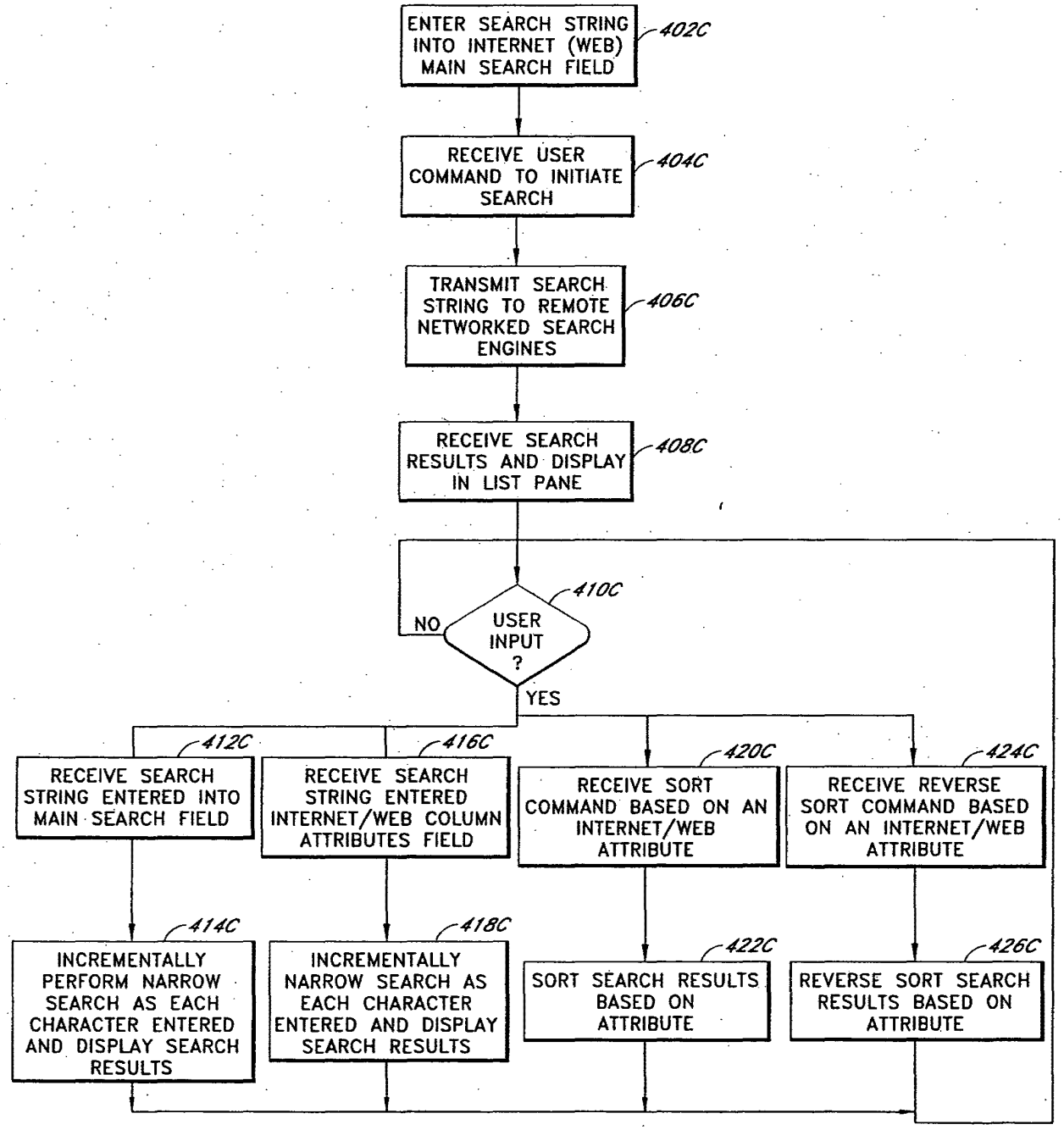

ENTER SEARCH STRING INTO INTERNET (WEB) MAIN SEARCH FIELD
402C
RECEIVE USER COMMAND TO INITIATE SEARCH
404C
TRANSMIT SEARCH STRING TO REMOTE NETWORKED SEARCH ENGINES
406C
RECEIVE SEARCH RESULTS AND DISPLAY IN LIST PANE
408C
410C
NO
USER INPUT ?
YES
412C
RECEIVE SEARCH STRING ENTERED INTO MAIN SEARCH FIELD
416C
RECEIVE SEARCH STRING ENTERED INTERNET/WEB COLUMN ATTRIBUTES FIELD
420C
RECEIVE SORT COMMAND BASED ON AN INTERNET/WEB ATTRIBUTE
424C
RECEIVE REVERSE SORT COMMAND BASED ON AN INTERNET/WEB ATTRIBUTE
414C
INCREMENTALLY PERFORM NARROW SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
418C
INCREMENTALLY NARROW SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
422C
SORT SEARCH RESULTS BASED ON ATTRIBUTE
426C
REVERSE SORT SEARCH RESULTS BASED ON ATTRIBUTE

FIG. 4C

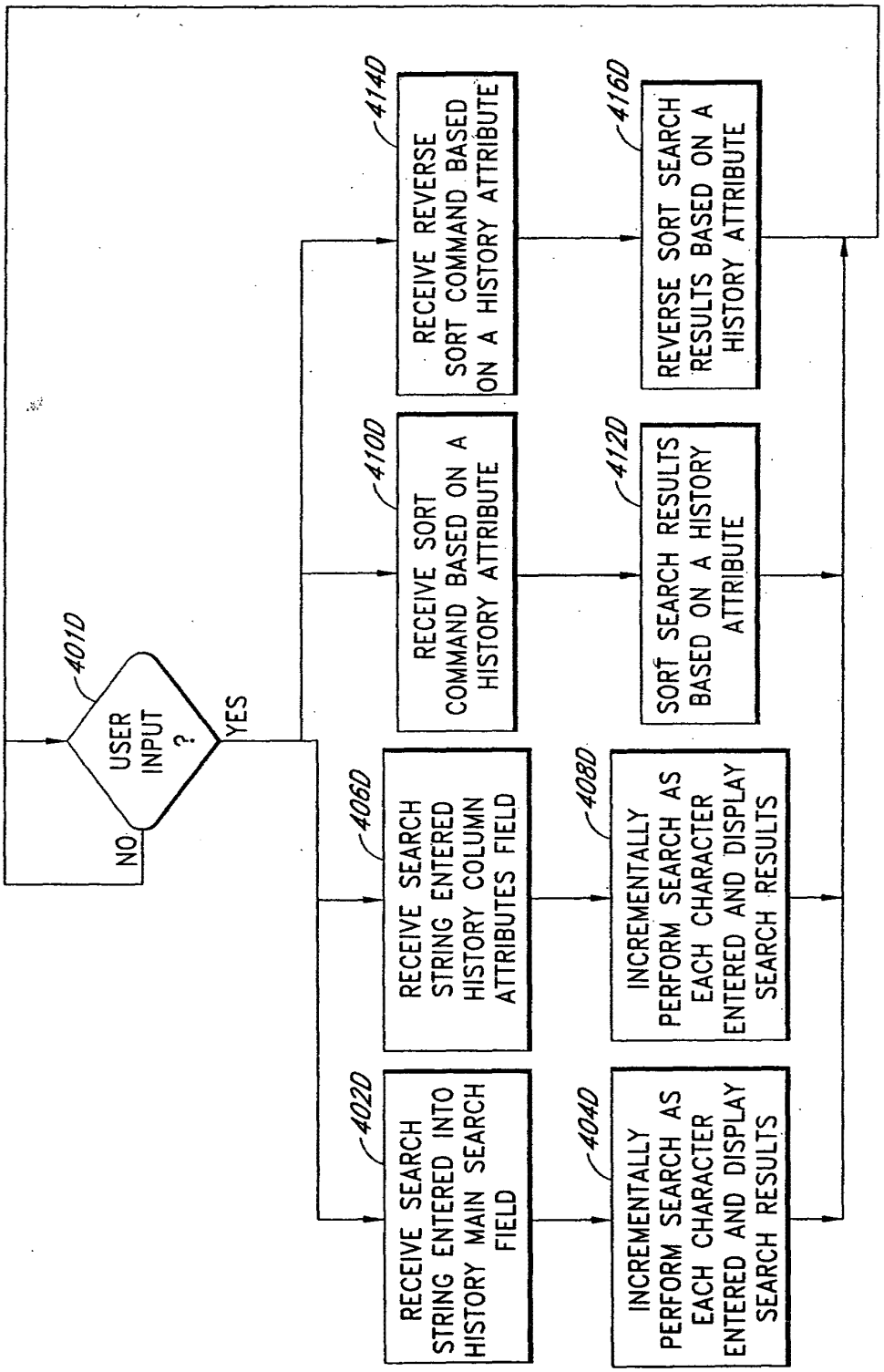

401D
USER INPUT ?
NO
YES
402D
RECEIVE SEARCH STRING ENTERED INTO HISTORY MAIN SEARCH FIELD
404D
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
406D
RECEIVE SEARCH STRING ENTERED HISTORY COLUMN ATTRIBUTES FIELD
408D
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
410D
RECEIVE SORT COMMAND BASED ON A HISTORY ATTRIBUTE
412D
SORT SEARCH RESULTS BASED ON A HISTORY ATTRIBUTE
414D
RECEIVE REVERSE SORT COMMAND BASED ON A HISTORY ATTRIBUTE
416D
REVERSE SORT SEARCH RESULTS BASED ON A HISTORY ATTRIBUTE

FIG. 4D

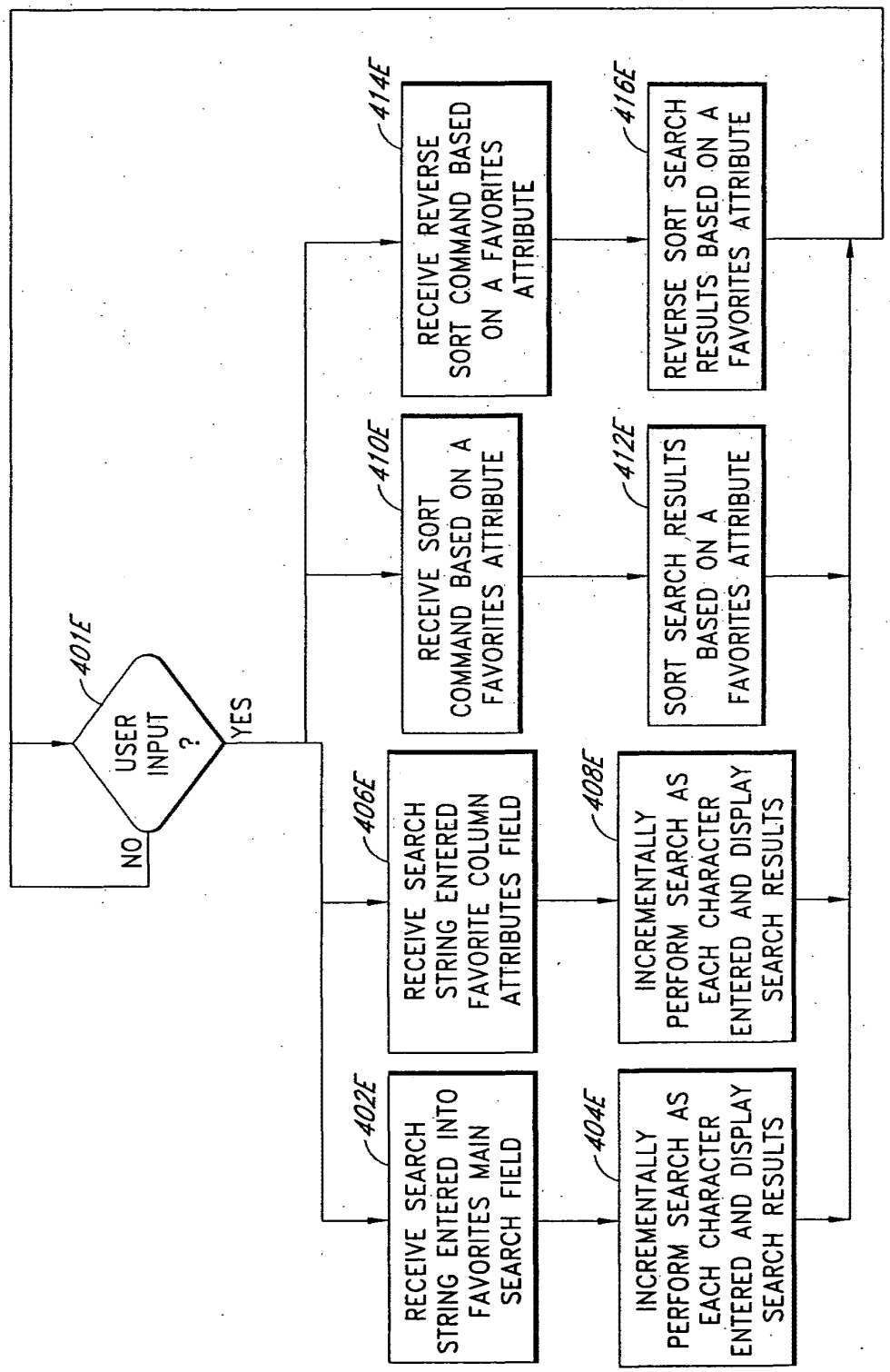

401E
USER INPUT ?
NO
YES
402E
RECEIVE SEARCH STRING ENTERED INTO FAVORITES MAIN SEARCH FIELD
404E
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
406E
RECEIVE SEARCH STRING ENTERED FAVORITE COLUMN ATTRIBUTES FIELD
408E
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
410E
RECEIVE SORT COMMAND BASED ON A FAVORITES ATTRIBUTE
412E
SORT SEARCH RESULTS BASED ON A FAVORITES ATTRIBUTE
414E
RECEIVE REVERSE SORT COMMAND BASED ON A FAVORITES ATTRIBUTE
416E
REVERSE SORT SEARCH RESULTS BASED ON A FAVORITES ATTRIBUTE

FIG. 4E

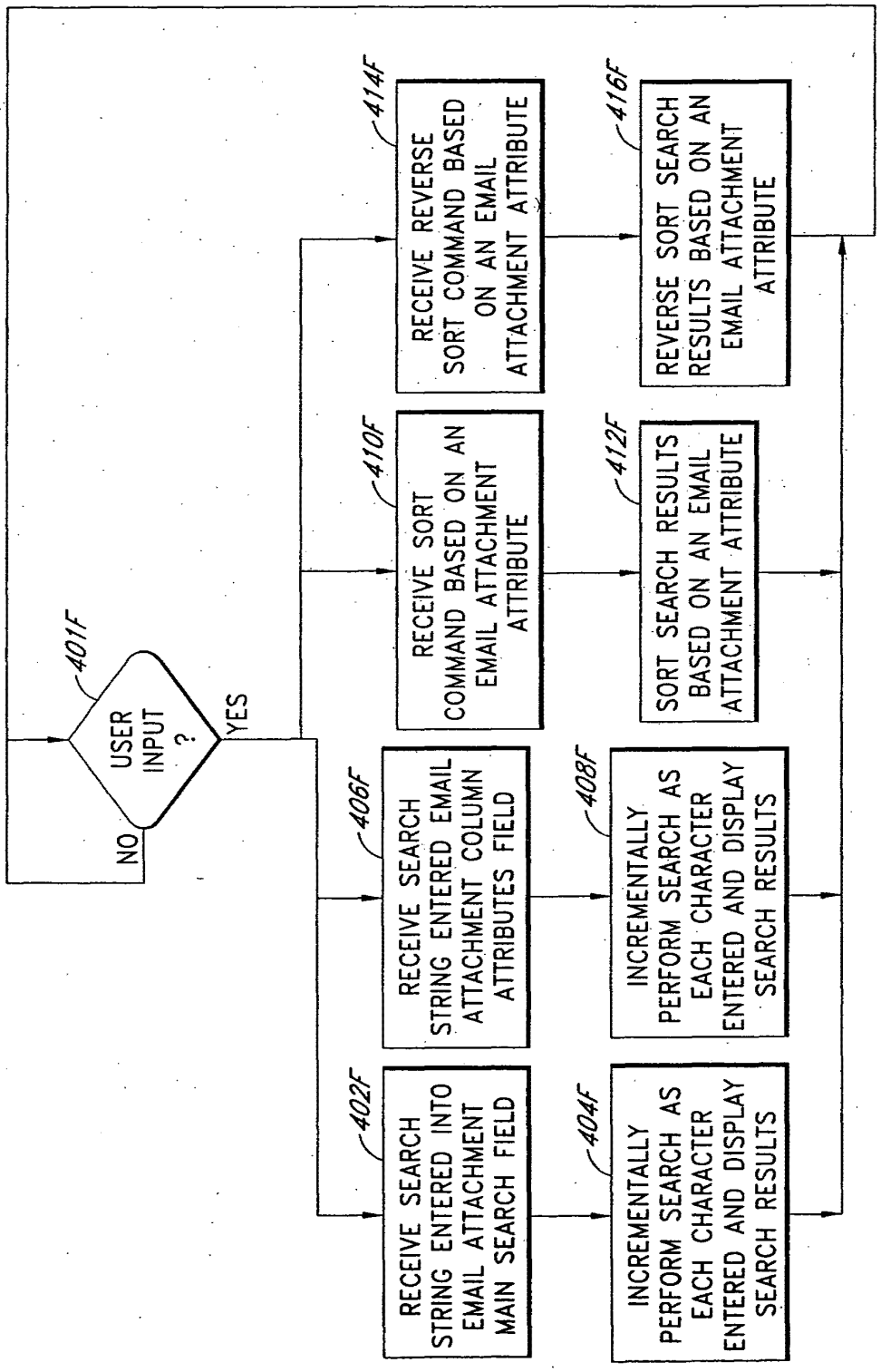

401F
USER INPUT ?
NO
YES
402F
RECEIVE SEARCH STRING ENTERED INTO EMAIL ATTACHMENT MAIN SEARCH FIELD
404F
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
406F
RECEIVE SEARCH STRING ENTERED EMAIL ATTACHMENT COLUMN ATTRIBUTES FIELD
408F
INCREMENTALLY PERFORM SEARCH AS EACH CHARACTER ENTERED AND DISPLAY SEARCH RESULTS
410F
RECEIVE SORT COMMAND BASED ON AN EMAIL ATTACHMENT ATTRIBUTE
412F
SORT SEARCH RESULTS BASED ON AN EMAIL ATTACHMENT ATTRIBUTE
414F
RECEIVE REVERSE SORT COMMAND BASED ON AN EMAIL ATTACHMENT ATTRIBUTE
416F
REVERSE SORT SEARCH RESULTS BASED ON AN EMAIL ATTACHMENT ATTRIBUTE

FIG. 4F

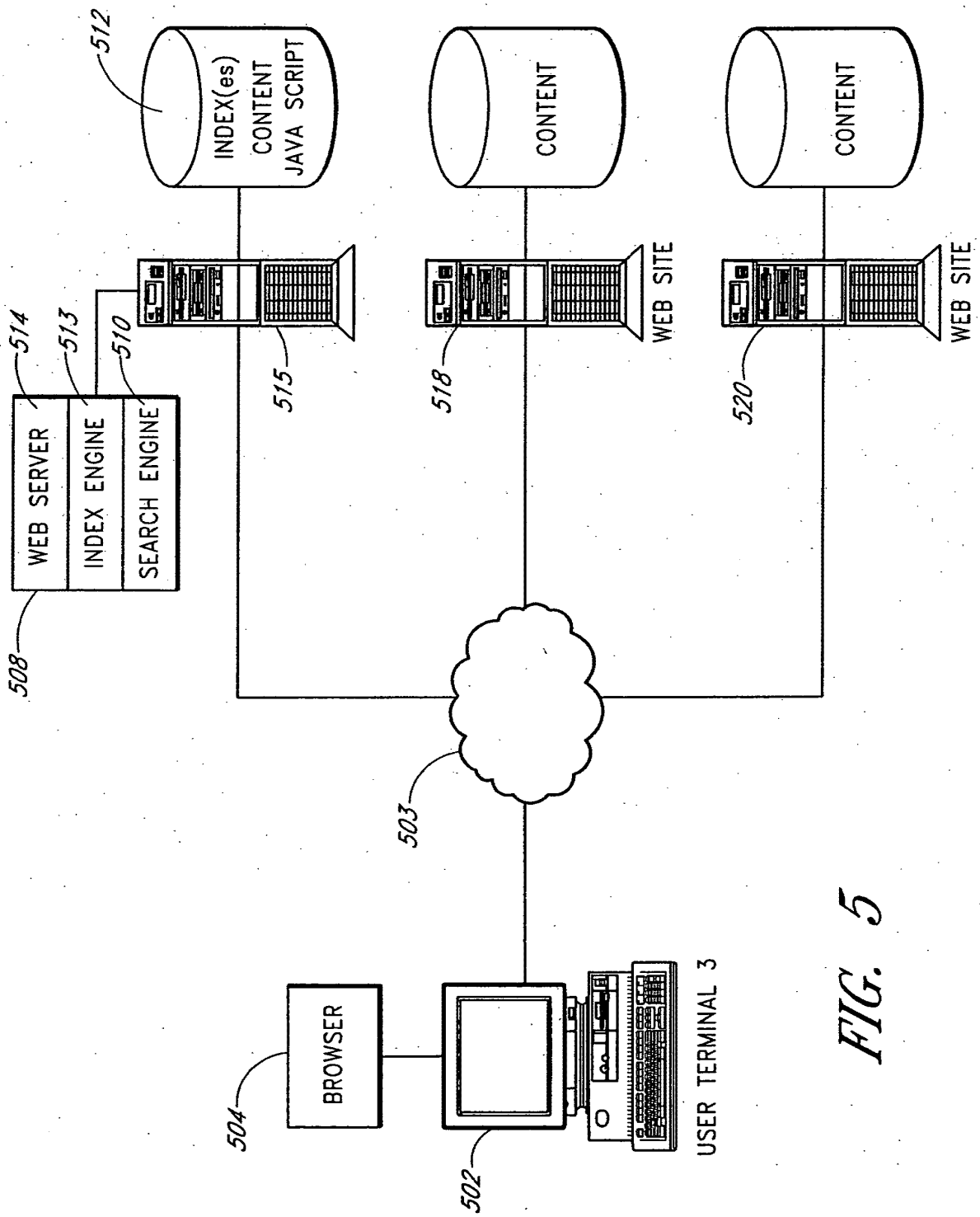

512
INDEX(es)
CONTENT
JAVA SCRIPT
CONTENT
CONTENT
WEB SITE
WEB SITE
514
513
510
WEB SERVER
INDEX ENGINE
SEARCH ENGINE
515
518
520
508
503
BROWSER
504
502
USER TERMINAL 3

FIG. 5

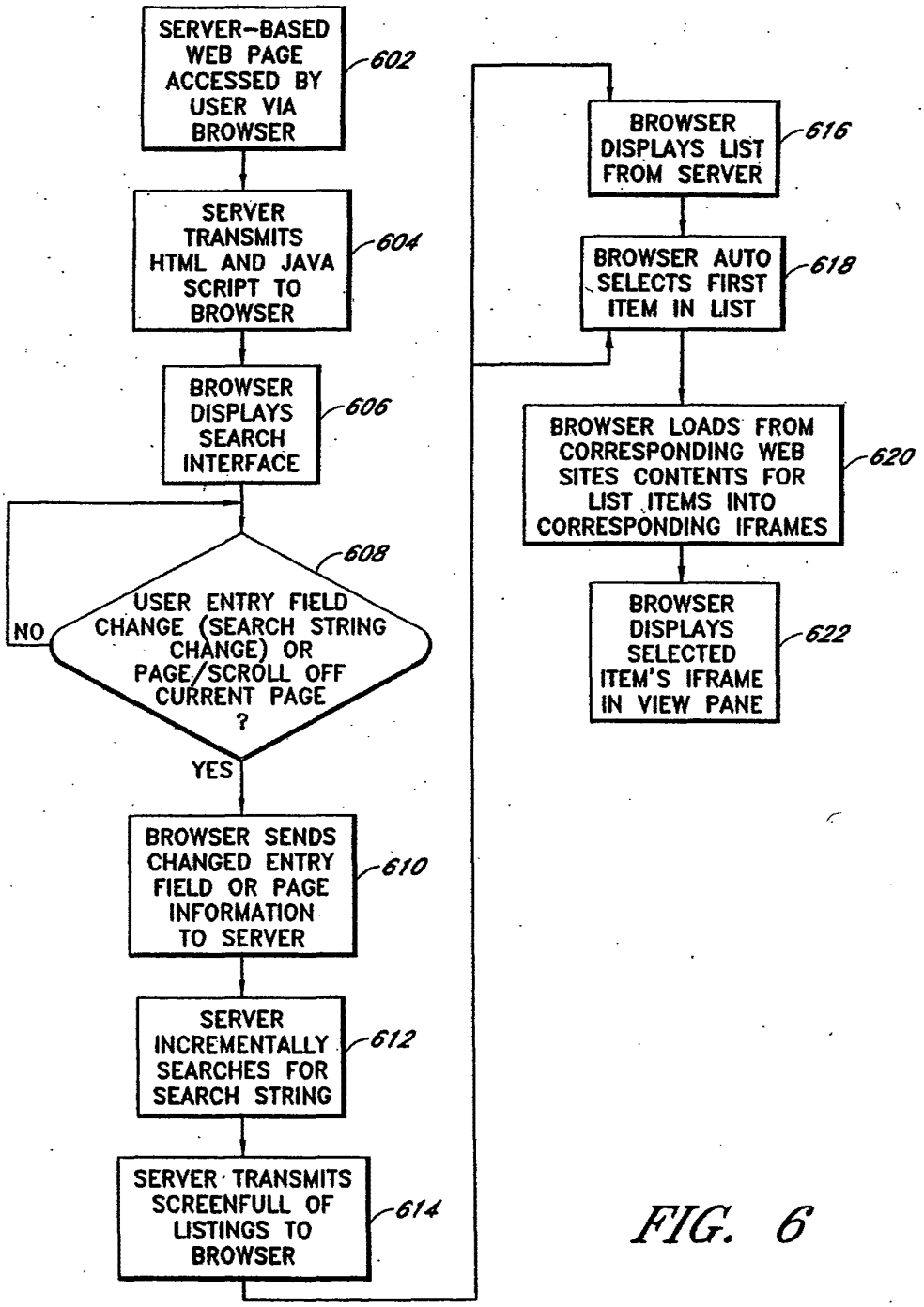

SERVER-BASED WEB PAGE ACCESSED BY USER VIA BROWSER
602
SERVER TRANSMITS HTML AND JAVA SCRIPT TO BROWSER
604
BROWSER DISPLAYS SEARCH INTERFACE
606
USER ENTRY FIELD CHANGE (SEARCH STRING CHANGE) OR PAGE/SCROLL OFF CURRENT PAGE ?
608
NO
YES
BROWSER SENDS CHANGED ENTRY FIELD OR PAGE INFORMATION TO SERVER
610
SERVER INCREMENTALLY SEARCHES FOR SEARCH STRING
612
SERVER TRANSMITS SCREENFULL OF LISTINGS TO BROWSER
614
BROWSER DISPLAYS LIST FROM SERVER
616
BROWSER AUTO SELECTS FIRST ITEM IN LIST
618
BROWSER LOADS FROM CORRESPONDING WEB SITES CONTENTS FOR LIST ITEMS INTO CORRESPONDING IFRAMES
620
BROWSER DISPLAYS SELECTED ITEM'S IFRAME IN VIEW PANE
622

FIG. 6

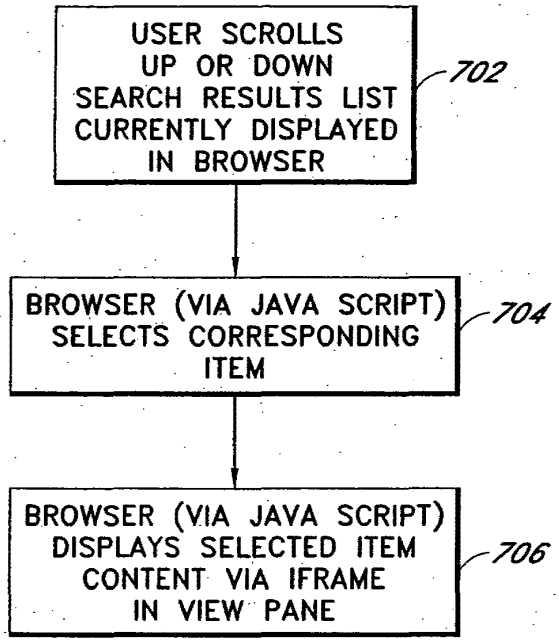

USER SCROLLS UP OR DOWN SEARCH RESULTS LIST CURRENTLY DISPLAYED IN BROWSER
702
BROWSER (VIA JAVA SCRIPT) SELECTS CORRESPONDING ITEM
704
BROWSER (VIA JAVA SCRIPT) DISPLAYS SELECTED ITEM CONTENT VIA IFRAME IN VIEW PANE
706

FIG. 7

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 10654588

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	37	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	37 minus 20=	* 17
INDEPENDENT CLAIMS	5 minus 3 =	* 2
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
X$ 9=		OR	X$18=	306
X43=		OR	X86=	172
+145=		OR	+290=	
TOTAL		OR	TOTAL	1248

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

OIPE JC184
OCT 0 2 2003
PATENT TRADEMARK OFFICE

X1.002A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Unknown
Appl. No.	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Unknown
Group Art Unit	:	Unknown

CERTIFICATE OF MAILING

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

September 29, 2003
(Date)

David N. Weiss, Reg. No. 41,371

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Please enter the amendments submitted herein.

