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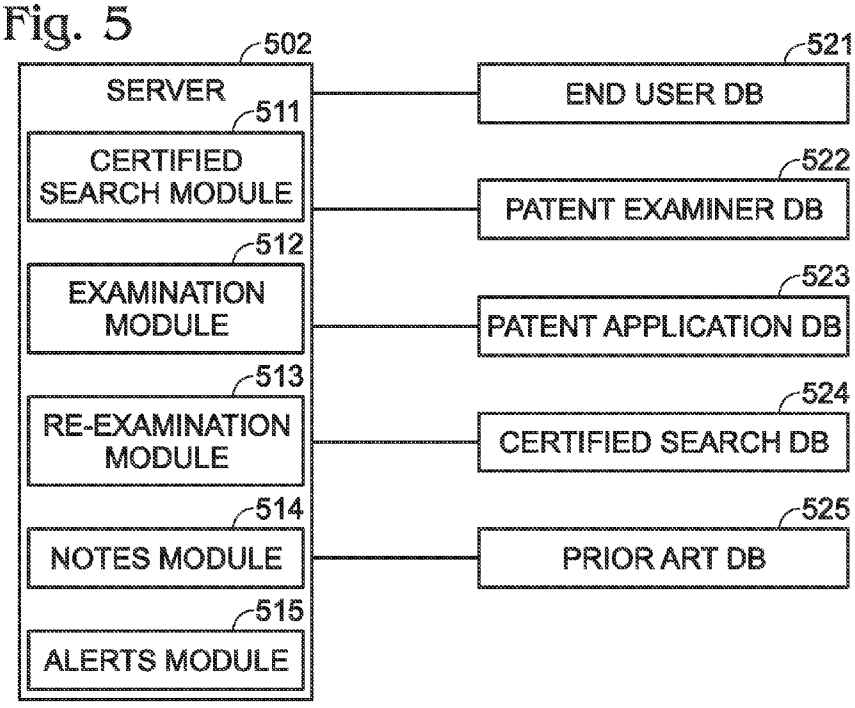
(54) **Title:** INTELLECTUAL PROPERTY NOTES-BASED COMMENTING SYSTEM

Fig. 5



(57) **Abstract:** A system of maintaining notes associated with documents that may be, for example in a document database, such as a patent database, is described. The notes may be submitted by the author(s) of the original document, by parties associated with the original document (such as a patent examiner), or by a third party. Access to the notes may be limited based, for example, on a party's relationship to the original document.

WO 2008/130397 A1

Intellectual Property Notes-Based Commenting System

Background of the Invention

[001] Protecting intellectual property through patent systems is a vital part of most countries' national economies and well as the global economy. However, many patent systems are facing a number of challenges due to the increased technical complexity of patent applications as well as with the challenge of hiring and training new patent examiners to cope with the increasing number of applications being filed.

[002] In 2000, 311,807 patent applications were filed in the U.S. This number increased to 409,532 applications in 2005. Globally, 145,300 applications were filed under the Patent Cooperation Treaty in 2006, representing a 6.4% growth over the previous year. This trend has held steady since 1995 with the number of applications filed increasing every year.

[003] The problems in the protection of intellectual property rights are further compounded by virtual reality games. Hundreds of thousands of players access games known as massive multi-player online games (MMOGs) and massive multi-player online role playing games (MMORPGs). Players of these games customarily access a game repeatedly (for durations typically ranging from a few minutes to several days) over a given period of time, which may be days, weeks, months or even years. Many of these games purport to give intellectual property rights to the players in their virtual creations. However, these games lack a structured system for evaluating and granting such rights.

[004] Given the increasing number of applications being filed and the increased demand for protection of intellectual property, it would be advantageous to provide alternate methods for assigning and distributing applications for examinations. Such alternate methods would relieve some of the pressure on patent systems, allowing examiner's to focus on the aspects of their duties that require human involvement.

Brief Description of the Drawings

[005] Fig. 1 is a block diagram of a general system 100 according to an exemplary embodiment of the present disclosure.

[006] Fig. 2 is a block diagram of a system 100' according to an exemplary embodiment of the present disclosure.

[007] Fig. 3 is a block diagram of a system 300 according to an exemplary embodiment of the present disclosure.

[008] Fig. 4 is a block diagram of a system 400 according to an exemplary embodiment of the present disclosure.

[009] Fig. 5 is a block diagram of a system 500 according to an exemplary embodiment of the present disclosure.

[010] Fig. 6 is a block diagram of a system 600 according to an exemplary embodiment of the present disclosure.

[011] Fig. 7 is a block diagram of a system 700 according to an exemplary embodiment of the present disclosure.

[012] Fig. 8 is a block diagram of a system 800 according to an exemplary embodiment of the present disclosure.

[013] Fig. 9 is a block diagram of a system 900 according to an exemplary embodiment of the present disclosure.

Detailed Description

[014] According to various embodiments, the present disclosure provides systems and methods that may be used alone or in combination to provide a notes-based commenting system configured to allow users to submit notes and/or comments into a public or private record. As described in greater detail below, while the notes/comments are typically submitted with respect to the public record, the notes themselves may or may not be publicly available.

[015] According to various embodiments the following terms may, but do not necessarily, have or include the following meanings:

[016] Advertisement – includes any communication via any medium to any one or more end users or any person or third party. Advertisements may include text, audio, video, icons, graphics, images, etc. Advertisements may include an offer for sale, for profit or not, and may or may not include a discount, for any services, products, financial instruments, e.g., insurance, annuities, securities, e.g., stocks, bonds, options, etc. and/or any other good or service, and/or may provide information about any of the forgoing or anything, such as a request for donations to political or charitable or any other entity or organization. Or, an advertisement might be used or designed to provide information to inform or educate any constituent and/or may include communications in support of any one or more objectives such as public relations, publicity, product placement or introduction, sponsorship, underwriting, public notice or service announcement or any other objective or purpose.

[017] Alert - includes the transfer, delivery or storage of information or otherwise communicating with, by, between or among any two or more of the following, including, but not limited to any real or virtual: a) end user, b) game owners, c) game or other servers, d) player or player characters, e) NPC's, f) exchanges, g) game devices or controllers, h) cell phone or other communications hardware and/or networks, i) databases, j) software applications, k) legal agencies, l) governing bodies, m) software interfaces, n) any person, o) and/or any combination of any of the above, which may be initiated by and/or based upon an alert event or other action. Exemplary methods to determine alert events and/or to send alerts are disclosed for example, in U.S. Patent Application Serial No. 11/676,848 "Virtual Environment with Alerts" filed February 20, 2007 which is incorporated herein by reference.

[018] Alert Event - includes any change in, of or to any condition or state, and includes any action, opposite action, unexpected action, desire for action, or failure to act, and thus Alert Event includes, but is not limited to any one or more of:

1. When or after any one or more variables or data changes or is expected or is about to change within an application, service, API, communications network or one or more databases, or database variables or element, e.g., a balance is reached or exceeded
2. When an end-user acts, e.g., clicks on a word or link, or fails to act as or when expected.
3. An amount of time elapses with or without an action.
4. When or after information is transmitted and/or shared (e.g. via a communications package or other mechanism) between two or more applications, services, servers, financial institutions, or any other entities, e.g., a message sent between two servers to provide information about one or more hyperlinks.

[019] Approval Queue- includes a queue of documents and or prior art associated with those documents that is awaiting an approval mark from an entity such as a patent examiner

[020] Boilerplate – includes any text, word, words, or phrases and/or part or all of a document which may be readily or otherwise reused with little or no modification and/or to serve as the basis of a new phrase or document, which use may save time and effort in the creation of said phrase or document. Boilerplate may include standard documents, terms, conditions, words, phases, etc., that can be incorporated or reused in multiple applications.

