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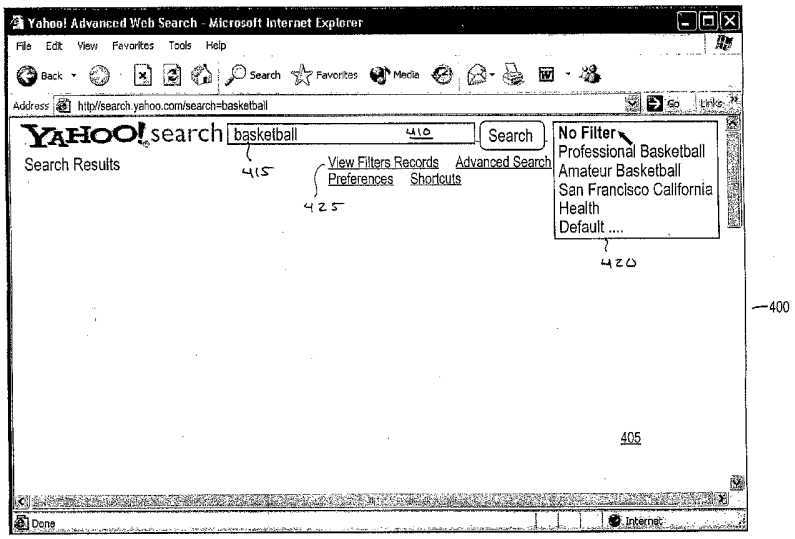
(54) **Title:** CUSTOMIZABLE FILTERS FOR PERSONALIZED SEARCH



(57) **Abstract:** A computerized search filtering method includes receiving on a client system a query from a querier; receiving a selection for a filter record from the querier, the filter record including a set of filter elements; retrieving the filter record from a filter-record database; transferring the query and the filter record to a search filter; adding at least one of the filter elements to the query to generate an amended-query; performing a document-corpus search to identify a set of documents relevant to the amended-query; identifying a subset of the documents that include at least one of the filter elements; and displaying on a display of the client system a set of search results for the subset of the documents.

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CUSTOMIZABLE FILTERS FOR PERSONALIZED SEARCH

BACKGROUND OF THE INVENTION

[0001] The present invention relates to searching a document corpus for documents, and more particularly relates to methods and apparatus for customized filtering of a document corpus search and a set of search result of the document corpus search.

[0002] In a typical search system, a user using a client system issues a search query to search a document corpus and receives a set of search results via the client system. The search query may be issued from the client system to a search engine that is configured to search the document corpus, or an index thereof, for content that is relevant to the search query. The search engine may send a summary of the identified content in the form of a set of search results to the client system. The search results might include titles, abstracts, and/or links for the identified pieces of content. The search query and search results may be routed between the client system and the search engine over one or more networks, and by one or more servers coupled to the network.

[0003] The network might be a local network, a global internetwork of networks, or a combination of networks. Common local networks in use today include local area networks (LANs), wide area networks (WANs), virtual LANs (VLANs) and the like. One common global internetwork of networks in use today is referred to as the Internet, wherein nodes of the network send the search query to other nodes that might respond with the search results relevant to the search query. One protocol usable for networks that include search systems is the Hypertext Transport Protocol (HTTP), wherein an HTTP client, such as a browser program operating on the client system, issues a query for search results referenced by a Uniform Resource Locator (URL), and an HTTP server responds to the query by sending search results specified by the URL. Of course, while this is a very common example, the issuance of a query and the sending of a set of search results relevant to the query is not so limited.

[0004] For example, networks other than the Internet might be used, such as a token ring, a WAP (wireless application protocol) network, an overlay network, a point-to-point network, proprietary networks, etc. Moreover, protocols other than HTTP might be used to request and transport search results, such as SMTP (Simple Mail Transfer Protocol), FTP (File

Transfer Protocol), HTTPS (hypertext transfer protocol secure), etc. Further, content might be specified by other than URLs. Portions of the present invention are described with reference to the Internet, but it should be understood that references to the Internet can be substituted with references to variations of the basic concept of the Internet (e.g., intranets, virtual private networks, enclosed TCP/IP networks, etc.), as well as other forms of networks. It should also be understood that the present invention might operate entirely within one computer or one collection of computers, thus obviating the need for a network.

[0005] Requested search results that are relevant to a query could be in many forms. For example, some search results might include text, images, video, audio, animation, program code, data structures, etc. The search results may be formatted according to the Hypertext Markup Language (HTML), the Extensible Markup Language (XML), the Standard Generalized Markup Language (SGML) or other language in use at the time.

[0006] HTML is a common format used for pages and other content that are supplied from an HTTP server. HTML-formatted content might include links to other HTML content and a collection of content that references other content might be thought of as a document web, hence the name "World Wide Web" or "WWW" given to one example of a collection of HTML-formatted content. As that is a well-known construct, it is used in many examples herein, but it should be understood that unless otherwise specified, the concepts described by these examples are not limited to the WWW, HTML, HTTP, the Internet, etc.

[0007] As described briefly above, a set of search results may include abstracts that identify documents that are relevant to a search query. The search results, however, may include a number of results that are not what the user had in mind when formulating a query (e.g., when formulating a query string). To locate the results the user had in mind, the user may review a number of the results, for example, by scrolling through the search results, which may be displayed as a Web page on the client system. If the search results are relatively lengthy, as is common, the user may become frustrated in attempting to locate the results that the user had in mind and might end their review of the search results. Alternatively, the user might issue another search query via their client system in an attempt to locate the search results the user had in mind.

[0008] The foregoing described process of issuing a search query and scrolling through search results may be repeated a number of times before a user is presented with a search result the user desires. The repetitive nature formulating and reformulating a query, and of

scrolling through numerous sets of search results is essentially a manual filtering process performed by a user, and this process repeated a number of times can be both frustrating and time consuming for the user.

[0009] What is needed are an improved search apparatus and an improved search method for generating search results, wherein the search results are automatically filtered to provide the user with search results that are not only relevant to a query, but are also relevant to the user.

BRIEF SUMMARY OF THE INVENTION

[0010] A computerized search filtering method is provided for amending a query to perform a context-specific query of a document corpus, and for filtering a set of search results of the document corpus to generate context-specific search results such that the context of the amended query and the search results are set by the search filter, wherein a search filtering method according to one embodiment includes receiving on a client system a query from a querier, and receiving a selection for a filter record from the querier. The filter record includes a set of filter elements used for search filtering by a search filter. The method includes retrieving the filter record from a filter-record database based on the selection; and transferring the query and the filter record to the search filter. The method further includes the search filter adding at least one of the filter elements in the filter record to the query to generate an amended-query, and includes a search engine performing a document-corpus search to identify a set of documents relevant to the amended-query. The search filter then identifies a subset of the documents that include at least one of the filter elements. The subset of documents is then displayed on a display of the client system.

[0011] According to a specific embodiment, the querier is a human. According to another specific embodiment, the querier is a computer.

[0012] The filter elements include at least one keyword, at least one topic, and/or at least one domain name. The at least one keyword might include a negative keyword; the at least one topic might include a negative topic; and the at least one domain name might include a negative-domain name.

[0013] According to another embodiment a search system is provided and includes a client system configured to receive a query from a querier and receive a selection for a filter record that includes a set of filter elements. The system may include a filter-record database

configured to receive a name for the filter record from the client system and retrieve the filter record based on the received name. The system may also include search filter configured to receive the query from the client system and receive the filter record from the filter-record database. The search filter is configured to amend the query to include at least one of the filter elements to form an amended query. The system may further include a search engine is configured to receive the amended query from the search filter and perform a corpus search to identify documents relevant to the amended query. The search engine is further configured to receive a set of search results for the amended query from the search engine, and identify a subset of documents that include at least one of the filter elements. The subset of the identified documents is identified in an amended set of search results. And the client system is configured to receive the amended set of search results for display.

[0014] Other features and advantages of the invention will be apparent in view of the following detailed description and accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is an illustration of an information retrieval and communication network that includes a client system according to an embodiment of the present invention.

[0016] FIG. 2 is an illustration of the information retrieval and communication network shown in further detail according to one embodiment of the present invention.

[0017] FIG. 3 is an illustration of the information retrieval and communication network shown in further detail according to another embodiment of the present invention.

[0018] FIG. 4 is an illustration of a browser window that includes a search page configured to receive a query string according to one embodiment of the present invention.

[0019] FIG. 5 is an illustration of a browser window that includes a Web page that in turn includes an exemplary set of filter records, wherein each filter record includes a number of filter fields and associated filter elements.

[0020] FIG. 6 is an illustration of a browser window that includes a Web page that in turn includes a set of search results that are not filtered by the search filter.

[0021] FIG. 7 is an illustration of a browser window that includes a Web page that includes a set of search results filtered by the search filter based on a selected filter record.

[0022] FIG. 8 is an illustration of a browser window that includes a Web page that includes the set of search results filtered by the search filter based on another selected filter record.

[0023] FIG. 9 is a high-level flow chart having steps for searching a document corpus to identify documents relevant to a query amended by a search filter to provide a context-specific set of search results.

[0024] FIG. 10 is a high-level flow chart having steps for generating a filter record according to one embodiment of the present invention.

DESCRIPTION OF SELECT EMBODIMENTS

[0025] Embodiments of the invention will now be described, by way of example, not limitation. It is to be understood that the invention is of broad utility and may be used in many different contexts.

[0026] FIG. 1 is an illustration of an information retrieval and communication network 10 including a client system 20 according to an embodiment of the present invention. In communication network 10, client system 20 is coupled through a network 30, such as the Internet and/or an intranet (e.g., a LAN or a WAN), to any number of server systems 40_1 to 40_N. As will be described herein, client system 20 is configured to communicate with any of server systems 40_1 to 40_N, for example, to request, access, receive, retrieve, and/or display a set of search results. As referred to herein a set includes one or more elements.

[0027] Several elements in the system shown in FIG. 1 include conventional, well-known elements that need not be explained in detail here. For example, client system 20 might include a desktop personal computer, workstation, laptop, PDA (personal digital assitant), cell phone, any wireless application protocol (WAP) enabled device or any other computing device capable of interfacing directly or indirectly to the Internet. Client system 20 typically runs a browser program, such as Microsoft's Internet Explorer™ browser, Netscape Navigator™ browser, Mozilla™ browser, Opera™ browser, a WAP-enabled browser in the case of a cell phone, a PDA or other wireless device, allowing a user of client system 20 to access, process and view search results available to it from server systems 40_1 to 40_N over network 30. Client system 20 might also include one or more user interface devices 22, such as a keyboard, a mouse, a roller ball, a touch screen, a pen or the like, for interacting with a graphical user interface (GUI) provided by the browser on a display (e.g., monitor screen,

LCD display, etc.), in conjunction with pages, forms, and other information provided by server systems 40_1 to 40_N.