Amendments to the Specification begin on page 2 of this paper.

Remarks/Arguments begin on page 3 of this paper.

AMENDMENTS TO THE SPECIFICATION

On page 1, please replace the Related Applications paragraph with the following:

--This application is related to copending application entitled APPARATUS AND METHODS FOR LOCATING DATA, Application Number 10/654,595, Attorney Docket No. X1.001A, and copending application entitled METHODS AND SYSTEMS FOR WEB-BASED INCREMENTAL SEARCHES, Application Number 10/654,596, Attorney Docket No. X1.003A, filed on the same date as the present application, the entirety of which are hereby incorporated by reference.--.

On page 1, please replace the Priority Claim paragraph with the following:

--This application claims the benefit under 35 U.S.C. 119(e) of U.S. Provisional Application No. 60/408,015, filed September 3, 2002, U.S. Provisional Application No. 60/413,013, filed September 23, 2002, U.S. Provisional Application No. 60/448,923, filed February 20, 2003, U.S. Provisional Application No. 60/470,903, filed May 14, 2003, and U.S. Provisional Application No. 60/478,960, filed June 13, 2003, the contents of which are incorporated herein in their entirety. --.

REMARKS

By this amendment, the Related Applications paragraph has been corrected to include the application numbers of the related applications. The amendment to the Priority Claim paragraph corrects a transposed application number.

Claims 1-37 remain pending.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9/29/03

By: David Weiss

David N. Weiss
Registration No. 41,371
Attorney of Record
Customer No. 20,995
(310) 551-3450

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092503

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/654,588	09/03/2003		X1.002A

CONFIRMATION NO. 4164

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

FORMALITIES LETTER

OC000000011494492

Date Mailed: 12/15/2003

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **770** *to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).*
- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of **$478** as a non-small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$1378** for a Large Entity

- **$770** Statutory basic filing fee.
- **$130** Late oath or declaration Surcharge.

- Total additional claim fee(s) for this application is **$478**
  - **$172** for **2** independent claims over 3.
  - **$306** for **17** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

A. Sabla

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

OIPE
MAR 0 9 2004
PATENT & TRADEMARK OFFICE
JC25

X1.002A PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Gross, et al.	Group Art Unit 2122
Appl. No.	:	10/654,588	
Filed	:	September 3, 2003	
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING	
Examiner	:	Unknown	

REQUEST FOR CORRECTED FILING RECEIPT

Commissioner for Patents
P.O. Box 1450
Office of Initial Patent Examination
Customer Service Center
Alexandria, VA 22313-1450

Dear Sir:

Applicants hereby request that the Official Filing Receipt be corrected to reflect the correct priority information. A copy of the Official Filing Receipt, marked with redlines to show the requested corrections, is enclosed.

In particular, please replace:

and claims benefit of 60/478,690 06/13/2003

with:

and claims benefit of 60/478,960 06/13/2003

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 5 mar 04

By: Kyle Schlueter

Kyle F. Schlueter, Attorney of Record
Registration No. 54,912
Customer No. 20,995
(949) 760-0404

H:\DOCS\KFS\KFS-3184.DOC
030504

X1.002A
DNW/KFS

OIPE
MAR 09 2004
JC25
PATENT & TRADEMARK OFFICE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/654,588	09/03/2003	2122	0.00	X1.002A	23	37	5

CONFIRMATION NO. 4164

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

FILING RECEIPT

OC000000011494491

Date Mailed: 12/15/2003

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/408,015 09/03/2002
and claims benefit of 60/413,013 09/23/2002
and claims benefit of 60/448,923 02/20/2003
and claims benefit of 60/470,903 05/14/2003
and claims benefit of 60/478,690 06/13/2003
60/478,960

Foreign Applications

If Required, Foreign Filing License Granted: 12/12/2003

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

Methods and systems for search indexing

Preliminary Class

717

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

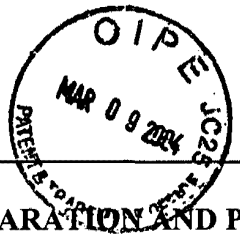
The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



DECLARATION AND POWER OF ATTORNEY- USA PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled METHODS AND SYSTEMS FOR SEARCH INDEXING; the specification of which was filed on **September 3, 2003** as Application Serial No. **10/654,588**.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above;

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56;

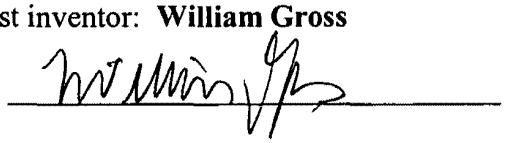
I hereby claim the benefit under Title 35, United States Codes § 119(e) of any United States provisional application(s) listed below.

Application No.: 60/408,015	Filing Date: September 3, 2002
Application No.: 60/413,013	Filing Date: September 23,2002
Application No.: 60/448,923	Filing Date: February 20, 2003
Application No.: 60/470,903	Filing Date: May 14, 2003
Application No.: 60/478,960	Filing Date: June 13, 2003

POWER OF ATTORNEY: I hereby appoint the registrants of Knobbe, Martens, Olson & Bear, LLP, 2040 Main Street, 14th Floor, Irvine, California 92614, Telephone (949) 760-0404, **Customer No. 20,995**.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of the first inventor: **William Gross**

Inventor's signature 

Date 02/08/04

Residence: **130 West Union Street, Pasadena, CA 91103**

Citizenship: **United States**

Post Office Address: **Same**

Full name of the second inventor: **Steven Lee Colwell**

Inventor's signature _____

Date _____

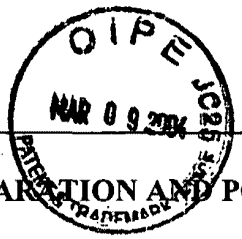
Residence: **2265 Las Canoas Road, Santa Barbara, CA 93105**

Citizenship: **United States**

Post Office Address: **Same**

Send Correspondence To:
KNOBBE, MARTENS, OLSON & BEAR, LLP
Customer No. 20,995

H:\DOCS\KFS\KFS-3091.DOC
020304



DECLARATION AND POWER OF ATTORNEY- USA PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled METHODS AND SYSTEMS FOR SEARCH INDEXING; the specification of which was filed on **September 3, 2003** as Application Serial No. **10/654,588**.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above;

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56;

I hereby claim the benefit under Title 35, United States Codes § 119(e) of any United States provisional application(s) listed below.

Application No.: 60/408,015	Filing Date: September 3, 2002
Application No.: 60/413,013	Filing Date: September 23,2002
Application No.: 60/448,923	Filing Date: February 20, 2003
Application No.: 60/470,903	Filing Date: May 14, 2003
Application No.: 60/478,960	Filing Date: June 13, 2003

POWER OF ATTORNEY: I hereby appoint the registrants of Knobbe, Martens, Olson & Bear, LLP, 2040 Main Street, 14th Floor, Irvine, California 92614, Telephone (949) 760-0404, **Customer No. 20,995**.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of the first inventor: **William Gross**

Inventor's signature _____

Date _____

Residence: **130 West Union Street, Pasadena, CA 91103**

Citizenship: **United States**

Post Office Address: **Same**

Full name of the second inventor: **Steven Lee Colwell**

Inventor's signature _____

Date Feb 23, 2004

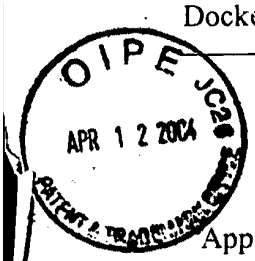
Residence: **2265 Las Canoas Road, Santa Barbara, CA 93105**

Citizenship: **United States**

Post Office Address: **Same**

Send Correspondence To:
KNOBBE, MARTENS, OLSON & BEAR, LLP
Customer No. 20,995

H:\DOCS\KFS\KFS-3091.DOC
020304



INFORMATION DISCLOSURE STATEMENT

Applicant	:	Gross, et al.
App. No.	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Unknown
Group Art Unit	:	2122

CERTIFICATE OF MAILING

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first-class mail in an envelope addressed to: United States Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450, on

8 apr 2004
(Date)

Kyle F. Schlueter
Kyle F. Schlueter, Reg. No. 54,912

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is form PTO-1449 listing eleven (11) references. Copies of disclosed U.S. patents and/or publications are not included pursuant to PTO waiver of the requirement under 37 C.F.R. § 1.98(a)(2)(i) for applications filed after June 30, 2003. Copies of other references, if listed, are enclosed.

This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required in accordance with 37 C.F.R. § 1.97(b)(3). If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 8 apr 04

By: Kyle Schlueter
Kyle F. Schlueter
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040704

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. X1.002A	APPLICATION NO. 10/654,588
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)	APPLICANT Gross, et al.	
	FILING DATE September 3, 2003	GROUP 2122

OIPE APR 12 2004 PATENT & TRADEMARK OFFICE

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1	5,832,208	11/03/98	Chen, et al.			
	2	6,035,325	03/07/00	Potts			
	3	6,073,133	06/06/00	Chrabaszcz			
	4	6,330,567	12/11/01	Chao			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

EXAMINER INITIAL		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	5	"Lotus Magellan Product Information Guide," Circa 1989.
	6	"Lotus Magellan Explorer's Guide," ©1989 Lotus Development Corporation
	7	Chris Sherman, "Enfish Tracker Pro," © January 1999; printed from http://www.onlinemag.net/OL1999/sherman1.html
	8	Jon Halpin, "PC Data Finder Goes A-Hunting," 19 June 2001; printed from http://www.pcmag.com/article2/0,4149,144228,00.asp
	9	Carol Ellison, "Info to Go," 30 June 2002; printed from http://www.pcmag.com/article2/0,1759,3575,00.asp
	10	Steve Barth, "Personal Toolkit: Navigating Information and Ideas," KMWorld April 2003, Volume 12, Issue 4; printed from http://www.kmworld.com/publications/magazine/index.cfm?action=readarticle&article_id=1505&publication_id=1
	11	Copy of International Search Report from corresponding PCT Application PCT/US03/27241

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040704

EXAMINER	DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/654,588		2161	2167

Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 20995 on 12/08/2005

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 20995 is:
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE,CA 92614

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	4	(("5832208") or ("6035325") or ("6073133") or ("6330567")).PN.	USPAT; USOCR	OR	OFF	2006/05/31 12:37
S2	722	((search$3 near string$1) and (string$1 with document$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 18:45
S3	27	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:41
S4	7	(incremental$1 and (search$3 near string$1)) and (string$1 with punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 19:23
S5	1	((incremental$1 with (output or reslut$1)) and (search$3 near string$1)) and (punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 19:30
S6	42	(search$3 near string$1) and (incremental$2 with (document$1 or result$1 or output$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 19:31
S7	11	(search$3 near string$1) and (incremental$2 with (document$1 or result$1 or output$3)) and (punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 19:35
S8	6	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1) and (string$1 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/30 14:24

EAST Search History

S9	49	(("6052122") or ("6249282") or ("6418382") or ("6432361") or ("6453245") or ("6718518") or ("5412807") or ("5832494") or ("6175830") or ("6233571") or ("5220625") or ("5544352") or ("5649186") or ("5696962") or ("5950159") or ("6097841") or ("6249784") or ("5454105") or ("5457794") or ("5557787") or ("5644657") or ("5710844") or ("5764818") or ("5857185") or ("5870701") or ("5905892") or ("5926825") or ("6038610") or ("6061677") or ("6175863") or ("6188010") or ("6226638") or ("6226638") or ("6279018") or ("6321226") or ("6324534") or ("6353448") or ("6377927") or ("6463428") or ("6473751") or ("6477531") or ("6484164") or ("6484166") or ("6487553") or ("6499029") or ("6505194") or ("6519587") or ("6546388") or ("6584462") or ("6662177")).PN.	USPAT; USOCR	OR	OFF	2006/05/31 12:37
S10	0	S9 and (incremental$2 with search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:42
S11	1170	(incremental$2 with search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:42
S12	242	(incremental$2 near search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:42
S13	7	(incremental$2 near search$3) and ((search$3 near string$1) and (string$1 with document$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:53

EAST Search History

S14	24	(incremental$2 near search$3) and ((search$3 near string$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:53
S15	11	(incremental$2 near search$3) and (punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:56
S16	61	(search$3) and (punctuation$1 with string$1) and (command$1 with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 12:57
S17	32	(search$3 with string$1) and (punctuation$1 with string$1) and (command$1 with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:36
S18	3	(("6711565") or ("5721897") or ("5907837")).PN.	USPAT; USOCR	OR	OFF	2006/05/31 13:15
S19	7	(compar$3 with command$1$3 with string$1) and (punctuation$1 with string$1) and (command$1 with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:45
S20	212	((search$3 near field$1) with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:46
S21	209	((search$3 near field$1) with strings)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:46
S22	13	((search$3 near field$1) with strings) and (incremental$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:49

EAST Search History

S23	3	((search$3 near field$1) with strings) and (incremental$2 same search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:46
S24	0	((search$3 near field$1) with string$1) and puncuation$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:50
S25	8	((search$3 near field$1) with string$1) and punctuation$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/31 18:50
S26	1	("6070158").PN.	USPAT; USOCR	OR	OFF	2006/06/06 20:23
S27	0	S26 and (index$3 same punctuation$1)	USPAT	OR	OFF	2006/06/06 20:25
S28	1	S26 and (index$3 same file$1)	USPAT	OR	OFF	2006/06/06 20:25
S29	822	(punctuation$1 with set$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 10:53
S30	228	(punctuation$1 with set$1) and ((first or second or third) near set$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 10:53
S31	105	(punctuation$1 with set$1) and ((first or second or third) near set$1) and search$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 10:56
S32	0	(punctuation$1 with set$1) and ((first or second or third) near set$1) and search$3 and (divd$3 with (string$1 or term$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 10:59

EAST Search History

S33	9	(punctuation$1 with set$1) and ((first or second or third) near set$1) and search$3 and (divid$3 with (string$1 or term$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 11:14
S34	54	(punctuation$1 near5 set$1) and ((first or second or third) near set$1) and search$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 11:14
S35	45	(punctuation$1 near5 set$1) and ((first or second or third) near set$1) and search$3 and (match$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 11:16
S36	31	(punctuation$1 near5 set$1) and ((first or second or third) near set$1) and search$3 and (match$3 with (string$1 or term$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 14:24
S37	10939	(search$3 with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:37
S38	998	(search$3 with string$1) and (string with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:37
S39	508	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:38
S40	219	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:16

EAST Search History

S41	31	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (user) and ambig$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:57
S42	1	("20040148154").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/06/07 15:57
S43	128	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 19:25
S44	136	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:18
S45	97	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:19
S46	80	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1) and (user with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:19
S47	3	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1) and (user with command$1) and (command with movie$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:20
S48	10	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1) and (user with command$1) and (command with (movie$1 or video$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:21

EAST Search History

S49	16	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1) and (user with command$1) and (command same (movie$1 or video$1 or price$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:31
S50	2	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list$3 with command$1) and (application with command$1) and (user with command$1) and ((movie$1 or video$1 or price) near list$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:27
S51	40	(search$3 with string$1) and (compar$3 with string with command$1) and (execut$3 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:32
S52	34	(search$3 with string$1) and (compar$3 with string with command$1) and (execut$3 with command$1) and (list$3 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 16:32
S53	5	(search$3 with string$1) and (string with command$1) and (execut$3 with command$1) and ((string or word$1 or term$1) with field$1) and (list with command$1) and (command with ambig$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 19:25
S54	5	(search$3 with string$1) and (string$1 with command$1) and (command$1 with ambig$6) and (resolv$3 with ambig$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 19:49
S55	2	(search$3 with string$1) and (string$1 with command$1) and (command$1 with ambig$6) and (resolv$3 with ambig$6) and (violation or conflict$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 19:28

S56	5	(search$3 with string$1) and (string$1 with command$1) and (command$1 with (ambig$6 or conflict$1)) and (resolv$3 with (ambig$6 or conflict$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 19:50
S57	10	(search$3 with string$1) and (command$1 with (ambig$6 or conflict$1)) and (resolv$3 with (ambig$6 or conflict$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:07
S58	4	(search$3 with string$1) and (command$1 with ((movie$1 or video$1) near list$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:08
S59	0	(search$3 with string$1) and (command$1 with ((movie$1 or video$1) near list$3)) and (command with pric$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:08
S60	0	(command$1 with ((movie$1 or video$1) near list$3)) and (command with pric$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:09
S61	0	(command$1 with ((movie$1 or video$1) near list$3)) and (command with price$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:09
S62	69	(command$1 with ((movie$1 or video$1))) and (command with price$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:09
S63	9	((command$1 with ((movie$1 or video$1))) same list$3) and (command with price$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:12

S64	42	(command$1 with ((movie$1 or video$1))) and (command with price$3) and list$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:13
S65	9	(command$1 with ((movie$1 or video$1))) and (command with price$3) and (list$3 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:14
S66	20	(movie with list$3) and (command with (price$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 20:15

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JUN 12 2006
PATENT & TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT

Applicant	:	Gross et al.
App. No	:	10/654,588
Filed	:	3 September 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

CERTIFICATE OF MAILING

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

8 jun 06
(Date)

Kyle F. Schlueter, Reg. No. 54,912

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 4 references to be considered by the Examiner. Also enclosed is 1 non-patent literature as listed on the Information Disclosure Statement.

This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required. If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 8 jun 06

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2639549
053106

OIPE IAP28 JUN 12 2006 PATENT & TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application No.	10/654,588
	Filing Date	3 September 2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	6,711,565	03/2004	Subramaniam et al.	
	2	5,907,837	05/1999	Ferrel et al.	
	3	5,721,897	02/1998	Rubinstein	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
	4	Chapter 14, Section 14.5; "JavaScript & DHTML Cookbook" by Danny Goodman; ISBN: 0-596-00467-2; Publisher: O'Reilly; Print Publication Date 4/1/2003	
	5		
	6		
	7		
	8		

2639357
053106
2639409
053106

Examiner Signature	Date Considered
***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T[1] - Place a check mark in this area when an English language Translation is attached.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 06/15/2006

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EXAMINER	
SAEED, USMAAN	

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09/03/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-37 are pending in this office action.

Information Disclosure Statement

2. Applicants' Information Disclosure Statement, filed on 4/12/2004 has been received, entered and considered. See attached form PTO-1449.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-23 and 32-37 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. The language of the claims raises a question as to whether the claims are directed merely to an environment or machine which would result in a practical application producing a concrete useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claims 11-23 and 32-37 are directed to an apparatus and search index system containing instructions, and code. Therefore they appear to be computer

program per se because they are not capable of causing computer programs functionality to be realized. See MPEP § 2106.IV.B.1 (a).

To expedite a complete examination of the instant application the claims rejected under U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of application amending these claims to place them within the four categories of invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18-21 are rejected under 35 U.S.C 102(b) as being anticipated by **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158).

With respect to claim 18, **Kirsch** teaches **an search index system comprising:**

"scan code that determines at least in part what files to index" an incremental scan of the Web to generate various, often substantial indexes that can be later searched in response to a user's query (**Kirsch** Col 1, Lines 54-56).

"index code that indexes files based at least in part on the scan code determination, wherein the index code is further configured to locate punctuation marks in at least a first search string and to treat at least a portion of the punctuation marks as string separators based at least in part on their location within the first search string" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). The sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17).

With respect to claim 19, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein the punctuation marks "<", "(", "[", and "{" are treated as string separators when indexing regardless of their position between a first character and a last character within the first string"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the semicolons and periods as "<", "(", "[", "{".

With respect to claim 20, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a predetermined number of characters from the beginning of the first string"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the semicolons within a string.

With respect to claim 21, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned after a predetermined number of characters from the beginning of the first string"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the period at the end of sentence or after certain number of characters.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

> be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9-10, 11-14 and 16-17 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158) in view of **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981).

With respect to claim 1, **Kirsch** teaches **a method of performing a search comprising:**

"receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The

resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine.

"incrementally locating at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string" as the batch update 22 are collected through the operation of a web spider that incrementally searches the web for new and changed documents (**Kirsch** Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (**Kirsch** Col 9, Lines 27-31).

Kirsch teaches the elements of claim 1 as noted above but does not explicitly disclose, **"search strings being entered into a field."**

However, **Spaey** discloses, **"search strings being entered into a field"** as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically

display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

Claim 11 is essentially the same as claim 1 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 2, **Kirsch** teaches **the method as defined in claim 1 further comprising:**

"receiving at least a third search string in a second search field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing all first, second and third search string which are being entered/delivered different search engines/fields 44, 46 and 48.

"incrementally locating at least a first document that has a least a first word that begins with the first string, a second word that begins with the second string, and a third word that begins with the third string" as the batch update 22 are collected through the operation of a web spider that incrementally searches the web for new and changed documents (**Kirsch** Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query

selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (**Kirsch** Col 9, Lines 27-31).

Kirsch teaches the elements of claim 2 as noted above but does not explicitly discloses, **"string being entered into a second search field."**

However, **Spaey** discloses, **"string being entered into a second search field"** as figure 9 (**Spaey** Figure 9). Figure 9 shows different fields where different search strings are being entered. Therefore examiner interprets the second search field as it contains third string and the search results are being incrementally displayed according to the search strings both in the first and second search fields.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

With respect to claim 3, **Kirsch** teaches **"the method as defined in claim 1 further comprising automatically presenting a first occurrence of the first word in the first document"** as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42).

With respect to claim 4, **Kirsch** teaches **"the method as defined in claim 1 further comprising presenting at the same time a plurality of occurrences of the first word in the first document while excluding portions of text between occurrences of the first word"** as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42). The relevance ranking system typically presumes that increasing occurrences of specific query terms within a document means that the document is more likely relevant and responsive to the query (**Kirsch** Col 2, Lines 34-37). These lines teach plurality of occurrences of terms/words and the frequency is only for relevant term and excludes the text between these relevant words.

With respect to claim 5, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"indexing a first file including a third search string" as the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser. The search engine operates to intersect the list with

the collection index to identify a predetermined document from the collection of documents (**Kirsch** Abstract). The reference is generating indexes corresponding to the search target types. **"the third string including a punctuation mark at a first location"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). The reference has strings/terms with punctuations.

"determining the position of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark.

"based at least in part on the first location, treating a first portion of the third string before the punctuation mark as a fourth string and treating a second portion of the third string after the punctuation mark as a fifth string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word

parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). Examiner interprets the two separate identified potential terms as fourth and fifth string according to the location of the hyphen.

Claim 12 is essentially the same as claim 5 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 6, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"indexing a first file including a third search string" as the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser. The search engine operates to intersect the list with the collection index to identify a predetermined document from the collection of documents (**Kirsch** Abstract). The reference is generating indexes corresponding to the search target types. **"the third string including a punctuation mark at a first location"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and

semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). The reference has strings/terms with punctuations.

"determining the location of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark. **"and based at least in part on the location, treating the punctuation mark as a space"** as the phrase analyzer 74 is also sensitive to punctuation internal to each sentence identified by the sentence analyzer 68. Specifically, phrases that span specific punctuation, including commas, semicolons, and mdashes, are removed from further consideration as phrases (**Kirsch** Col 10, Lines 52-56). The sentence analyzer 68 identifies individual words based primarily on space separators, though potentially on selected punctuation (**Kirsch** Col 10, Lines 1-3). Therefore the reference teaches that punctuations are removed and individual words are being identified based on space separators.

Claim 13 is essentially the same as claim 6 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 7, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at a first location within the third search string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark.

"determining the position of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10,

Lines 10-17). The two separate identified potential terms are separated according to the location/position of the hyphen/punctuation mark.

"and based at least in part on the first location, locating a document that has a fourth string that includes at least said third string" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). Where multiple search engines identify common documents that contain multiple different search terms, a unique instance of the document ID is maintained with a cumulative value of the relevancy scores (**Kirsch** Col 13 40-44). The identified terms before the punctuation and after the punctuation mark are being sent to the search engines and the documents are being located according to these identified terms.