[021] Blog – includes a user-generated website or other system where entries may be made in journal or other style and may be displayed in a reverse chronological or other order. Blogs often provide commentary or news on a particular subject, such as food, politics, or local news; some function as more personal online diaries. Blogs may include and/or combine or use text, images, and may include links, including hyperlinks to other blogs, web pages, documents, words, and other media related to its topic or subject matter. The term "blog" is derived from the term "Web log." "Blog" can also be used as a verb, meaning to maintain or add content to a blog.

[022] Certified Component-includes any piece of software that is a component of a total software solution that has been approved for use by an entity such as the USPTO

[023] Certified Definition-includes the definition of a word or phrase as it relates to a class or subclass of patentable inventions that is approved by an central entity such as the USPTO

[024] Certified Font-includes any font that is approved by a central entity such as the patent office for use in an invention disclosure or figures associated with such a disclosure.

[025] Certified Icon-includes any icon that can be used in a figure to be submitted with a patent application to identify a standard component of invention that is approved for it use by a central entity.

[026] Certified Plug-in-includes any software module that can be inserted into a larger software program and used to perform a sub function of the total function of the total system that is approved by a certification party such as the USPTO

[027] Certified Shape-shall include any visual shape that can be used to identify a component in a patent or other drawing that is approved by a central entity such as the patent office for use in a figure associated with an invention disclosure

[028] Certified Template-shall include a group of certified shapes, certified Icons, and or certified fonts that can be used in a figure associated with an invention disclosure and that is approved by a central entity such as the patent office.

[029] Class, in the context of a patent application, -includes a class of patents or other digital documents in an electronic database

[030] Click-through – includes the process of an end user selecting or otherwise activating a hyperlink

[031] Document Map or Map - includes a visual representation of a group of documents or other items or objects, such as patents that shows the relationship of

those documents, objects or items to one another. For example, a map might be of a group of documents and their relevancy to each other. Or, a map might include a visual representation.

[032] End User – includes any person or entity, real or virtual that makes use of or otherwise practices any part or all of the disclosed invention and/or any software application or tool disclosed herein or otherwise. End users include, for example, patent applicants, patent examiners, patent attorneys, patent examiner supervisors, document review specialists, diagram or figure design engineers, survey respondents, search tool users, and other persons. In certain embodiments, an end user may be an application, application program interface, reporting or other tool or automated process.

[033] Genetic Algorithm – includes any software application or module that can improve results with use.

[034] Hyperlink or link – includes a set of instructions or code, which may be embedded, or otherwise associated with or connected to, an element, word, object, icon, document, figure, map, file attachment, or other displayed area within a document which, when selected, clicked or otherwise activated by an end user, may cause a computer to perform one or more functions. Examples of functions that might be performed include, but are not limited to, displaying new or additional information, redirecting to a different area of the same or a new document, displaying an advertisement, soliciting and/or capturing information, opening a form that requires end user input, and/or displaying new information that is generally associated with and/or related to the hyperlinked element. New or additional information and/or webpage(s) may or may not be displayed using a separate or new web browser page or popup window or interstitial. Hyperlinks are commonly identified through the use of an underline and/or color coding, e.g., HYPERLINK, but this is not necessarily required or desired. Hyperlinks may be activated by any applicable means, including, but not limited to, left or right clicking on or near the link, placing a pointer on or near the link (briefly, temporarily or not), touching the area, e.g., via use of a touch screen or other pointing mechanism, and/or automatically, e.g., based upon date or time, or other action or inaction of the end user. For example, in some situations, failure to respond within a given timeframe may cause execution or delay of execution of a hyperlink. A hyperlink may be associated with other hyperlinks, e.g., hyperlinks within hyperlinks, documents, programs, words, phrases, or other information or

actions. For example, if an end user right clicks on a hyperlink, one or more options may appear, permitting the end user some degree of flexibility in the action or actions taken. The terms link and hyperlink shall have corollary meanings.

[035] Information Disclosure Statement (IDS)-includes the definition provided by the United States Patent and Trademark Office (USPTO).

[036] IDS Report-includes a document that references all prior art material associated with a patent application or invention disclosure

[037] Image-includes figures, pictures, drawings, document images, e.g., document snapshots, etc.

[038] Improvement Module-includes a sub module that is embedded in a total system that is used to improve upon the total system or other sub modules embedded in that system.

[039] Keyword – includes any word or words that are identified as being "of interest." A keyword may be of interest because it is a word that generally helps to describe the content of the document in which it is used, or for other reasons.

[040] Lexicon-includes a group of words with corresponding definitions that is broken into classes and subclasses that are associated with the class and subclass of documents in a database such as the digital database of filed and or issued patents of the USPTO

[041] Mapping-includes the process of associating documents to one another and providing a visual representation of the relationships of those documents.

[042] Merchant – includes any person that desires to sell a good or service or desires to have one or more end users to review, select, or click a hyperlink in a document and/or receive other information and/or perform other tasks and/or receive information associated with one or more keywords selected by such merchant.

[043] Notes – includes any computer file or data or any free form or other text, graphics, figures and/or any files such as any audio, video, e.g., JPEG or MPEG, pictures, e.g., GIF, or other files, such as, PDF, XLS, XML, TXT, DOC, RTF, or any other known files such as those described on the websites: http://filext.com/ and http://www.computeruser.com/resources/dictionary/filetypes.html, which are incorporated herein by reference. Notes may be attached or associated with any one or more of the following, any electronic element, word or words, phrase, document, figure, hyperlink, webpage, database, table, file, or any other electronic media. Notes may include any description, hyperlink, figure, document or file associated or

attached to any of the forgoing and/or any combination of the forgoing. In certain embodiments, notes may contain or refer or reference other notes, e.g., notes within notes. Exemplary methods to provide attachment of notes into documents and/or associate notes with documents, or words, or other data are disclosed in US Patent Application Nos. 11/690,095 "Facilitating Certified Prior Art Note Taking and Method for Using Same," filed March 22, 2007; 11/697,480 entitled "Note Overlay System," filed April 6, 2007; and 11/697,486 entitled "Document Examiner Comment System," filed April 6, 2007; each of which is incorporated herein by reference.

[044] Patent Application-includes an invention disclosure that has been filed with a registration entity such as the USPTO

[045] Patent Application Drafting Tool-includes a web based software program that assists in the drafting and filing of patent applications with a registration entity such as the USPTO. An exemplary patent application drafting tool is described in U.S. Patent Application No. 11/627,263, which is hereby incorporated by reference.

[046] Patent Drafting Engine-includes a software module that can partially or completely draft and/or modify an existing draft patent application and/or file those applications with a registration entity such as the USPTO.

[047] Patent Figure-includes any figure or document attached to a patent application

[048] Patent Section-includes any section of a patent application or invention disclosure such as the background, summary, title, abstract and or claims.

[049] Patentability Score-includes a score assigned by one or more people, e.g., an end user, or computer programs to a patent application that relate to its strength of patentability in categories such as novelty, obviousness, and usefulness.

[050] Plug-in – includes any software application or module or one or more computer instructions, which may or may not be in communication with other software applications or modules, and may include any file, image, graphic, icon, audio, video or any other attachment. Plug-ins may be comprised of any one or more set of computer instructions using any computer programming language.

[051] Relevancy-includes how relevant a word, phrase, patent section, patent figure or document is to another word, phrase, patent section, patent figure or document

[052] Rules – includes computer instructions that can provide application direction and/or decision making and includes both inference and reactive rules. Rules may include permissions, limitations, method steps, alert event conditions, alert contents,

workflow instructions, security measures, business process management instructions, if/then/else instructions and/or any supporting data, variables, or computing instructions and/or logic.

[053] Rules Based – includes any system or application or module that uses or relies on one or more rules.

[054] Search Relevancy-includes how relevant sections of a document are to a word, phrase, patent section, patent figure, or document are when producing search results for a query. For example, the abstract of a patent document can have higher search relevancy than the background of a patent document when conducting prior art searches using a prior art search software tool.