[0028] The present invention is suitable for use with the Internet, which refers to a specific global internetwork of networks. However, it should be understood that other networks can be used instead of or in addition to the Internet, such as an intranet, an extranet, a virtual private network (VPN), a virtual LAN (VLAN), a non-TCP/IP based network, any LAN or WAN or the like.

[0029] According to one embodiment, client system 20 and system servers 40_1 - 40_N and their respective components are operator configurable using an application including computer code run using one or more central processing units, such as those manufactured by Intel, AMD or the like. Computer code for operating and configuring client system 20 to communicate, process, and display search results relevant to a query is preferably downloaded and stored on a hard disk, but the entire program code, or portions thereof, may also be stored on any other volatile or non-volatile memory medium or device as is well known, such as a ROM or RAM, or provided on any media capable of storing program code, such as a compact disk (CD) medium, a digital versatile disk (DVD) medium, a floppy disk, and the like. Additionally, the entire program code, or portions thereof, may be transmitted and downloaded from a software source, e.g., from one of server systems 40_1 to 40_N to client system 20 over network 30 using a communication medium and protocols (e.g., TCP/IP, HTTP, HTTPS, Ethernet, or other conventional media and protocols). As referred to herein, a server system may include a single server computer or number of server computers configured to operate as a server system.

[0030] It should be appreciated that computer code for implementing aspects of the present invention can be C, C++, HTML, XML, Java, JavaScript, etc. code, or any other suitable scripting language (e.g., VBScript), or any other suitable programming language that can be executed on client system 20 and/or servers 40_1 - 40_N or compiled to execute on client system 20 and/or servers 40_1 - 40_N. In some embodiments, no code is downloaded to client system 20, and needed code is executed by a server, or code already present at client system 20 is executed.

[0031] FIG. 2 is an illustration of information retrieval and communication network 10 shown in further detail according to one embodiment of the present invention. According to the embodiment of network 10 shown in FIG. 2, server system 40_1 is configured to operate as

a search engine, and for convenience, will be referred to herein as a search engine. Although, server system 40_1 is referred to as a search engine, this server system may be configured to perform a number of processing functions in addition to searching.

[0032] According to one embodiment, network 10 includes one or more of a document corpus 50, an index of the document corpus 55, and a document cache 60. The document corpus might include the Internet, an intranet, a combination thereof or the like. For example, documents on an intranet might include documents on a Yahoo! intranet and might include documents associated with (e.g., configured to be served by) one or more Yahoo! property servers, such as the Yahoo! news property server, the Yahoo! sports property server, the Yahoo! health property server, the Yahoo! auction property server or the like. The index of the document corpus includes an index of documents in the document corpus, and the document cache includes cached versions of documents in the document corpus. A document as referred to herein may include text, images, video, audio, animation, program code, data structures, formatted text, etc.

[0033] Document corpus index 55 and/or document cache 60 may be "populated" with index information and cached documents, respectively, by one or more servers, such as server 40_2 that might be configured to operate in conjunction with an indexer module 70 to populate the index and cache. According to one embodiment, the search engine is configured to search one or more of the document corpus, the index, and the document cache to identify documents. The search engine may by configured to initiate a search at the request of client system 20 on receipt of query 75 issued by the client system.

[0034] A query for a search may be requested by a user via client system 20. The client system may be configured to communicate with the search engine over network 30, for example, via server 40_3, which might be an HTTP server. Accordingly, one or more processes configured to operate on the client system might be HTTP clients that are configured to communicate with the HTTP server. According to one embodiment, client system 20 is configured to run a browser program 77 that may be an HTTP client.

[0035] According to one embodiment, network 10 includes a search filter 80. Search filter 80 is configured to filter search results generated by the search engine. Search filtering is described in detail below. According to one embodiment, search filter 80 is operative on one or more of the search engines, the HTTP server, and the client system. While the search filter is shown in FIG. 2 as being located on the search engine, the search filter might be located on

the HTTP server or on the client system (see, for example, FIG. 3). If the search filter is configured to operate on more than one of the search engines, the HTTP server, and the client system, the search filter may be configured as a multi-module system, wherein modules of the search filter may be stored on the systems on which the modules are configured to operate. Alternatively, the modules of the search filter may be distributed to these systems at the time the search filter is used. For example, the HTTP server may be configured to distribute modules of the search filter to the systems on which the modules are operable.

[0036] Alternatively, the search filter may be ported from the HTTP server or the search engine to the client system for use thereon. The search filter might be ported to the client system at the request of the client system if, for example, a query is entered on the client system by the user. It should be understood that the foregoing described distributed and consolidated configurations of the search engine are described for exemplary purposes. While the search filter has been described as software, the search filter might be a hardware module (e.g., an application specific integrated circuit [ASIC]), a firmware module or a combination of the foregoing.

[0037] The search filter is configured to operate in conjunction with one or more filter records 85 that may be stored in a filter-records database 90. One or more of the search engine, the client system, and the HTTP server may be operatively coupled to filter-records database 90, and may be configured to retrieve filter records 85 from the filter-records database. Alternatively, the filter-records database may be resident on one or more of these systems. Filter records are described in further detail below.

[0038] FIG. 4 is an illustration of a browser window 400 that includes a search page 405 according to one embodiment of the present invention. Search page 405 is shown for exemplary purposes and may be alternatively configured as will be readily understood by those of skill in the art. Therefore, the exemplary embodiment should not be viewed as limiting the invention as specified by the claims. The search page might be a Yahoo! search page or other search page, and might be formatted as an HTML page, an XML page or the like. The search page might be served to the client system by the HTTP server, which might be a Yahoo! property server or the like.

[0039] The search page may include a field window 410 that is configured to receive query information 415 in the form of a query string (e.g., text), image data (e.g., graphical images, such as video or the like), audio data, a link that points to a page (such as a Web page on the

Web) or the like. The query string might be entered in the field window by a user operating the client system. For example, a user might enter the query string "basketball" in field window 410 as shown in FIG. 4 or may enter any other query string the user desires information for.

[0040] According to one embodiment, search page 405 includes a menu 420 (e.g., a drop down menu) that is configured to provide a number of filter record options that may be selected by a user. Specifically, the menu also includes the names of filter records that a user may select and that are stored in filter-records database 90. The filter records included in menu 420, according to the example being considered, include a professional basketball filter, an amateur basketball filter, a San Francisco filter, a health filter, and a set of default filters. Menu 420 also includes an option to not apply the search filter (e.g., "no filter") to a corpus search. The names of the filter records shown in FIG. 4 are shown for exemplary purposes.

[0041] Search filter 80 is configured to use a filter record selected by a user for filtering search information, such as query 75 and/or search results 105. A number of properties of filter records are described first below prior to a description of the search filter's use of the filter records. FIG. 5 is an illustration of a browser window 500 that includes a Web page 502 that in turn includes an exemplary set of filter records 505. Each filter record 505 includes a set of filtering fields 510 that includes one or more filtering elements that may be used by the search filter for filtering. The exemplary filter records shown in FIG. 5 include a professional basketball filter record 505a, an amateur basketball filter record 505b, a San Francisco filter record 505c, a health filter record 505d, and a set of default filter records 505e. The exemplary default filter records include a Yahoo! sports filter 505e1, a Yahoo! entertainment filter 505e2, and a Yahoo! technology filter 505e3. It should be understood that these filter records are shown for illustrative purposes, and the set of filter records might include other filter records.

[0042] As briefly mentioned above, each filter record 505 includes a set of filter fields 510. The filter fields may include one or more of: keywords, negative keywords, topics, negative topics, "special-domain names," "negative-special-domain names," inside Yahoo! domain names and the like. According to the example being considered, the filter fields include keywords 510a, topics 510b, special domains 510c, and inside Yahoo! links 510d. Each filter field 510 included in a filter record 505 is associated with a set of filter elements 515. For

example, the topics filter field 510b, in the San Francisco filter record 500c, includes the filter elements: travel, extreme sports, and camping.

[0043] In general, keywords are specific stings (e.g., words or lists of words) that might by included in a document or in metadata associated with a document. Topics might define categorizations of documents. A given topic might be associated with a number of documents that are assigned to that given topic. For example, documents relating to basketball, baseball, soccer or the like might be assigned to a sports topic. Or documents relating to muscle strains, the common cold, knee injuries and the like may be assigned to a health topic. Documents might be assigned to more than one topic, if, for example, the documents include information for one or more aspects of an issue. For example, a document that provides information about muscle strains that are common to basketball players might be assigned to a sports topic and a health topic. Keywords, topics, domain names, and inside Yahoo! domain names are described in further detail below.

[0044] Search page 405 may include a View Filter Records option 425 (e.g., a screen button associated with a link or the like) that may be configured to initiate the display of the filter records. The View Filter Records option might be a screen button associated with a link that is configured to retrieve the filter records for display.

[0045] Filter records, such as filter records 500, might be organized in a variety of formats, such as a plain text, an HTML file, an XML file, a proprietary file or the like. The filters record may be edited via a filter-records editor 110 (see FIGs. 2 and 3), which might be activated by selecting an Edit My Filters Records option 520 on the filter records page. The filter-records editor might be a dedicated editor, a text editor, a word processor or the like. Alternatively, Web page 502 may be configured to permit a user to edit the filter records directly on the page, and save the edited filter records by selecting a Save Filter Records option 525. According to one embodiment, Web page 502 might include a screen option 535 for adding filter records to a user's set of filter records. Screen option 535 (e.g., a screen button associated with a link) might be configured to launch the filter editor or other editor configured for adding filter records to a set of filter records.

[0046] The filter editor may be configured to impose a select structure on filter records, such as the structure shown in FIG. 5. For example, a new filter record may include each filter field that might be included in a filter record. The filter elements might be placed in the filter fields by keying in (e.g., typing) the filter elements, selecting filter elements from

menus, such as drop down menus, or the like. For example, each filter field might be associated with a drop down menu that might be selected by clicking on the filter field and then clicking on a filter element in the drop down menu. The filter editor might be configured to remove filter fields from a filter record for which no filter elements are entered.

[0047] According to an alternative embodiment, a filter record is created by the filter editor and populated with information included in a user profile 115. User profiles might be populated with user information by a user via their associated client system, populated by a server configured to monitor user behavior (Web pages viewed, ads clicked on, etc) or the like. The filter editor may be configured to collect information from a user profile at the time the user profile is created, edited, or at other times. The filter editor may be configured to extract keywords, topics, domain names, and the like, and place this information in the appropriate filter fields of an existing or new field record.