Claim 14 is essentially the same as claim 7 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 9, **Kirisch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at the end of the third string" as the sentence analyzer 68,

in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10 Lines 10-12). Examiner interprets the periods as a punctuation mark at the end of the string.

"and locating at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). Where multiple search engines identify common documents that contain multiple different search terms, a unique instance of the document ID is maintained with a cumulative value of the relevancy scores (**Kirsch** Col 13 40-44). The identified terms before the punctuation and after the punctuation mark are being sent to the search engines and the documents are being located according to these identified terms.

Claim 16 is essentially the same as claim 9 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 10, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at the end of the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10 Lines 10-12). Examiner interprets the periods as a punctuation mark at the end of the string.

"and locating at least a first document that includes an exact match for the third string" as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42). The occurrence is an exact match found within the document.

Claim 17 is essentially the same as claim 10 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

6. Claims 8, and 15 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158) in view of **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) as applied to claims 1-7, 9-10, 11-14 and 16-17 above further in view of **Nunberg et al**. (**Nunberg** hereinafter) U.S. Patent No. 5,111,398.

With respect to claim 8, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third string, the third string including a first punctuation mark" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12).

"determining how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms **(Kirsch** Col 10, Lines 10-17).

Kirsch teaches the elements of claim 8 as noted above but does not explicitly discloses **"determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks."**

However, **Nunberg** discloses **"determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks"** as first set of punctuational features with positions relative to the first set of words. Second set

of punctuational features with positions relative to the second set of words (**Nunberg** Col 29, Lines 10-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Nunberg's** teaching would have allowed **Kirsch and Spaey** to modify the data structure using operations rules, and the user's pointing or selecting signals are mapped onto the data structure and to check modified data structure with the grammar of textual types to ensure that it has an autonomous punctuational structure.

Claim 15 is essentially the same as claim 8 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

7. Claims 22 and 23 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (US Patent No. 6,070,158) as applied to claims 18-21 in view of **Charles G. Call** (**Call** hereinafter) (U.S. PGPub No. 2002/0055981).

With respect to claim 22, **Kirsch** does not explicitly teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within**

a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string"

However, **Call** discloses **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string"** as punctuation character strings which separate said natural language terms, each of said natural language terms consisting of one or more characters in a first predetermined set of characters that include the letters of the alphabet, and each of said punctuation strings consists of one or more of characters is a second predetermined set of characters which does not include the letters of the alphabet (**Call** Claim 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Call's** teaching would have allowed **Kirsch** to search, display, categorize, annotate and highlight the text and highlighted text are specified by their starting and ending positions.

With respect to claim 23, **Kirsch** does not explicitly disclose **"the search apparatus as defined in claim 22, where the first predetermined number is 2 and the second predetermined number is 4."**

However, **Call** discloses **"the search apparatus as defined in claim 22, where the first predetermined number is 2 and the second predetermined number is 4"** as punctuation character strings which separate said natural language terms, each of said natural language terms consisting of one or more characters in a first predetermined set of characters that include the letters of the alphabet, and each of said punctuation strings consists of one or more of characters is a second predetermined set of characters which does not include the letters of the alphabet (**Call** Claim 2). Examiner interprets the first set of one or more characters as 2 and the second set of one or more characters as 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Call's** teaching would have allowed **Kirsch** to search, display, categorize, annotate and highlight the text and highlighted text are specified by their starting and ending positions.

8. Claims 24-30, 32-34, and 37 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009).

With respect to claim 24, **Spaey** teaches **a method of selectively performing a search and executing a command, the method comprising:**

"receiving at least a first string in a search field" as Figure 3 (Spaey Figure 3). Figure 3 shows a search string being entered into the search field.

"selectively initiating a search if the first string is not a command" as the query strings from all the search boxes and defines on which column the results should be sorted (**Spaey** Paragraph 0157 & 0166).

Spaey teaches the elements of claim 24 as noted above but does not explicitly disclose **"determining if the first string is a command" and "selectively initiating command execution in response to determining that the first string is a command."**

However, **Fireman** discloses **"determining if the first string is a command"** as if the command string input corresponds to a command rather than simple key strokes, the string is handled by the check command procedure 660 (**Fireman** Paragraph 0129). **"selectively initiating command execution in response to determining that the first string is a command"** as if the command is a mouse the command is executed 1100 (which drags the mouse), the cursor is displayed 1102 and my button returns (**Fireman** Paragraph 0171).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 32 is essentially the same as claim 24 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 25, **Spaey** does not explicitly discloses **"the method as defined in claim 24, wherein determining if the first string is a command further comprises: comparing the first string to a list of commands; and determining if the first string corresponds to a command in the list of commands."**

However, **Fireman** discloses **"the method as defined in claim 24, wherein determining if the first string is a command further comprises: comparing the first string to a list of commands; and determining if the first string corresponds to a command in the list of commands"** as in the check command procedure 660 the next four characters from the speech queue (four characters is the length of all command strings, see appendix A) are fetched 662 and compared 664 to a command table. If 666, the characters equal a voice command, then a command is recognized and processing is continued by the handle command routine 668 (**Fireman** Paragraph 0129). Examiner interprets the command table as containing list of commands.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired

results by determining if the search string is command and comparing it to the list/table of commands.

Claim 34 is essentially the same as claim 25 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 26, **Spaey** does not explicitly teach **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user."**

However, **Fireman** discloses **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user"** as if the command is a mouse the command is executed 1100 (which drags the mouse), the cursor is displayed 1102 and my button returns (**Fireman** Paragraph 0171). Examiner interprets the mouse and voice commands being edited by an end user.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 33 is essentially the same as claim 26 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 27, **Spaey** does not explicitly disclose **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a search application command."**

However, **Fireman** disclose **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a search application command"** as if the names are created by parsing the executable code 144 for an application, then the names are initially associated with the command strings which execute the corresponding menu commands for the application (**Fireman** Paragraph 0056).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 37 is essentially the same as claim 27 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 28, **Spaey** teaches **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command using as a command argument a second string entered into the search field"** as figure 9 (**Spaey** Figure 9). Figure 9 shows the second string being entered into the search field and this subsequent string is being treated as command argument.

With respect to claim 29, **Spaey** teaches **"the method as defined in claim 24, further comprising determining if a second string and a third string entered into the search field are command arguments, and if so, determining if there is an HTML violation"** as figure 9 (**Spaey** Figure 9). Figure 9 shows the second string being entered into the search field and examiner interprets these fields are not command arguments. Therefore there is no need of determining if there is an HTML violation.

With respect to claim 30, **Spaey** teaches **"the method as defined in claim 24, further comprising presenting information retrieved by at least a first command entered into the search field using a search application interface"** as the interface 10 is button driven, i.e. all actions are activated by pressing buttons in opposition to menu or command line driven interfaces. It has rich functionality, which is presented in a layered approach (**Spaey** Paragraph 0061).

9. Claims 31 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009) as applied to claims 24-30, 32-34, and 37 above further in view of **Arend et al.** (**Arend** hereinafter) U.S. PGPub No. 2003/0227489.

With respect to claim 31, **Spaey and Fireman** do not explicitly teach **the method as defined in claim 24, further comprising: determining if there is an ambiguity with respect to at least a first command entered by a user; and presenting a list of user selectable options in order to resolve the ambiguity."**

However, **Arend** discloses **"the method as defined in claim 24, further comprising: determining if there is an ambiguity with respect to at least a first command entered by a user"** as the top display area 310 and the bottom display area 440, contains the command section 330 and the content section 350 from the relevant display area 320 of FIG. 4 (the display area where the user had entered the ambiguous field entry in this example), and the new temporary communication area 410 (**Arend** Paragraph 0068). **"and presenting a list of user selectable options in order to resolve the ambiguity"** as the user could then select a choice from the multiple-choice list of acceptable input choices and the user interface would update the associated input field with the selected choice, thereby resolving the ambiguity (**Arend** Paragraph 0057).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Arend's** teaching would have allowed **Spaey and Fireman** to find and resolve ambiguous commands that are being entered by the user by presenting a multiple option list to the user for resolving an ambiguity.

10. Claims 35 and 36 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009) as applied to claims 24-30, 32-34, and 37 above further in view of **Babu et al.** (**Babu** hereinafter) U.S. PGPub No. 2003/0229898.

With respect to claim 35 and 36, **Spaey and Fireman** do not explicitly teaches **"the search apparatus as defined in claim 32, further comprising a command that accesses movie listings" and "a command that accesses price information."**

However, **Babu** teaches **"the search apparatus as defined in claim 32, further comprising a command that accesses movie listings"** as figure 1, with command center 102 and figure 2 with movie listings (**Babu** Figure 1 & 2) **"a command that accesses price information"** as figure 1, with command center 102 and figure 3 with price listing (**Babu** Figure 1 & 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Babu's** teaching would have allowed **Spaey and Fireman** to view listing of movies and the prices for the movies by comprising commands for movies listings and price information.

Conclusion

11. The prior art made of record and not replied upon is considered pertinent to applicant's disclosure is listed on 892 form.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Usmaan Saeed
Patent Examiner
Art Unit: 2166

Leslie Wong
Primary Examiner

US
June 07, 2006

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. X1.002A	APPLICATION NO. 10/654,588
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)	APPLICANT Gross, et al.	
	FILING DATE September 3, 2003	GROUP 2122

OIPE APR 12 2004 PATENT & TRADEMARK OFFICE

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
US	1	5,832,208	11/03/98	Chen, et al.			
	2	6,035,325	03/07/00	Potts			
	3	6,073,133	06/06/00	Chrabaszcz			
	4	6,330,567	12/11/01	Chao			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

EXAMINER INITIAL		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
US	5	"Lotus Magellan Product Information Guide," Circa 1989.
	6	"Lotus Magellan Explorer's Guide," ©1989 Lotus Development Corporation
	7	Chris Sherman, "Enfish Tracker Pro," © January 1999; printed from http://www.onlinemag.net/OL1999/sherman1.html
	8	Jon Halpin, "PC Data Finder Goes A-Hunting," 19 June 2001; printed from http://www.pcmag.com/article2/0,4149,144228,00.asp
	9	Carol Ellison, "Info to Go," 30 June 2002; printed from http://www.pcmag.com/article2/0,1759,3575,00.asp
	10	Steve Barth, "Personal Toolkit: Navigating Information and Ideas," KMWorld April 2003, Volume 12, Issue 4; printed from http://www.kmworld.com/publications/magazine/index.cfm?action=readarticle&article_id=1505&publication_id=1
	11	Copy of International Search Report from corresponding PCT Application PCT/US03/27241

H:\Docs\KFS\KFS-3297.doc
040704

EXAMINER /Usmaan Saeed/	DATE CONSIDERED 06/07/2006

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Notice of References Cited	Application/Control No. 10/654,588	Applicant(s)/Patent Under Reexamination GROSS ET AL.	
	Examiner Usmaan Saeed	Art Unit 2166	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,111,398 A	05-1992	Nunberg et al.	704/9
	B	US-5,920,854 A	07-1999	Kirsch et al.	707/3
	C	US-6,070,158 A	05-2000	Kirsch et al.	707/3
	D	US-2002/0055981 A1	05-2002	Spaey et al.	709/217
	E	US-2002/0178009 A1	11-2002	Firman, Thomas R.	704/275
	F	US-2003/0229898 A1	12-2003	Babu et al.	725/87
	G	US-2003/0227489 A1	12-2003	Arend et al.	345/804
	H	US-2002/0165707 A1	11-2002	Call, Charles G.	704/2
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
10/654,588	GROSS ET AL.
Examiner	**Art Unit**
Usmaan Saeed	2166

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date
Final	Original	6/7/06
	1	√
	2	√
	3	√
	4	√
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 4164

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/654,588	09/03/2003 RULE	707	2166	X1.002A

APPLICANTS

William Gross, Pasadena, CA;
Steven Lee Colwell, Santa Barbara, CA;

**** CONTINUING DATA ***************************

This appln claims benefit of 60/408,015 09/03/2002 and claims benefit of 60/413,013 09/23/2002
and claims benefit of 60/448,923 02/20/2003
and claims benefit of 60/470,903 05/14/2003
and claims benefit of 60/478,960 06/13/2003

YES (US)

**** FOREIGN APPLICATIONS *********************

NO (US)

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 12/12/2003

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☑ no	CA	23	37	5
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged	Examiner's Signature / Initials: US				

ADDRESS
20995

TITLE

Methods and systems for search indexing

FILING FEE RECEIVED		
1378	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

SEARCHED			
Class	Subclass	Date	Examiner
707	3	5/4/2006	US
707	2	5/4/2006	US

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor & related case search	6/7/2006	US
East (US-PGPUB, USPAT, USOCR, EPO, JPO, DERWENT, IBM_TDB)	5/19/2006	US
Consulted Primary Examiner (Leslie Wong)	5/31/2006	US
Plus	5/4/2006	US

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 09/12/2006

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Interview Summary	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Usmaan Saeed (PTO)*.

(2) *Leslie Wong (PTO)*.

(3)*Russel Jeide (Applicant's Rep) (Ph# (951)779-2015)*.

(4)*Andrew Naglestad (Applicant)*.

Date of Interview: *07 September 2006*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Kirsch and Spaey et al*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

U.S. Patent and Trademark Office

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant's representative described the invention and discussed rejected claim and cited prior art. Applicant argued that the prior art of record does not teach "first search string and the second search strings are being entered into the same field" and "incrementally locating documents with first search string and and second search strings." In response to the applicant's argument examiner pointed out that the Kirsch and spaey teaches "first search string and the second search strings are being entered into the same field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (Kirsch Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine. And "incrementally locating documents with first search string and and second search strings" as a web spider that incrementally searches the web for new and changed documents (Kirsch Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (Kirsch Col 9, Lines 27-31). Further examiner pointed out figures 8A, 8B and 8C (Spaey Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

The applicant did not agree with the examiner regarding the above explanation and further argued that the references cannot be combined in the sequence they are combined. In response to these arguments examiner respectfully submitted that Kirsch reference is a real time document collection with phrase indexing and Spaey is used for browsing structured data. Therefore the examiner explained that the Kirsch could be used with Spaey to incrementally and automatically display documents through browser by accessing, searching, filtering and sorting stored documents.

Applicant described that the indexing described by the cited prior art is different than of the claimed invention. Applicant desrcibed that when a user enters a first string it incrementally indexes documents according to the first string. Further, he described that when a user enters a second string in the same field, the documents are incrementally indexed according to the first and second string from the same field.
Examiner stated that the claims are broad enough therefore, the teachings of cited references read on the claimed limitations. Examiner suggested to add the limitation of "searching of the terms from the body of the email" as described during the explantion of the invention by the applicant.

In the end, the applicant said that he may add "in response to the user input, incrementally locating..." to further clarify the sequence of limitations. He also said that he might add some limitations from dependent claims or add/mofidy the claims to further clarify the invention.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Gross et al.
Appl. No.	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmann Saeed
Group Art Unit	:	2166

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This amendment is in response to the Office Action dated June 15, 2006.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Summary of Interview begins on page 9 of this paper.

Remarks begin on page 10 of this paper.

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of performing a search comprising:

receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field; and

incrementally locating at least a first document that has [[a]] at least a first word that begins with the first search string and a second word that begins with the second search string.

2. (Original) The method as defined in Claim 1 further comprising:

receiving at least a third search string in a second search field; and

incrementally locating at least a first document that has a least a first word that begins with the first string, a second word that begins with the second string, and a third word that begins with the third string.

3. (Original) The method as defined in Claim 1 further comprising automatically presenting a first occurrence of the first word in the first document.

4. (Original) The method as defined in Claim 1 further comprising presenting at the same time a plurality of occurrences of the first word in the first document while excluding portions of text between occurrences of the first word.

5. (Original) The method as defined in Claim 1, further comprising:

indexing a first file including a third search string, the third string including a punctuation mark at a first location;

determining the position of the punctuation mark in the third string;

based at least in part on the first location, treating a first portion of the third string before the punctuation mark as a fourth string and treating a second portion of the third string after the punctuation mark as a fifth string.

6. (Original) The method as defined in Claim 1, further comprising:

indexing a first file including a third search string, the third string including a punctuation mark at a first location;

determining the location of the punctuation mark in the third string; and

based at least in part on the location, treating the punctuation mark as a space.

7. (Original) The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at a first location within the third search string;

determining the position of the punctuation mark in the third string; and

based at least in part on the first location, locating a document that has a fourth string that includes at least said third string.

8. (Original) The method as defined in Claim 1, further comprising:

receiving a third string, the third string including a first punctuation mark;

determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks; and

determining how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to.

9. (Original) The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at the end of the third string; and

locating at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark.

10. (Original) The method as defined in Claim 1, further comprising:

receiving a third search string, the third string including a punctuation mark at the end of the third string; and

locating at least a first document that includes an exact match for the third string.

11. (Currently Amended) A search apparatus stored on a computer readable medium, the search apparatus comprising:

a first instruction configured to read at least a first search string and a second search string entered into a same first search field; and

a second instruction configured to incrementally filter search results to locate at least a first document that has at least a first word that begins with the first string and a second word that begins with the second string.

wherein at least one of the first and second instructions are configured to be executed by a computing device.

12. (Original) The search apparatus as defined in Claim 11, further configured to:

read a third search string, the third string including a punctuation mark at a first location;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, treat a first portion of the third string before the punctuation mark as a fourth string and treat a second portion of the third string after the punctuation mark as a fifth string.

13. (Original) The search apparatus as defined in Claim 11, further configured to:

receive a third string, the third string including a punctuation mark at a first location;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, treat the punctuation mark as a space.

14. (Original) The search apparatus as defined in Claim 11, further configured to:

receive a third string, the third string including a punctuation mark at a first location within the third search string;

determine the position of the punctuation mark in the third string; and

based at least in part on the first location, determine if the third string should be indexed as more than one string.

15. (Original) The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a first punctuation mark;

determine if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks; and

determine how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to.

16. (Original) The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a first punctuation mark at the end of the third string; and

locate at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark based at least in part on detecting the first punctuation mark.

17. (Original) The search apparatus as defined in Claim 11, further configured to:

receive a third search string, the third string including a punctuation mark at the end of the third string; and

locate at least a first document that includes an exact match for the third string based at least in part on detecting the punctuation mark at the end of the third string.

18. (Currently Amended) [[An]] A search index system comprising:

scan code that determines at least in part what files to index;

index code that indexes files based at least in part on the scan code determination, wherein the index code is further configured to locate punctuation marks in at least a first ~~search~~ string and to treat at least a portion of the punctuation marks as string separators based at least in part on their location within the first ~~search~~ string.

19. (Original) The search apparatus as defined in Claim 18, wherein the punctuation marks "<", "(", "[", and "{" are treated as string separators when indexing regardless of their position between a first character and a last character within the first string.

20. (Original) The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a predetermined number of characters from the beginning of the first string.

21. (Original) The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned after a predetermined number of characters from the beginning of the first string.

22. (Original) The search apparatus as defined in Claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string.

23. (Original) The search apparatus as defined in Claim 22, where the first predetermined number is 2 and the second predetermined number is 4.

24. (Currently Amended) A method of selectively performing a search and executing a command, the method comprising:

receiving at least a first string in a search field;

determining if the first string is a command;

selectively initiating command execution in response to determining that the first string is a command; and

selectively initiating a search in response to determining that the first string ~~if the first string~~ is not a command.

25. (Original) The method as defined in Claim 24, wherein determining if the first string is a command further comprises:

comparing the first string to a list of commands; and

determining if the first string corresponds to a command in the list of commands.

26. (Original) The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user.

27. (Original) The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a search application command.

28. (Original) The method as defined in Claim 24, wherein selectively initiating command execution further comprises executing a command using as a command argument a second string entered into the search field.

29. (Original) The method as defined in Claim 24, further comprising determining if a second string and a third string entered into the search field are command arguments, and if so, determining if there is an HTML violation.

30. (Original) The method as defined in Claim 24, further comprising presenting information retrieved by at least a first command entered into the search field using a search application interface.

31. (Original) The method as defined in Claim 24, further comprising:

determining if there is an ambiguity with respect to at least a first command entered by a user; and

presenting a list of user selectable options in order to resolve the ambiguity.

32. (Currently Amended) A search apparatus stored on a computer readable medium, the search apparatus comprising:

a first instruction configured to receive a first string entered into a search field;

a second instruction configured to determine if the first string corresponds to a command;

a third instruction configured to initiate command execution in response to determining that the first string corresponds to a command; and

a fourth instruction configured to initiate a search if the first string is not a command,

wherein at least some of the instructions are configured to be executed by a computing device.

33. (Original) The search apparatus as defined in Claim 32, further comprising user-editable command files corresponding to commands that are executed when entered into the search field.

34. (Original) The search apparatus as defined in Claim 32, further comprising a list of commands corresponding to commands that are executed when entered into the search field.

35. (Original) The search apparatus as defined in Claim 32, further comprising a command that accesses movie listings.

36. (Original) The search apparatus as defined in Claim 32, further comprising a command that accesses price information.

37. (Original) The search apparatus as defined in Claim 32, further comprising a command that launches an application program.

38. (New) A method of performing a search comprising:

receiving at least a first string and a second string as the first and second strings are being entered into the same search field; and

incrementally locating one or more emails that each comprise at least a first word that begins with the first string and a second word that begins with the second string.

39. (New) The method of Claim 38, further comprising:

automatically displaying in a user interface a first occurrence of the first word in a first of the located one or more emails.

40. (New) The method of Claim 38, further comprising:

displaying an indication of each of the located one or more emails in a user interface that is viewable by a user.

41. (New) The method of Claim 38, wherein at least some of the emails are stored on a computing device that performs the act of receiving and incrementally locating.

42. (New) The method of Claim 38, wherein the at least a first word and the at least a second word may be located in one or more of the following email fields: to, from, cc, bcc, subject, body.

43. (New) A method of performing a search comprising:

receiving at least a first string and a second string in a single search field;

incrementally locating at least a first document that has at least a first word that begins with the first string and a second word that begins with the second string as the first and second search string are entered into the search field; and

displaying at least a portion of the first document while at least one of the first word and second word comprises more characters than the respective first string and second string.

44. (New) A method of performing a search comprising:

receiving a first string in a first search field;

in response to receiving the first string, incrementally locating a first group of documents that has at least a first word that begins with the first string;

receiving a second string in the first search field, wherein the first and second strings are separated by a string separator character in the first search field;

in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second groups of documents; and

displaying an indication of corresponding to one or more of the located one or more documents that are included in each of the first and second groups of documents.

SUMMARY OF INTERVIEW

Exhibits and/or Demonstrations

None.

Identification of Claims Discussed

Claim 1 and general subject matter of other claims.

Identification of Prior Art Discussed

Kirsch and Spaey

Proposed Amendments

General subject matter of multiple possible amendments was discussed.

Principal Arguments and Other Matters

Discussed how Claim 1 distinguishes over the cited art. Also discussed several additional claim features that may further distinguish the claims over the cited art.

Results of Interview

Examiner indicated that Claim 1 would be reconsidered in view of discussion. Additionally, Examiner provided suggested claim amendments that the Examiner believed would be allowable over the currently cited art.

REMARKS

The June 15, 2006 Office Action was based upon pending Claims 1-37. This Amendment amends Claims 1, 11, 18, 24 and 32, and adds new Claims 38-44. Thus, after entry of this Amendment, Claims 1-44 are pending and are presented for consideration.

Discussion of Claim Rejections Under 35 U.S.C. § 101

In Section 3 of the Office Action, Claims 11-23 and 32-37 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. By this paper, Claims 11 and 32, from which the remaining claims depend, have been amended to clarify that at least some of the instructions recited in these claims are configured to be executed by a computer system. In view of these amendments, Applicants request that the rejections under section 101 be withdrawn.

Discussion of Claim Rejections Under 35 U.S.C. § 102

Applicant respectfully submits that anticipation under 35 U.S.C. 102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, (Fed. Cir. 1987); *See also,* M.P.E.P. § 2131. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Additionally, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to support the determination that the inherent characteristic necessarily flows from the teachings of the applied prior art." *See* M.P.E.P. § 2112. In view of the above claim amendments and the comments below, Applicant respectfully asserts that the pending claims are not anticipated by the cited art and requests removal of all rejections.

In Section 4 of the Office Action, Claims 18-21 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kirsch (U.S. Patent No. 6,070,158). In view of the comments below, Applicant respectfully requests reconsideration of these claims.

Claim 18 recites, in pertinent part, "A search index system comprising ... index code [that] is further configured to ***locate punctuation marks in at least a first search string*** and to treat at least a portion of the punctuation marks as string separators based at least in part on their

location within the first search string." Kirsch fails to teach or suggest at least this feature of Claim 18. Kirsch describes that a "document analyzer 64 also includes a lexical analysis routine sufficient to identify separate sequences of words from the document that reasonably represent individual sentences. The document analyzer 64 is sensitive to selected occurrences of capitalization and punctuation that can be utilized as hints in delineating individual sentences within the document 62." Kirsch therefore appears to teach a system that is "sensitive to selected occurrences of capitalization and punctuation," but Kirsch fails to teach or suggest treating punctuation marks, or portions thereof, as string separators "based at least in part on their location within the first search string," as recited in Claim 18.

Applicant also notes that the Office Action cites Kirsch at column 12, lines 5-15 as teaching that "[after] qualification any remaining simple terms are passed to a search term list." However, this portion of Kirsch relates to "processing of a client query 40" (*Id.* at col. 11, l. 66), rather than "index code that indexes files," as recited in Claim 18. Furthermore, even if the teachings of Kirsch at the location indicated by the Examiner were directed towards indexing of files, Kirsch still fails to teach or suggest index code that is "configured to locate punctuation marks in at least a first search string and to treat at least a portion of the punctuation marks as string separators based at least in part on their location within the first search string." Accordingly, Claim 18 is believed to be in condition for allowance.

Claims 19-23 depend from Claim 18 and, therefore, include each of the limitations of Claim 18. Claims 18-23 are believed to be allowable over the cited art at least for the reasons discussed above with reference to Claim 18. Reconsideration and prompt notice of allowability of Claims 18-23 is respectfully requested.

Discussion Of Claim Rejections Under 35 U.S.C. § 103(a)

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the references when combined must teach or suggest all of the claim limitations. *See M.P.E.P. § 2143.* The Federal circuit has held that "[t]he suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.[...] virtually all [inventions] are combinations

of old elements. [internal quotes omitted...] If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention." *In re* Rouffet, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998). In view of the remarks below, Applicant respectfully maintains that the pending claims are each allowable over the cited art.

In Section 5 of the Office Action, Claims 1-7, 9-10, 11-14, and 16-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kirsch (U.S. Patent No. 6070158) in view of Spaey (U.S. Publication No. 2002/0055981). In view of the amendments to these claims and the comments below, Applicant respectfully requests reconsideration and removal of these rejections.