[055] Search Weight-shall mean the score that one section of a document has to other sections of a document when conducting searches against a database of documents in which that document is included.

[056] Subclass-includes a subclass of patent documents as defined by the USPTO. Subclass can also include any sub classification of a database of electronic documents.

[057] Synonym – is any word or group of words that have the same or similar meaning of another word or group of words and/or that may be interchangeable. The opposite of synonym is antonym.

[058] Thesaurus-includes an electronic database of words that have been mapped to indicate similarities in word definitions. The thesaurus may be broken into classes and subclasses that relate to the classes and subclasses of documents stored in an electronic database and/or accessed via such database

[059] Virtual – includes anything that is not real, in whole or in part, and/or anything real, in whole or in part; which may be simulated, represented, presented or depicted in a virtual environment, video game or displayed on a screen.

[060] Virtual Environment – any technology that permits one or more end users to interact with a real, imaginary or virtual computer simulated environment.

[061] Virtual World – includes a world created in an online game such as World of Warcraft, or a virtual community such as Second Life, Eve or There.com

[062] Video Game-shall mean any massive multi online player game such as World of Warcraft and any virtual world such as Second Life

[063] Web page – includes any resource, form, or any information that is accessible via the Internet and that is suitable or exists on the world wide web. A web page

usually includes information in any applicable format, e.g., HTML or XHTML. Web pages may include hyperlinks or provide other means of navigation to other web pages. Web pages may be accessed by any applicable means, including, but not limited to: any computing or internet enabled devices, e.g., personal computers, laptops, PDAs, cell phones, video game controllers, or any other communications device, which may be local or remote to the computer or server where such web page(s) may exist or reside.

[064] Word – includes one or more groups of letters including titles, indices, text, headings, descriptions, diagrams, etc., and documents (in whole or in part), phrases (i.e., groups of two or more words), synonyms, antonyms, icons, graphics, drawings, schematics, blueprints, pictures, audio and/or video, and/or any combination of the forgoing, The words "Word" and "Words" shall have corollary meanings.

[065] Turning first to Fig. 1, a general system 100 is shown. The system includes one or more program modules 10, which are in electronic communication with one or more databases 20. Databases 20 may be hosted on the same server as program modules 20 (which themselves may or may not be hosted on the same server). Alternatively, some or all of databases 20 may be hosted on other or remote locations/servers.

[066] According to one or more embodiments, the present invention provides an automated web-based patent application preparation and submission tool. In one embodiment, an end user can draft a patent application using an online tool. Once the patent application or portion thereof is created, the document can be submitted to: (i) a researcher for further research, (ii) a patent attorney for further drafting, or (iii) the patent office.

[067] The information submitted into the tool may be analyzed automatically and/or in real time by the system in order to perform various functions. For example, based on the information submitted, the system can recommend alternate language for sections or draft missing parts of the total patent application. For the purposes of the present disclosure, information is considered to be analyzed automatically any time it is analyzed by the system with the system having to receive additional input, such as a request or command, from the user. It will be appreciated, that computer implemented systems are subject to various operating constraints, such as server loads, processing speeds, and the like, with which those of skill in the art will be familiar and, accordingly, "real time" analysis may not necessarily be instantaneous,

but is rather intended to mean that results are automatically provided to the user as soon as they are available, given the various system operating constraints.

[068] Recommendations for alternate language or missing portions may be based on patent applications or other non-copyright protected publications describing similar inventions. For example, the system may use a genetic algorithm to determine like patent applications as the end user is entering the description of his invention. Because patent practitioners often act as their own lexicographers and coin new terminology to describe inventions, such new terminology can be shared immediately and made available to other patent practitioners. In this manner, the system can act as an ever changing virtual dictionary of language for new patent applications. An example of a genetic algorithm that can perform this function is the Semetric program offered by Engenium.

[069] As another example, the system can perform real time prior art search based on the disclosure as the end user types words into the tool. The system could be configured to dynamically display the most relevant prior art choices based on the words and letters being typed. The prior art being displayed would then change in real time as the end user types in more words to describe the invention. It will be appreciated that such real time searching could be used for any type of searching and not just searching for prior art for inventions.

[070] Suggestions for alternate language and missing portions or prior art or other searches need not necessarily be performed in real time, but may also or alternatively be performed after a disclosure is submitted by the end user, for example in order to receive an initial review prior to filing, or only upon the end user's request.

[071] According to another embodiment, the system may utilize a genetic algorithm to specify a class and subclass for a patent application. The system may analyze an application in real time, or after it has been submitted, and determine the appropriate class and subclass. The genetic algorithm may or may not allow for the incorporation of classification data from previously submitted applications which are identified by the system or the end user as being similar to the current application.

[072] According to another embodiment, the system may track and/or identify information that is missing from the patent application that is required for filing the patent application with the patent office. The end user can review missing parts for a particular patent application and fill them in as desired. The end user can also leave

missing information fields open for subsequent completion, for example, by researchers and/or patent practitioners.

[073] According to another embodiment, one or more notes could be submitted by an end user or other individual in connection with a document, including, for example, an application as it is being drafted, a submitted or filed application, a patent publication, an issued patent, a non-patent reference, an office action, a examiner or practitioner communication, a judicial or review-board decision, or the like. These notes may or may not be viewable to other users and may or may not be used by the system for any suitable purpose, including, for example, preparation or examination of the present application, preparation or examination of other applications, system maintenance, and the collection and dissemination of statistical information. Moreover, notes may or may not be submitted in response to additions, suggestions, or notes from the system or other individuals. Any suitable type of file, including, but not limited to a jpg, digital video, recording, voice message, or textual document could be added to or associated with a document as a note.

[074] As a non-limiting example, an end user may add notes to the alternate language and missing portion suggestions provided to or by the system. These notes can be used by the genetic algorithm to generate improved alternate language and missing portion suggestions for later invention submissions by the same and/or other end users. Moreover, these notes could be readable by subsequent end users and could be used to assist in the drafting of later patent applications.

[075] According to another embodiment, the present disclosure provides for a system in which a practitioner can elect from between multiple post-drafting processing options. The system may or may not require that the application have been drafted using a web-based drafting tool such as that described above. According to this embodiment, once an end user has completed drafting a patent application, the end-user can select whether he wants to:

1. Submit the patent application to a researcher
2. Submit the patent application to an attorney for further drafting
3. Submit the patent application to the Patent Office for filing

[076] In an alternate embodiment, the system can recommend one of the previous three choices to an end user based on the current status of an application. According to this embodiment, the system analyzes the patent application document and compares it to previously filed patent applications. The patent application is scored

and the system determines whether the application should be sent to a researcher, an attorney, or to the patent office.

[077] If the end user elects to submit the patent application to a researcher, the system can select or suggest an optimal researcher from its database of researchers based on inventions researched by those researchers and the relevance of those inventions to the invention currently being submitted by the end user. Alternatively or additionally, the system could select or suggest a researcher based on whether a particular researcher has capacity to conduct research on the patent application. If the end user is allowed to select a researcher, a list of applicable researchers could be provided to the user by the system. The list could be sorted or sortable based on relevancy, expected timeframe for research completion, cost, location, or other factors.

[078] As a further embodiment, if the end user is allowed to select a researcher, researchers could bid on the opportunity to research the patent application. Bids could include any number of relevant factors including but not limited to, cost for research, type of fee rate (i.e. flat fee, hourly, etc.), type and extent of results provided, and timeframe for returning results.

[079] Moreover, the system could be configured to provide to the end user contact information for each selected or suggested researcher. The end user could then contact the selected or suggested researcher via the system interface and submit the patent application to the researcher for review. A contract can be set up, i.e., drafted and executed automatically, between the end user and the patent researcher using the system.