[0048] The filter records editor may populate one or more filter fields of one or more filter records with information extracted from a user query history 116. User query history 116 may be stored on the client system, in the filter records database, in the user profile database or the like. The user query history includes query information of one or more user queries issued by the user via his or her client system. The user query history may include the query string of each query issued by the user. The user query history may be retrieved by the filter record editor for analysis to determiner whether to populate a filter record with query information from the user query history. The query strings included in the user query history may be parsed by the filter records editor, or the like, to determine the frequency of specific query strings (e.g., keywords, topics, domain names, and the like) included in the query strings. If the number of times a specific query string is included in the user query history exceeds a given number (e.g., 10, 20, etc.), this specific query sting may be placed in one or more of the user's filter records or one or more of the default filter records provided for the user. According to one embodiment, the filer records editor may be configured to determine whether the specific query sting is associated with an existing search filter (e.g., the professional basketball filter record 505a, the amateur basketball filter record 505b or the like). If the filter records editor determines that the specific query string is associated with a one or more filter records (e.g., the professional basketball filter record), then the filter records editor may enter the specific query string into one or more of the filter fields of these filter records. The filter editor may further be configured to determine whether the specific query sting is a keyword, a topic, a domain name or the like, and insert the query string into

the identified filter field. While the filter record editor is described as being configured to retrieve and analyze the user query history, other modules on the communication network (e.g., one or more of servers 40_1 - 40_n, a dedicated program configured to operate on the client system, the server systems or the like) may be configured to retrieve and analyze the user query history to populate the filter records. The user query history may be accumulated by one or more of the search filter, the browser program, the filter records editor, one or more of servers 40_1 - 40_n, a dedicated program configured to operate on the client system, or the like.

[0049] According to one embodiment, filter records are transferable. For example, a user via client system 20 may transfer their filter records to the client systems of other users. For example, filter records may be configured to be uploaded to a server, such that another user via their associated client system can download these filter records to their client system. Filter records might also be transferable by e-mail, disk transfer, peer-to-peer file transfer, or other well known methods for transferring files.

[0050] According to one embodiment, search filter 80 is configured to: i) amend a query to generate an amended query based on one or more filter elements included in a field record, and/or ii) filter a set of search results based on one or more of filter elements. For example, search filter 80 may be configured to add filter elements for keywords and/or topics to an original query string entered by a user to generate an amended query string used in an amended query 75'. For example, if the user enters the query string "basketball" in field window 405 and selects the amateur basketball filter record, then search filter 80 may generate an amended query string that includes: "basketball 'my college team' '2004 Olympics' 'US National Team' 'medal tally.'" According to the example, the strings added to query string basketball include the keywords in the amateur basketball filter record. Alternatively, if the user enters the query string "basketball" in field window 405, and selects the health filter record, then search filter 80 may generate an amended query that includes "basketball 'knee injury' 'back injury' 'weight loss,'" wherein the strings added to the query string basketball include the keywords of the health filter record.

[0051] If the search filter is operative on the client system, the search filter may generate the amended query on the client system. For example, the search filter may be configured to request the filter record selected by the user, and use this filter record to generate the amended query. The search filter may request the filter record substantially directly from the

filter records database if the filter records database is operatively coupled to the client system. Alternatively, the search filter may request the filter record from the HTTP server or the search engine if the filter record database is operatively coupled to one of these servers. For example, the browser program, via client system 20, may send a filter record request 95 (e.g., an HTTP request) to the HTTP server or the search engine to retrieve a selected filter record. The filter record request might include the name of the filter record or other identifier for the selected filter record. The HTTP server or the search engine may be configured to retrieve the filter record identified in the filter record request, and send this filter record to the client system.

[0052] Alternatively, if the search filter is configured to operate on the search engine, the browser program may be configured to send query 75 and the name, or other identifier for the selected filter record, (e.g., in an HTTP request) to the search engine (e.g., via the HTTP server). The search filter may then retrieve the identified filter record, and generate an amended query on the search engine. If the search engine is operative on the HTTP server, the HTTP server may be configured to operate similarly.

[0053] The search engine is configured to use the amended query to search one or more of: the document corpus (e.g., in real time), the index of the document corpus, and document cache to identify documents relevant to the amended query. The search engine is thereafter configured to organize the documents identified in the search into a set of search results 100.

[0054] Subsequent to generating the set of search results, the search filter is configured to filter the search results to generate a set of filtered-search results 105. If the search filter is configured to operate on the client system or the HTTP server, the search engine may be configured to send search results 100 to the client system or the HTTP server for filtering and generation of the filtered-search results. Alternatively, if the search filter is configured to operate on the search engine, the filtered-search results may be generated on this server and sent to the client system for display and use by the user.

[0055] The search filter may be configured to filter the search results based on one or more filter elements of one or more filter fields of the filter record selected by the user. For example, if the selected filter record includes a set of negative keywords, the search filter may be configured to remove from the search result one or more identified documents that include the negative keywords. Or the search filter may rank the search results based on the negative keywords such that the identified documents that include the negative keywords are

ranked relatively lower than other identified documents that do not include the negative keywords. Alternatively, if an identified document includes one of the keywords included in a selected filter record, the search filter may be configured to rank this identified document higher than other documents that do not include the keyword. According to one embodiment, the search filter may be configured to rank a select number of identified documents to form a set of filtered-search results. For example, the search filter may be configured to filter and re-rank the top 50, the top 100, etc. identified documents included in search results 100.

[0056] The search filter may be configured to remove or rank identified documents in the search results based on the special-domain names and/or the negative-special domain names. Removal and/or ranking of search results based on special-domain names and/or negative-special-domain names may be executed as described above with respect to keyword filtering and negative-keyword filtering. For example, if an identified document is associated with a special-domain name that is included in the selected filter record, this identified document might be ranked higher than identified documents that are not associated with this domain name. Further, the search filter may be configured to remove or rank identified documents in the search results based on the topics and/or negative topics. For example, if an identified document is assigned to a given topic, then this identified document may be ranked higher in a set of filtered-search results than other identified documents not associated with the given topic.

[0057] Filtered-search results 105 may be presented to the user via their associated client system. FIGs. 6 and 7 are illustrations of a browser window 400 that includes, respectively, a Web page 605 of a set of search results that are not filtered by the search filter, and a Web page 705 of a set of filtered-search results that are filtered by the search filter. The search results illustrated in FIG. 6 might be for the query string "basketball," wherein the user selected the "no filter" option from menu 410. The search results illustrated in FIG. 7 might be for the query string "basketball," wherein the user selected the "professional-basketball filter record" from menu 410. While the search results illustrated in FIG. 6 include abstracts for identified documents related to basketball, the search results might or might not include the particular information the user desires related to professional basketball, and/or these search results might or might not be arranged such that the user can quickly and easily identify the information relevant to professional basketball. Alternatively, the filtered-search results illustrated in FIG. 7 are filtered such that the abstracts that include the keyword elements: professional, teams, and the like included in the selected filter record are ranked as

being relevant to the to the keyword elements. Other abstracts not including the keyword elements are ranked relatively lower than those abstracts that include these keyword elements. Select abstracts that are ranked relatively higher than other abstracts are positioned at or near the top of abstracts presented in the filtered-search results. Further, abstracts for identified documents that are on the special domains (e.g., domain1.com and domain2.com) and/or the inside Yahoo! domains (e.g., news.yahoo.com and sports.yahoo.con) are relatively highly ranked and are positioned at or near the top of abstracts presented in the filtered-search results. Further yet, abstracts for identified documents that are assigned to the topic sports are also ranked relatively highly and positioned at or near the top of abstracts presented in the filtered-search results. As such, the user may relatively quickly locate identified documents that relate to professional basketball and the particular filter element in the professional basketball filter record.

[0058] According to one embodiment, if documents identified by the search engine are in a document corpus associated with one or more Yahoo! property servers (which are listed in a search filter record, e.g., the Yahoo! news property server and the Yahoo! sports property server includes in the professional basketball filter record), then the search filter may be configured to place links (e.g., link 620 in FIGs. 6 and 7) to these servers on a Web page that includes a set of search results. The abstracts of identified documents associated with the Yahoo! property servers might also be ranked in the search as described above with respect to ranking of search results based on keywords.

[0059] FIG. 8 is an illustration for browser window 600 that includes a Web page 805 having a set of filtered-search results for the query string basketball and the heath filter record. As shown in FIG. 8, the abstracts 1 - 4 for identified documents that include keywords, topics, etc. in the health filter record are ranked in the search result relatively higher than other abstracts (e.g., abstract 5) for identified documents not including the keywords or topics of the health filter record. Also, as seen in a comparison of FIGs. 6 and 8, the basketball memorabilia auction document is ranked relatively lower in FIG. 8 than in FIG. 6, as the abstracts for the identified documents that include the keywords and/or the topics of the health filter record are ranked above this abstract.

[0060] According one embodiment, the filter fields of a filter record may be weighted by a set of weighting factors 810 that define the relevancy of the filter fields in a query context. The weighting factors might be numbers (e.g., 0 - 1) or other descriptors used to weight the

relevancy of a set of filter records. In a query context, identified documents and their associated abstracts may be ranked based on the weighting factors. Relatively high ranked abstracts may be prominently presented (e.g., position higher in list of abstracts) in a set a search results. For example, the keyword filter field and the topic filter field may be weighted with respective weighting factors that might indicate that the keyword filter field is of higher relevancy than the topic filter field or vise versa. If a first set of identified documents includes one or more keywords included in the keyword filter field, and a second set of identified documents includes one or more topics from the topic filter field, the first set of identified documents may be ranked relatively higher than the second set of identified documents. Based on this ranking, abstracts for the first set of documents may be presented relatively more prominently in a set of search results than the abstracts associated with the second set of documents. For example, abstracts for the first set of documents may be presented relatively higher on a page of search results than abstracts for the second set of documents.

[0061] According an alternative embodiment, the filter elements of the filter fields are weighted by the set of weighting factors 810 that define the relevancy of the filter elements in a query context. Identified documents and their associated abstracts may be ranked based on the filter element weighting and presented in a set of search results according to the ranking. According to one embodiment, both filter fields and the filter elements associated with the filter fields may be assigned weighting factor for ranking a set of documents identified in a query. While ranking has been described above as a method that includes comparing weighting factors to rank a set of identified documents, ranking may be based on a mathematical function of the weighting factors. Mathematical functions that might be used to determine a ranking of identified documents include an addition function, a multiplication function, a logarithmic function, an exponential function or the like.