Claim 1, as currently amended, recites:

> A method of performing a search comprising:
> receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field; and
> incrementally locating at least a first document that has a least a first word that begins with the first search string and a second word that begins with the second search string.

The cited art fails to teach or suggest multiple features recited in amended Claim 1 and, furthermore, the cited art fails to teach the combination of features recited in Claim 1. For example, the cited art fails to teach or suggest that "the first and second search strings are being entered into the same search field," as recited in Claim 1. Kirsch does not describe any fields or even the entry of search terms, only describing that "[t]he linguistic analysis module 42 preferably filters the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40." *Kirsch*, col. 9, ll. 6-9. Spaey does not remedy the deficiency of Kirsch as Spaey teaches that "[s]earch criteria 72 on multiple columns 58 are combined to create a more restrictive result set." *Spaey*, para. [0169]. Thus, rather than teaching that "first and second search strings are being entered into the same search field," as recited in Claim 1, Spaey appears to teach that a first search criteria is entered into a first field, while a second search criteria is entered into a second field. Thus, Kirsch and Spaey

fail to teach or suggest at least the feature of "the first and second search strings ... being entered into the same search field," as recited in Claim 1. Accordingly, Applicant respectfully asserts that Claim 1 is in condition for allowance

Claim 11 recites, in pertinent part, "a first instruction configured to read at least a first search string and a second search string entered into a same first search field." As noted above with reference to Claim 1, the cited art fails to teach or suggest entry of two or more search strings into a same search field. Accordingly, Applicant respectfully asserts that Claim 11 is in condition for allowance

Claims 2-10 depend from Claim 1 and, therefore, include each of the limitations of Claim 1. Claims 12-17 depend from Claim 11 and, therefore, include each of the limitations of Claim 11. Claims 2-10 and 12-17 are believed to be allowable over the cited art at least for the reasons discussed above with reference to their respective base claims. Reconsideration and prompt notice of allowability of Claims 1-17 is respectfully requested.

In Section 8 of the Office Action, Claims 24-30, 32-34, and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Spaey in view of Firman (U.S. Publication No. 2002/0178009). In view of the amendments to these claims above, and the comments below, Applicant respectfully requests reconsideration and removal of these rejections.

Claim 24 recites:

> A method of selectively performing a search and executing a command, the method comprising:
> receiving at least a first string in a search field;
> determining if the first string is a command;
> selectively initiating command execution in response to determining that the first string is a command; and
> selectively initiating a search in response to determining that the first string is not a command.

Thus, Claim 24 recites receiving a first string in a search field, where the first string comprises a search term or a command. Thereafter, the method initiates "command execution in response to determining that the first string is a command." The Examiner notes that "Spaey ... does not explicitly disclose 'determining if the first string is a command' and selectively initiating command execution in response to determining that the first string is a command."

Applicant agrees with the Examiner regarding the lack of teaching in Spaey and further asserts that even the combination of Firman with Spaey fails to teach or suggest each feature of Claim 24.

Firman is directed toward a "Voice Controlled Computer Interface," wherein "[v]oice utterances are substituted for manipulation of a pointing device of the kind which is manipulated to control motion of a cursor on a computer display and to indicate desired actions associated with the position of the cursor on the display." *Firman*, Title and Abstract.

As indicated above, to establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the references when combined must teach or suggest all of the claim limitations. *See M.P.E.P. § 2143.* With respect to the first criteria, the suggestion or motivation to combine reference teachings must be either in the references or in the knowledge generally available among those of ordinary skill in the art. *Id.* As noted above, Spaey is directed toward a "System and Method for Remotely Browsing Structured Data," while Firman is directed towards a "Voice Controlled Computer Interface." On page 22 of the Office Action, the Examiner notes that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because Fireman's teaching would have allowed Spaey to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command." However, this statement merely acknowledges the results achieved by the present invention, without indicating where a motivation is provided in the references to modify Spaey as proposed by the Examiner, and without even stating why someone would have been motivated to seek the claimed results. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so. See *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988); MPEP 2143.01. The mere fact that a reference can be modified does not render the result obvious unless the prior art suggests the desirability of the modification. The Examiner has failed provide such a motivation and so has failed to make a prima facie case of obviousness. Accordingly, Applicant respectfully asserts that the combination of Spaey with

Firman is improper and respectfully requests removal of rejections under this combination of references.

Furthermore, assuming *arguendo* that there is a proper motivation to combine Spaey and Firman, this combination of references still fails to teach or suggest all of the claim limitations. For example, the cited references alone, or in combination, fail to teach or suggest at least "selectively initiating a search in response to determining that the first string is not a command," as recited in amended Claim 24. On page 22 of the Office Action, the Examiner states that "'selectively initiating command execution in response to determining that the first string is a command' as if the command is a mouse the command is executed 1100 (which drags the mouse), the cursor is displayed 1102 and my button returns (Firman Paragraph 0171)." However, this portion of Firman, and the remaining portions of Firman, fail to teach or suggest "initiating a search" and, additionally, fail to disclose "selectively initiating a search in response to determining that the first string is not a command," as recited in amended Claim 24.

In addition, assuming *arguendo* that there is a proper motivation to combine Spaey and Firman, this combination of references still fails to teach or suggest "receiving at least a first string in a search field;" followed by the step of "determining if the first string is a command." In contrast to the invention embodied in claim 24, Firman appears to convert voice utterances to a character string, determine if the string is a command, and treat the string as text for purposes of an application if it is not a command. In paragraph 129, Firman states:

> "If the command string input corresponds to a command rather than simple key strokes, the string is handled by the Check Command procedure 660 as illustrated in FIG. 19. In the Check Command procedure 660 the next four characters from the speech queue (four characters is the length of all command strings, see Appendix A) are fetched 662 and compared 664 to a command table. If, 666, the characters equal a voice command, then a command is recognized, and processing is continued by the Handle Command routine 668. Otherwise, the characters are interpreted as text and processing returns to the meta bits step 652."

Thus, Firman must identify a command ***before*** it is entered into the field of a browser application, for example. The Voice Controlled Computer Interface in Firman, however, does not appear to be capable of distinguishing a command from a query ***after*** the characters are entered into a field, as recited in claim 24. Although the Examiner asserts that "Firman's teaching would have allowed Spaey to enable [the] user to input voice commands and use these

commands for searching and ... determin[e] if the search string is a command," Applicant respectfully asserts that the Examiner has disregarded the order in which these steps are executed. Accordingly, Applicant respectfully asserts that Claim 24 is in condition for allowance over the cited art.

Claim 32 recites, in pertinent part, "[a] search apparatus stored on a computer readable medium, the search apparatus comprising: ... a fourth instruction configured to initiate a search if the first string is not a command." As noted above with reference to Claim 24, Applicant maintains that the combination of Spaey and Firman is improper. Furthermore, Applicant maintains that, even if the combination was proper, the cited references fails to teach or suggest at least "a fourth instruction configured to initiate a search if the first string is not a command," as generally discussed above with reference to Claim 24. Accordingly, Applicant respectfully asserts that Claim 32 is in condition for allowance over the cited art.

Claims 25-31 depend from Claim 24 and, therefore, include each of the limitations of Claim 1. Claims 33-37 depend from Claim 32 and, therefore, include each of the limitations of Claim 32. Claims 25-31 and 33-37 are believed to be allowable over the cited art at least for the reasons discussed above with reference to their respective base claims. Reconsideration and prompt notice of allowability of Claims 25-37 is respectfully requested.

Discussion of New Claims

New Claims 38-43 have been added. Applicant submits that these claims are supported by the specification as filed and do not add new matter to the application. Furthermore, Applicant submits that the cited art fails to teach the combination of features in each of the new Claims 38-43. Accordingly, consideration of Claims 38-43 is respectfully requested.

For example, new Claim 38 recites a "method of performing a search comprising: ... incrementally locating one or more emails that each comprise at least a first word that begins with the first string and a second word that begins with the second string." The cited art fails to teach or suggest incrementally locating emails having the entered search terms.

New Claim 43 recites a "method of performing a search comprising: ... displaying at least a portion of the first document while at least one of the first word and second word comprises more characters than the respective first search string and second search string." The

cited art fails to teach or suggest displaying a portion of a located document prior to complete entry of at least one of the search terms.

New Claim 44 recites a search method comprising "incrementally locating a first group of documents that has at least a first word that begins with the first string ... [and] incrementally locating a second group of documents that has at least a second word that begins with the second string." Claim 44 further recites "identifying one or more documents that are included in each of the first and second groups of documents; and displaying an indication corresponding to one or more of the located one or more documents that are included in each of the first and second groups of documents." The cited art fails to teach or suggest the multiple-stage incremental searching as recited in Claim 44.

Summary

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. By focusing on specific claims and claim limitations in the discussion above, Applicant does not imply an agreement with the Examiner's assertions regarding other claims and claim limitations. Additionally, Applicant reserves the right to disqualify any of the cited references as prior art by showing an earlier invention date. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. If the Examiner has any questions which may be answered by telephone, he is invited to call the undersigned directly.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 10/13/2006

By: _____

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Electronic Acknowledgement Receipt

EFS ID:	1251384
Application Number:	10654588
Confirmation Number:	4164
Title of Invention:	Methods and systems for search indexing
First Named Inventor:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Justin Lancaster
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
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Application Type:	Utility
International Application Number:	

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Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Transmittal letter	TRANSMITTAL_X1-002A.pdf	43599	no	2

Warnings:					
Information:					
2		AMENDMENT_X1-002A.pdf	899264	yes	18

	Multipart Description		
	Doc Desc	**Start**	**End**
	Amendment - After Non-Final Rejection	1	1
	Claims	2	8
	Applicant summary of interview with examiner	9	9
	Applicant Arguments/Remarks Made in an Amendment	10	18

Warnings:	
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AMENDMENT / RESPONSE TRANSMITTAL

Applicant	:	Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmann Saeed
Art Unit	:	2166

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing in the above-identified application are the following enclosures:

(X) Amendment in 18 pages.

The fee has been calculated as shown below:

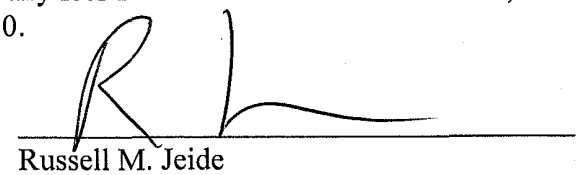
FEE CALCULATION				
FEE TYPE		**FEE CODE**	**CALCULATION**	**TOTAL**
Excess Claims	44 - 37 = 7	1202 ($50)	7 x 50 =	$350
Excess Independent	8 - 5 = 3	1201 ($200)	3 x 200 =	$600
1 Month Extension	*1.17(a)(1)*	1251 ($120)		$120
			TOTAL FEE DUE	$1070

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PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 10654,588

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	37	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	37 minus 20=	* 17
INDEPENDENT CLAIMS	5 minus 3 =	* 2
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐			OR	OTHER THAN SMALL ENTITY	
RATE	FEE			RATE	FEE
BASIC FEE	385.00		OR	BASIC FEE	770.00
X$ 9=			OR	X$18=	306
X43=			OR	X86=	172
+145=			OR	+290=	
TOTAL			OR	TOTAL	1248

CLAIMS AS AMENDED - PART II

10/13/06

AMENDMENT A	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 44	Minus	** 37	= 7
Independent	* 8	Minus	*** 5	= 3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY			OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE			RATE	ADDITIONAL FEE
X$ 9=			OR	X$18=	350
X43=			OR	X86=	600
+145=			OR	+290=	
TOTAL ADDIT. FEE			OR	TOTAL ADDIT. FEE	950

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		OR	RATE	ADDITIONAL FEE
X$ 9=			OR	X$18=	
X43=			OR	X86=	
+145=			OR	+290=	
TOTAL ADDIT. FEE			OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		OR	RATE	ADDITIONAL FEE
X$ 9=			OR	X$18=	
X43=			OR	X86=	
+145=			OR	+290=	
TOTAL ADDIT. FEE			OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	8	(search$3 near3 email$1) same incremental$2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/25 12:25
L3	11	(search$3 with email$1) same incremental$2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/25 12:25
L4	50	(search$3 near3 email$1) with (subject or "cc" or "bcc")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/25 12:30
S8	6	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1) and (string$1 with command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:48
S60	0	(command$1 with ((movie$1 or video$1) near list$3)) and (command with pric$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/21 13:54
S67	27	(increment$4 with email$1)	USPAT	OR	OFF	2006/12/20 15:24
S68	1792	(increment$4 with (email$1 or document$1))	USPAT	OR	OFF	2006/12/20 15:24
S69	94	(increment$4 with (email$1 or document$1)) and (field with search$3)	USPAT	OR	OFF	2006/12/20 15:25
S70	1	(increment$4 with (email$1 or document$1)) and (field with search$3 with string$1)	USPAT	OR	OFF	2006/12/20 15:26
S71	351	(search$3 with (email$1 or document$1)) and (increment$4 with (email$1 or document$1))	USPAT	OR	OFF	2006/12/20 15:27
S72	17	(search$3 with (email$1 or document$1)) and (locat$3 with increment$4 with (email$1 or document$1))	USPAT	OR	OFF	2006/12/20 15:38
S73	873	(incremental$4 near3 locat$3)	USPAT	OR	OFF	2006/12/20 15:38

EAST Search History

S74	1	(incremental$4 near3 locat$3) with (document$1 or email$1)	USPAT	OR	OFF	2006/12/20 15:39
S75	7	(incremental$4 near3 locat$3) same (document$1 or email$1)	USPAT	OR	OFF	2006/12/20 15:39
S76	0	("2002/0055981").URPN.	USPAT	OR	OFF	2006/12/20 15:44
S77	7816	outlook	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:48
S78	779	(outlook with email)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:49
S79	462	(outlook with email) and (search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:49
S80	101	(outlook with email) and (search$3 with name)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:49
S81	182	(outlook with email) and (search$3 with (name or email))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:49
S82	0	(outlook with email) and incremtal$3 and (search$3 with (name or email))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:49
S83	22	(outlook with email) and incremental$3 and (search$3 with (name or email))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 15:56

EAST Search History

S84	1752	(incremental$3 and (search$3 with (name or email)))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:36
S85	109	(incremental$3 with (search$3 with (name or email or document$1 or file$1)))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:05
S86	3	(("6711565") or ("5907837") or ("5721897")).PN.	USPAT; USOCR	OR	OFF	2006/12/20 16:05
S87	2	"facebook"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/20 16:41
S88	8	email with (incremental$4 with search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/21 14:10
S89	279	(realtime or real$time) near search$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/21 14:10
S90	2	((realtime or real$time) near search$3) with email	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/21 14:12
S91	3	((realtime or real$time) near search$3) same email	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/21 14:13
S92	47	((realtime or real$time) near search$3) and email	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/22 14:57

EAST Search History

S93	795	(search$3 near3 email$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/22 14:58
S94	74	(search$3 near3 email$1) and incremental$2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/22 16:12
S95	8	(search$3 near3 email$1) same incremental$2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/22 14:59
S96	30	(search$3 near3 email$1) and incremental$2 and (email with (subject or "cc" or "bcc"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/12/25 12:29

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

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EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	12/28/2006	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 12/28/2006.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/12/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Receipt of Applicant's Amendment, filed on 10/13/2006 is acknowledged. Claims 1, 11, 18, 24, and 32 have been amended and added new claims 38-44.

Claim Rejections - 35 USC § 101

2. Claims 11-23 and 32-37 have been amended and are acceptable to overcome the rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 44 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the claim it recites "first group of documents" and second group of documents" which are not present in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18-21 are rejected under 35 U.S.C 102(b) as being anticipated by **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158).

With respect to claim 18, **Kirsch** teaches **a search index system comprising:**

"scan code that determines at least in part what files to index" an incremental scan of the Web to generate various, often substantial indexes that can be later searched in response to a user's query (**Kirsch** Col 1, Lines 54-56).

"index code that indexes files based at least in part on the scan code determination, wherein the index code is further configured to locate punctuation marks in at least a first string and to treat at least a portion of the punctuation marks as string separators based at least in part on their location within the first string" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). The sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and

the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17).

With respect to claim 19, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein the punctuation marks "<", "(", "[", and "{" are treated as string separators when indexing regardless of their position between a first character and a last character within the first string"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the semicolons and periods as "<", "(", "[", "{".

With respect to claim 20, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a predetermined number of characters from the beginning of the first string"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the semicolons within a string.

With respect to claim 21, **Kirsch** teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned after a predetermined number of characters**

from the beginning of the first string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). Examiner interprets the period at the end of sentence or after certain number of characters.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9-10, 11-14, 16-17 and 43-44 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158) in view of **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981).

With respect to claim 1, **Kirsch** teaches **a method of performing a search comprising:**

"receiving at least a first search string and a second search string as the first and second search strings are being entered into the same search field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine.

"incrementally locating at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string" as the batch update 22 are collected through the operation of a web spider that incrementally searches the web for new and changed documents (**Kirsch** Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (**Kirsch** Col 9, Lines 27-31).

Kirsch teaches the elements of claim 1 as noted above but does not explicitly disclose, **"search strings being entered into a field."**

However, **Spaey** discloses, **"search strings being entered into a field"** as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed

incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

Claim 11 is essentially the same as claim 1 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 2, **Kirsch** teaches **the method as defined in claim 1 further comprising:**

"receiving at least a third search string in a second search field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing all first, second and third search string which are being entered/delivered different search engines/fields 44, 46 and 48.

"incrementally locating at least a first document that has a least a first word that begins with the first string, a second word that begins with the second string, and a third word that begins with the third string" as the batch update 22

are collected through the operation of a web spider that incrementally searches the web for new and changed documents (**Kirsch** Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (**Kirsch** Col 9, Lines 27-31).

Kirsch teaches the elements of claim 2 as noted above but does not explicitly discloses, **"string being entered into a second search field."**

However, **Spaey** discloses, **"string being entered into a second search field"** as figure 9 (**Spaey** Figure 9). Figure 9 shows different fields where different search strings are being entered. Therefore examiner interprets the second search field as it contains third string and the search results are being incrementally displayed according to the search strings both in the first and second search fields.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

With respect to claim 3, **Kirsch** teaches **"the method as defined in claim 1 further comprising automatically presenting a first occurrence of the first word in the first document"** as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of

occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42).

With respect to claim 4, **Kirsch** teaches **"the method as defined in claim 1 further comprising presenting at the same time a plurality of occurrences of the first word in the first document while excluding portions of text between occurrences of the first word"** as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42). The relevance ranking system typically presumes that increasing occurrences of specific query terms within a document means that the document is more likely relevant and responsive to the query (**Kirsch** Col 2, Lines 34-37). These lines teach plurality of occurrences of terms/words and the frequency is only for relevant term and excludes the text between these relevant words.

With respect to claim 5, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"indexing a first file including a third search string" as the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser. The search

engine operates to intersect the list with the collection index to identify a predetermined document from the collection of documents (**Kirsch** Abstract). The reference is generating indexes corresponding to the search target types. **"the third string including a punctuation mark at a first location"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). The reference has strings/terms with punctuations.

"determining the position of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark.

"based at least in part on the first location, treating a first portion of the third string before the punctuation mark as a fourth string and treating a second portion of the third string after the punctuation mark as a fifth string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms

(**Kirsch** Col 10, Lines 10-17). Examiner interprets the two separate identified potential terms as fourth and fifth string according to the location of the hyphen.

Claim 12 is essentially the same as claim 5 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 6, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"indexing a first file including a third search string" as the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser. The search engine operates to intersect the list with the collection index to identify a predetermined document from the collection of documents (**Kirsch** Abstract). The reference is generating indexes corresponding to the search target types. **"the third string including a punctuation mark at a first location"** as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12). The reference has strings/terms with punctuations.

"determining the location of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as

periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark. **"and based at least in part on the location, treating the punctuation mark as a space"** as the phrase analyzer 74 is also sensitive to punctuation internal to each sentence identified by the sentence analyzer 68. Specifically, phrases that span specific punctuation, including commas, semicolons, and mdashes, are removed from further consideration as phrases (**Kirsch** Col 10, Lines 52-56). The sentence analyzer 68 identifies individual words based primarily on space separators, though potentially on selected punctuation (**Kirsch** Col 10, Lines 1-3). Therefore the reference teaches that punctuations are removed and individual words are being identified based on space separators.

Claim 13 is essentially the same as claim 6 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 7, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at a first location within the third search string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and

semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location of the hyphen/punctuation mark.

"determining the position of the punctuation mark in the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17). The two separate identified potential terms are separated according to the location/position of the hyphen/punctuation mark.

"and based at least in part on the first location, locating a document that has a fourth string that includes at least said third string" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). Where multiple search engines identify common documents that contain multiple different search terms, a unique instance of the document ID is maintained with a cumulative value of the relevancy scores (**Kirsch** Col 13 40-44). The identified terms before the punctuation and after the punctuation mark

are being sent to the search engines and the documents are being located according to these identified terms.

Claim 14 is essentially the same as claim 7 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 9, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at the end of the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10 Lines 10-12). Examiner interprets the periods as a punctuation mark at the end of the string.

"and locating at least a first document that includes an exact match for the portion of the third string preceding the punctuation mark" as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). Where multiple search engines identify common documents that contain multiple different search terms, a unique instance of the document ID is maintained with a cumulative value of the relevancy scores (**Kirsch** Col 13 40-44). The identified terms before the punctuation and after the punctuation mark

are being sent to the search engines and the documents are being located according to these identified terms.

Claim 16 is essentially the same as claim 9 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 10, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third search string, the third string including a punctuation mark at the end of the third string" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10 Lines 10-12). Examiner interprets the periods as a punctuation mark at the end of the string.

"and locating at least a first document that includes an exact match for the third string" as the frequency of potentially relevant individual terms occurring within the document is kept on term by term basis. Term phrase frequencies of occurrence are then determined for each of the term phrases found within the document (**Kirsch** Col 6, Lines 36-42). The occurrence is an exact match found within the document.

Claim 17 is essentially the same as claim 10 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 43, **Kirsch** teaches **"receiving at least a first search string and a second search string in a single search field"** as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine.

"incrementally locating at least a first document that has a least a first word that begins with the first string and a second word that begins with the second string" as the batch update 22 are collected through the operation of a web spider that incrementally searches the web for new and changed documents (**Kirsch** Col 6, Lines 7-10). Each preliminary search report preferably contains a list of query selected term and term phrases, document identifiers where the listed terms occur, and an initial relevancy score for each listed term (**Kirsch** Col 9, Lines 27-31).

Kirsch teaches the elements of claim 1 as noted above but does not explicitly disclose, **"search strings being entered into a field," "incrementally locating as the first and second search string are entered into the search field" and "displaying at least a portion of the first document while at least one of the first word and second work comprises more characters than the respective first string and second string."**

However, **Spaey** discloses, **"search strings being entered into a field," "incrementally locating as the first and second search string are entered into the**

search field" and "displaying at least a portion of the first document while at least one of the first word and second work comprises more characters than the respective first string and second string." as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

With respect to claim 44, **Kirsch** teaches **"receiving the first search string in a first search field" and "receiving a second string in the first search field"** as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine.

"wherein the first and second strings are separated by a string separator character in the first search field" as punctuation within the provided query terms 82

is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). The sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17).

Kirsch teaches the elements of claim 44 as noted above but does not explicitly discloses **"in response to receiving the first string incrementally locating a first group of documents that has at least a first work that begins with the first string," "in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second group of documents" and "displaying an indication of corresponding to one ore more of the located one or more documents that are included in each of the first and second group of documents."**

However, **Spaey** discloses **"in response to receiving the first string incrementally locating a first group of documents that has at least a first work that begins with the first string," "in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents**

that are included in each of the first and second group of documents" and "displaying an indication of corresponding to one ore more of the located one or more documents that are included in each of the first and second group of documents" as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C & 9). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Kirsch** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

6. Claims 8, and 15 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (**Kirsch** hereinafter) (US Patent No. 6,070,158) in view of **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) as applied to claims 1-7, 9-10, 11-14 and 16-17 above further in view of **Nunberg et al.** (**Nunberg** hereinafter) U.S. Patent No. 5,111,398.

With respect to claim 8, **Kirsch** teaches **the method as defined in claim 1, further comprising:**

"receiving a third string, the third string including a first punctuation mark" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words (**Kirsch** Col 10, Lines 10-12).

"determining how many strings to divide the third string into for indexing based at least in part on which of the first, second and third sets the first punctuation mark belongs to" as the sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms **(Kirsch** Col 10, Lines 10-17).

Kirsch teaches the elements of claim 8 as noted above but does not explicitly discloses **"determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks."**

However, **Nunberg** discloses **"determining if the first punctuation mark belongs to one of a first set of punctuation marks, a second set of punctuation marks, and a third set of punctuation marks"** as first set of punctuational features with positions relative to the first set of words. Second set of punctuational features with positions relative to the second set of words (**Nunberg** Col 29, Lines 10-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Nunberg's** teaching would have allowed **Kirsch and Spaey** to modify the data structure using operations rules, and the user's pointing or selecting signals are mapped onto the data structure and to check modified data structure with the grammar of textual types to ensure that it has an autonomous punctuational structure.

Claim 15 is essentially the same as claim 8 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

7. Claims 22 and 23 are rejected under 35 U.S.C 103(a) as being unpatentable over **Kirsch et al.** (US Patent No. 6,070,158) as applied to claims 18-21 in view of **Charles G. Call** (**Call** hereinafter) (U.S. PGPub No. 2002/0055981).

With respect to claim 22, **Kirsch** does not explicitly teaches **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when indexing if they are positioned within a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string"**

However, **Call** discloses **"the search apparatus as defined in claim 18, wherein a first set of punctuation marks are treated as string separators when**

indexing if they are positioned within a first predetermined number of characters from the beginning of the first string or if they are positioned after a second predetermined number of characters from the beginning of the first string" as punctuation character strings which separate said natural language terms, each of said natural language terms consisting of one or more characters in a first predetermined set of characters that include the letters of the alphabet, and each of said punctuation strings consists of one or more of characters is a second predetermined set of characters which does not include the letters of the alphabet (**Call** Claim 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Call's** teaching would have allowed **Kirsch** to search, display, categorize, annotate and highlight the text and highlighted text are specified by their starting and ending positions.

With respect to claim 23, **Kirsch** does not explicitly disclose **"the search apparatus as defined in claim 22, where the first predetermined number is 2 and the second predetermined number is 4."**

However, **Call** discloses **"the search apparatus as defined in claim 22, where the first predetermined number is 2 and the second predetermined number is 4"** as punctuation character strings which separate said natural language terms, each of said natural language terms consisting of one or more characters in a first predetermined set of characters that include the letters of the alphabet, and each of said punctuation strings consists of one or more of characters is a second predetermined set

of characters which does not include the letters of the alphabet (**Call** Claim 2). Examiner interprets the first set of one or more characters as 2 and the second set of one or more characters as 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Call's** teaching would have allowed **Kirsch** to search, display, categorize, annotate and highlight the text and highlighted text are specified by their starting and ending positions.