[080] According to an embodiment, the researcher receives the patent application, creates a research report, and submits the research report to the end user. The research report may be submitted to the end user via the central system. According to some embodiments, the end user can review the prior art cited in the research report and rate its relevance to the invention disclosed. The relevance rankings can be used to match that researcher to subsequent patent applications. The end user can also submit notes distinguishing the application over the prior art cited and/or alter the application, such as to include distinguishing language.

[081] According to an embodiment, the system may be configured to facilitate fee transactions between the end user and the researcher. The system may or may not impose a surcharge for facilitating the fee transactions. For example, once an

application has been submitted to a researcher, the system may charge the researcher with a finder's fee. The system could also charge the end user with a researcher finder fee, or, the two parties could split a single fee. Alternatively the system could charge the researcher, who, in turn could charge the end user some, or all, of the fee amount. Alternatively or additionally, once the report has been received by the end user, a research report fee can be charged to the end user and some or all of the fee can be remitted to the researcher.

[082] Alternatively or additionally, the system may be configured to submit the application to an automated searching program configured to produce search results using, for example, a genetic algorithm search program. A genetic algorithm search program is described, for example, previously incorporated U.S. Patent Application Serial No. 11/462/621, and U.S. Provisional Patent Application Serial No. 60/727,191.

[083] If the end user elects to submit the patent application to an attorney (or agent) for additional drafting, the system can determine an optimal attorney from its database of attorneys. The determination may be based on any number of factors including, for example, estimated fee, past applications filed by the attorney, attorney's capacity, estimated turn-around, etc. For example, the system may be configured to identify past inventions/applications filed and prosecuted by attorneys in the database and further determine the relevance of those inventions to the invention currently being submitted by the end user.

[084] Moreover, attorneys may be asked or required to provide the system with information regarding their fees for preparation including billing rates and fees for past applications, current availability, estimated turn-around time, contact information, etc. Accordingly, the system can select or suggest an attorney based on such information. For example, a given attorney may be selected or suggested based on whether or not the system determines that attorney has capacity to assist the inventor in enhancing the application. Once one or more attorneys are selected by the system or the end user, the system can provide the attorneys' contact information to the end user using any suitable method. According to one embodiment, the end user may receive an attorney's contact information via the web-based form.

[085] Furthermore, the end user may be able to automatically submit the patent application to the attorney via the web-based service. The attorney may then review the application for further refinement. Changes, additions, and alterations made by the

attorney may be tracked by the system. Once the attorney has completed the application, the end user may be able to log in or otherwise access the completed application via the system to order to review and approve changes made by the attorney to the application.

[086] If the end-user is not completely satisfied with the changes made by the first attorney, the application, with or without the first attorney's changes, may be submitted to a second attorney and such process repeated until the end-user is satisfied with the application. Once final approval is received from the end-user, the patent application can be submitted to the patent office by the system.

[087] The determination of an appropriate attorney may be made at the time the end user opts to submit the draft application to an attorney or while the end user is drafting the application. Moreover, rather than waiting until the end user believes he has "finished" the application, the end user may be able to contact the attorney via the system while drafting the application. For example, while the end user is entering the patent application data into the system, the system can determine an appropriate attorney and offer the opportunity to provide the end user with real time chat with the attorney. if the end user accepts, a chat window is opened between the end user and attorney via the central system. The end user can provide patent application data and the attorney can add and edit the data. When the session is complete, the system can charge a fee to the end user and submit a portion of that fee to the attorney. The recorded chat session is attached to the patent application file.

[088] The system may be configured to facilitate fee transactions and contract formation between the attorney and the end-user. The system may or may not impose a surcharge for such facilitation. For example, when an end user contacts an attorney, a finder's fee can be charged to both the attorney and the end user. Furthermore the system may facilitate with the drafting and execution of a contract between the end user and attorney specifying terms and conditions so that the attorney can complete the application. The system may or may not utilize a standard contract which may or may not be modifiable by the end user and/or the attorney. Once the attorney's changes are made, the system may be configured to charge the fee specified by the contract to the end user for enhancing the patent application and submit some or all of the fee to the attorney.

[089] Once the end user elects to submit the patent application to the patent office, the system may be configured to determine if all information fields have been

completed. Once the system has determined that all information fields have been completed, the system generates the appropriate forms, and submits the patent application, along with the appropriate forms to the patent office. An electronic receipt confirmation is received from the patent office and stored by the central system as well as being transmitted to the end user. The central system charges a filing fee to the end user and remits a portion of that fee to the patent office. If all fields have not been completed, the system steps the applicant through each open field, providing examples and information about each field, its use, etc.

[090] According to a further embodiment, the system may be configured to time stamp the patent application file as additions are made by the various parties who can access it. Moreover, the system could time and date stamp and store all files that are entered into the system and so that a record of the invention is maintained.

[091] According to yet another embodiment, the end user may be allowed to determine whether or not an application filed with the system is to be treated as public or private data. If the filed application is be treated as public data, and thus useful as prior art against other inventions, the end user may further be allowed to identify the application as an invention registration rather than as an application. Just like a filed patent application, an invention registration can be assigned a filing date and used as prior art against later filed applications, but may not be subjected to further examination.

[092] An end user preparing a patent application may desire to get into contact with other end users that are preparing or have prepared other similar patent applications. Accordingly, the system of the present disclosure may be configured to facilitate communication between end users who are or have worked on similar patent applications. According to this embodiment, when the system receives patent application data from an end user, the system may perform a search to find other end users that are working or have worked on similar patent applications and allow the end users to communicate with one another. Such communication may or may not be anonymous. According to one example, the system receives patent application data from an end user and then uses that patent application data to search against other end user profiles in the system. The system generates a list of end user profiles that are relevant to the patent application data and scores them based on relevance. The system then outputs the list of relevant end users to the end user submitting the patent

application data. According to some embodiments, end users may be able to opt in to or out of being a member of this service.

[093] The system may require the use of a user ID and password associated with a specific log in profile or other mechanism to protect privacy and ensure that end users are accessing only the information they are entitled to access. For example, a given user may only be given access to or receive help from applications written by himself, other members of his firm or corporation, other applications for the same inventor or assignee, or other practioners who have opted in to a program. In cases where an end user is an entity with multiple individuals who access the system, each individual may have the same or a separate log in profile.

[094] In addition to a formal web browser interface, the system may incorporate a smaller interface, like a toolbar on a browser or a freestanding toolbar / text field that floats, and/or is hidden but present as an icon (e.g., in the bottom right hand corner in Windows XP). For example, a text field may be ever present on the screen. A user may be able to type a patent number, application number, attorney docket number, etc (along with any necessary password, confirmation number or the like), hit enter and be automatically directed to a search results screen, draft history screen, prosecution history screen, or some other desirable location.

[095] In a further embodiment, the system may be configured to make new matter added as part of a continuation in part (CIP) or other application easily identifiable. For example, new matter could be red-lined, highlighted, or otherwise identified by altering the font or in some other recognizable manner as the application is being prepared, or at the time of submission or filing.

[096] Furthermore, any of the processes described above, such as generation of suggested language, suggested researchers, and suggested attorneys could be performed for the new material. As a further embodiment, a new search request or automated research report could be automatically generated for the new subject matter in the CIP.

[097] According to yet another embodiment, the system may be configured to ensure that all submissions for filing comply with any formalities requirements. For example, the system may ensure that all submitted figures fall within the current guidelines for margins size, line thickness, font size, etc. Such compliance may be determined each time a submission is made, whether an initial filing, response to an office action, filing of a continuation, divisional, continuation-in-part of the like.

[098] According to yet another embodiment, the system could generate a clarity score for the patent application. An AI system could be trained to identify patent applications that clearly define an invention vs. applications that do not. End Users and patent examiners could provide a clarity rating for prior art. Based on the ratings assigned, an AI system can analyze newly filed patent applications and assign clarity scores to them.