[0062] According to one embodiment, the weighting factors may be used by the search filter to re-rank a set of identified documents that were previously ranked for relevancy by the search engine. Alternatively, the weighting factors might be used by the search engine in conjunction with other ranking methods used by the search engine to rank and/or re-rank a set of identified documents. The weighting factors may be set by the user, the filter editor or the like at the time a filter record is created or subsequently to update the weighting factors to indicate a user's changing interests over time.

[0063] FIG. 9 is a high-level flow chart having steps for searching a document corpus to identify documents relevant to an amended query amended by a search filter to provide a context-specific set of search results. That is, the search filter is configured to apply a set of filter elements to the query and to a set of search results (which are relevant to the query) to set a context for the search, wherein the filter elements define the context. The filter elements may be applied by the search filter to a number of queries to set the same context for each query and for the search results relevant to the query. The high-level flow chart is merely exemplary, and those of skill in the art will recognize various steps that might be added, deleted, and/or modified, and are considered to be within the scope and purview of the present invention. Therefore, the exemplary embodiment should not be viewed as limiting the invention as defined by the claims.

[0064] At 900, a client system associated with a querier is configured to receive a query string from a querier. A query string for a query might be entered by the querier on a Web page displayed on the querier's client system. Alternatively, a querier that is a computer system might be configured to provide the query string to the client system. It might be in the latter case that although a computer querier provides the query string for a query, a human user might be the ultimate user of a set of search results generated for the query. At 910, the client system is further configured to receive a selection for a filter record from the querier. The filter record selected might be selected from a plurality of filter records that might be presented to the querier on the display of the client system. For example, the plurality of filter record might be displayed in a drop down menu or other menu. Each filter record will include at least one filter element. As mentioned briefly above, the filter elements are used by a search filter to establish a context for the search.

[0065] At 920, the selected filter record is retrieved for use by the search filter. More specifically, the search filter may be configured to issue a request to one or more other servers to retrieve the selected filter record from a filter-record database. At 930, the filter record and the query string are transferred to the search filter. At 940, the search filter is configured to add at least one of the filter elements that are included in the selected filter record to the query to generate an amended-query. At 950, the search filter is configured to transfer the amended query to the search engine. At 960, the search engine performs a document-corpus search to identify a set of documents relevant to the amended-query. The document corpus might include the Internet, an intranet or a combination thereof. The

document corpus might also include an index of the corpus, and/or a cache that includes cached versions of documents in the corpus.

[0066] At 970, the search filter is configured to identifying a subset of the documents identified by the search engine such that these documents include at least one of the filter elements or that is otherwise associated with at least one of the filter elements. At 980, a set of search results for the subset of the documents is displayed on a display of the client system. The search results for the subset of the identified document might include hyperlinks to pages (e.g., HTML pages) that include the documents.

[0067] FIG. 10 is a high-level flow chart having steps for generating a filter record. The filter record is configured for use by a search filter for setting a context for a query of a document corpus. The high-level flow chart is merely exemplary, and those of skill in the art will recognize various steps that might be added, deleted, and/or modified and are considered to be within the purview of the present invention. Therefore, the exemplary embodiment should not be viewed as limiting the invention as defined by the claims.

[0068] At 1000, a user profile is received from a user. The user profile may be provided by the user in response to a request for information for a user account, a user service or the like. At 1010, at least one keyword, at least one topic, and/or at least one domain name is extracted from the user profile. At 1020, if a keyword is extracted from the user profile, then the keyword is inserted into a keyword filter field of the filter record. At 1030, if a topic is extracted from the user profile, then the topic is inserted into a topic filter field of the filter record. At 1040, if a domain name is extracted from the user profile, then the domain name is inserted into a domain name filter field of the filter record. The filter record might be stored in a filter-record database for later use. The filter-record database may be accessible by the search filter for search filtering as described above.

[0069] It is to be understood that the examples and embodiments described above are for illustrative purposes only and that various modifications or changes in light thereof will be suggested to persons skilled in the art and are to be included within the spirit and purview of this application and scope of the appended claims. For example, filtering methods described herein might be combined with other filtering techniques such as feedback relevancy methods, wherein a user identifies to the search engine, search filter or the like documents that the user determines are of relatively high relevance to a query and the search filter ranks the identified document for the instant query and/or subsequent queries based at least in part

on the user identification of relevant documents. Therefore, the above description should not be taken as limiting the scope of the invention as defined by the claims.

WHAT IS CLAIMED IS:

1. A computerized search filtering method for amending a query to perform a context-specific query of a document corpus and for filtering a set of search results of the document corpus to generate context-specific search results such that the context of the amended query and the search results are set by the search filter, the method comprising:

receiving on a client system a query from a querier;

receiving a selection for a filter record from the querier, the filter record including a set of filter elements;

retrieving the filter record from a filter-record database;

transferring the query and the filter record to a search filter;

adding at least one of the filter elements to the query to generate an amended-query;

performing a document-corpus search to identify a set of documents relevant to the amended-query;

identifying a subset of the documents that include at least one of the filter elements; and

displaying on a display of the client system a set of search results for the subset of the documents.

2. The method of claim 1, wherein the querier is a human.

3. The method of claim 1, wherein the querier is a computer.

4. The method of claim 1, wherein the filter elements include at least one keyword, at least one topic, and/or at least one domain name.

5. The method of claim 4, wherein the at least one keyword includes a negative keyword, the at least one topic includes at least one negative topic, and the at least one domain name includes at least one negative-domain name.

6. The method of claim 1, displaying on the display with the set of search results at least one hypertext link to a homepage of a server system that is configured to serve at least one Web page that includes at least one document that includes at least one filter element.

7. The method of claim 1, wherein a Web page on which the set of search results is displayed is a hypertext page.

8. A search system comprising:

a client system configured to receive a query from a querier and a selection for a filter record that includes a set of filter elements;

a filter-record database configured to receive a name for the filter record from the client system and retrieve the filter record;

a search filter configured to receive the query from the client system and receive the filter record from the filter-record database, and add to the query at least one of the filter elements to form an amended query; and

a search engine configured to receive the amended query from the search filter and perform a corpus search to identify documents relevant to the amended query,

wherein the search filter is configured to receive a set of search results for the amended query from the search engine, and identifying a subset of documents that include at least one of the filter elements to form an amended set of search results, and

wherein the client system is configured to receive the amended set of search results and display the amended set of search results.

9. The search system of claim 8, wherein the search filter is a module of the client system.

10. The search system of claim 8, wherein the search filter is a module of the search filter.

11. The search system of claim 8, wherein the filter elements include at least one keyword, at least one topic, and/or at least one domain name.

12. The search system of claim 11, wherein the at least one keyword includes a negative keyword, the at least one topic includes at least one negative topic, and the at least one domain name includes at least one negative-domain name.

13. The search system of claim 8, wherein the querier is a human.

14. The search system of claim 8, wherein the querier is a computer.

15. The search system of claim 8, wherein the amended set of search results includes hyperlinks to the identified documents associated with the amended set of search results.

16. A computerized method for generating a filter record comprising:

receiving a user profile from a user;

extracting at least one keyword, at least one topic, and/or at least one domain name from the user profile;

if extracted, inserting the at least one keyword into a keyword filter field of the filter record;

if extracted, inserting the at least one topic into a topic filter field of the filter record;

if extracted, inserting the at least one domain name into a domain name filter field of the filter record;

wherein the filter record is configured for use by a search filter that is configured to amend a query string and filter a set of search results of a corpus based on the at least one keyword, the at least one topic, and/or the at least one domain name.

wherein the at least one keyword, the at least one topic, and/or the at least one domain name define a context for generating a context-specific set of search results of the corpus.

17. The method of claim 16, further comprising storing the filter record in a filter record database.

18. The method of claim 16, wherein the filter record is configured to be applied by the search filter to a plurality of queries of the corpus to define the same context for each of the queries.