8. Claims 24-30, 32-34, and 37 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009).

With respect to claim 24, **Spaey** teaches **a method of selectively performing a search and executing a command, the method comprising:**

"receiving at least a first string in a search field" as Figure 3 (Spaey Figure 3). Figure 3 shows a search string being entered into the search field.

"selectively initiating a search in response to determining that the first string is not a command" as the query strings from all the search boxes and defines on which column the results should be sorted (**Spaey** Paragraph 0157 & 0166).

Spaey teaches the elements of claim 24 as noted above but does not explicitly disclose **"determining if the first string is a command" and "selectively initiating**

command execution in response to determining that the first string is a command."

However, **Fireman** discloses **"determining if the first string is a command"** as if the command string input corresponds to a command rather than simple key strokes, the string is handled by the check command procedure 660 (**Fireman** Paragraph 0129). **"selectively initiating command execution in response to determining that the first string is a command"** as if the command is a mouse the command is executed 1100 (which drags the mouse), the cursor is displayed 1102 and my button returns (**Fireman** Paragraph 0171).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 32 is essentially the same as claim 24 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 25, **Spaey** does not explicitly discloses **"the method as defined in claim 24, wherein determining if the first string is a command further comprises: comparing the first string to a list of commands; and determining if the first string corresponds to a command in the list of commands."**

However, **Fireman** discloses **"the method as defined in claim 24, wherein determining if the first string is a command further comprises: comparing the first string to a list of commands; and determining if the first string corresponds to a command in the list of commands"** as in the check command procedure 660 the next four characters from the speech queue (four characters is the length of all command strings, see appendix A) are fetched 662 and compared 664 to a command table. If 666, the characters equal a voice command, then a command is recognized and processing is continued by the handle command routine 668 (**Fireman** Paragraph 0129). Examiner interprets the command table as containing list of commands.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command and comparing it to the list/table of commands.

Claim 34 is essentially the same as claim 25 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 26, **Spaey** does not explicitly teach **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user."**

However, **Fireman** discloses **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command file edited by an end user"** as if the command is a mouse the command is executed 1100 (which drags the mouse), the cursor is displayed 1102 and my button returns (**Fireman** Paragraph 0171). Examiner interprets the mouse and voice commands being edited by an end user.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 33 is essentially the same as claim 26 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 27, **Spaey** does not explicitly disclose **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a search application command."**

However, **Fireman** disclose **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a search application command"** as if the names are created by parsing the executable code 144 for an application, then the names are initially associated with the command strings

which execute the corresponding menu commands for the application (**Fireman** Paragraph 0056).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Claim 37 is essentially the same as claim 27 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

With respect to claim 28, **Spaey** teaches **"the method as defined in claim 24, wherein selectively initiating command execution further comprises executing a command using as a command argument a second string entered into the search field"** as figure 9 (**Spaey** Figure 9). Figure 9 shows the second string being entered into the search field and this subsequent string is being treated as command argument.

With respect to claim 29, **Spaey** teaches **"the method as defined in claim 24, further comprising determining if a second string and a third string entered into the search field are command arguments, and if so, determining if there is an HTML violation"** as figure 9 (**Spaey** Figure 9). Figure 9 shows the second string being entered into the search field and examiner interprets these fields are not command arguments. Therefore there is no need of determining if there is an HTML violation.

With respect to claim 30, **Spaey** teaches **"the method as defined in claim 24, further comprising presenting information retrieved by at least a first command entered into the search field using a search application interface"** as the interface 10 is button driven, i.e. all actions are activated by pressing buttons in opposition to menu or command line driven interfaces. It has rich functionality, which is presented in a layered approach (**Spaey** Paragraph 0061).

9. Claims 31 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009) as applied to claims 24-30, 32-34, and 37 above further in view of **Arend et al.** (**Arend** hereinafter) U.S. PGPub No. 2003/0227489.

With respect to claim 31, **Spaey and Fireman** do not explicitly teach **the method as defined in claim 24, further comprising: determining if there is an ambiguity with respect to at least a first command entered by a user; and presenting a list of user selectable options in order to resolve the ambiguity."**

However, **Arend** discloses **"the method as defined in claim 24, further comprising: determining if there is an ambiguity with respect to at least a first command entered by a user"** as the top display area 310 and the bottom display area 440, contains the command section 330 and the content section 350 from the relevant

display area 320 of FIG. 4 (the display area where the user had entered the ambiguous field entry in this example), and the new temporary communication area 410 (**Arend** Paragraph 0068). **"and presenting a list of user selectable options in order to resolve the ambiguity"** as the user could then select a choice from the multiple-choice list of acceptable input choices and the user interface would update the associated input field with the selected choice, thereby resolving the ambiguity (**Arend** Paragraph 0057).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Arend's** teaching would have allowed **Spaey and Fireman** to find and resolve ambiguous commands that are being entered by the user by presenting a multiple option list to the user for resolving an ambiguity.

10. Claims 35 and 36 are rejected under 35 U.S.C 103(a) as being unpatentable over **Spaey et al.** (**Spaey** hereinafter) (U.S. PGPub No. 2002/0055981) in view of **Thomas R. Fireman** (**Fireman** hereinafter) (U.S. PGPub No. 2002/0178009) as applied to claims 24-30, 32-34, and 37 above further in view of **Babu et al.** (**Babu** hereinafter) U.S. PGPub No. 2003/0229898.

With respect to claim 35 and 36, **Spaey and Fireman** do not explicitly teaches **"the search apparatus as defined in claim 32, further comprising a command that accesses movie listings" and "a command that accesses price information."**

However, **Babu** teaches **"the search apparatus as defined in claim 32, further comprising a command that accesses movie listings"** as figure 1, with

command center 102 and figure 2 with movie listings (**Babu** Figure 1 & 2) **"a command that accesses price information"** as figure 1, with command center 102 and figure 3 with price listing (**Babu** Figure 1 & 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Babu's** teaching would have allowed **Spaey and Fireman** to view listing of movies and the prices for the movies by comprising commands for movies listings and price information.

11. Claims 38-42 are rejected under 35 U.S.C 103(a) as being unpatentable over **Mathew Thankachan.** (**Thankachan** hereinafter) (U.S. PGPub No. 2002/0184317) in view of **Spaey et al.** (U.S. PGPub No. 2002/0055981).

With respect to claim 38, **Thankachan** teaches **a method of performing search comprising:**

"receiving at least a first string and a second string as the first and second strings are being entered into the same search field" as in one embodiment, the search feature is configured to copy the text of the email message that is responsive to the search parameter delimited by periods on both sides of the matching text. For example, if the search parameter is "Dr. Jones", and the sentence "We are waiting for a response from Dr. Jones to the proposal" appears in the middle of the paragraph in a message, the whole sentence is copied to the new document (**Thankachan** Paragraph 0018).

"locating one or more emails that each comprise at least a first word that begins with the first string and a second word that beings with the second string" as in one embodiment, the search feature is configured to copy the text of the email message that is responsive to the search parameter delimited by periods on both sides of the matching text. For example, if the search parameter is "Dr. Jones", and the sentence "We are waiting for a response from Dr. Jones to the proposal" appears in the middle of the paragraph in a message, the whole sentence is copied to the new document (**Thankachan** Paragraph 0018).

Thankachan teaches the elements of claim 38 as noted above but does not explicitly disclose, **"incremental searching."**

However, **Spaey** discloses, **"incremental searching"** as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Thankachan** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

With respect to claim 39, **Thankachan** teaches **"the method of claim 38, further comprising: automatically displaying in a user interface a first occurrence of the first word in a first of the located one or more emails"** as the electronic device 2 is interfaced with a display device 12 which enables the electronic mail application 4 to display output to a user (**Thankachan** Paragraph 0013).

With respect to claim 40, **Thankachan** teaches **"the method of claim 38, further comprising: displaying an indication of each of the located one or more emails in a user interface that is viewable by a user"** as in one embodiment, the search feature is configured to copy the text of the email message that is responsive to the search parameter delimited by periods on both sides of the matching text. For example, if the search parameter is "Dr. Jones", and the sentence "We are waiting for a response from Dr. Jones to the proposal" appears in the middle of the paragraph in a message, the whole sentence is copied to the new document (**Thankachan** Paragraph 0018). The electronic device 2 is interfaced with a display device 12, which enables the electronic mail application 4 to display output to a user (**Thankachan** Paragraph 0013).

With respect to claim 41, **Thankachan** teaches **"wherein at least some of the emails are stored on a computing device that performs the act of receiving"** as the email messages are stored on a computer readable medium,

such as a mail server accessible over a network or on a local hard drive, that is accessible by an electronic device (**Thankachan** Paragraph 0003).

Thankachan teaches the elements of claim 38 as noted above but does not explicitly disclose, **"incremental locating."**

However, **Spaey** discloses, **"incremental locating"** as figures 8A, 8B and 8C (**Spaey** Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Spaey's** teaching would have allowed **Thankachan** to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

With respect to claims 42, **Thankachan** teaches **"wherein at least a first word and the at least second word may be located in one or more of the following email fields: to, from, cc, bcc, subject, body"** as the email search feature searches email headers (including subject lines), the body of email messages, and any file attachments to the email messages (**Thankachan** Paragraph 0011).

Response to Arguments

12. Applicant's arguments filed 10/13/2006 have been fully considered but they are not persuasive.

Applicant argues that Kirsch fails to teach or suggest **"locate punctuation mark in at least a first search string and to treat at least a portion of the punctuation mark as string separators."**

In response to the applicants arguments examiner respectfully submits that Kirsch teaches **"locate punctuation mark in at least a first search string and to treat at least a portion of the punctuation mark as string separators"** as punctuation within the provided query terms 82 is examined and generally normalized or deleted. That is, query terms 82 are typically presented as a sequence of keywords or sentence fragment. After qualification any remaining simple terms are passed to a search term list (**Kirsch** Col 12, Lines 5-15). The sentence analyzer 68, in identifying simple terms, ignores selected punctuation, such as periods and semicolons, to identify individual words. Hyphenated words in particular are further analyzed to determine whether the hyphen is either hard or soft. If soft, the hyphen is ignored and the two word parts are concatenated. Where the hyphen is hard, both the hyphenated word and the separate word parts are identified as potential terms (**Kirsch** Col 10, Lines 10-17).

Further **Kirsch** teaches the sequence of sentences identified by the document analyzer 64 are successively passed to a sentence analyzer 68 for

term identification. The sentence analyzer 68 identifies individual words based primarily on space separators, though potentially on selected punctuation. For example, the document analyzer 64 will identify most abbreviations with period separators as not necessarily designating the end of a word or sentence (**Kirsch** Col 10, Lines 1-6). Therefore the reference users space and selected punctuations as word separators.

Further applicant argues that Kirsch and Spaey fail to teach or suggest **"the first and second search string being entered into the same search field."**

In response to the applicants arguments examiner respectfully submits that Kirsch teaches **"the first and second search string being entered into the same search field"** as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (**Kirsch** Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine.

Further Kirsch teaches the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that

identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser (**Kirsch** Col 3, Lines 51-58).

Kirsch is sending multiples terms to the search engine and is being combined with fields taught by Spaey in figures 8A-8C.

Further applicant argues that there is no motivation or suggestion to combine spaey with fireman.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, **Spaey** is directed to a system and method to synchronously access structured data using the Internet platform (browser) to access, search, filter and sort remotely stored data.

Fireman's invention is to be used by an operating system of a computer, by converting some voiced utterances into commands corresponding to actions

to be taken by the operating system, and converting other voiced utterances into commands which carry associated text strings to be used as part of text being processed in an application program running under the operating system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because **Fireman's** teaching would have allowed **Spaey** to enable user to input voice commands and use these commands for searching and to achieve the desired results by determining if the search string is command.

Further in the applicants disclosure, the commands or selections can also be made using other input techniques, such as using voice input, pen input, mousing or hovering over an input area, and/or the like which is same as the fireman's commands.

Further applicant argues that fireman fails to teach or suggest, **"initiating a search in response to determining that the first string is not a command."**

In response to the applicants arguments examiner respectfully submits that fireman teaches **"selectively initiating a search if the first string is not a command"** as the query strings from all the search boxes and defines on which column the results should be sorted (**Spaey** Paragraph 0157 & 0166).

Spaey does not contain commands as described by the applicant and is only executing search when a search string is being entered and there these search strings are not commands.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Usmaan Saeed
Patent Examiner
Art Unit: 2166

Leslie Wong
Primary Examiner

US
December 23, 2006

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

OIPE IAP28 JUN 12 2006 PATENT & TRADEMARK OFFICE

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	3 September 2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
US	1	6,711,565	03/2004	Subramaniam et al.	
US	2	5,907,837	05/1999	Ferrel et al.	
US	3	5,721,897	02/1998	Rubinstein	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
US	4	Chapter 14, Section 14.5; "JavaScript & DHTML Cookbook" by Danny Goodman; ISBN: 0-596-00467-2; Publisher: O'Reilly; Print Publication Date 4/1/2003	
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2639357
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053106

Examiner Signature /Usmaan Saeed/	Date Considered 12/25/2006

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Notice of References Cited	Application/Control No. 10/654,588	Applicant(s)/Patent Under Reexamination GROSS ET AL.	
	Examiner Usmaan Saeed	Art Unit 2166	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-2002/0184317	12-2002	Thankachan, Mathew	709/206
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
10/654,588	GROSS ET AL.
Examiner	**Art Unit**
Usmaan Saeed	2166

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	12/25/06								
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Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	10/654,588	GROSS ET AL.
	Examiner: Usmaan Saeed	Art Unit: 2166

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Updated East	12/20/2006	US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Gross et al.
Appl. No.	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmann Saeed
Group Art Unit	:	2166

REQUEST FOR RECONSIDERATION

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This amendment is in response to the Office Action dated December 28, 2006.

No amendments are being made to the Claims.

Remarks begin on page 2 of this paper.

REMARKS

This amendment is in response to the Office Action dated December 28, 2006. Claims 1-44 are currently pending.

REJECTION OF CLAIMS 1, 11, 38, AND 43

Independent Claims 1, 11, and 43 are rejected as being unpatentable over Kirsch (U.S. Patent No. 6,070,158) in view of Spaey (PGPub no. 2002/0055981). Applicant respectfully asserts that the Examiner has not established a *prima facie* case of obviousness since the references cited by the Examiner fail to disclose or suggest each and every limitation of the claimed invention. Claim 1 recites in relevant part: "receiving at least a first search string and a second search string as the first and second search strings are being *entered into the **same** search field*" (emphasis added). Claims 11, 38, 43, and 44 each recite that multiple strings are received into a single search field, in addition to their unique patentable features. The feature of receiving multiple search strings "*entered into the **same** search field*," is absent from Kirsch, as the Examiner concedes on page 6 of the December 28, 2006 Office Action. This feature is also absent from Spaey. In particular, instead of showing multiple strings being entered into the "same search field," Spaey shows only one search string per search field. That is, Spaey discloses ***a first string*** being entered into a first search field and a ***second string*** being entered into a ***different search field.*** Referring to FIG. 9 of Spaey, for example, the string "ree" is entered in the first column's search field and the string "*live" is entered into the second column's search field.

In addition to being novel, Claims 1, 11, 38, 43, and 44, are non-obvious with respect to the prior art. In Claim 1, for example, entry of multiple search strings in a single search field allows the user to incrementally locate the first document independent of the location of the first and second search strings in the document. In contrast to the present invention, Spaey burdens the user by making the user enter different search strings into different fields of the user interface, which requires additional keystrokes or clicks with a pointing device to change search fields. Referring again to FIG. 9 of Spaey, for example, the user must manually enter the string

"ree" in the search field of the first column and then manually switch to the second column before entering "*live".

As noted above, the combination of Kirsch and Spaey fails to teach or suggest a method of receiving multiple search strings into a single search field and incrementally locating one or more documents with words beginning with those search strings anywhere in the documents. Therefore, Applicants respectfully requests allowance of Claim 1, as well as independent Claims 11, 38, 43, and 44, and their associated dependent claims, for at least the same reasons as Claim 1.

Claim 38 is rejected over the combination of Spaey with Thankachan (PGPub no. 2002/0055981). However, the combination of Spaey and Thankachan fails to teach the combination of features recited in Claim 38. For example, Thankachan fails to teach or suggest "[a] method of performing a search comprising ... incrementally locating one or more emails that each comprise at least a first word that begins with the first string and a second word that begins with the second string." In Thankachan, only a single search string is entered, as implied by the quotes around the search term "Dr. Jones" in paragraph [0018] of Thankachan. Thus, Thankachan cannot locate a first word that *begins* with the first string because Thankachan treats the entire set of characters, e.g., "Dr. Jones", as a single string. Accordingly, Thankachan can only find a match of all characters of the first word if the first word is followed by all of the characters of the second word. Similarly, Thankachan can only find an exact match of the second word if it is preceded by all of the characters of the first word. Because the search string of Thankachan is only a single search string, rather than two separate search strings as recited in Claim 38, Thankachan cannot locate words that begin with "Dr.", and cannot locate the name "Jones" unless preceded by "Dr." Therefore, Thankachan teaches use of only a single search string, rather than multiple search strings that are entered into a single search field.

Spaey fail to remedy the deficiency of Thankachan as Spaey does not describe searching of emails and, therefore, does not each or suggest "incrementally locating one or more emails that each comprise at least a first word that begins with the first string and a second word that begins with the second string," as recited in Claim 38.

In view of the above, Applicant respectfully requests allowance of Claims 1, 11, 38, 43, and 44, and their associated dependent claims, for at least the same reasons as discussed above.

REJECTION OF CLAIMS 24 AND 32

Independent Claims 24 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Spaey in view of Firman (PGPub no. 2002/0178009). Applicant respectfully asserts that the Examiner has not established a *prima facie* case of obvious since the references cited by the Examiner fail to disclose or suggest each and every limitation of the claimed invention. In particular, Claim 24 recites in relevant part: "selectively initiating a search in response to *determining that the first string is* ***not a command***" (emphasis added), which the combination of Spaey and Firman does not disclose or suggest.

In the exemplary embodiment of Claim 24, a search of the first string is executed on the condition that the string does not comprise a command. In contrast to Claim 24, the combination of Spaey and Firman appears to invoke a search only if the string includes a command. That is, the system in Firman would need to receive a voice command from the user, recognize the command, and then invoke a search in response to the command. Applicant respectfully asserts that Firman could not invoke a search without a command. The combination of Spaey and Firman, therefore, fails to teach the invention of Claim 24, which initiates a search if the string is ***not*** a command.

Applicant respectfully requests allowance of Claim 24, as well as Claim 32 and the claims that depend from Claims 24 and 32, for at least the same reasons as discussed above with regard to Claim 24.

INCORPORATION BY REFERENCE

Applicant hereby incorporates by reference the remarks made in the October 12, 2006 Response to Office Action filed in this matter. Specifically, Applicant directs the Examiner to the remarks made in that Response with regard to Claims 18-23 and respectfully asserts that the prior art cited in the rejection of these claims in the present Office Action still does not teach or

suggest the combination of features in those claims, as discussed in the October 12, 2006 Response to Office Action. Applicant respectfully requests allowance of Claim 18-23.

Summary

Certain features of each pending independent claim have been discussed above. However, the discussed features are only a limited representation of the features that are believed to be patentable over the cited art. Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. In light of the above remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. If the Examiner has any questions which may be answered by telephone, she is invited to call the undersigned directly. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2-21-2007

By: _____
Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

3433676:lw
021507

INFORMATION DISCLOSURE STATEMENT

Applicant	:	Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 8 references to be considered by the Examiner. Also enclosed are 3 non-patent literature as listed on the Information Disclosure Statement.

This Information Disclosure Statement is being filed before the mailing date of a Notice of Allowance. This Statement is accompanied by the fees set forth in 37 C.F.R. § 1.17(p). The Commissioner is hereby authorized to charge any additional fees which may be required or to credit any overpayment to Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2-21-2007

By: _____

Russell M. Weide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

3252530_2:lw
022107

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	Gross et al.
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	5,692,173	11/1997	Chew, Chee Heng	
	2	6,421,675	07/2002	Ryan et al.	
	3	6,006,225	12/1999	Bowman et al.	
	4	US-2003/0130993	07/2003	Mendelevitch et al.	
	5	US-2003/0233419	12/2003	Beringer, Joerg	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
	6	Stop words, Wikipedia, http://en.wikipedia.org/wiki/Stop_words; December 12, 2006	
	7	Inverted index, Wikipedia, http://en.wikipedia.org/wiki/Inverted_index; December 12, 2006	
	8	Proximity search (text), Wikipedia, http://en.wikipedia.org/wiki/Proximity_search_%28text%29; December 12, 2006	

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122806

Examiner Signature	Date Considered

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Electronic Patent Application Fee Transmittal

Application Number:	10654588
Filing Date:	03-Sep-2003
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Filer:	Russell M. Jeide/Laurel Weiler
Attorney Docket Number:	X1.002A

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	1533668
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Ji Kim
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	21-FEB-2007
Filing Date:	03-SEP-2003
Time Stamp:	19:52:26
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$180
RAM confirmation Number	1006
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)

1	NPL Documents	STOPWORDS.pdf	48113	no	1
Warnings:					
Information:					
2	NPL Documents	INVERTEDINDEX.pdf	103082	no	2
Warnings:					
Information:					
3	NPL Documents	PROXIMITYSEARCH.pdf	131794	no	2
Warnings:					
Information:					
4		AMEND_X1-002A.pdf	233063	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	1
	Applicant Arguments/Remarks Made in an Amendment	2	5

Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Filed	IDS_X1-002A.pdf	94254	no	2
Warnings:					
Information:					
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6	Fee Worksheet (PTO-06)	fee-info.pdf	8164	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	618470		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 10654,588

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	37	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	37 minus 20=	* 17
INDEPENDENT CLAIMS	5 minus 3 =	* 2
MULTIPLE DEPENDENT CLAIM PRESENT	☐	

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐			OTHER THAN SMALL ENTITY	
RATE	FEE	OR	RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
X$ 9=		OR	X$18=	306
X43=		OR	X86=	172
+145=		OR	+290=	
TOTAL		OR	TOTAL	1248

CLAIMS AS AMENDED - PART II

10/13/06

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 44	Minus	** 37	= 7
Independent	* 8	Minus	*** 5	= 3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY			OTHER THAN SMALL ENTITY	
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X$ 9=		OR	X$18=	350
X43=		OR	X86=	600
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	950

2-2-07

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 44	Minus	** 44	=
Independent	* 8	Minus	*** 8	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-875 (Rev. 10/03) — Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 03/07/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	

NOTIFICATION DATE	DELIVERY MODE
03/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/654,588	Applicant(s) GROSS ET AL.	
	Examiner Usmaan Saeed	Art Unit 2166	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 21 February 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: 1-44.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Leslie Wong
Primary Examiner

Continuation of 11. does NOT place the application in condition for allowance because: Applicant argues that Kirsch and Spaey fail to teach or suggest "the first and second search string being entered into the same search field."
In response to the applicants arguments examiner respectfully submits that Kirsch teaches "the first and second search string being entered into the same search field" as the client query 40 to identify both single terms and term and term phrases that are most likely to represent the content of the client query 40. The resulting query list, potentially including both single and compound terms, is then delivered to all or some subsets of query search engines 44, 46, 48 within the architecture 20 (Kirsch Col 9, Lines 6-12). Examiner interprets the compound terms containing both first and second search strings, which are being entered/delivered to search field/engine. Further Kirsch teaches the collection search system includes a collection index including first predetermined single word and multiple word phrases as indexed terms occurring in the collection of documents, a linguistic parser that identifies a list of search terms from a user query, the linguistic parser identifying the list from second predetermined single words and multiple word phrases, and a search engine coupled to receive the list from the linguistic parser (Kirsch Col 3, Lines 51-58). Kirsch is sending multiples terms to the search engine and is being combined with fields taught by Spaey in figures 8A-8C.

Further applicant argues that combination of Spaey and Thankachan does not teach "locating one or more emails that each comprise at least a first word that begins with the first string and a second word that beings with the second string."
In response to the applicants arguments examiner respectfully submits that Thankachan teaches "locating one or more emails that each comprise at least a first word that begins with the first string and a second word that beings with the second string" as in one embodiment, the search feature is configured to copy the text of the email message that is responsive to the search parameter delimited by periods on both sides of the matching text. For example, if the search parameter is "Dr. Jones", and the sentence "We are waiting for a response from Dr. Jones to the proposal" appears in the middle of the paragraph in a message, the whole sentence is copied to the new document (Thankachan Paragraph 0018). Since the search parameter is delimited by periods therefore these are two search strings.
Thankachan teaches the elements of claim 38 as noted above but does not explicitly disclose, "incremental searching."
However, Spaey discloses, "incremental searching" as figures 8A, 8B and 8C (Spaey Figures 8 A-C). These figures shows that the search string "ree" is being entered into the search field and the results are being displayed incrementally according to the search string as it is being entered. The search results contain the words being entered into the search string.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because Spaey's teaching would have allowed Thankachan to incrementally and automatically display documents through an internet browser by accessing, searching, filtering and sorting remotely stored documents.

Further applicant argues that fireman fails to teach or suggest, "initiating a search in response to determining that the first string is not a command."
In response to the applicants arguments examiner respectfully submits that fireman teaches "selectively initiating a search if the first string is not a command" as the query strings from all the search boxes and defines on which column the results should be sorted (Spaey Paragraph 0157 & 0166).
Spaey does not contain commands as described by the applicant and is only executing search when a search string is being entered and there these search strings are not commands.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Gross et al.
Appl. No.	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmann Saeed
Group Art Unit	:	2166

SUPPLEMENTAL REQUEST FOR RECONSIDERATION

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This amendment is in response to the Examiner Interview conducted on April 4, 2007.

No amendments are being made to the Claims.

Summary of Interview begins on page 2 of this paper.

Remarks begin on page 3 of this paper.

SUMMARY OF INTERVIEW

Exhibits and/or Demonstrations

None.

Identification of Claims Discussed

Claims 1, 43, and the general subject matter of other claims.

Identification of Prior Art Discussed

Kirsch, Spaey, and Thankachan

Proposed Amendments

General subject matter of multiple possible amendments was discussed.

Principal Arguments and Other Matters

Discussed how Claims 1 and 43 distinguish over the cited art. Also discussed several additional claim features that may further distinguish the claims over the cited art.

Results of Interview

The Examiner indicated that Claim 43 would be reconsidered in view of our discussion. Additionally, the Examiner provided suggested claim amendments that would distinguish additional claims over the currently cited art.