[099] The system can be built using any suitable architectural method. Examples of suitable architectural methods include, but are not necessarily limited to: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian Algorithm.

[0100] Those having skill in the art will recognize that there is little distinction between hardware and software implementations. The use of hardware or software is generally a choice of convenience or design based on the relative importance of speed, accuracy, flexibility and predictability. There are therefore various vehicles by which processes and/or systems described herein can be effected (e.g., hardware, software, and/or firmware) and that the preferred vehicle will vary with the context in which the technologies are deployed.

[0101] At least a portion of the devices and/or processes described herein can be integrated into a data processing system with a reasonable amount of experimentation. Those having skill in the art will recognize that a typical data processing system generally includes one or more of a system unit housing, a video display device, memory, processors, operating systems, drivers, graphical user interfaces, and application programs, interaction devices such as a touch pad or screen, and/or control systems including feedback loops and control motors. A typical data processing system may be implemented utilizing any suitable commercially available components to create the gaming environment described herein.

[0102] Accordingly, the presently described system may comprise a plurality of various hardware and/or software components. An exemplary system 100' is shown in Fig. 2 and described below. However, it will be understood that a nearly unlimited number of variations are possible and that such description is intended to provide a non-limiting example of an implementation that could be utilized but should not be used to define the entire scope of the invention.

[0103] Accordingly, a system 100' configured to perform the various functions described above may incorporate a number of software modules configured to

perform various tasks. Exemplary software modules useful for the presently-described system include:

1. User interface 102 – this program allows the end user to interface with system 100'.
2. Patent Words and Phrases Dictionary Program 104 -this program generates like words and word phrases based on patent application text entered by an end user. These words and phrases may then be stored in a database such as Patent Words and Phrases Database 124, described below.
3. Patent Application Text Enhancement Program 106 – this program identifies words and phrases in an end user's patent application and associates these words and phrases with alternative words and phrases from the patent words and phrases dictionary program 104.
4. Web Based Filing Program 108 - this program allows patent applications to be created and electronically filed with the patent office.
5. Profile Score Generation Program 110 -this program scores the relevance of end users to one another and to patent applications and prior art.

[0104] System 100' may further include a number of databases configured to store and associate the various types of data that are used by the system to perform the functions described above. Exemplary databases useful for the presently-described system include:

[0105] End User Database 112, which may store and associate data such as:

1. End User ID
2. End User Name
3. End User Address
4. End User Contact Info
5. End User Billing Info
6. Profile Score ID

[0106] Patent Application Database 114, which may store and associate data such as:

1. Patent Application ID Number
2. End User ID
3. Patent Application Title

4. Patent Application Abstract
5. Patent Application Description/Specification
6. Patent Application Invention Class and Sub Class
7. Patent Application Inventor Name
8. Patent Application Inventor City
9. Patent Application Inventor State
10. Patent Application Inventor Country
11. Patent Application Attorney or Agent
12. Patent Application PCT Information
13. Patent Application Date of Invention
14. Patent Application Background of the invention
15. Patent Application Invention Figures
16. Patent Application Assignee Name
17. Patent Application Assignee City
18. Patent Application Assignee State
19. Patent Application Assignee Country
20. Patent Application Claims
21. Patent Application Search ID
22. Patent Application Researcher
23. Patent Application Filing Date
24. Patent Application Status
25. Profile Score ID
26. Published/Unpublished Flag

[0107] Patent Application Status Database 116, which may store and associate data such as:

1. Patent Application Registered
2. Submitted to manual Search
3. Manual Search Received
4. Submitted to Attorney
5. Attorney Review Complete
6. Submitted to Formal Search
7. Formal Search Complete
8. Received Distinguishing Language Over Prior Art
9. Filed

10. Patent Examiner Review
11. Response to Examiner Review
12. Patent Abandoned
13. Final Rejection
14. Patent Issued

[0108] Attorney Database 118, which may store and associate data such as:

1. Attorney ID
2. Attorney Name
3. Attorney Address
4. Attorney Billing Info
5. Profile Score ID

[0109] Prior Art Database 120, which may store and associate data such as:

1. Prior Art ID
2. Prior Art Title
3. Prior Art Abstract
4. Prior Art Description/Specification
5. Prior Art Invention Class and Sub Class
6. Prior Art Inventor Name
7. Prior Art Inventor City
8. Prior Art Inventor State
9. Prior Art Inventor Country
10. Prior Art Attorney or Agent
11. Prior Art PCT Information
12. Prior Art Date of Invention
13. Prior Art Background of the invention
14. Prior Art Invention Figures
15. Prior Art Assignee Name
16. Prior Art Assignee City
17. Prior Art Assignee State
18. Prior Art Assignee Country
19. Prior Art Claims
20. Profile Score ID
21. Related Prior Art Notes IDs 1-N
22. Prior Art Search Score

23. Published/Unpublished Flag

[0110] Prior Art Note Database 122, which may store and associate data such as:

1. Note ID
2. End User ID(s)
3. Patent Application ID
4. Prior Art ID(s)
5. Note Title
6. Note Description
7. Note Class
8. Note Subclass
9. Note Keyword(s) 1-N
10. Profile Score ID

[0111] Patent Words and Phrases Dictionary Database 124, which may store and associate data such as:

1. Word ID
2. Word
3. Like Words 1-N
4. Common phrases using word or like words 1-N
5. Used in Patents 1-N
6. Profile Score ID

[0112] Researcher Database 126, which may store and associate data such as:

1. Researcher ID
2. Researcher Name
3. Researcher Address
4. Researcher Billing Info
5. Profile Score ID

[0113] Researcher Queue 128, which may store and associate data such as:

1. Researcher ID
2. Patent Application ID
3. Patent Application Queue Number

[0114] Certified Search Database 130, which may store and associate data such as:

1. Search ID
2. Patent Application ID
3. Prior Art ID 1-N

4. Distinguishing Language Over Prior Art 1-N
5. Prior Art Score
6. Novelty Score
7. Usefulness Score
8. Non-obvious Score
9. Search Score
10. Clarity Score

[0115] Profile Database 132, which may store and associate data such as:

1. Profile Score ID
2. Profile Type
3. Patent Class 1-N
4. Patent Subclass 1-N

[0116] End User Profile 134, which may store and associate data such as:

1. Profile Score ID
2. Patent Application(s) Class 1-N
3. Patent Application(s) Sub Class 1-N
4. Invention Keywords 1-N

[0117] Profile Type Database 136, which may store and associate data such as:

1. End User
2. Attorney
3. Researcher
4. Word
5. Patent Application
6. Prior Art

[0118] Transaction Database 138, which may store and associate data such as:

1. Transaction ID
2. Transaction Date
3. Transaction Type
4. End User ID (1-N)
5. Researcher ID (1-N)
6. Attorney ID (1-N)
7. Transaction Amount

[0119] Transaction Type and Fee Database 140, which may store and associate data such as:

1. Transaction Type
2. Transaction Fee (1-N)
3. Fee Applied to Account Type (1-N)

[0120] Accordingly, a system such as that described herein will be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples of methods that may be performed by a system and the steps that the system may execute in order to perform these methods are described below:

[0121] Draft initial patent application:

1. Receive patent application information
2. Receive request for alternate language and missing part suggestions
3. Determine similar patent applications and prior art
4. Determine alternate language and missing portion suggestions based on similar applications
5. Output alternate language and missing portion suggestions
6. Receive patent application modifications based on alternate language and missing portion suggestions

[0122] Specify class and subclass:

1. Receive patent application data
2. Determine patent class and subclass based on patent application data
3. Assign class and subclass to patent application based on data received.

[0123] Enhance alternate language and missing portion suggestions based on user input

1. Output alternate language and missing portion suggestions based on patent application information
2. Receive relevance score and/or notes on alternate language and missing portion suggestions
3. Store relevance score and/or notes with patent applications and prior art for subsequent use. (Note: the scores can take into account both the prior art and the current invention being submitted, so that the relevance can be determined for later patent applications that are similar to the current application being filed.)