19. The method of claim 16, wherein the at least one domain name includes an inside Yahoo! domain name.

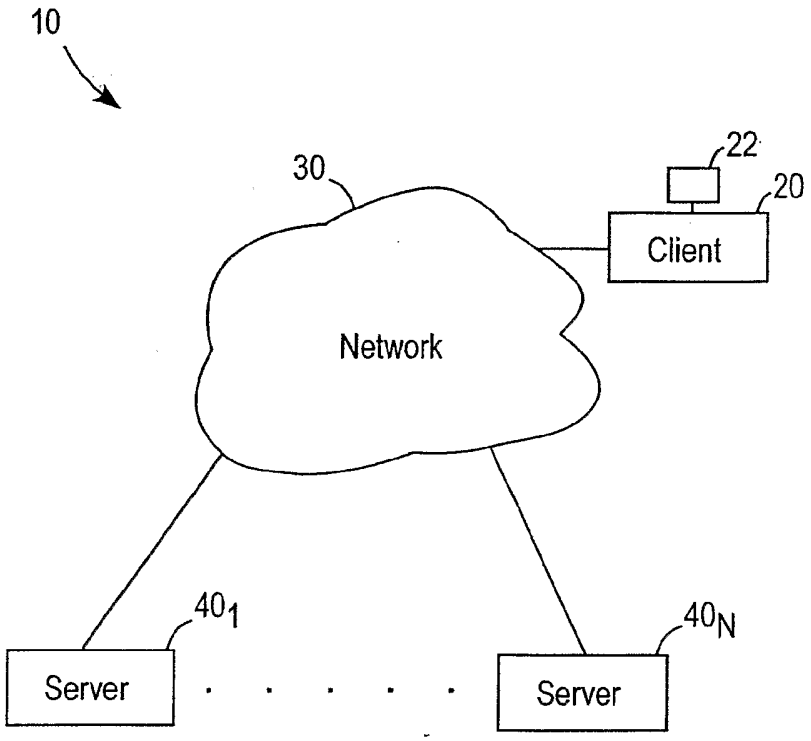

FIG. 1

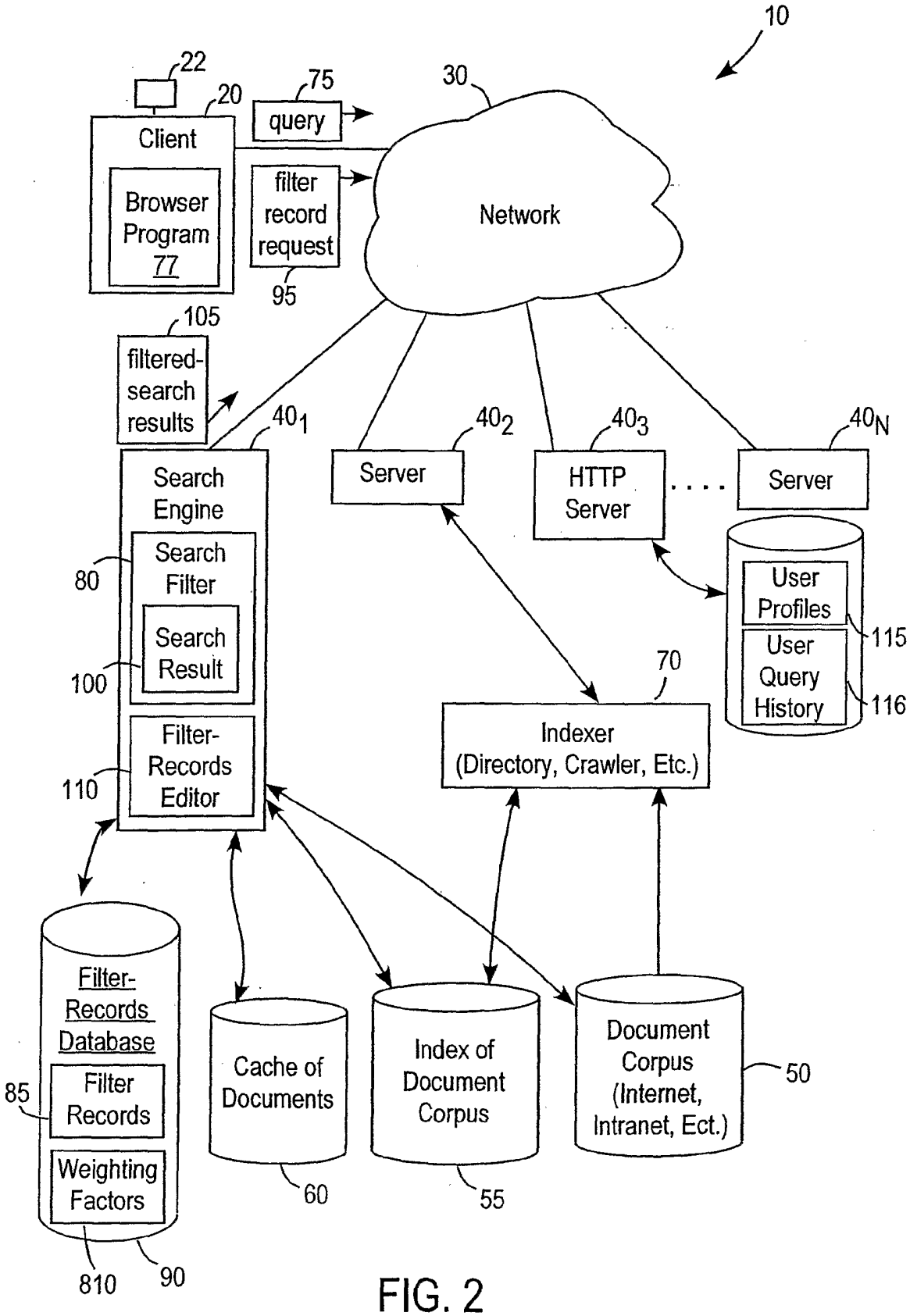
10
22
20
Client
Browser Program 77
75
query
filter record request
95
30
Network
105
filtered-search results
40_1
Search Engine
Search Filter
Search Result
Filter-Records Editor
80
100
110
40_2
Server
40_3
HTTP Server
40_N
Server
User Profiles
User Query History
115
116
70
Indexer (Directory, Crawler, Etc.)
Filter-Records Database
Filter Records
Weighting Factors
85
810
90
Cache of Documents
60
Index of Document Corpus
55
Document Corpus (Internet, Intranet, Ect.)
50

FIG. 2

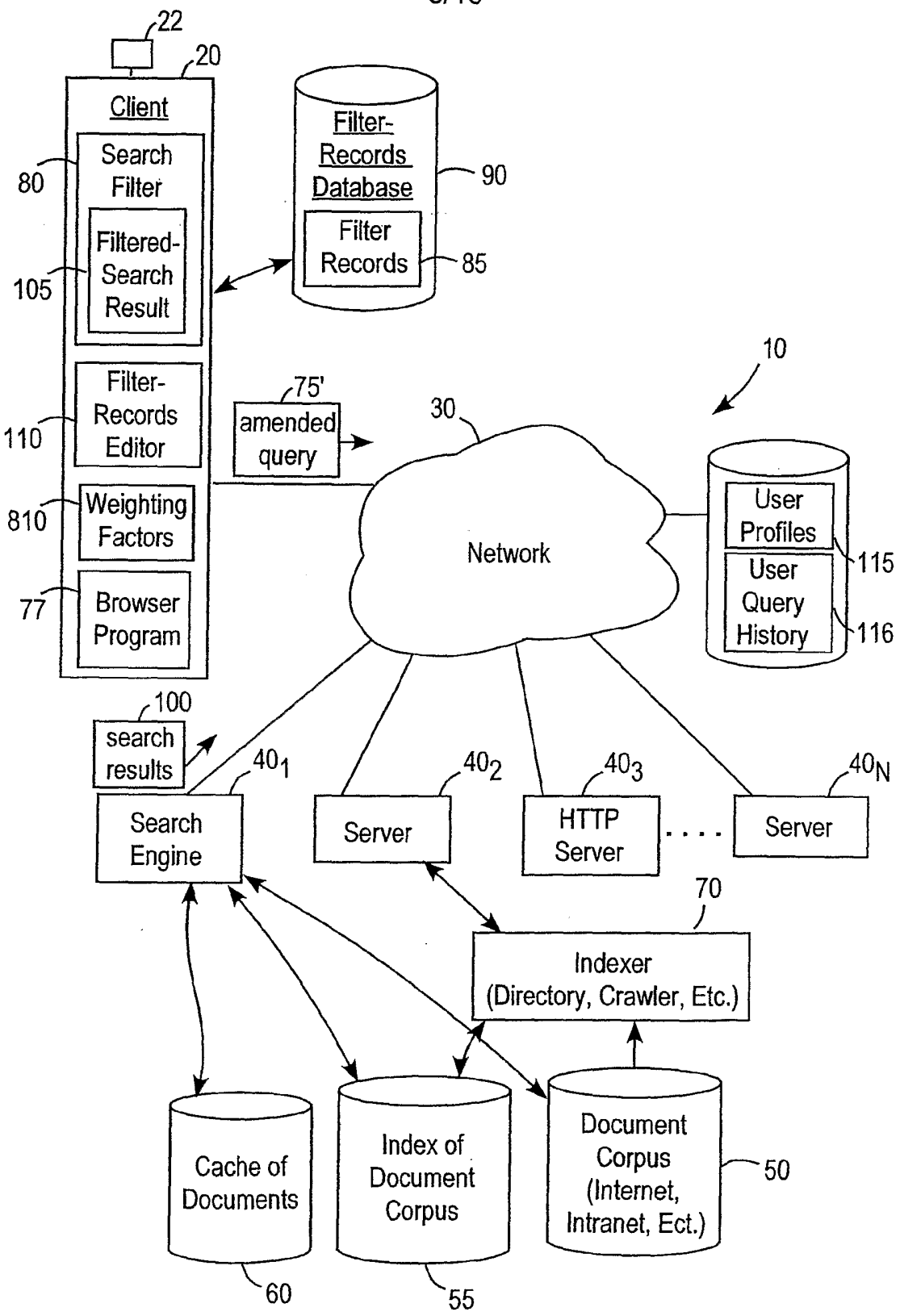
22
20
Client
Search Filter
80
Filtered-Search Result
105
Filter-Records Editor
110
Weighting Factors
810
Browser Program
77
Filter-Records Database
90
Filter Records
85
75'
amended query
30
10
Network
User Profiles
115
User Query History
116
100
search results
Search Engine
40 1
Server
40 2
HTTP Server
40 3
Server
40 N
70
Indexer (Directory, Crawler, Etc.)
Cache of Documents
60
Index of Document Corpus
55
Document Corpus (Internet, Intranet, Ect.)
50

FIG. 3

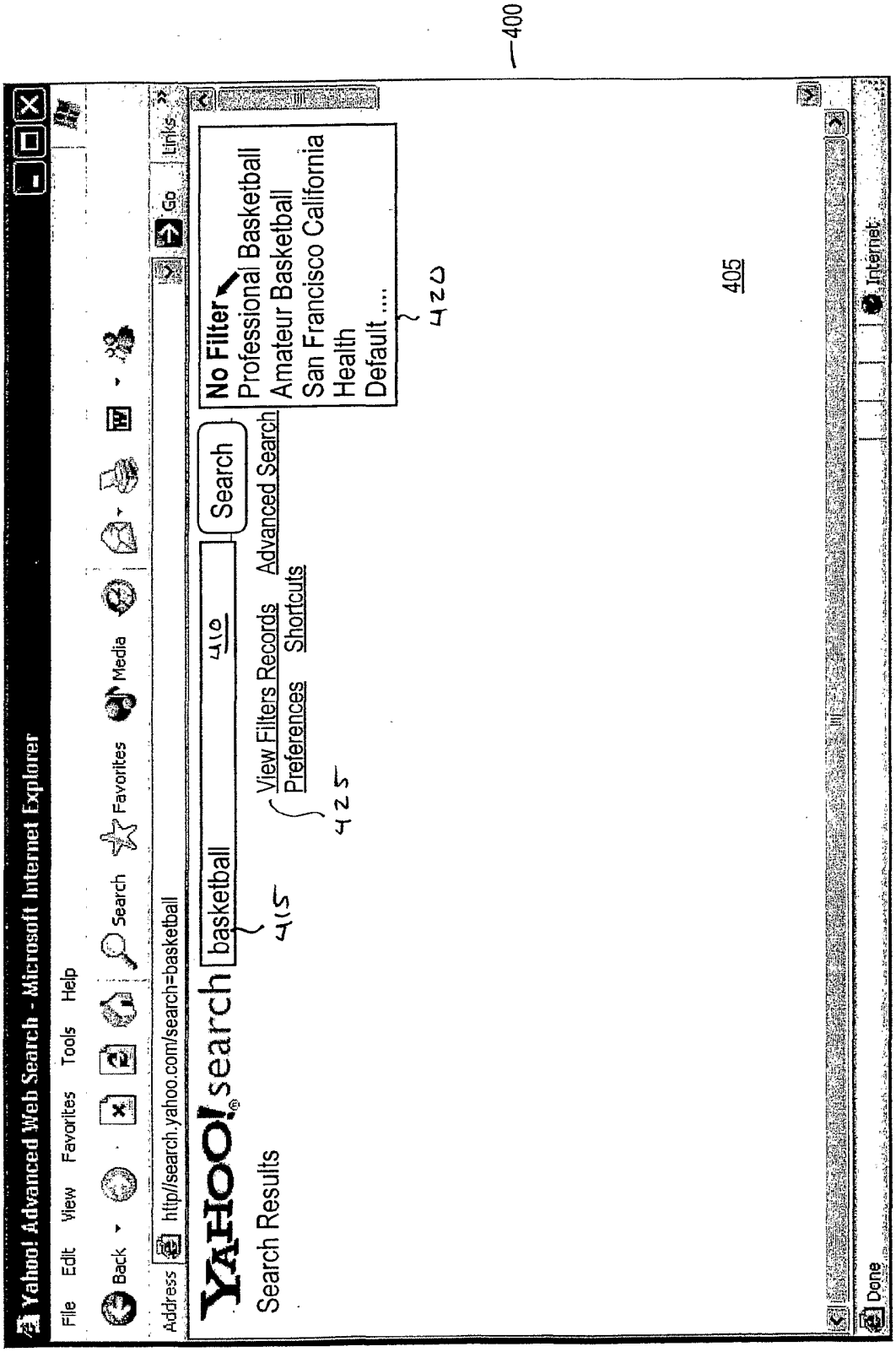
400
Yahoo! Advanced Web Search - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://search.yahoo.com/search=basketball
Links
YAHOO! search
basketball
410
Search
View Filters Records Advanced Search
Preferences Shortcuts
415
425
No Filter
Professional Basketball
Amateur Basketball
San Francisco California
Health
Default ....
420
Search Results
405
Done
Internet