REMARKS

This amendment is in response to the Examiner Interview conducted on April 4, 2007. Claims 1-44 are currently pending.

Applicant appreciates Examiners Saeed and Wong participating in the Examiner Interview on April 4, 2007. As discussed in that interview, Applicant provides herein remarks regarding aspects of the claims that are believed to distinguish the pending claims over the cited art. Applicant understands that prosecution of the application will be reopened as a result of the interview and the pending claims will be reconsidered in view of the below remarks.

A. Multiple Search Strings

As discussed in the Interview, certain claims of the present application recite that multiple search strings are entered into a single search field and each of the search strings are treated as separate search strings, rather than as a single search string. As discussed, neither Spaey nor Kirsch teaches or suggests entry of multiple search strings into a single search field, as recited in Claims 1, 11, 38 and 43, for example. Additionally, Thankachan fails to remedy the deficiencies of Spaey and Kirsch as the example cited at paragraph [0018] of Thankachan does not treat "Dr." and "Jones" as separate search terms, but only locates an occurrence of the entire character set "Dr. Jones". This discussion in Thankachan recites configuration of the search apparatus to return the entire sentence in which the search term, e.g., "Dr. Jones," is located by finding the periods on either side of the search term. This functionality, however, does not affect the fact that Thankachan locates text in the document based on the single search string "Dr. Jones". Reconsideration of Claims 1, 11, 38, 43 and their respective dependent claims is respectfully requested.

B. Partial Search Strings

Certain claims of the present application recites features that allow a user to locate a first string and second strings in a single document, wherein the search strings entered into a single search field comprise fewer characters than the located respective first and second strings.

Paragraph [0134] of the present application, as filed, provides a description of one embodiment of such a partial search string:

> **[0134]** The user can enter multiple separate search words or strings and each one will optionally be treated as a prefix. For example, searching "Joh Do" can be used to locate the strings "John Doe". Thus, one embodiment of the present invention provides multiword separate prefix searching. The searching can be performed incrementally. For example, if the user enter "Jo D" documents with the strings ("Jon" and "David"), ("Joe" and "Daniel"), ("John" and "Doe") will be located. If user then adds an "h" to "Jo" so that the search strings are now "Joh D" then the list of search results will be substantially immediately narrowed to present only documents having at least one string beginning with "Joh" and one string beginning with "D", such as a document containing ("John" and "Doe"). Further, the user can enter one or more additional search strings into one or more other search fields, such as one or more column search fields and the search system will incrementally search for documents that have strings that correspondingly begin with the search strings or that are exact matches for the search strings.

Claims 43 recites a search method that makes use of partial search strings: "receiving at least a first string and a second string in a single search field ... and displaying at least a portion of the first document ***while at least one of the first word and second word comprises more characters than the respective first string and second string.***" The cited art fails to teach or suggest at least this feature.

Claim 1 similarly recites a method that facilitates use of partial search strings. In particular, Claim 1 recites a method comprising "incrementally locating at least a first document that has at least **a first word that *begins* with the first search string** and a **second word that *begins* with the second search string**." By locating first and second words in a document that *begin* with respective first and second words, the method of Claim 1 treats the search strings as prefixes such that a search string may comprises fewer characters than a matching word in a document. The cited art fails to teach or suggest at least this feature of Claim 1. Claims 11, 38, and 43 also recites features that allow searching using partial search strings, as described above. Reconsideration of Claims 1, 11, 38, 43 and their respective dependent claims is respectfully requested.

C. **Location of Non-contiguous Search Results**

As discussed in the April 4, 2007 Interview, the feature of locating a first string (having a prefix that matches a first search string) and a second string (having a prefix that matches a second search string) in non-contiguous locations of a document appears to distinguish over the cited art. For example, a first partial search string may match the initial characters of a word near the beginning of a document, while a second partial search string may match the initial characters of a word near the end of the document, where the matched words are separated by a plurality of characters. Claims 11 recites, for example, "[a] search apparatus ... comprising ... a second instruction configured to incrementally filter search results to locate at least a first document that has at least ***a first word that begins with the first string*** and ***a second word that begins with the second string***." Because the method of claim 11 treats each search string as separate search strings, the method of Claim 11 enables location of strings that match the first and second search strings in non-contiguous portions of a document.

D. **Location of Search Results in Any Order**

As discussed in the April 4, 2007 Interview, the feature of locating a first string (having a prefix that matches a first search string) either before or after a second string (having a prefix that matches a second search string) in a document appears to distinguish over the cited art. For example, a first partial search string may match the initial characters of a word near the end of a document, while a second, later entered, partial search string may match the initial characters of a word near the beginning of the document. Claims 38 recites, for example, "incrementally locating one or more emails that each comprise at least a first word that begins with the first string and a second word that begins with the second string." Because the method of claim 38 treats each search string as separate search strings, the method of Claim 38 enables location of strings that match the first and second search strings in any order within a document.

Summary

Certain features of each pending independent claim have been discussed above. However, the discussed features are only a limited representation of the features that are believed to be

patentable over the cited art. Furthermore, because a rejection under 35 U.S.C. §102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," and a rejection under 35 U.S.C. § 103 similarly requires that the references when combined teach or suggest all of the claim limitations, Applicant further asserts that the combinations of features in each claim are patentable over the cited art. *Verdegaal; M.P.E.P. § 2143.*

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. In light of the above remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. If the Examiner has any questions which may be answered by telephone, she is invited to call the undersigned directly. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 4-5-07

By: _____

Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

3616197
040407
3616589
040407

INFORMATION DISCLOSURE STATEMENT

Applicant	:	Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 9 references to be considered by the Examiner. Also enclosed are 2 foreign patent references and/or non-patent literature as listed on the Information Disclosure Statement.

This Information Disclosure Statement is being filed after the mailing date of a final action or after the mailing date of a Notice of Allowance. This Statement is accompanied by the fee set forth in 37 C.F.R. § 1.17(p). The Commissioner is hereby authorized to charge any additional fees which may be required or to credit any overpayment to Account No. 11-1410.

CERTIFICATION UNDER 37 C.F.R. § 1.97(e)(2)

I hereby certify that no item of information contained in this Statement was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to my

knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than 3 months prior to the filing of this Information Disclosure Statement.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 4-5-07

By: _____

Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

3618335:lw
040507

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	Gross et al.
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	2005/0256846	11-2005	Zigmond et al.	
	2	6,085,193	07-2000	Malkin et al.	
	3	6,665,668	12-2003	Sugaya et al.	
	4	6,862,713	03-2005	Kraft et al.	
	5	6,615,237	09-2003	Kyne et al.	
	6	6,873,982	03-2005	Bates et al.	
	7	6,112,172	08-2000	True et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
	8	Computing Service, Email Addresses in Microsoft Outlook 98, December 05, 2000, Pages 1-3	
	9	http://www2.essex.ac.uk/cs/services/email/addressing2.html - searched on www.waybackmachine.com – Internet Archive Wayback Machine	

3618258:lw
040507

Examiner Signature	Date Considered

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Electronic Patent Application Fee Transmittal

Application Number:	10654588
Filing Date:	03-Sep-2003
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Filer:	Russell M. Jeide/Laurel Weiler
Attorney Docket Number:	X1.002A

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	1657860
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Heide Young
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	05-APR-2007
Filing Date:	03-SEP-2003
Time Stamp:	17:50:01
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$180
RAM confirmation Number	950
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)

1		AMENDMENT_X1-002A.pdf	269998	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Supplemental Response or Supplemental Amendment	1	1
	Applicant summary of interview with examiner	2	2
	Applicant Arguments/Remarks Made in an Amendment	3	6

Warnings:

Information:

2	Information Disclosure Statement (IDS) Filed	IDS2_X1-002A.pdf	115693	no	3

Warnings:

Information:

This is not an USPTO supplied IDS fillable form

3	NPL Documents	COMPUTINGSERVICE_X1-003A.pdf	240449	no	3

Warnings:

Information:

4	NPL Documents	WAYBACK_X1-003A.pdf	30485	no	1

Warnings:

Information:

5	Fee Worksheet (PTO-06)	fee-info.pdf	8164	no	2

Warnings:

Information:

Total Files Size (in bytes):	664789

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 05/03/2007
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	

NOTIFICATION DATE	DELIVERY MODE
05/03/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Interview Summary	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Usmaan Saeed (PTO)*.

(2) *Leslie Wong (PTO)*.

(3)*Russel M. Jeide, Reg # 54,198*.

(4)*Andrew Nagelstad*.

Date of Interview: *04 April 2007*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1 and 43*.

Identification of prior art discussed: *Kirsch, Spaey, and Thankachan*.

Agreement with respect to the claims f)☐ was reached. g)☐ was not reached. h)☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

MOHAMMAD ALI
PRIMARY EXAMINER

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required LW

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant's representative described the invention and discussed rejected claims and cited prior art. Applicant's representative argued that Kirsch and Spaey do not teach, "partial search string being entered into the same field" as recited in claim 1. In response examiner pointed out that the claim does not recite word partial and the combination of Kirsch and Spaey still teaches independent claim 1. Then applicant pointed out that the prior art of record does not teach the limitation of claim 43, which recites "displaying at least a portion of the first document while at least one of the first word and second word comprises more characters than the respective first string and second string." Applicants argument on claim 43 is persuasive, therefore the examiner will issue another action in an effort to address the discussed limitation. Mr. Nagelstad further stated that the invention is able to partially search the string to find matched string within the document. Also the user does not have to enter the search string in a particular order (i.e., Doe, John or John, Doe). All in all, the interview was productive in advancing the prosecution.

Please Direct All Correspondence to Customer Number **20995**

NOTICE OF APPEAL

FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision of the Examiner dated December 28, 2006 finally rejecting Claims 1-10, 24-31, and 38-44.

FEE CALCULATION				
FEE TYPE		**FEE CODE**	**CALCULATION**	**TOTAL**
Notice of Appeal	*41.20(b)(1)*	1401 ($500)		$500
1 Month Extension	*1.17(a)(1)*	1251 ($120)		$
2 Month Extension	*1.17(a)(2)*	1252 ($450)		$
3 Month Extension	*1.17(a)(3)*	1253 ($1,020)		$1,020
			TOTAL FEE DUE	$1,520

(X) An extension of time is hereby requested by payment of the appropriate fee indicated above.

(X) The amount of $1,520 will be paid via EFS Web.

Please Direct All Correspondence to Customer Number **20995**

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Dated: June 28, 2007

Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

3943534 / kmb
062807

Electronic Patent Application Fee Transmittal

Application Number:	10654588
Filing Date:	03-Sep-2003
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Filer:	Russell M. Jeide/Karen Byrd(RMJ)
Attorney Docket Number:	X1.002A

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	1401	1	500	500
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	1253	1	1020	1020
Miscellaneous:				
			Total in USD ($)	**1520**

Electronic Acknowledgement Receipt

EFS ID:	1923292
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	Methods and systems for search indexing
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Nicole Lauer
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	28-JUN-2007
Filing Date:	03-SEP-2003
Time Stamp:	19:59:11
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$1520
RAM confirmation Number	3263
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)

1	Notice of Appeal Filed	Notice_of_Appeal_X1-002A.pdf	47231	no	2
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8298	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	55529		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S16	61	(search$3) and (punctuation$1 with string$1) and (command$1 with string$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 09:26
S22	13	((search$3 near field$1) with strings) and (incremental$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/26 15:35
S100	7	(("20050256846") or ("6085193") or ("6665668") or ("6862713") or ("6615237") or ("6873982") or ("6112172")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/26 15:19
S101	17	(multiple with partial$2 with search$3 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/26 15:47
S102	54	((multiple$1 or pluralit$3) with partial$2 with search$3 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/27 11:28
S103	3	(search$3 near field$1) with (partial$2 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/26 16:03
S104	191	(search$3 near field$1) and (partial$2 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/26 16:10
S105	10	(search$3 near field$1) same (partial$2 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/26 16:04

EAST Search History

S106	3	(("5692173") or ("6421675") or ("6006225") or ("200310130993") or ("200310233419")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/26 16:05
S107	1	("5671426").PN.	USPAT; USOCR	OR	OFF	2007/06/27 11:28
S108	33	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 09:34
S109	3	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1) and (incremental$2 same search$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 09:56
S110	1193	(search$3 with field$1) and (string$1 and term$1 or phrase$1) and incremental$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 10:35
S111	128	(search$3 with field$1) and (string$1 and term$1 or phrase$1) and incremental$3 and (partial$3 with (term$1 or string$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 10:41
S112	17	(search$3 with field$1) and (string$1 and term$1 or phrase$1) and (incremental$3 with search$3) and (partial$3 with (term$1 or string$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 10:41
S113	191	(search$3 near field$1) and (partial$2 with (string$1 or term$1 or phrase$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 10:48
S114	36	(incremental$2 near search$3) and ((search$3 near string$1))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 10:48
S115	7169	((707/3) or (707/2) or (707/5) or (707/6)).CCLS.	USPAT; USOCR	OR	OFF	2007/06/28 11:28

S116	33	((search$3 near string$1) and (string$1 with document$1)) and (string$1 with punctuation$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 11:29
S117	7	S115 and S116	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/28 11:29

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"with" is a very common word and was not included in your search. [details]

Patents

Patents **1** - **10** on **incremental searching with partial search term**. (**0.01** seconds)

Real-time document collection **search** engine with phrase indexing
US Pat. 5920854 - Filed Aug 14, 1996 - Infoseek Corporation
The **incremental search** engine 44 may differ in regard to the preferred us of ...
though generally or **partial search** reports that are combined by a result ...

Real-time document collection **search** engine with phrase indexing
US Pat. 6070158 - Filed Nov 13, 1997 - Infoseek Corporation
The **incremental search** engine 44 may differ in 20 regard to the preferred us ...
46, 48 produce preliminary or **partial search** reports that are combined by a ...

Iterative technique for phrase query formation and an information retrieval system employing same
US Pat. 5278980 - Filed Aug 16, 1991 - Xerox Corporation
The "Step" box causes the **incremental** movement of the phrase selector 35 332 ...
Note that the interface reports the marginal frequency of the **search term**, ...

Method for organizing **incremental search** dictionary
US Pat. 5671426 - Filed Jun 22, 1993 - Kurzweil Applied Intelligence, Inc.
While ordering by if **incremental searching** is applied to such a file ... be needed
for each **partial** spelling sequence or prefix 40 implemented in the ...

Multimedia database for use over networks
US Pat. 5983218 - Filed Jun 30, 1997 - Xerox Corporation
For example, web **search** engines such as Lycos™ and Alta Vista™ currently create
... (A) The multimedia database model for Web sites proposes an **incremental** ...

Non-uniform cache apparatus, systems, and methods
US Pat. 6965969 - Filed Oct 8, 2004 - Board of Regents, The University of Texas Systems
While an **incremental search** policy can reduce the number of bank look-ups, ...
Implementing a **partial** tag comparison may operate to reduce both the number ...

Method and apparatus for controlling the cutting and placement of components on a moving substrate
US Pat. 5235515 - Filed Feb 7, 1992 - Kimberly-Clark Corporation
Although not neces- coder counts, representing the **partial** patch length, if •">•
this procedure is preferably repeated to **search** the any, ...

SYSTEM FOR NULLING ARRAY SENSITIVITY PATTERNS
US Pat. 3503069 - Filed Feb 27, 1968 - Bell Telephone Laboratories
Beam-former 22 produces 20 a derivative or "**incremental**" **search** beam in the ...
is an optimal **search** beam with any prescribed number of higher order **partial** ...

Apparatus and methods for optimally using available computer resources for task execution during ...
US Pat. 5784616 - Filed May 2, 1997 - Microsoft Corporation
I utilize the **term** 2. task instances exhibiting time-varying value "EVC flux"
... though a given strategy S used in conjunction with a given task **partial**, ...

Method and apparatus for controlling the cutting and placement of components on a moving ...
US Pat. 5286543 - Filed May 6, 1993 - Kimberly-Clark Corporation
The **search** routine then calculates the relative difference between; ... is employed to determine an amount of said **incremental** movement of web material. ...

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Patents

Patents **1** - **10** on **incremental searching**. (**0.15** seconds)

Voice recognition system
US Pat. 4829576 - Filed Oct 21, 1986 - Dragon Systems, Inc.
Then step 525 of **INCREMENTAL**-SEARCH-MATCH test if the last word of the ...
This is useful if a user is **searching** for a particular position in a large ...

Method for organizing **incremental** search dictionary
US Pat. 5671426 - Filed Jun 22, 1993 - Kurzweil Applied Intelligence, Inc.
While ordering by if **incremental searching** is applied to such a file located on frequency of use or likelihood of occurrence is preferred, it a hard disk, ...

Satellite seeking system for earth-station antennas for TVRO systems
US Pat. 4801940 - Filed Oct 30, 1985 - Capetronic (BSR) Ltd.
... in order to conveniently use it for further **searching**, as described below.
... At step 508 the elevation **incremental** operator AEL is incremented by one ...

Object relationship management system
US Pat. 5692184 - Filed May 9, 1995 - Intergraph Corporation
However, because a partial or **incremental** search has been performed, ... If the new mode defined for for **searching** is incompatible with previous modes. 6.7. ...

Object relationship management system
US Pat. 6052691 - Filed Sep 24, 1997 - Intergraph Corporation
However, because a partial or **incremental** search has been performed, ... If the new mode defined for **searching** is incompatible with previous modes. 6.7. ...

System and method for a communication system
US Pat. 5754306 - Filed Sep 5, 1995 - Hewlett-Packard Company
The **incremental** search continues as each other ICU components, to indicate passing of ... eg the purpose of **searching**, the address cards in the card stack. ...

Global **incremental** type search navigation directly from printable keyboard character input ...
US Pat. 6169984 - Filed Apr 1, 1998 - Microsoft Corporation
... And System For Combining Prefix and First Character **Searching** Of A List". ...
Searching Of alist" for details of an existing hybrid **incremental** type ...

Apparatus and method for compressing video information
US Pat. 6937659 - Filed Nov 13, 1998 - AC Capital Management, Inc.
If a better match is found, in comparison to that determined during **incremental searching** described above, the fractional mask is added to the motion vector ...

Intelligent agents for electronic commerce
US Pat. 6119101 - Filed Jan 17, 1997 - Personal Agents, Inc.
43 pending agents, to identify active decision agents that are **searching** for a ... 40 an **incremental** search engine for matching each new advertisement ...

Object relationship management system
US Pat. 6292804 - Filed Dec 13, 1999 - Intergraph Corporation
The solver should then ask for an **incremental** search of the graph that takes all the

... New mode for the **searching**. Could be changed from Return OK ...

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Google Patent Search

The "AND" operator is unnecessary -- we include all search terms by default. [details]

Patents

Patents **1 - 10** on **incremental searching and partial string**. (**0.26** seconds)

Dictionary **searching** system
US Pat. 5136289 - Filed Aug 6, 1991 - Fujitsu Limited
... K. **searching** system which is used for a universal coding A **partial string** (tok) which is described as a combina- such as an **incremental** parsing type ...

Method for organizing **incremental** search dictionary
US Pat. 5671426 - Filed Jun 22, 1993 - Kurzweil Applied Intelligence, Inc.
While ordering by if **incremental searching** is applied to such a file located on frequency ... The maximum number of words in a termi- **string** of characters, ...

Systems, methods and articles of manufacture for performing high resolution N-best **string** ...
US Pat. 5805772 - Filed Dec 30, 1994 - Lucent Technologies Inc.
The forward **partial** path map is traversed in the backward direction as a function of the allophonic specifications to generate the one or more **string** ...

CAD for hexagonal architecture
US Pat. 5822214 - Filed Aug 21, 1995 - LSI Logic Corporation
However, if the A schema is a set of genes that make up a **partial** solution. 60 individuals are chosen randomly there is no way to gain The simulated ...

Incremental ideographic character input method
US Pat. 5926566 - Filed Nov 15, 1996 - Synaptics, Inc.
The function of the **incremental** recognizer 18 is to take a list of strokes which form a **partial** or completed character and create a list of hypotheses of ...

Method and apparatus for detecting run length of two successive pixels and subjecting run length ...
US Pat. 5177622 - Filed Jul 27, 1990 - Fujitsu Limited
The buffer Q stores the character **string** to be coded using a 4-bit reference ... The obtained character **partial string** is designated by the 35 "starting ...

Dynamically variable machine readable binary code and method for reading and producing thereof
US Pat. 4939354 - Filed May 5, 1988 - Datacode International, Inc.
CPU 28 calculates the maximum number of character variations expected at each position of the input **string** and then determines the minimum number of visual ...

Architecture having diamond shaped or parallelogram shaped cells
US Pat. 5973376 - Filed Aug 21, 1995 - LSI Logic Corporation
A solution **string** made up of genes is called a chromosome. A schema is a set of genes that make up a **partial** solution. The simulated evolution or genetic ...

Transistors having dynamically adjustable characteristics
US Pat. 5811863 - Filed Aug 21, 1995 - LSI Logic Corporation
50 A solution **string** made up of genes is called a chromosome. A schema is a set of genes that make up a **partial** solution. The simulated evolution or genetic ...

Incremental ideographic character input method
US Pat. 6028959 - Filed Apr 6, 1999 - Synaptics, Inc.
The function of the **incremental** recognizer 18 is to take a list of strokes which form a **partial** or completed character and create a list of hypotheses of ...

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incremental searching SEARCH

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Feedback Report a problem Satisfaction survey

Terms used: **incremental searching** Found **52,588** of **204,472**

Sort results by: relevance

Display results: expanded form

Save results to a Binder

Search Tips

Open results in a new window

Try an Advanced Search

Try this search in The ACM Guide

Results 1 - 20 of 200 Result page: **1** 2 3 4 5 6 7 8 9 10 next

Best 200 shown Relevance scale

1 Weighted increment linear search for scatter tables

Fabrizio Luccio

December 1972 **Communications of the ACM**, Volume 15 Issue 12

Publisher: ACM Press

Full text available: pdf(216.90 KB) Additional Information: full citation, abstract, references, citings

A new linear search for hash tables whose increment step is a function of the key being addressed is presented. Comparisons with known methods are given, in terms of efficiency and computation complexity. In particular, the new method applies to tables of size n = 2r. It allows full table searching, and practically eliminates primary clustering at a very low cost.

Keywords: clustering, hash addresss, hash table, key, linear search, scatter storage, search length, weighted increment search

2 A search-based bump-and-refit approach to incremental routing for ECO applications in FPGAs

Shantanu Dutt, Vinay Verma, Hasan Arslan

October 2002 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, Volume 7 Issue 4

Publisher: ACM Press

Full text available: pdf(515.29 KB) Additional Information: full citation, abstract, references, citings, index terms

Incremental physical CAD is encountered frequently in the so-called engineering change order (ECO) process in which design changes are made typically late in the design process in order to correct logical and/or technological problems in the circuit. Incremental routing is a significant part of an incremental physical design methodology. Typically after an ECO process, a small portion of the circuit netlist is changed, and in order to capitalize on the enormous resources and time already ...

Keywords: Bump-and-refit (B&R) paradigm, ECO (engineering change order), bumping cost, detailed routing, dynamic programming, field programmable gate arrays, global routing, incremental routing, switchbox

3 Relevance feedback with a small number of relevance judgements: incremental relevance feedback vs. document clustering

Makoto Iwayama

July 2000 **Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval SIGIR '00**

Publisher: ACM Press

Full text available: pdf(644.90 KB) Additional Information: full citation, abstract, references, citings, index terms

The use of incremental relevance feedback and document clustering were investigated in an relevance feedback environment in which the number of relevance judgements was quite small. Through experiments on the TREC collection, the incremental relevance feedback approach was found not to improve the overall search effectiveness. The clustering approach was found to be promising, although it sometimes over-focuses on a particular topic in a query and ignores the others. To overcome this problem, ...

4 Solution of Integer Linear Programming Problems by Direct Search

Robert E. Echols, Leon Cooper

January 1968 **Journal of the ACM (JACM)**, Volume 15 Issue 1

Publisher: ACM Press

Full text available: pdf(672.04 KB) Additional Information: full citation, abstract, references, index terms

An approximate but fairly rapid method for solving integer linear programming problems is presented, which utilizes, in part, some of the philosophy of "direct search" methods. The method is divided into phases which can be applied in order and has the desirable characteristic that a best feasible solution is always available. Numerical results are presented for a number of test problems. Some possible extensions and improvements are also presented.

5 A Comparison of Fast Search Methods for Real-Time Situated Agents

Sven Koenig

July 2004 **Proceedings of the Third International Joint Conference on Autonomous Agents and Multiagent Systems - Volume 2 AAMAS '04**

Publisher: IEEE Computer Society

Full text available: pdf(233.74 KB) Additional Information: full citation, abstract, index terms

Real-time situated agents, including characters in real-time computer games, often do not know the terrain in advance but automatically observe it within a certain range around them. They have to interleave planning with movement to make planning tractable when moving autonomously to user-specified coordinates. Planning faces real-time requirements since it is important that the agents be responsive to the commands of the users and move smoothly. In this paper, we compare two fast search methods ...

6 Session 3C: Routing architecture and techniques for FPGAs: A search-based bump-and-refit approach to incremental routing for ECO applications in FPGAs

Vinay Verma, Shantanu Dutt

November 2001 **Proceedings of the 2001 IEEE/ACM international conference on Computer-aided design ICCAD '01**

Publisher: IEEE Press

Full text available: pdf(198.08 KB) Additional Information: full citation, abstract, references, index terms

Incremental physical CAD is encountered frequently in the so-called engineering change order (ECO) process in which design changes are made typically late in the design process in order to correct logical and/or technological problems in the circuit. As far as routing is concerned, in order to capitalize on the enormous resources and time already spent on routing the circuit, and to meet time-to-market requirements, it is desirable to re-route only the ECO-affected portion of the circuit, while ...

7 XFM: An incremental methodology for developing formal models

Syed M. Suhaib, Deepak A. Mathaikutty, Sandeep K. Shukla, David Berner

October 2005 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, Volume 10 Issue 4

Publisher: ACM Press

Full text available: pdf(318.09 KB) Additional Information: full citation, abstract, references, index terms

We present an agile formal methodology named eXtreme Formal Modeling (XFM), based

on Extreme Programming (XP) concepts to construct abstract models from natural language specifications of complex systems. In particular, we focus on Prescriptive Formal Models (PFMs) that capture the specification of the system under design in a mathematically precise manner. Such models can be used as golden reference models for formal verification, test generation, coverage monitor generation, etc. This methodol ...