[0124] Submit initial application to researcher

1. Receive patent application from end user
2. Receive request to send application to researcher
3. Determine researcher based on patent application, researcher history, and researcher availability
4. Output researcher contact information
5. Receive request to submit application to researcher
6. Submit application to researcher
7. Bill end user account a researcher finders fee
8. Bill researcher account a finder's fee
9. Receive a completed research report
10. Submit report to end user
11. Bill end user account for completed report
12. Remit payment to researcher for completed report.

[0125] Rate Researcher based on Research Report Feedback

1. Submit research report to end user
2. Receive feedback for prior art cited in research report
3. Store feedback with prior art cited for subsequent search matches
4. Receive feedback for researcher
5. Store feedback with researcher record for subsequent search matches

[0126] Submit initial application to attorney for completion

1. Receive patent application from end user
2. Receive request to send application to attorney
3. Determine attorney based on patent application, attorney history, and attorney availability
4. Output attorney contact information
5. Receive request to submit application to attorney
6. Submit application to attorney
7. Bill attorney account a finder's fee
8. Bill end user account an attorney finder's fee
9. Receive completed application
10. Notify end user application has been received

[0127] Submit application to patent office

1. Receive patent application
2. Determine if there are missing parts
3. Output list of missing parts
4. If there are no missing parts, generate appropriate filing forms
5. Submit application to patent office
6. Bill end user account a filing fee
7. Remit filing fee to patent office
8. Receive notice from patent office that application was received
9. Store notice and output notice to end user.

[0128] Submit application to central system for time and date stamp

1. Receive patent application data
2. Receive indication that patent application should be submitted for a disclosure date
3. Time and Date stamp patent application data
4. Receive request to make patent application data public or private
5. Store patent application data with time stamp and public or private flag.

[0129] Find like inventors

1. Receive Patent Application Data
2. Search Patent Application Data against End User Profiles
3. Determine relevant end user profiles
4. Score relevant end user profiles
5. Output end user profiles in order of their scores

[0130] According to yet another embodiment, the present disclosure provides a system and method for providing certified third party searches. According to one aspect of this embodiment, an end user may create a patent application. Either the system or an end user determines a class and subclass for the patent application. Based on the patent class and subclass, a list of potential researchers is generated. The system selects a researcher from the list based on any number of factors, including, for example, the queue of patent applications each researcher has, the class and sub class of the patent being filed, and the class and subclasses for which the researcher is considered an expert. According to one aspect, a researcher can be selected based on keywords in the patent application.

[0131] According to one embodiment, the invention is submitted to the researcher to be researched. In certain embodiments, the system does not disclose the end user or assignee to the researcher. The researcher conducts a prior art search and attaches relevant digital prior art to the patent application record. The researcher can highlight sections of the prior art and site the specific sections of the prior art as relevant to specific sections of the patent application. Alternatively, a researcher can embed specific section of prior art as notes into a patent application.

[0132] The researcher may submit the patent application with added prior art data to the system and the system may certify the search.

[0133] According to an embodiment, an end user may receive a notice indicating that the researcher has completed a certified search for the submitted patent application. The end user can log in to the system and retrieve the patent application along with the certified search data. The end user can then provide distinguishing language over the prior art and submit the patent application, the certified search, and the distinguishing language to the central system to be filed and reviewed.

[0134] According to another embodiment, while the end user is entering the patent application data into the system, the system can determine an appropriate researcher and offer the opportunity to provide the end user with real time chat with a researcher. If the end user accepts, a chat window, or equivalent communication method/portal may be opened between the end user and researcher via the central system. The end user can provide patent application data and the researcher can provide relevant prior art. When the session is complete, the system can charge a fee to the end user and submit a portion of that fee to the researcher. The recorded chat session may be attached to the patent application file.

[0135] Accordingly, system 100 can be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples of programs or modules that may be employed by a system 300 according to the present disclosure are shown in Fig. 3 and include the following programs which may have the following architectures and/or capabilities:

[0136] Central Server 302

1. Researcher Selection Program 311
2. Certified Search Program 312
3. Billing Program 313

[0137] System 300 may further include a number of databases configured to store and associate the various types of data that are used by the system to perform the functions described above. Exemplary database architectures useful for the presently-described system include:

[0138] Researcher Database 321, which may be configured to collect, store, and interrelate data such as:

1. Researcher ID
2. Researcher Profile
3. Researcher Billing and Account Information
4. Researcher Search Score

[0139] End User Database 322, which may be configured to collect, store, and interrelate data such as:

1. End User ID
2. End User Profile
3. End User Billing Info
4. End User Score

[0140] Patent Application Database 323, which may be configured to collect, store, and interrelate data such as:

1. Creation Date
2. Patent Application ID
3. Patent Application Status
4. End User ID
5. Researcher ID
6. Patent Application Data
7. Research Report ID

[0141] Prior Art Database 324, which may be configured to collect, store, and interrelate data such as:

1. Prior Art ID
2. Prior Art Content
3. Prior Art Date

[0142] Researcher Schedule Database 325, which may be configured to collect, store, and interrelate data such as:

1. Researcher ID
2. Patent Application ID 1-N

3. Patent Application Research Target Date 1-N

[0143] Research Report Database 326, which may be configured to collect, store, and interrelate data such as:

1. Research Report ID
2. Patent Application ID
3. Prior Art ID 1-N

[0144] Accordingly, a system such as that described herein will be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples of methods that may be performed by a system according to the present disclosure include the following:

[0145] Select Researcher

1. Receive Patent Application Data
2. Determine Appropriate Researcher based on Patent Application Data
3. Submit Patent Application to Researcher

[0146] Real Time Chat with Researcher

1. Receive Patent Application Data
2. Determine Appropriate Researcher based on Patent Application Data
3. Determine if Researcher is available for Real Time Chat
4. If Researcher is available for real time chat, output offer for real time chat to end user
5. Receive acceptance of offer from end user
6. Initiate Chat session
7. Receive indication that chat session is complete
8. Store chat session with patent application data
9. Determine fee for chat session
10. Charge end user account fee
11. Remit a portion of the fee to the Researcher

[0147] Create Certified Search

1. Output Patent Application
2. Receive Research Results
3. Store Results with Patent Application Data

4. Output notice to end user that certified search is complete
5. Determine fee for certified search
6. Apply fee to end user account
7. Remit a portion of fee to researcher account

[0148] File Patent Application

1. Output Patent Application Data with Certified Search
2. Receive Distinguishing Language
3. Store Distinguishing Language with Patent Application Data
4. File Patent Application Data, Certified Search, and Distinguishing Language with Patent Office
5. Determine Fee
6. Apply fee to end user account

[0149] According to one further embodiment, a system is provided wherein prior art searches for patent-related document are automatically generated. An end user can submit a patent application to a central system, for example via the web-based form described in U.S. Patent Application Nos. 11/668,596, 11/668,586, 11/611,024, 11/462,621 and 60/727,191 each of which is hereby incorporated by reference in its entirety, and as described in greater detail below. Of course it will be appreciated that this system could be implemented using any standard mechanism for submitting a patent application and that known methods, such as scanning and OCR, can be used to turn applications submitted in paper form into electronic applications which can then be entered into the presently described system.

[0150] Once the patent application is submitted, the system uses a genetic algorithm or other similar mechanism to automatically identify relevant prior art. The system may output the prior art in order of its relevancy. Relative relevancy may be determined based on a score generated by the system. The end user may also be able to review the identified prior art and rate its relevance to the patent application submitted.