FIG. 4

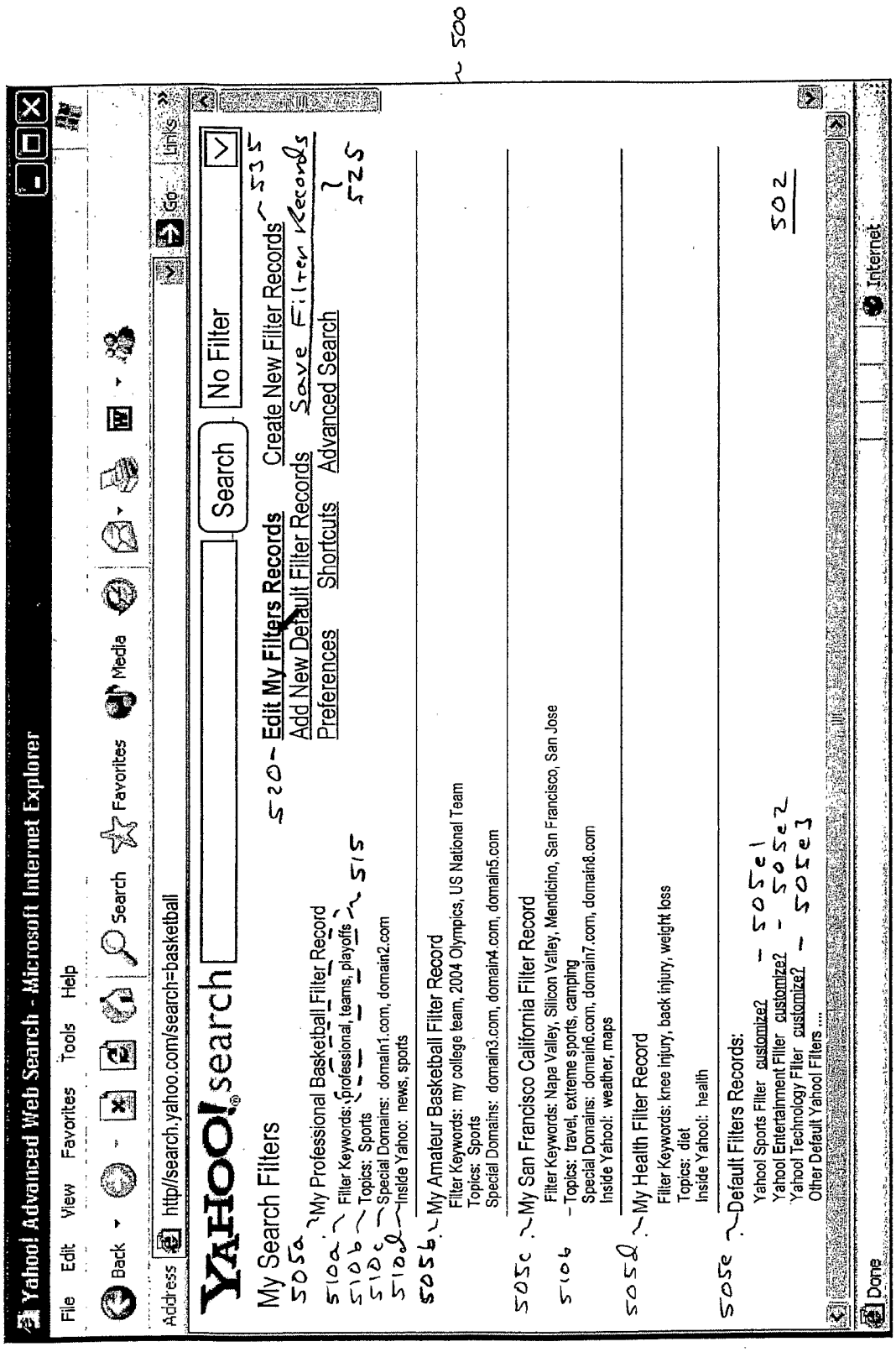
500
Yahoo! Advanced Web Search - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://search.yahoo.com/search=basketball
YAHOO! search
Search
No Filter
My Search Filters
520 - Edit My Filters Records
Create New Filter Records
Add New Default Filter Records
Save Filter Records
Preferences Shortcuts Advanced Search
525
535
505a My Professional Basketball Filter Record
Filter Keywords: professional, teams, playoffs
Topics: Sports
Special Domains: domain1.com, domain2.com
Inside Yahoo: news, sports
515
505b My Amateur Basketball Filter Record
Filter Keywords: my college team, 2004 Olympics, US National Team
Topics: Sports
Special Domains: domain3.com, domain4.com, domain5.com
505c My San Francisco California Filter Record
Filter Keywords: Napa Valley, Silicon Valley, Mendicino, San Francisco, San Jose
Topics: travel, extreme sports, camping
Special Domains: domain6.com, domain7.com, domain8.com
Inside Yahoo!: weather, maps
505d My Health Filter Record
Filter Keywords: knee injury, back injury, weight loss
Topics: diet
Inside Yahoo!: health
505e Default Filters Records:
Yahoo! Sports Filter customize2 - 505e1
Yahoo! Entertainment Filter customize2 - 505e2
Yahoo! Technology Filter customize2 - 505e3
Other Default Yahoo! Filters ....
502
Done
Internet

FIG. 5

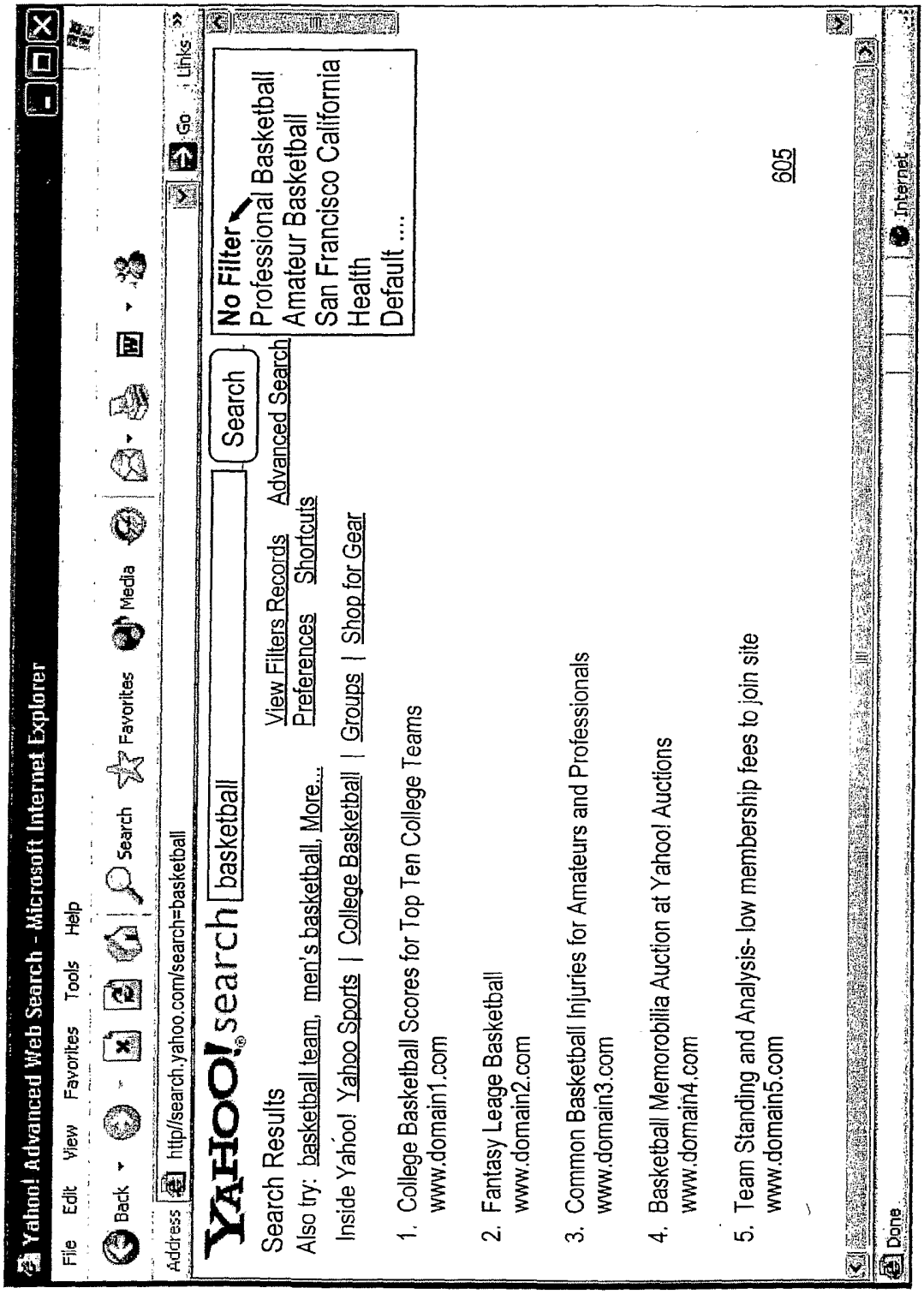
600
Yahoo! Advanced Web Search - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://search.yahoo.com/search=basketball
Go Links
YAHOO! search basketball
Search
View Filters Records Advanced Search
Preferences Shortcuts
Search Results
Also try: basketball team, men's basketball, More...
Inside Yahoo! Yahoo Sports | College Basketball | Groups | Shop for Gear
1. College Basketball Scores for Top Ten College Teams
www.domain1.com
2. Fantasy Leage Basketball
www.domain2.com
3. Common Basketball Injuries for Amateurs and Professionals
www.domain3.com
4. Basketball Memorobilia Auction at Yahoo! Auctions
www.domain4.com
5. Team Standing and Analysis- low membership fees to join site
www.domain5.com
No Filter
Professional Basketball
Amateur Basketball
San Francisco California
Health
Default ....
605
Done
Internet