Keywords: Extreme formal modeling, SMV, SPIN, extreme programming, formal specification, formal verification, prescriptive formal models, property ordering, property refactoring

8 Optimal multi-step k-nearest neighbor search

Thomas Seidl, Hans-Peter Kriegel

June 1998 **ACM SIGMOD Record , Proceedings of the 1998 ACM SIGMOD international conference on Management of data SIGMOD '98**, Volume 27 Issue 2

Publisher: ACM Press

Full text available: pdf(1.54 MB) Additional Information: full citation, abstract, references, citings, index terms

For an increasing number of modern database applications, efficient support of similarity search becomes an important task. Along with the complexity of the objects such as images, molecules and mechanical parts, also the complexity of the similarity models increases more and more. Whereas algorithms that are directly based on indexes work well for simple medium-dimensional similarity distance functions, they do not meet the efficiency requirements of complex high-dimensional and adaptable ...

9 A constraint-based architecture for local search

Laurent Michel, Pascal Van Hentenryck

November 2002 **ACM SIGPLAN Notices , Proceedings of the 17th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications OOPSLA '02**, Volume 37 Issue 11

Publisher: ACM Press

Full text available: pdf(198.00 KB) Additional Information: full citation, abstract, references, citings, index terms, review

Combinatorial optimization problems are ubiquitous in numerous practical applications. Yet most of them are challenging, both from computational complexity and programming standpoints. Local search is one of the main approaches to address these problems. However, it often requires sophisticated incremental algorithms and data structures, and considerable experimentation. This paper proposes a constraint-based, object-oriented, architecture to reduce the development time of local search algorithm ...

Keywords: constraint, incrementality, local search, optimization

10 Incremental clustering for dynamic information processing

Fazli Can

April 1993 **ACM Transactions on Information Systems (TOIS)**, Volume 11 Issue 2

Publisher: ACM Press

Full text available: pdf(1.49 MB) Additional Information: full citation, abstract, references, citings, index terms, review

Clustering of very large document databases is useful for both searching and browsing. The periodic updating of clusters is required due to the dynamic nature of databases. An algorithm for incremental clustering is introduced. The complexity and cost analysis of the algorithm together with an investigation of its expected behavior are presented. Through empirical testing it is shown that the algorithm achieves cost effectiveness and generates statistically valid clusters that are compatibl ...

Keywords: best-match cluster search, cluster validity, cover coefficient, dynamic information retrieval environment, information retrieval, information retrieval

effectiveness, information retrieval efficiency

11 Symbolic guided search for CTL model checking

Roderick Bloem, Kavita Ravi, Fabio Somenzi

June 2000 **Proceedings of the 37th conference on Design automation DAC '00**

Publisher: ACM Press

Full text available: pdf(110.11 KB) Additional Information: full citation, abstract, references, citings, index terms

CTL model checking of complex systems often suffers from the state-explosion problem. We propose using Symbolic Guided Search to avoid difficult-to-represent sections of the state space and prevent state explosion from occurring. Symbolic Guided Search applies hints to guide the exploration of the state space. In this way, the size of the BDDs involved in the computation is controlled, and the truth of a property may be decided before all states have been explored. In this work, ...

12 SATIRE: a new incremental satisfiability engine

Jesse Whittemore, Joonyoung Kim, Karem Sakallah

June 2001 **Proceedings of the 38th conference on Design automation DAC '01**

Publisher: ACM Press

Full text available: pdf(108.58 KB) Additional Information: full citation, abstract, references, citings, index terms

We introduce SATIRE, a new satisfiability solver that is particular-ly suited to verification and optimization problems in electronic de-sign automation. SATIRE builds on the most recent advances in satisfiability research, and includes two new features to achieve even higher performance: a facility for incrementally solving sets of related problems, and the ability to handle non-CNF constraints. We provide experimental evidence showing the effectiveness of these additions to classical sati ...

13 Incremental techniques for the identification of statically sensitizable critical paths

Yun-Cheng Ju, Resve A. Saleh

June 1991 **Proceedings of the 28th conference on ACM/IEEE design automation DAC '91**

Publisher: ACM Press

Full text available: pdf(683.79 KB) Additional Information: full citation, references, citings, index terms

14 Project notes and demos: An experiment on incremental analysis using robust parsing techniques

Kilian Foth, Wolfgang Menzel, Horia F. Pop, Ingo Schröder

July 2000 **Proceedings of the 18th conference on Computational linguistics - Volume 2**

Publisher: Association for Computational Linguistics

Full text available: pdf(467.28 KB) Additional Information: full citation, abstract, references

The results of an experiment are presented in which an approach for robust parsing has been applied incrementally. They confirm that due to the robust nature of the underlying technology an arbitrary prefix of a sentence can be analysed into an intermediate structural description which is able to direct the further analysis with a high degree of reliability. Most notably, this result can be achieved without adapting the grammar or the parsing algorithms to the case of incremental processing. The ...

15 Performance and cost tradeoffs in Web search

Nick Craswell, Francis Crimmins, David Hawking, Alistair Moffat

January 2004 **Proceedings of the 15th Australasian database conference - Volume 27 ADC '04**

Publisher: Australian Computer Society, Inc.

Full text available: pdf(153.92 KB) Additional Information: full citation, abstract, references, citings, index terms

Web search engines crawl the web to fetch the data that they index. In this paper we re-examine that need, and evaluate the network costs associated with data acquisition, and alternative ways in which a search service might be supported. As a concrete example, we make use of the Research Finder search service provided at http://rf.panopticsearch.com, and information derived from its crawl and query logs. Based upon an analysis of the Research Finder system we introduce a hybrid arrangement, in ...

Keywords: Web crawling, World-Wide Web, information retrieval, metasearch, search engine

16 Session 5A: embedded tutorial: Incremental CAD

Olivier Coudert, Jason Cong, Sharad Malik, Majid Sarrafzadeh

November 2000 **Proceedings of the 2000 IEEE/ACM international conference on Computer-aided design ICCAD '00**

Publisher: IEEE Press

Full text available: pdf(195.53 KB) Additional Information: full citation, abstract, references, citings

Comprehensive study of incremental algorithms and solutions in the context of CAD tool development is an open area of research with a great deal of potential. Incremental algorithms for synthesis and layout are needed when design undergoes local or incremental change. Often these local changes are made to react to local change in the design, correct local errors or to make local improvements in one or more of the design quality metrics. In this paper we outline fundamental problems in incrementa ...

17 Incremental execution of guarded theories

Giuseppe De Giacomo, Hector J. Levesque, Sebastian Sardiña

October 2001 **ACM Transactions on Computational Logic (TOCL)**, Volume 2 Issue 4

Publisher: ACM Press

Full text available: pdf(245.94 KB) Additional Information: full citation, abstract, references, index terms, review

When it comes to building controllers for robots or agents, high level programming languages like Golog and ConGolog offer a useful compromise between planning-based approaches and low-level robot programming. However, two serious problems typically emerge in practical implementations of these languages: how to evaluate test in a program efficiently enough in an open-world setting, and how to make appropiate nondeterministic choices while avoiding full look ...

Keywords: agent behavior, reasoning about actions, situation calculus

18 Incremental and interactive sequence mining

S. Parthasarathy, M. J. Zaki, M. Ogihara, S. Dwarkadas

November 1999 **Proceedings of the eighth international conference on Information and knowledge management CIKM '99**

Publisher: ACM Press

Full text available: pdf(1.78 MB) Additional Information: full citation, abstract, references, citings, index terms

The discovery of frequent sequences in temporal databases is an important data mining problem. Most current work assumes that the database is static, and a database update requires rediscovering all the patterns by scanning the entire old and new database. In this paper, we propose novel techniques for maintaining sequences in the presence of a) database updates, and b) user interaction (e.g. modifying mining parameters). This is a very challenging task, since such updates can invalidate ex ...

19 Incremental parsing with the perceptron algorithm

Michael Collins, Brian Roark
July 2004 **Proceedings of the 42nd Annual Meeting on Association for Computational Linguistics ACL '04**
Publisher: Association for Computational Linguistics
Full text available: pdf(141.53 KB) Additional Information: full citation, abstract, references

This paper describes an incremental parsing approach where parameters are estimated using a variant of the perceptron algorithm. A beam-search algorithm is used during both training and decoding phases of the method. The perceptron approach was implemented with the same feature set as that of an existing generative model (Roark, 2001a), and experimental results show that it gives competitive performance to the generative model on parsing the Penn treebank. We demonstrate that training a perceptr ...

20 Optimizing method search with lookup caches and incremental coloring

Pascal André, Jean-Claude Royer
October 1992 **ACM SIGPLAN Notices , conference proceedings on Object-oriented programming systems, languages, and applications OOPSLA '92**, Volume 27 Issue 10
Publisher: ACM Press
Full text available: pdf(1.70 MB) Additional Information: full citation, references, citings, index terms

Keywords: Smalltalk-80, coloring, efficiency, lookup caches, method search, object-oriented languages with classes, statistics

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1 Inverted files for text search engines
Justin Zobel, Alistair Moffat
July 2006 **ACM Computing Surveys (CSUR)**, Volume 38 Issue 2
Publisher: ACM Press
Full text available: pdf(944.29 KB) Additional Information: full citation, abstract, references, index terms

The technology underlying text search engines has advanced dramatically in the past decade. The development of a family of new index representations has led to a wide range of innovations in index storage, index construction, and query evaluation. While some of these developments have been consolidated in textbooks, many specific techniques are not widely known or the textbook descriptions are out of date. In this tutorial, we introduce the key techniques in the area, describing both a core impl ...

Keywords: Inverted file indexing, Web search engine, document database, information retrieval, text retrieval

2 A programming language
Kenneth E. Iverson
January 1962 Book
Publisher: John Wiley & Sons, Inc.
Full text available: pdf(40.45 MB) Additional Information: full citation, abstract, references, citings, index terms

From the Preface

Applied mathematics is largely concerned with the design and analysis of explicit procedures for calculating the exact or approximate values of various functions. Such explicit procedures are called algorithms or programs. Because an effective notation for the description of programs exhibits considerable syntactic structure, it is called a programming language.

Much of applied mathematics, particularly the more recent computer-related areas which ...

3 Fast detection of communication patterns in distributed executions
Thomas Kunz, Michiel F. H. Seuren
November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research CASCON '97**
Publisher: IBM Press

Full text available: pdf(4.21 MB) Additional Information: full citation, abstract, references, index terms

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

4 The FINITE STRING Newsletter: Abstracts of current literature
Computational Linguistics Staff
January 1987 **Computational Linguistics**, Volume 13 Issue 1-2
Publisher: MIT Press
Full text available: pdf(6.15 MB) Additional Information: full citation
Publisher Site

5 The theory of parsing, translation, and compiling
Alfred V. Aho, Jeffrey D. Ullman
January 1972 Book
Publisher: Prentice-Hall, Inc.
Full text available: pdf(98.28 MB) Additional Information: full citation, abstract, references, citings, index terms

From volume 1 Preface (See Front Matter for full Preface)

This book is intended for a one or two semester course in compiling theory at the senior or graduate level. It is a theoretically oriented treatment of a practical subject. Our motivation for making it so is threefold.

(1) In an area as rapidly changing as Computer Science, sound pedagogy demands that courses emphasize ideas, rather than implementation details. It is our hope that the algorithms and concepts presen ...

6 Compiler construction: an advanced course
F. L. Bauer, F. L. De Remer, M. Griffiths, U. Hill, J. J. Horning, C. H. A. Koster, W. M. McKeeman, P. C. Poole, W. M. Waite, G. Goos, J. Hartmanis
January 1974 Book
Publisher: Springer-Verlag New York, Inc.
Full text available: pdf(65.62 MB) Additional Information: full citation, abstract, references, cited by

The Advanced Course took place from March 4 to 15, 1974 and was organized by the Mathematical Institute of the Technical University of Munich and the Leibniz Computing Center of the Bavarian Academy of Sciences, in co-operation with the European Communities, sponsored by the Ministry for Research and Technology of the Federal Republic of Germany and by the European Research Office, London.

7 Anatomy of LISP
John Allen
January 1978 Book
Publisher: McGraw-Hill, Inc.
Additional Information: full citation, abstract, references, cited by, index terms

This text is nominally about LISP and data structures. However, in the process it covers much broader areas of computer science. The author has long felt that the beginning student of computer science has been getting' a distorted and disjointed picture of the field. In some ways this confusion is natural; the field has been growing at such a rapid

rate that few are prepared to be judged experts in all areas of the discipline. The current alternative seems to be to give a few introductory cou ...

8 The relational model for database management: version 2
E. F. Codd
January 1990 Book
Publisher: Addison-Wesley Longman Publishing Co., Inc.
Full text available: pdf(28.61 MB) Additional Information: full citation, abstract, references, citings, index terms, review

From the Preface (See Front Matter for full Preface)

An important adjunct to precision is a sound theoretical foundation. The relational model is solidly based on two parts of mathematics: firstorder predicate logic and the theory of relations. This book, however, does not dwell on the theoretical foundations, but rather on all the features of the relational model that I now perceive as important for database users, and therefore for DBMS vendors. My perceptions result from 20 y ...

9 Artificial intelligence
Elaine Rich
January 1983 Book
Publisher: McGraw-Hill, Inc.
Additional Information: full citation, abstract, references, cited by, review

The goal of this book is to provide programmers and computer scientists with a readable introduction to the problems and techniques of artificial intelligence (A.I.). The book can be used either as a text for a course on A.I. or as a self-study guide for computer professionals who want to learn what A.I. is all about.

The book was designed as the text for a one-semester, introductory graduate course in A.I. In such a course, it should be possible to cover all of the material in the boo ...

10 Classics in software engineering
January 1979 Divisible Book
Publisher: Yourdon Press
Full text available: pdf(22.45 MB) Additional Information: full citation, cited by, index terms

11 Special issue on knowledge representation
Ronald J. Brachman, Brian C. Smith
February 1980 **ACM SIGART Bulletin**, Issue 70
Publisher: ACM Press
Full text available: pdf(13.13 MB) Additional Information: full citation, abstract, citings

In the fall of 1978 we decided to produce a special issue of the SIGART Newsletter devoted to a survey of current knowledge representation research. We felt that there were twe useful functions such an issue could serve. First, we hoped to elicit a clear picture of how people working in this subdiscipline understand knowledge representation research, to illuminate the issues on which current research is focused, and to catalogue what approaches and techniques are currently being developed. Secon ...

12 Structured programming
January 1972 Divisible Book
Publisher: Academic Press Ltd.
Full text available: pdf(11.44 MB) Additional Information: full citation, abstract, cited by, index terms

In recent years there has been an increasing interest in the art of computer programming, the conceptual tools available for the design of programs, and the prevention of

programming oversights and error. The initial outstanding contribution to our understanding of this subject was made by E. W. Dijkstra, whose Notes on Structured Programming form the first and major section of this book. They clearly expound the reflections of a brilliant programmer on the methods which he has hitherto uncon ...

13 Spoken dialogue technology: enabling the conversational user interface

Michael F. McTear
March 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 1
Publisher: ACM Press

Full text available: pdf(987.69 KB) Additional Information: full citation, abstract, references, citings, index terms, review

Spoken dialogue systems allow users to interact with computer-based applications such as databases and expert systems by using natural spoken language. The origins of spoken dialogue systems can be traced back to Artificial Intelligence research in the 1950s concerned with developing conversational interfaces. However, it is only within the last decade or so, with major advances in speech technology, that large-scale working systems have been developed and, in some cases, introduced into commerc ...

Keywords: Dialogue management, human computer interaction, language generation, language understanding, speech recognition, speech synthesis

14 Computation: finite and infinite machines

Marvin L. Minsky
January 1967 Book
Publisher: Prentice-Hall, Inc.
Additional Information: full citation, abstract, references, cited by, index terms

From the Preface (See Front Matter for full Preface)

Man has within a single generation found himself sharing the world with a strange new species: the computers and computer-like machines. Neither history, nor philosophy, nor common sense will tell us how these machines will affect us, for they do not do "work" as did machines of the Industrial Revolution. Instead of dealing with materials or energy, we are told that they handle "control" and "information" and even "intellectua ...

15 Types and persistence in database programming languages

Malcolm P. Atkinson, O. Peter Buneman
June 1987 **ACM Computing Surveys (CSUR)**, Volume 19 Issue 2
Publisher: ACM Press

Full text available: pdf(7.91 MB) Additional Information: full citation, abstract, references, citings, index terms, review

Traditionally, the interface between a programming language and a database has either been through a set of relatively low-level subroutine calls, or it has required some form of embedding of one language in another. Recently, the necessity of integrating database and programming language techniques has received some long-overdue recognition. In response, a number of attempts have been made to construct programming languages with completely integrated database management systems. These lang ...

16 Technique for automatically correcting words in text

Karen Kukich
December 1992 **ACM Computing Surveys (CSUR)**, Volume 24 Issue 4
Publisher: ACM Press

Full text available: pdf(6.23 MB) Additional Information: full citation, abstract, references, citings, index terms, review

Research aimed at correcting words in text has focused on three progressively more difficult problems:(1) nonword error detection; (2) isolated-word error correction; and (3)

context-dependent work correction. In response to the first problem, efficient pattern-matching and n-gram analysis techniques have been developed for detecting strings that do not appear in a given word list. In response to the second problem, a variety of general and application-specific spelling cor ...

Keywords: n-gram analysis, Optical Character Recognition (OCR), context-dependent spelling correction, grammar checking, natural-language-processing models, neural net classifiers, spell checking, spelling error detection, spelling error patterns, statistical-language models, word recognition and correction

17 Essays in computing science
C. A. R. Hoare
January 1989 Book
Publisher: Prentice-Hall, Inc.
Full text available: pdf(20.91 MB) Additional Information: full citation, abstract, references, cited by, review

Charles Antony Richard Hoare is one of the most productive and prolific computer scientists. This volume contains a selection of his published papers. There is a need, as in a Shakespearian Chorus, to offer some apology for what the book manifestly fails to achieve. It is not a complete 'collected works'. Selection between papers of this quality is not easy and, given the book's already considerable size, some difficult decisions as to what to omit have had to be made. Pity the editor weighin ...

18 External memory algorithms and data structures: dealing with **massive data**
Jeffrey Scott Vitter
June 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 2
Publisher: ACM Press
Full text available: pdf(828.46 KB) Additional Information: full citation, abstract, references, citings, index terms

Data sets in large applications are often too massive to fit completely inside the computers internal memory. The resulting input/output communication (or I/O) between fast internal memory and slower external memory (such as disks) can be a major performance bottleneck. In this article we survey the state of the art in the design and analysis of external memory (or EM) algorithms and data structures, where the goal is to exploit locality in order to reduce the I/O costs. We consider a varie ...

Keywords: B-tree, I/O, batched, block, disk, dynamic, extendible hashing, external memory, hierarchical memory, multidimensional access methods, multilevel memory, online, out-of-core, secondary storage, sorting

19 Interactive Editing Systems: Part II
Norman Meyrowitz, Andries van Dam
September 1982 **ACM Computing Surveys (CSUR)**, Volume 14 Issue 3
Publisher: ACM Press
Full text available: pdf(9.17 MB) Additional Information: full citation, references, citings, index terms

20 Data clustering: a review
A. K. Jain, M. N. Murty, P. J. Flynn
September 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 3
Publisher: ACM Press
Full text available: pdf(636.24 KB) Additional Information: full citation, abstract, references, citings, index terms, review

Clustering is the unsupervised classification of patterns (observations, data items, or feature vectors) into groups (clusters). The clustering problem has been addressed in

many contexts and by researchers in many disciplines; this reflects its broad appeal and usefulness as one of the steps in exploratory data analysis. However, clustering is a difficult problem combinatorially, and differences in assumptions and contexts in different communities has made the transfer of useful generic co ...

Keywords: cluster analysis, clustering applications, exploratory data analysis, incremental clustering, similarity indices, unsupervised learning

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TITLE OF INVENTION: METHODS AND SYSTEMS FOR SEARCH INDEXING

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

TITLE OF INVENTION: METHODS AND SYSTEMS FOR SEARCH INDEXING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$0	$1700	10/09/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAEED, USMAAN	2166	707-003000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 07/09/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 07/09/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 579 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 579 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment dated 04/05/2007*.

2. ☒ The allowed claim(s) is/are *44-53 (renumbered as 1-10)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 2/07 and 4/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *June 27, 2007* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other *See Continuation Sheet*.

Continuation of Attachment(s) 9. Other: Copy of Applicant's email for Examiners proposed amendment..

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

1. This communication is in response to the amendment filed on 04/05/2007.

After thorough search and examination of the present application and in light of the prior art made of record, claims 44-53 (renumbered as 1-10) are allowed. Claims 1-43 have been cancelled.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview/email with Attorney, Russell M. Jeide, Registration No. 54,198 on June 27, 2007.

A copy of the attorneys email regarding the proposed examiner's amendment is also attached.

Please amend the claims, which were filed on 10/13/2006 with the new version as follows:

1 - 43. Canceled

44. (Currently Amended) A method of performing a search comprising:

receiving a first string in a first search field;

in response to receiving the first string, incrementally locating a first group of documents that has at least a first word that begins with the first string;

receiving a second string in the first search field, wherein the first and second strings are separated by a string separator character in the first search field;

in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second groups of documents; and

displaying an indication of ~~corresponding to~~ one or more of the ~~located~~ identified one or more documents that are included in each of the first and second groups of documents.

45. (New) The method of Claim 44, further comprising displaying a portion of a selected document of the documents that are included in each of the first and second groups of documents.

46. (New) The method of Claim 45, further comprising automatically highlighting a first occurrence of the first word in the selected document.

47. (New) The method of Claim 45, further comprising highlighting at the same time a plurality of occurrences of the first word in the selected document while not highlighting portions of text between occurrences of the first word.

48. (New) The method of Claim 44, wherein the documents comprise one or more of emails, text documents, contact information, appointment information, task information, music files, system files, photographs, and images.

49. (New) The method of Claim 44, wherein the documents comprise emails and the method further comprises automatically displaying in a user interface a first occurrence of the first word in a first of the identified one or more emails.

50. (New) The method of Claim 44, wherein at least some of the documents comprise at least the following email fields in which one or more of the first and second strings may be located: to, from, cc, bcc, subject, body.

51. (New) The method of Claim 44, wherein the single search field corresponds with a single field of the documents and the incrementally locating steps are performed only on content of the single field of the documents.

52. (New) The method of Claim 51, wherein the single field of the documents comprises one of: to, from, cc, bcc, subject, and body fields of email documents.

53. (New) A search apparatus stored on a computer readable medium, the search apparatus comprising instructions configured to be executed by a computing device in order to perform the method of:

receiving a first string in a first search field;

in response to receiving the first string, incrementally locating a first group of documents that has at least a first word that begins with the first string;

receiving a second string in the first search field, wherein the first and second strings are separated by a string separator character in the first search field;

in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second groups of documents; and

displaying an indication of one or more of the identified one or more documents that are included in each of the first and second groups of documents.

Reason for Allowance

3. The prior art made of record does not teach or fairly suggest the combination of elements, as recited in independent claims 44, and 53.

Prior art of record teaches incremental searching by entering a search parameter in a field and further entering different search parameter in different fields to narrow the

results and only one partial string is being enter into the a single field at a time (Spaey et al U.S. 2002/0055981). The prior art of record does not teach entering two partial search strings ("first and second word that beings with first and second string" as recited in claim) in the same field and using these partial strings to incrementally located documents as argued by the applicant in the response filed on 04/05/2007.

More specifically, the prior art of records does not specifically suggest "incrementally locating a first group of documents that has at least *a first word that begins with the first string*; receiving a second string in the first search field, *wherein the first and second strings are separated by a string separator character in the first search field*; in response to receiving the second string, incrementally locating a second group of documents that has at least *a second word that begins with the second string* and identifying one or more documents that are included in each of the first and second groups of documents; and" in combination with all the other limitations in the independent claims 44 and 53.

These features together with other limitations of the independent claims are novel and non-obvious over the prior art of record. The dependent claims 45-52 being definite, enabled by the specification, and further limiting to the independent claims, are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Usmaan Saeed
Patent Examiner
Art Unit: 2166

Leslie Wong
Primary Examiner

US
June 28, 2007

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

All Participants:

(1) *Usmaan Saeed (PTO)*.

(2) *Leslie Wong (PTO)*.

Status of Application: _____

(3) *Russel M. Jeide, Reg # 54,198*.

(4) _____.

Date of Interview: *27 June 2007*

Time: *2:00*

Type of Interview:
☒ Telephonic
☐ Video Conference
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☒ No
If Yes, provide a brief description:

Part I.

Rejection(s) discussed:
None

Claims discussed:
1-44

Prior art documents discussed:
None

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:
See Continuation Sheet

Part III.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.
☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

(Examiner/SPE Signature)

(Applicant/Applicant's Representative Signature – if appropriate)

Continuation of Substance of Interview including description of the general nature of what was discussed: A telephone call was made to applicant's representative about the potential amendment in order to allow the case. The representative agreed with the examiner's proposal and gave authorization for examiner's amendment via email containing examiner's proposed amendment which canceled claims 1-43, amended claim 44 and added 45-53 new claims. A copy of the amended claims is attached.