[0151] The end user can also submit notes about or related to the identified prior art. The submitted notes and relevance ratings are stored with the prior art and may be used as criteria on subsequent patent application searches. Over time prior art is given a stand-alone relevance score and a relevance score for each patent application in which it was cited. Relevance may be based on any number of suitable factors which may be determined solely by the system and/or may be determined by the end-user's

and/or other reviewer's actions. For example, if the end-user ultimately includes a prior art reference found and presented by the system, that particular piece of prior art may be assumed to have been relevant. If the end-user decides not to include a particular prior art reference that has been found by the system, that piece of prior art may or may not be considered to be relevant.

[0152] The end user can elect to save some or all of the search results with the patent application. The end user can also write language to distinguish the patent application over the prior art search results and/or amend the claims of the patent application to distinguish over the prior art cited. Any language in the patent application that is added, altered, or deleted by the end user in response to the automated search results may be identified by the system as an "amendment" to the application. Such amendment may be stored with a time and date stamp. The central system can certify the search results as being unaltered by the end user, and the patent application and any "amendments" can be submitted along with the certified search results to the patent office for filing.

[0153] As a further embodiment, the system can be used to generate the first office action for a patent application. The automated search results are treated as the first office action. The "amendments" submitted by the end user in response to the automated prior art search can be treated as a response to the first office action. The automated search results along with the end user's "amendments," notes, and comments can then be submitted to an examiner, who can then develop a second office action. The system could therefore be used to automate an entire step of the patent filing and issuance process.

[0154] When the application is published and/or issued, the system could then display the patent application, prior art or search results, and/or end user's notes to future applicants, whose applications include the same or similar prior art, i.e., to assist them in distinguishing their invention over the same or similar prior art. For example, an end user's notes may identify that a particular invention is not or only partially enabled or a particular combination is or is not obvious. These types of comments could then prove useful to other practitioners, particularly if a given argument was found to be persuasive by an examiner.

[0155] In another embodiment, the automated search tool described herein can also be used to find prior art on issued patents. The end user submits the issued patent title or number to the system and the system finds the most relevant prior art with a date

prior to the filing date of the submitted issued patent. The system can assemble the prior art on each issued patent in real time, i.e. when the prior art request is submitted. Alternatively, the system can classify issued patents with prior art all the time, i.e. on an on-going basis, and have pre-assembled search results and/or reports available on demand or request for issued patents. The central system can certify the search results so that they can be used by multiple parties who can use them as the basis for invalidating a patent, one or more of its claims, or determining the novelty of an issued patent and/or one or more of its claims. The system maintains a database of all searches, notes and search results for any issued patents, and for any new searches for the pending application. This information helps the system to determine a relevancy score, i.e., if another applicant uses the same or similar search, the results, prior art, notes, etc., from the first application could be available to any subsequent application(s).

[0156] Regardless of whether the system is used to search a patent application or an issued patent, the system can generate a novelty score of the document over the prior art it cites and/or that the system determines as relevant. The novelty score can be generated by the system based on how close the prior art cited comes to disclosing the invention disclosed in the document submitted by the end user.

[0157] Researchers can use manual searching or automated search engines to complete any search, this may be especially useful when the system is new and just beginning to build a prior art database. Researchers can then enter or list any relevant prior art and, optionally, assign their own relevancy scores and/or attach one or more notes. These data would be used to train the system to conduct and enhance its own searches. Additionally the system could request and optionally pay attorneys and researchers to provide this feedback. The feedback could be ranked by comparing it to the feedback from other end users. Researchers and Attorneys who provided the most accessed, cited or relevant feedback could be paid the greatest fees or greatest share of fees.

[0158] According to yet another embodiment, end users can submit prior art and/or hyperlinks to prior art to a confidential database where it can be stored, certified or otherwise used as prior art for submitted, yet unpublished, patent applications. Patent examiners or any other authorized end users can access such prior art and use it to distinguish over submitted patent applications. The search system can use the unpublished or other prior art and cite is as references to newly submitted patent

applications. The search system can additionally generate novelty scores for the newly submitted patent applications based on the unpublished prior art and/or end user submitted novelty scores. Should an examiner cite unpublished prior art as a reason for not issuing a patent or one or more of its claims, the end user can request at least one second opinion from another examiner.

[0159] End users can also submit unpublished prior art as prior art for an issued patent. The system can use the unpublished prior art to generate a novelty score for the issued patent. Patent examiners can review the issued patent in light of the unpublished prior art and determine if the patent and/or one or more of its claims should be invalidated. In this manner, file wrappers for issued patents can continue to expand after a patent has issued. The ever-expanding file wrapper can be used, in whole or in part, to determine the value of a patent for licensing purposes. An issued patent with a low novelty score can have a generally lower or different licensing value then an issued patent with a generally higher novelty score.

[0160] The system can search both public and unpublished prior art. In the case of public prior art, the system can cite references and output them to the end user. (And can, optionally, insert references and/or hyperlinks in the end user's application). In the case of unpublished prior art, the system can generate a novelty score and certify the search results. The end user can elect to continue filing or prosecuting the patent based on the novelty score. The unpublished, certified results can be reviewed by a patent examiner in determining whether or not to issue a patent on the claimed invention.

[0161] As a non-limiting example, a piece of prior art may be determined to be relevant based on:

1. The number, order and/or use of similar phrases, or words or synonyms in the patent application and the prior art
2. The relevance score that prior art has been given to patent applications similar to the current application.
3. The number of times a piece of prior art has been cited in patent applications in the same field, class, and subclass of the patent application.
4. The relevance of the prior art to other patent applications previously filed by the end user in the class and sub class of the patent application

5. Common attorney or agent between the patent application and the prior art.
6. The relationship of the end user of the patent application to the end users that are inventors, attorneys, or assignees of the prior art.

[0162] Information found in one or more invention fields may be considered during the automated prior art search. Non-limiting examples of invention fields that may be considered suitable for review during the invention search include:

1. Title
2. Abstract
3. Issue Date
4. Patent Number
5. Application date
6. Application Serial Number
7. Application Type
8. Assignee Name
9. Assignee City
10. Assignee State
11. Assignee Country
12. International Classification
13. Current US Classification
14. Primary Examiner
15. Assistant Examiner
16. Inventor Name
17. Inventor City
18. Inventor State
19. Inventor Country
20. Government Interest
21. Attorney or Agent
22. PCT Information
23. Foreign Priority
24. Reissue Data
25. Related US App Data
26. Referenced By
27. Foreign References

28. Other References
29. Claims
30. Description/Specification
31. Notes

[0163] As a further embodiment, as patent application data is entered, the system could determine relevant prior art and output results in real time via the web-based application. Prior art or hyperlinks to the prior art could be incorporated into or otherwise associated with the patent application as the application is being drafted or when filed, examined or prosecuted. (Output formats could be a simple listing, sorted or unsorted in order of relevancy, tree structure, showing links, or a "web" mapping, showing links among all patents and other prior art, published or otherwise).

[0164] If an end user indicates that a particular prior art reference cited is particularly relevant to the patent application, the system can retrieve prior art that is relevant to the prior art reference in real time and display it to the end user either automatically or by request. As end-users indicate manual relevancy scores, the system could weight that information based upon the end-user's role (applicant, researcher, and attorney) and/or based upon their proven ability to effectively score in the past. All end-users can score each other's performance, which may also affect the system's weighting of such scores (individually and collectively).

[0165] As the end-user is typing in a search term or phrase, the system could simultaneously: a) retrieve the relevant prior art, continuously updating the list as the search term or phrase is changed or completed and b) offer up completed terms or phrases that are similar (i.e., past searches) or relevant to the current search. In other words, multiple search windows could open up on the end user desktop showing completed search phrases that might be of interest to the current searcher. These searches could also be displayed based upon relevancy and/or how recent the search was submitted and/or popularity, i.e., how often it has been used.

[0166] The system could assemble and store a profile for each user that contributes to, or otherwise helps the system better understand the type of patent applications that a given user files, searches on, etc. So that the system could determine that, for example, an end user generally files more process patents, e.g., software related as opposed to generally fewer device patents. This information could aid any of the online tools and search engines to place a higher priority on the generally more applicable prior art, suggestions, etc.