FIG. 6

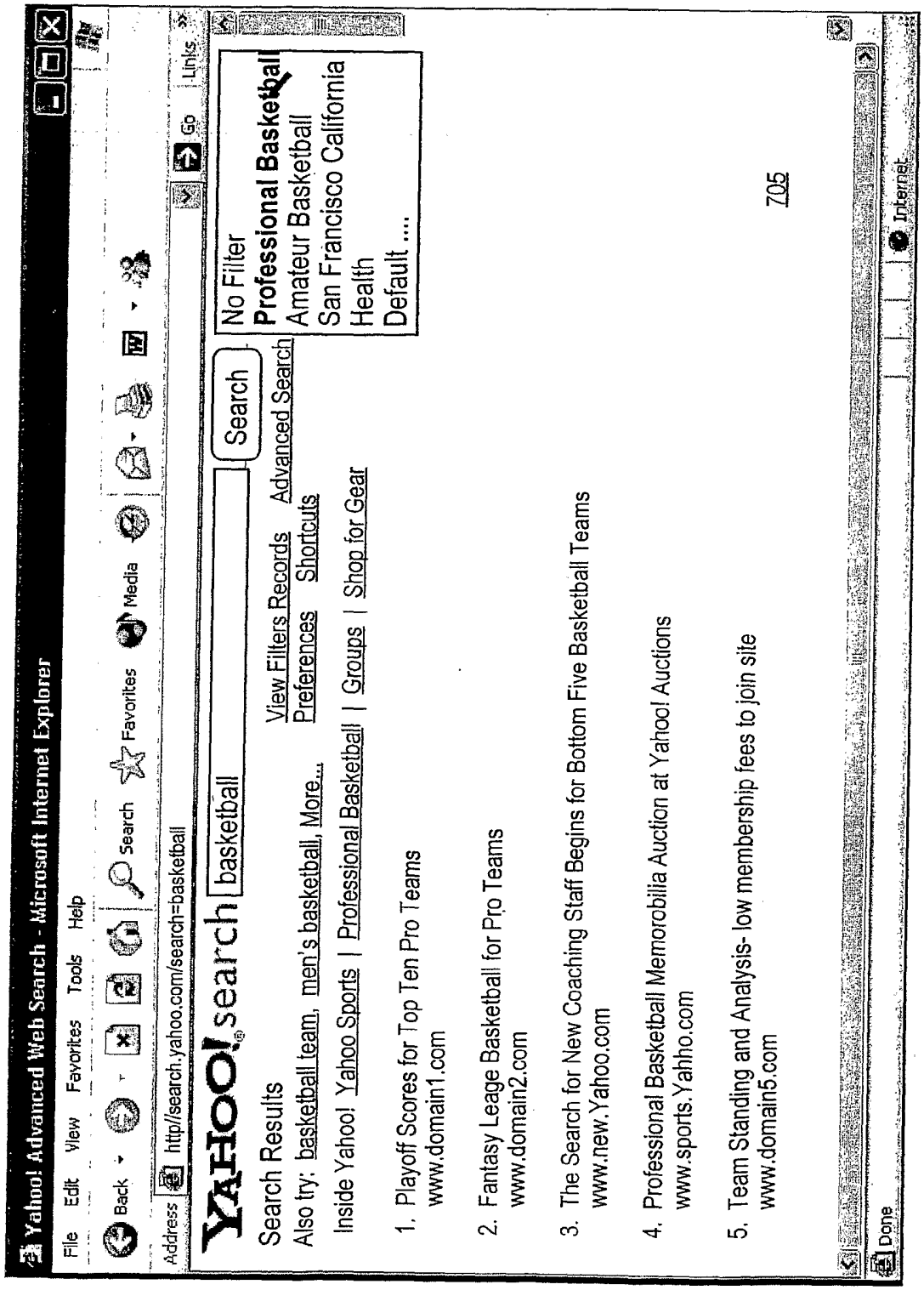
400
Yahoo! Advanced Web Search - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://search.yahoo.com/search=basketball
Go Links
YAHOO! search basketball
Search
View Filters Records Advanced Search
Preferences Shortcuts
Search Results
Also try: basketball team, men's basketball, More...
Inside Yahoo! Yahoo Sports | Professional Basketball | Groups | Shop for Gear
1. Playoff Scores for Top Ten Pro Teams
www.domain1.com
2. Fantasy Leage Basketball for Pro Teams
www.domain2.com
3. The Search for New Coaching Staff Begins for Bottom Five Basketball Teams
www.new.Yahoo.com
4. Professional Basketball Memorobilia Auction at Yahoo! Auctions
www.sports.Yahho.com
5. Team Standing and Analysis- low membership fees to join site
www.domain5.com
No Filter
Professional Basketball
Amateur Basketball
San Francisco California
Health
Default ....
705
Done
Internet

FIG. 7

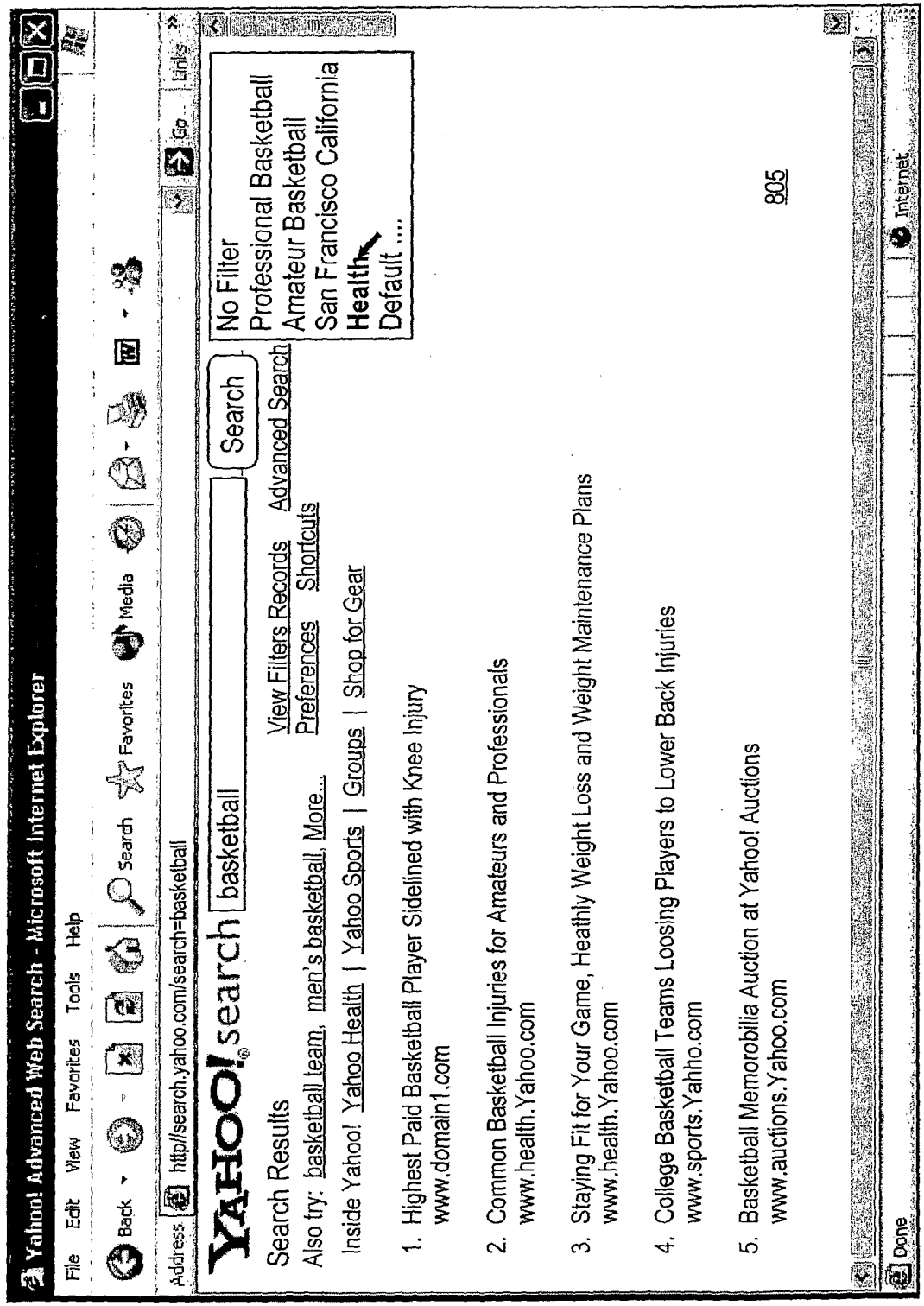
400
Yahoo! Advanced Web Search - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://search.yahoo.com/search=basketball
Links
YAHOO! search basketball Search
View Filters Records Advanced Search
Search Results
Also try: basketball team, men's basketball, More...
Preferences Shortcuts
Inside Yahoo! Yahoo Health | Yahoo Sports | Groups | Shop for Gear
No Filter
Professional Basketball
Amateur Basketball
San Francisco California
Health
Default ....
1. Highest Paid Basketball Player Sidelined with Knee Injury
www.domain1.com
2. Common Basketball Injuries for Amateurs and Professionals
www.health.Yahoo.com
3. Staying Fit for Your Game, Healthy Weight Loss and Weight Maintenance Plans
www.health.Yahoo.com
4. College Basketball Teams Loosing Players to Lower Back Injuries
www.sports.Yahho.com
5. Basketball Memorobilia Auction at Yahoo! Auctions
www.auctions.Yahoo.com
805
Done
Internet