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	Gross et al.
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
/US/	1	2005/0256846	11-2005	Zigmond et al.	
	2	6,085,193	07-2000	Malkin et al.	
	3	6,665,668	12-2003	Sugaya et al.	
	4	6,862,713	03-2005	Kraft et al.	
	5	6,615,237	09-2003	Kyne et al.	
	6	6,873,982	03-2005	Bates et al.	
	7	6,112,172	08-2000	True et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
/US/	8	Computing Service, Email Addresses in Microsoft Outlook 98, December 05, 2000, Pages 1-3	
/US/	9	http://www2.essex.ac.uk/cs/services/email/addressing2.html - searched on www.waybackmachine.com – Internet Archive Wayback Machine	

3618258:lw
040507

Examiner Signature	/Usmaan Saeed/	Date Considered	06/28/2007

***Examiner**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	Gross et al.
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
/US/	1	5,692,173	11/1997	Chew, Chee Heng	
	2	6,421,675	07/2002	Ryan et al.	
	3	6,006,225	12/1999	Bowman et al.	
	4	US-2003/0130993	07/2003	Mendelevitch et al.	
	5	US-2003/0233419	12/2003	Beringer, Joerg	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
/US/	6	Stop words, Wikipedia, http://en.wikipedia.org/wiki/Stop_words; December 12, 2006	
	7	Inverted index, Wikipedia, http://en.wikipedia.org/wiki/Inverted_index; December 12, 2006	
	8	Proximity search (text), Wikipedia, http://en.wikipedia.org/wiki/Proximity_search_%28text%29; December 12, 2006	

3252339:lw
122806

Examiner Signature	/Usmaan Saeed/	Date Considered	06/28/2007

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Notice of References Cited	Application/Control No. 10/654,588	Applicant(s)/Patent Under Reexamination GROSS ET AL.	
	Examiner Usmaan Saeed	Art Unit 2166	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,671,426	09-1997	Armstrong, III, John	704/10
	B	US-2002/0169763	11-2002	Tada et al.	707/3
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Issue Classification	Application/Control No. 10/654,588	Applicant(s)/Patent under Reexamination GROSS ET AL.
	Examiner Usmaan Saeed	Art Unit 2166

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION											
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED						
707	3	G	06	F	7	/00					/		
CROSS REFERENCES		G	06	F	17	/30					/		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
707	5 6					/					/		
						/					/		
						/					/		
						/					/		
						/					/		

Usmaan Saeed, 06/28/2007 (Assistant Examiner) (Date)	HOSAIN ALAM SUPERVISORY PATENT EXAMINER (Primary Examiner) (Date) 06/28/07	Total Claims Allowed: 10
G. White 7/3/07 (Legal Instruments Examiner) (Date)		O.G. Print Claim(s): 44 / O.G. Print Fig.: 1

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181
	2		32		62		92		122		152		182
	3		33		63		93		123		153		183
	4		34		64		94		124		154		184
	5		35		65		95		125		155		185
	6		36		66		96		126		156		186
	7		37		67		97		127		157		187
	8		38		68		98		128		158		188
	9		39		69		99		129		159		189
	10		40		70		100		130		160		190
	11		41		71		101		131		161		191
	12		42		72		102		132		162		192
	13		43		73		103		133		163		193
	14	1	44		74		104		134		164		194
	15	2	45		75		105		135		165		195
	16	3	46		76		106		136		166		196
	17	4	47		77		107		137		167		197
	18	5	48		78		108		138		168		198
	19	6	49		79		109		139		169		199
	20	7	50		80		110		140		170		200
	21	8	51		81		111		141		171		201
	22	9	52		82		112		142		172		202
	23	10	53		83		113		143		173		203
	24		54		84		114		144		174		204
	25		55		85		115		145		175		205
	26		56		86		116		146		176		206
	27		57		87		117		147		177		207
	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/654,588	GROSS ET AL.	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

SEARCHED			
Class	Subclass	Date	Examiner
707	2-3 and 5-6	6/28/2007	US

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
707	US 3, 2, 5-6	6/28/2007	US

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Updated (East)	6/26/2008	US
Consulted Primary Examiner (Leslie Wong)	6/27/2007	US
NPL (Google Patents)	6/28/2007	US
NPL (ACM)	6/28/2007	US

Saeed, Usmaan

From: Russell.Jeide [rjeide@kmob.com]
Sent: Wednesday, June 27, 2007 2:44 PM
To: Saeed, Usmaan
Cc: X1.002A.KMOB@IWCS.KMOB.COM
Subject: RE: Application No. 10/654,588 (Our Reference: X1.002A)
Importance: High

Examiner Saeed,

Thank you for your phone call earlier today.

I am attaching a revised claim set that is believed to put all claims in condition for allowance. If all claims in the attached claim set are allowable, you are authorized to enter the indicated claim amendments into the file via an Examiner's Amendment.

Please contact me with any questions regarding this matter.

Best regards,
Russell
(951)779-2015

CLAIMS

1-43. Canceled

44. (Presently Amended) A method of performing a search comprising:

receiving a first string in a first search field;

in response to receiving the first string, incrementally locating a first group of documents that has at least a first word that begins with the first string;

receiving a second string in the first search field, wherein the first and second strings are separated by a string separator character in the first search field;

in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second groups of documents; and

displaying an indication of ~~corresponding to~~ one or more of the ~~located~~ identified one or more documents that are included in each of the first and second groups of documents.

45. (New) The method of Claim 44, further comprising displaying a portion of a selected document of the documents that are included in each of the first and second groups of documents.

46. (New) The method of Claim 45, further comprising automatically highlighting a first occurrence of the first word in the selected document.

47. (New) The method of Claim 45, further comprising highlighting at the same time a plurality of occurrences of the first word in the selected document while not highlighting portions of text between occurrences of the first word.

48. (New) The method of Claim 44, wherein the documents comprise one or more of emails, text documents, contact information, appointment information, task information, music files, system files, photographs, and images.

49. (New) The method of Claim 44, wherein the documents comprise emails and the method further comprises automatically displaying in a user interface a first occurrence of the first word in a first of the identified one or more emails.

50. (New) The method of Claim 44, wherein at least some of the documents comprise at least the following email fields in which one or more of the first and second strings may be located: to, from, cc, bcc, subject, body.

51. (New) The method of Claim 44, wherein the single search field corresponds with a single field of the documents and the incrementally locating steps are performed only on content of the single field of the documents.

52. (New) The method of Claim 51, wherein the single field of the documents comprises one of: to, from, cc, bcc, subject, and body fields of email documents.

53. (New) A search apparatus stored on a computer readable medium, the search apparatus comprising instructions configured to be executed by a computing device in order to perform the method of:

receiving a first string in a first search field;

in response to receiving the first string, incrementally locating a first group of documents that has at least a first word that begins with the first string;

receiving a second string in the first search field, wherein the first and second strings are separated by a string separator character in the first search field;

in response to receiving the second string, incrementally locating a second group of documents that has at least a second word that begins with the second string and identifying one or more documents that are included in each of the first and second groups of documents; and

displaying an indication of one or more of the identified one or more documents that are included in each of the first and second groups of documents.

Please Direct All Correspondence to Customer Number **20995**

ISSUE FEE TRANSMITTAL LETTER

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Art Unit		2166
Class/Sub-Class	:	707-003000
Examiner	:	Usmaan Saeed

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing is the Issue Fee for the above-identified application:

(X) Form PTOL-85.

(X) An Information Disclosure Statement and PTO/SB/08 equivalent listing references for consideration:

(X) Listing 1 reference.

(X) The amount of **$1,889** will be paid via EFS Web.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.

Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995

4232080 / kmb
090607

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20995 7590 07/09/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

TITLE OF INVENTION: METHODS AND SYSTEMS FOR SEARCH INDEXING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$0	$1700	10/09/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAEED, USMAAN	2166	707-003000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Andrew Naglestad, Esq.
2 of Idealab and
3 Knobbe Martens Olson & Bear LLP

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Idealab

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Pasadena, CA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☒ Advance Order - # of Copies 3

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 11-1410 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Russell M. Jeide/ Date September 6, 2007

Typed or printed name Russell M. Jeide Registration No. 54,198

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 1 reference to be considered by the Examiner.

This Information Disclosure Statement is being filed after the mailing date of a final action or after the mailing date of a Notice of Allowance. This Statement is accompanied by the fee set forth in 37 C.F.R. § 1.17(p). The Commissioner is hereby authorized to charge any additional fees which may be required or to credit any overpayment to Account No. 11-1410.

CERTIFICATION UNDER 37 C.F.R. § 1.97(e)(2)

I hereby certify that no item of information contained in this Statement was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, was known to any individual

designated in 37 C.F.R. § 1.56(c) more than 3 months prior to the filing of this Information Disclosure Statement.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9/6/2007

By: _____

Russell M. Jeide
Registration No. 54, 198
Attorney of Record
Customer No. 20,995
(951) 781-9231

4232968 / kmb
090607

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1.	6,961,731 B2	11-01-2005	David M. Holbrook	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

4232981 / kmb
090607

Examiner Signature	Date Considered
***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T[1] - Place a check mark in this area when an English language Translation is attached.

Electronic Patent Application Fee Transmittal

Application Number:	10654588
Filing Date:	03-Sep-2003
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Filer:	Russell M. Jeide/Karen Byrd(RMJ)
Attorney Docket Number:	X1.002A

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1400	1400
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Printed copy of patent - no color	8001	3	3	9
		Total in USD ($)		**1889**

Electronic Acknowledgement Receipt

EFS ID:	2167431
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Nicole Lauer
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	06-SEP-2007
Filing Date:	03-SEP-2003
Time Stamp:	20:06:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$1889
RAM confirmation Number	3462
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	Issue_Fee_Payment_Recorded_X1-002A.pdf	129504 674cb7606da4bdff1ff8967ed7f7e66ff6b27dbc	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Filed	PTOSB08_X1-002A.pdf	98390 a5552a45e1d28147045e63f8c7f1e31a743c6bb6	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8576 13160d48a651ef9d511f3e9f3ff830664ad254e0	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	236470		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	03-Sep-2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 1 reference to be considered by the Examiner.

Please place this reference in the file of the above-identified patent application in accordance with 37 C.F.R. § 1.97(i).

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 11/26/07

By: _____

Russell M. Jerde
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

4570771 / kmb
112607

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	03-Sep-2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1.	6,847,959 B1	01-25-2005	Arrouye et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T^1

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^1

4570734 / kmb
112607

Examiner Signature	Date Considered
***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T^1 - Place a check mark in this area when an English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	2509450
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Segovia Phan
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	26-NOV-2007
Filing Date:	03-SEP-2003
Time Stamp:	19:01:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement Letter	PTOSB08_X1-002A.pdf	77162 67f523efb4393a8c294e406b0415c4fad0c2f7ae	no	2

Warnings:	
Information:	

Total Files Size (in bytes):	77162

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

7590 12/11/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	
NOTIFICATION DATE	**DELIVERY MODE**
12/11/2007	ELECTRONIC

NOTICE OF NON-COMPLIANT INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement (IDS) filed 11/26/07 in the above-identified application fails to meet the requirements of 37 CFR 1.97(d) for the reason(s) specified below. Accordingly, the IDS will be placed in the file, but the information referred to therein has not been considered.

The IDS is not compliant with 37 CFR 1.97(d) because:

☑ The IDS lacks a statement as specified in 37 CFR 1.97(e).

☐ The IDS lacks the fee set forth in 37 CFR 1.17(p).

☐ The IDS was field after the issue fee was paid. Applicant may wish to consider filing a petition to withdraw the application from issue under 37 CFR 1.313(c) to have the IDS considered. See MPEP 1308.

INFORMATION DISCLOSURE STATEMENT

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	03-Sep-2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 1 reference to be considered by the Examiner.

Please place this reference in the file of the above-identified patent application in accordance with 37 C.F.R. § 1.97(i).

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 12/11/07

By: _____

Russell M. Jeide
Registration No. 54,198
Attorney of Record
Customer No. 20,995
(951) 781-9231

4641575 / kmb
121107

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application No.	10/654,588
	Filing Date	03-Sep-2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1.	US-2003/0014415	01-16-2003	Weiss et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

4641589 / kmb
121107

Examiner Signature	Date Considered

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	2578695
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Kehinde Jegede
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	12-DEC-2007
Filing Date:	03-SEP-2003
Time Stamp:	15:46:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement Letter	PTOSB08_X1-002A.pdf	80687 3c0fb60277370e424d3c758e8511b9ff58b3e236	no	2

Warnings:	
Information:	

Total Files Size (in bytes):	80687

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

7590 12/18/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	PAPER NUMBER
2166	
NOTIFICATION DATE	DELIVERY MODE
12/18/2007	ELECTRONIC

NOTICE OF NON-COMPLIANT INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement (IDS) filed 12-12-07 in the above-identified application fails to meet the requirements of 37 CFR 1.97(d) for the reason(s) specified below. Accordingly, the IDS will be placed in the file, but the information referred to therein has not been considered.

The IDS is not compliant with 37 CFR 1.97(d) because:

☐ The IDS lacks a statement as specified in 37 CFR 1.97(e).

☐ The IDS lacks the fee set forth in 37 CFR 1.17(p).

☒ The IDS was field after the issue fee was paid. Applicant may wish to consider filing a petition to withdraw the application from issue under 37 CFR 1.313(c) to have the IDS considered. See MPEP 1308.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	09/03/2003	William Gross	X1.002A	4164

20995 7590 04/08/2008

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
SAEED, USMAAN	
ART UNIT	**PAPER NUMBER**
2166	

NOTIFICATION DATE	DELIVERY MODE
04/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10654588	9/3/2003	GROSS ET AL.	X1.002A

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER
USMAAN SAEED

ART UNIT	PAPER
2166	20080326

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Information Disclosure Statement (Form PTO-1449) filed 09/06/2007 has been considered and initialed by the examiner.

The Information Disclosure Statements filed on 11/26/2007 and 12/12/2007 have not been considered because they were filed after the payment of issue fee.

/Hosain T Alam/
Supervisory Patent Examiner, Art Unit 2166

PTO-90C (Rev.04-03)

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application No.	10/654,588
	Filing Date	03-Sep-2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1.	US-2003/0014415	01-16-2003	Weiss et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

4641589 / kmb
121107

Examiner Signature	Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	03-Sep-2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1.	6,847,959 B1	01-25-2005	Arrouye et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

4570734 / kmb
112607

Examiner Signature	Date Considered

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] - Place a check mark in this area when an English language Translation is attached.

INFORMATION DISCLOSURE STATEMENT

Applicant	:	William Gross et al.
App. No	:	10/654,588
Filed	:	September 3, 2003
For	:	METHODS AND SYSTEMS FOR SEARCH INDEXING
Examiner	:	Usmaan Saeed
Art Unit	:	2166

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application is a PTO/SB/08 Equivalent listing 1 reference to be considered by the Examiner.

This Information Disclosure Statement is being filed after the mailing date of a final action or after the mailing date of a Notice of Allowance. This Statement is accompanied by the fee set forth in 37 C.F.R. § 1.17(p). The Commissioner is hereby authorized to charge any additional fees which may be required or to credit any overpayment to Account No. 11-1410.

CERTIFICATION UNDER 37 C.F.R. § 1.97(e)(2)

I hereby certify that no item of information contained in this Statement was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, was known to any individual

designated in 37 C.F.R. § 1.56(c) more than 3 months prior to the filing of this Information Disclosure Statement.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9/6/2007

By: _____

Russell M. Jeide
Registration No. 54, 198
Attorney of Record
Customer No. 20,995
(951) 781-9231

4232968 / kmb
090607

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	10/654,588
	Filing Date	September 3, 2003
	First Named Inventor	William Gross
	Art Unit	2166
(Multiple sheets used when necessary)	Examiner	Usmaan Saeed
SHEET 1 OF 1	Attorney Docket No.	X1.002A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
/US/	1.	6,961,731 B2	11-01-2005	David M. Holbrook	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

4232981 / kmb
090607

Examiner Signature /Usmaan Saeed/	Date Considered 03/26/2008

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,588	05/06/2008	7370035	X1.002A	4164

20995 7590 04/16/2008

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 580 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

William Gross, Pasadena, CA;
Steven Lee Colwell, Santa Barbara, CA;

IR103 (Rev. 11/05)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,370,035
APPLICATION NO. : 10/654,588
ISSUE DATE : May 6, 2008
INVENTOR(S) : William Gross et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title page, Column 1, at Item (73) Assignee:, please delete "Idealab, Pasadena, CA (US)" and insert therefore, -- X1 Technologies, Inc., Pasadena, CA (US) -- .

On the Title page, Column 2, Line 6, under Abstract, please delete "a least" and insert therefore, -- at least --.

On page two, Column 2, Line 15, under Other Publications, please delete "words:" and insert therefore, -- words; --.

At Column 4, Line 52, please delete "may" and insert therefore, -- many --.

At Column 13, Line 39, please delete "store id" and insert therefore, -- storeid --.

At Column 15, Line 55, please delete "enter"2003-04"", and insert therefore, -- enter "2003-04"--.

At Column 20, Line 48, after "can" please add -- be --.

5651156 / kmb
071508
MAILING ADDRESS OF SENDER:

Russell M. Jeide
KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 Main Street, 14th Floor
Irvine, California 92614

DOCKET NO. X1.002A

PTO/SB/44 Equivalent

Electronic Patent Application Fee Transmittal

Application Number:	10654588
Filing Date:	03-Sep-2003
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Filer:	Russell M. Jeide/Karen Byrd
Attorney Docket Number:	X1.002A

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of correction	1811	1	100	100
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**100**

Electronic Acknowledgement Receipt

EFS ID:	3701311
Application Number:	10654588
International Application Number:	
Confirmation Number:	4164
Title of Invention:	METHODS AND SYSTEMS FOR SEARCH INDEXING
First Named Inventor/Applicant Name:	William Gross
Customer Number:	20995
Filer:	Russell M. Jeide/Chelsea Pearsall
Filer Authorized By:	Russell M. Jeide
Attorney Docket Number:	X1.002A
Receipt Date:	30-JUL-2008
Filing Date:	03-SEP-2003
Time Stamp:	16:12:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$100
RAM confirmation Number	1550
Deposit Account	111410
Authorized User	KNOBBE MARTENS OLSON AND BEAR

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	Transmittal_X1-002Apdf.pdf	30821 03a2999f022a79856995e8e80a89be83c5b9df3f	no	1
Warnings:					
Information:					
2	Request for Certificate of Correction	Request_for_Certificate_of_Correction_X1-002A.pdf	36489 44889d15fc6e111c0727d0d6c633037a2fd7e68d	no	1
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8143 151dfa5455144469773d43007fc77cd652ed9b81	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	75453		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Knobbe Martens Olson & Bear LLP
Intellectual Property Law

3403 Tenth Street
Suite 700
Riverside CA 92501
Tel 951-781-9231
Fax 951-781-4507
www.kmob.com

Russell M. Jeide
rjeide@kmob.com

July 15, 2008

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: Title: METHODS AND SYSTEMS FOR SEARCH INDEXING
Letters Patent No. 7,370,035
Issued: May 6, 2008
Our Reference: X1.002A

Dear Sir:

Enclosed for filing is a Certificate of Correction in connection with the above-identified patent.

As the errors cited in the Certificate of Correction were incurred through the fault of the Patent Office and the Applicant, the fee of $100 will be paid via EFS Web. Please charge any additional fees to our Deposit Account No. 11-1410.

Respectfully submitted,

Knobbe, Martens, Olson & Bear, LLP

Russell M. Jeide
Registration No. 54,198
Customer No. 20,995

Enclosures

5651579 / kmb
071508

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,370,035 B2
APPLICATION NO. : 10/654588
DATED : May 6, 2008
INVENTOR(S) : William Gross et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title page, at Item (73) Assignee:, please delete "Idealab, Pasadena, CA (US)" and insert therefore, -- X1 Technologies, Inc., Pasadena, CA (US) --.

On the Title page, Line 6 Item (57), under Abstract, please delete "a least" and insert therefore, -- at least --.

On the Title page, on page two Item (56), Line 15, under Other Publications, please delete "words:" and insert therefore, -- words; --.

At Column 4, Line 52, please delete "may" and insert therefore, -- many --.

At Column 13, Line 39, please delete "store id" and insert therefore, -- storied --.

At Column 15, Line 55, please delete "enter"2003-04"", and insert therefore, -- enter "2003-04" --.

At Column 20, Line 48, after "can" please add -- be --.

Signed and Sealed this

Ninth Day of September, 2008

JON W. DUDAS
Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
10/654,588	09/03/2003	William Gross	X1.002A	58781

Acknowledgement of Change to Small Entity Status

The entity status change request below filed through Private PAIR on 03/02/2018 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant asserting small entity status. See 37 CFR 1.27.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Russell M. Jeide/
Name:	Russell M. Jeide
Registration Number:	54198

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
10/654,588	**09/29/2023 06:38:06 PM ET**	**X1.002A**

Title of Invention

METHODS AND SYSTEMS FOR SEARCH INDEXING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	7370035
CONFIRMATION #	4164	FILED BY	Caroline Bialeck
PATENT CENTER #	62903737	FILING DATE	09/03/2003
CUSTOMER #	20995	FIRST NAMED INVENTOR	William Gross
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Russell Jeide

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
POA_X1002A.pdf	2	Power of Attorney	482 KB
373_Statement_ X1002A.pdf	3	Assignee showing of ownership per 37 CFR 3.73	114 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
POA_X1002A.pdf	24F794339BD012AE38822CBCE874439EE877D093508F4E82F0 477AC81705B638D896B49368AA619A13FC5BC40EF8368837D6 13F026CF0EEAAA961DC2D11236E0

373_Statement_ X1002A.pdf 07662143EEEA8DDCEE7C13B922C95FA4DFEF594E3FFA3855
8E04E1D3707707641CFFCBB9B57C7C5B929D51A8055DBE876
EDE8E59AA56DCCA6AC6944D6E90809A

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/82A (07-13)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	10/654588
Filing Date	09/03/2003
First Named Inventor	William Gross
Title	METHODS AND SYSTEMS FOR SEARCH INDEXING
Art Unit	2166
Examiner Name	Saeed Usmaan
Attorney Docket Number	X1.002A

SIGNATURE of Applicant or Patent Practitioner

Signature	/Russell M. Jeide/	Date (Optional)	
Name	Russell Jeide	Registration Number	54,198
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/80 (07-17)
Approved for use through 09/30/2025. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

[X] Practitioners associated with Customer Number: 20995

OR

[ ] Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

[ ] The address associated with Customer Number:

OR

[ ]

Firm or individual name		
Address		
City	State	Zip
Country		
Telephone	Email	

Assignee name and address: X1 Discovery, Inc.

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature [signature]	Date September 29, 2023
Name John Patzakis	Telephone 626 319-2333
Title Chief Legal Officer	

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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: X1 Discovery, Inc.

Application No./Patent No.: 7370035 Filed/Issue Date: 2008-05-06

Titled: METHODS AND SYSTEMS FOR SEARCH INDEXING

X1 Discovery, Inc., a California

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: GROSS, WILLIAM To: IDEALAB

   The document was recorded in the United States Patent and Trademark Office at Reel 016083, Frame 0831, or for which a copy thereof is attached.

2. From: IDEALAB To: X1 TECHNOLOGIES, INC.

   The document was recorded in the United States Patent and Trademark Office at Reel 015504, Frame 0975, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

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STATEMENT UNDER 37 CFR 3.73(c)

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The document was recorded in the United States Patent and Trademark Office at
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4. From: COLWELL, STEVE To: X1 TECHNOLOGIES, INC. (FORMERLY X1 TECHNOLOGIES, LLC)

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Reel 016201, Frame 0361, or for which a copy thereof is attached.

5. From: X1 TECHNOLOGIES, INC. To: FUTURE SEARCH HOLDINGS, INC.

The document was recorded in the United States Patent and Trademark Office at
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6. From: FUTURE SEARCH HOLDINGS, INC. To: X1 DISCOVERY, INC.

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Reel 063435, Frame 0126, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Russell M. Jeide/	September 29, 2023
Signature	Date
Russell M. Jeide	54,198
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
10/654,588	**09/29/2023 08:02:39 PM ET**	**X1.002A**

Title of Invention

METHODS AND SYSTEMS FOR SEARCH INDEXING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	7370035
CONFIRMATION #	4164	FILED BY	Caroline Bialeck
PATENT CENTER #	62905120	FILING DATE	09/03/2003
CUSTOMER #	20995	FIRST NAMED INVENTOR	William Gross
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Russell Jeide

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Terminal_Disclaimer_X1002A.pdf	2	Terminal Disclaimer Filed	227 KB
373_Statement_X1002A.pdf	3	Assignee showing of ownership per 37 CFR 3.73	114 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Terminal_Disclaimer_X1002A.pdf	96922A1CE0B42303B217BEC15E642C7B2E32B442725B36235CDD1861D65932E8925D5339B191172A07ADFFBFDB29F195969

BEBD6F8A28B42DE578378FFA77178

373_Statement_X1002A.pdf 07662143EEEA8DDCEE7C13B922C95FA4DFEF594E3FFA3855
8E04E1D3707707641CFFCBB9B57C7C5B929D51A8055DBE876
EDE8E59AA56DCCA6AC6944D6E90809A

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: X1 Discovery, Inc.

Application No./Patent No.: 7370035 Filed/Issue Date: 2008-05-06

Titled: METHODS AND SYSTEMS FOR SEARCH INDEXING

X1 Discovery, Inc., a California

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

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The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Russell M. Jeide/	September 29, 2023
Signature	Date
Russell M. Jeide	54,198
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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TERMINAL DISCLAIMER IN A PATENT OR PROCEEDING IN VIEW OF ANOTHER PATENT

Docket Number (Optional): X1.002A

Application/Control Number: 10/654588
Filing Date: 2023-09-03
First Named Inventor: William Gross
Title: METHODS AND SYSTEMS FOR SEARCH INDEXING
Patent No.: 7370035

The patentee, X1 Discovery, Inc., owner of 100 percent interest in the instant patent hereby disclaims, except as provided below, the terminal part of the statutory term of the instant patent which would extend beyond the expiration date of the full statutory term of patent No. 9633139 (the "**reference** patent"), as the term of said **reference** patent is presently shortened by any terminal disclaimer. The patentee hereby agrees that the instant patent shall be enforceable only for and during such period that the instant patent and the **reference** patent are commonly owned. This agreement runs with the instant patent and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the patentee does not disclaim the terminal part of the instant patent that would extend to the expiration date of the full statutory term of the **reference** patent, "as the term of said **reference patent** is presently shortened by any terminal disclaimer," in the event that said **reference** patent later: expires for failure to pay a maintenance fee; is held unenforceable; is found invalid by a court of competent jurisdiction; is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; has all claims canceled by a reexamination certificate; is reissued; or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer.

I. Check either box 1, 2, or 3 below, as appropriate, if there is an assignment:

1. ☐ The current ownership was established by the filing of a statement under 37 CFR 3.73 during prosecution of the application that issued as the instant patent.

2. ☐ The instant patent was issued from an application filed on or after September 16, 2012, and the current patent owner was the applicant under 37 CFR 1.46.

3. ☑ A statement under 37 CFR 3.73 is attached herewith. Form PTO/SB/96 or PTO/AIA/96, as appropriate, may be used.

II. Authorization for Terminal Disclaimer - Check either box 1 or 2 below, if appropriate:

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 54198

/Russell M. Jeide/	September 29, 2023
Signature	Date
Russell M. Jeide	949-760-0404
Typed or printed name	Telephone number

☑ The terminal disclaimer fee under 37 CFR 1.20(d) is included.

NOTE: Submit multiple forms if more than one signature is required, see below.*

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

☑ *Total of 1 forms are submitted.

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If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
10/654,588	**09/29/2023 08:02:39 PM ET**	**X1.002A**

Title of Invention

METHODS AND SYSTEMS FOR SEARCH INDEXING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	7370035
CONFIRMATION #	4164	FILED BY	Caroline Bialeck
PATENT CENTER #	62905120	AUTHORIZED BY	Russell Jeide
CUSTOMER #	20995	FILING DATE	09/03/2003
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	William Gross

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 2598	**E20239SK03286311**	**Wendy Castorena**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
111410	**37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.16 (National application filing, search, and examination fees)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	170.00	1	170.00
			TOTAL AMOUNT:	**$170.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement

Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/654,588	09/03/2003	William Gross	X1.002A

CONFIRMATION NO. 4164

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
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IRVINE, CA 92614

POA ACCEPTANCE LETTER

OC000000063075628

Date Mailed: 10/11/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/29/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/

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POWER OF ATTORNEY NOTICE

OC000000063075618

Date Mailed: 10/11/2023

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/29/2023.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/