FIG. 8

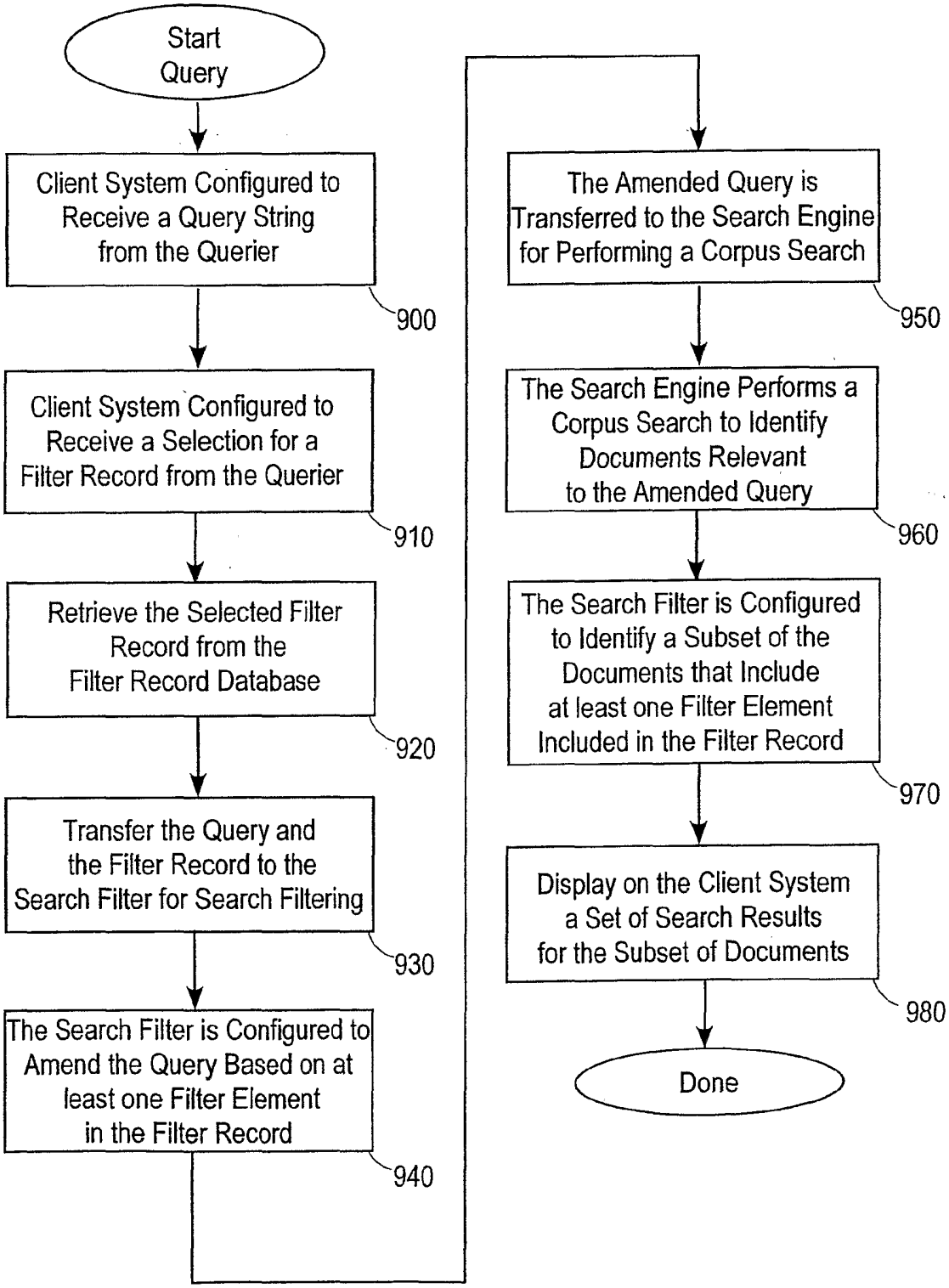
Start Query
Client System Configured to Receive a Query String from the Querier
900
Client System Configured to Receive a Selection for a Filter Record from the Querier
910
Retrieve the Selected Filter Record from the Filter Record Database
920
Transfer the Query and the Filter Record to the Search Filter for Search Filtering
930
The Search Filter is Configured to Amend the Query Based on at least one Filter Element in the Filter Record
940
The Amended Query is Transferred to the Search Engine for Performing a Corpus Search
950
The Search Engine Performs a Corpus Search to Identify Documents Relevant to the Amended Query
960
The Search Filter is Configured to Identify a Subset of the Documents that Include at least one Filter Element Included in the Filter Record
970
Display on the Client System a Set of Search Results for the Subset of Documents
980
Done

FIG. 9

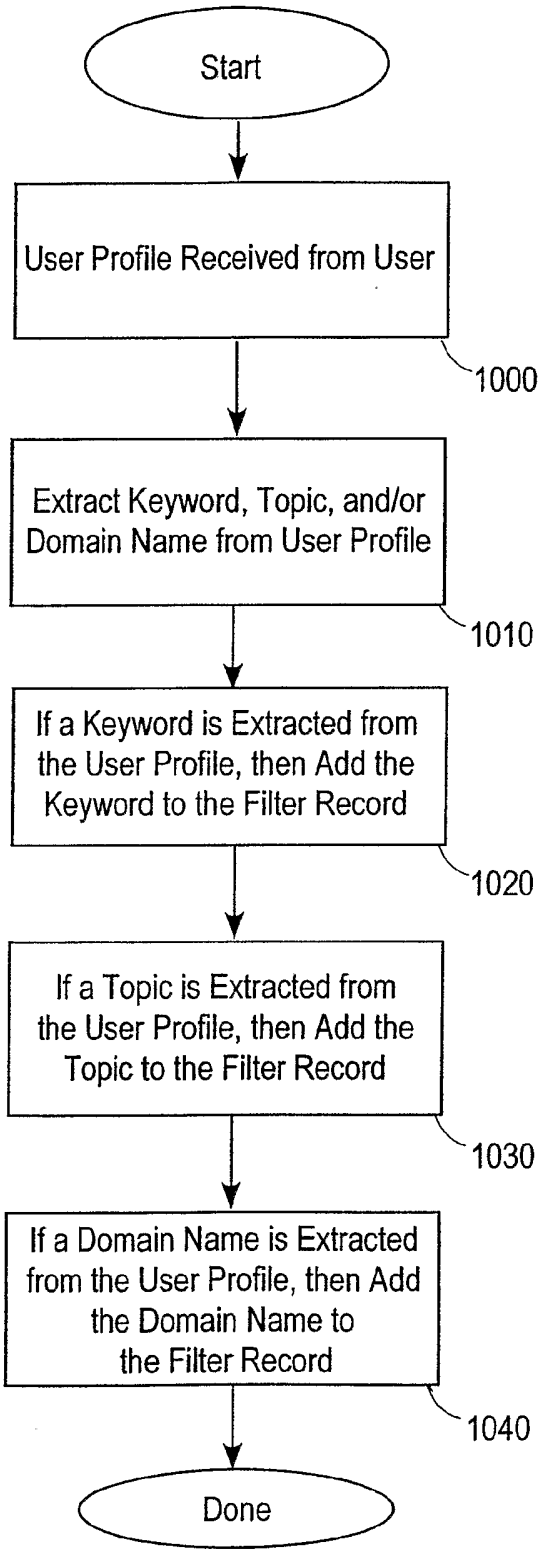
Start
User Profile Received from User
1000
Extract Keyword, Topic, and/or Domain Name from User Profile
1010
If a Keyword is Extracted from the User Profile, then Add the Keyword to the Filter Record
1020
If a Topic is Extracted from the User Profile, then Add the Topic to the Filter Record
1030
If a Domain Name is Extracted from the User Profile, then Add the Domain Name to the Filter Record
1040
Done

FIG. 10

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/012880

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GLOVER E J ET AL ASSOCIATION FOR COMPUTING MACHINERY: "ARCHITECTURE OF A METASEARCH ENGINE THAT SUPPORTS USER INFORMATION NEEDS" PROCEEDINGS OF THE 8TH. INTERNATIONAL CONFERENCE ON INFORMATION KNOWLEDGE MANAGEMENT. CIKM'99. KANSAS CITY, MISSOURI, NOV. 2 - 6, 1999, ACM CIKM INTERNATIONAL CONFERENCE ON INFORMATION AND KNOWLEDGE MANAGEMENT, NEW YORK, NY : ACM, US, 2 November 1999 (1999-11-02), pages 210-216, XP000895328 ISBN: 1-58113-146-1 abstract figures 1,3 page 211, right-hand column, paragraphs 3,4 page 213, right-hand column ----- -/--	1-9, 11-18

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 August 2006	30/08/2006

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Michalski, S

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/012880

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/071328 A1 (LAWRENCE STEPHEN R) 31 March 2005 (2005-03-31) figures 2,3,4B,5 figures 9A,9B paragraph [0076] -----	1-9, 11-18
P,X	WO 2005/098611 A (GOOGLE, INC; HAVELIWALA, TAHER, H; JEH, GLEN, M; KAMVAR, SEPANDAR, D) 20 October 2005 (2005-10-20) figures 4-6 paragraphs [0024], [0030], [0032] - [0036], [0057] -----	1-9, 11-18
A	YAHOO INC: "Yahoo Help - What is advanced search ?" INTERNET, [Online] 9 April 2004 (2004-04-09), pages 1-3, XP002394295 Retrieved from the Internet: URL:http://web.archive.org/web/20040409083707/http://help.yahoo.com/help/us/ysearch/tips/tips-03.html> [retrieved on 2006-08-09] the whole document -----	1,4,5,8, 11,12
A	EP 1 050 830 A (XEROX CORPORATION) 8 November 2000 (2000-11-08) figure 2 claims 1,2 paragraph [0024] -----	1-9, 11-18

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 10,19

The subject matter of claim 10 does not make sense and can consequently not be searched.

A meaningful search of the subject matter of claim 19 is not possible due to the presence of the unclear expression "inside Yahoo domain name".

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/012880

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 10,19
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2006/012880

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005071328 A1	31-03-2005	CA 2540679 A1	14-04-2005
		EP 1673703 A1	28-06-2006
		US 2005222989 A1	06-10-2005
		US 2005240580 A1	27-10-2005
		WO 2005033979 A1	14-04-2005
WO 2005098611 A	20-10-2005	US 2005216434 A1	29-09-2005
EP 1050830 A	08-11-2000	US 6327590 B1	04-12-2001