[0167] The system could highlight the more relevant sections of prior art with different colors or other font styles or attributes or other indicators to reflect the degree of potential infringement. The end user and patent examiner can add feedback to the cited prior art reference to indicate whether the reference was flagged with the appropriate color or other attributes. This feedback could be used by an artificial intelligence algorithm to improve the generation of relevant prior art for subsequent searches.

[0168] End users and patent examiners can add notes to a patent application or prior art reference. Such notes could be presented in any suitable form including, for example, in the form of a rollover pop up window.

[0169] Keyword analysis can determine the common use of rare vs. common words in two or more documents. For purposes of document comparisons, common words can then be discarded. The matching of rare words between documents could affect the relevancy score between the documents.

[0170] In another embodiment, the results of a search may be based both on the invention being submitted and previous inventions submitted by the end user.

[0171] The system can be built using any suitable architectural method. Examples of suitable architectural methods include, but are not necessarily limited to: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian Algorithm.

[0172] Those having skill in the art will recognize that there is little distinction between hardware and software implementations. The use of hardware or software is generally a choice of convenience or design based on the relative importance of speed, accuracy, flexibility and predictability. There are therefore various vehicles by which processes and/or systems described herein can be effected (e.g., hardware, software, and/or firmware) and that the preferred vehicle will vary with the context in which the technologies are deployed.

[0173] At least a portion of the devices and/or processes described herein can be integrated into a data processing system with a reasonable amount of experimentation. Those having skill in the art will recognize that a typical data processing system generally includes one or more of a system unit housing, a video display device, memory, processors, operating systems, drivers, graphical user interfaces, and application programs, interaction devices such as a touch pad or screen, and/or control systems including feedback loops and control motors. A typical data processing

system may be implemented utilizing any suitable commercially available components to create the gaming environment described herein.

[0174] Accordingly, the presently described system may comprise a plurality of various hardware and/or software components. A suitable exemplary system 200 is shown in Fig. 4. However, it will be understood that a nearly unlimited number of variations are possible and that such description is intended to provide a non-limiting example of an implementation that could be utilized but should not be used to define the entire scope of the invention.

[0175] Accordingly, a system 200 configured to perform the various functions described above may incorporate a number of software modules configured to perform various tasks. Exemplary software modules useful for the presently-described system include:

1. Certified Search Program 212 -This program conducts an AI prior art search for a submitted patent application and links the search results to a patent application
2. Novelty Score Program 214 -This program generates a novelty score of a patent application as they relate to the certified search results.
3. Generate End User Profile Program 216 -this program generates an end user profile based on patent applications submitted by an end user.

[0176] System 200 may further include a number of databases configured to store and associate the various types of data that are used by the system to perform the functions described above. Exemplary databases useful for the presently-described system include:

[0177] End User Database 218

1. End User ID
2. End User Name
3. End User Address
4. End User Contact Info
5. End User Billing Info
6. Profile Score ID

[0178] Patent Application Database 220

1. Patent Application ID Number

2. End User ID
3. Patent Application Title
4. Patent Application Abstract
5. Patent Application Description/Specification
6. Patent Application Invention Class and Sub Class
7. Patent Application Inventor Name
8. Patent Application Inventor City
9. Patent Application Inventor State
10. Patent Application Inventor Country
11. Patent Application Attorney or Agent
12. Patent Application PCT Information
13. Patent Application Date of Invention
14. Patent Application Background of the invention
15. Patent Application Invention Figures
16. Patent Application Assignee Name
17. Patent Application Assignee City
18. Patent Application Assignee State
19. Patent Application Assignee Country
20. Patent Application Claims
21. Patent Application Search ID
22. Patent Application Researcher
23. Patent Application Filing Date
24. Patent Application Status
25. Profile Score ID
26. Published/Unpublished Flag

[0179] Patent Application Status Database 222

1. Patent Application Registered
2. Submitted to Formal Search
3. Formal Search Complete
4. Received Distinguishing Language Over Prior Art
5. Patent Application Filed
6. Patent Examiner Review
7. Response to Examiner Review
8. Patent Abandoned

9. Final Rejection
10. Patent Issued

[0180] Attorney Database 224

1. Attorney ID
2. Attorney Name
3. Attorney Address
4. Attorney Billing Info
5. Profile Score ID
6. Qualifications 1 - N

[0181] Prior Art Database 226

1. Prior Art ID
2. Prior Art Title
3. Prior Art Abstract
4. Prior Art Description/Specification
5. Prior Art Invention Class and Sub Class
6. Prior Art Inventor Name
7. Prior Art Inventor City
8. Prior Art Inventor State
9. Prior Art Inventor Country
10. Prior Art Attorney or Agent
11. Prior Art PCT Information
12. Prior Art Date of Invention
13. Prior Art Background of the invention
14. Prior Art Invention Figures
15. Prior Art Assignee Name
16. Prior Art Assignee City
17. Prior Art Assignee State
18. Prior Art Assignee Country
19. Prior Art Claims
20. Profile Score ID
21. Related Prior Art Notes IDs 1-N
22. Prior Art Search Score
23. Published/Unpublished Flag

[0182] Prior Art Note Database 228

1. Note ID
2. End User ID(s)
3. Patent Application ID
4. Prior Art ID(s)
5. Note Title
6. Note Description
7. Note Class
8. Note Subclass
9. Note Keyword(s) 1-N
10. Profile Score ID

[0183] Virtual Dictionary Database 230

1. Word ID
2. Word
3. Like Words 1-N
4. Common phrases using word or like words 1-N
5. Used in Patents 1-N
6. Profile Score ID

[0184] Certified Search Database 232

1. Search ID
2. Patent Application ID
3. Prior Art ID
4. Novelty Score
5. Usefulness Score
6. Non-obvious Score
7. Search Score

[0185] Distinguishing Language Database 234

1. Patent Application ID
2. Prior Art ID
3. Referenced Section of Prior Art ID
4. Distinguishing Language over Referenced Section of Prior Art ID

[0186] Profile Database 236

1. Profile Score ID
2. Profile Type
3. Patent Class 1-N

4. Patent Subclass 1-N

[0187] End User Profile 238

1. Profile Score ID
2. Patent Application(s) Class 1-N
3. Patent Application(s) Sub Class 1-N
4. Invention Keywords 1-N

[0188] Profile Type Database 240

1. End User
2. Attorney
3. Word
4. Patent Application
5. Prior Art

[0189] Transaction Database (for search, novelty score, and filing fees) 242

1. Transaction ID
2. Transaction Date
3. Transaction Type
4. End User ID (1-N)
5. Transaction Amount

[0190] Transaction Type and Fee Database 244

1. Transaction Type
2. Transaction Fee (1-N)
3. Fee Applied to Account Type (1-N)

[0191] Accordingly, a system such as that described herein will be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples of methods that may be performed by a system and the steps that the system may execute in order to perform these methods are described below:

[0192] Submit patent application and receive relevant search results

1. Receive patent application
2. Determine relevant prior art for patent application
3. Generate relevance score for each piece of relevant prior art
4. Sort relevant prior art in order of relevance score
5. Output sorted relevant prior art
6. Receive feedback on relevant prior art

7. Store feedback on relevant prior art with prior art record.

[0193] Receive distinguishing language of relevant prior art and submit patent application, relevant prior art, and distinguishing language to patent office

1. Receive patent application
2. Generate and Output relevant prior art
3. Receive distinguishing language of relevant prior art
4. Submit patent application, relevant prior art, and distinguishing language to patent office

[0194] Generate novelty score of patent application based on relevant prior art

1. Receive patent application
2. Determine relevant prior art for patent application
3. Generate novelty score for patent application based on relevant prior art
4. Output novelty score based on prior art

[0195] Generate end user profile

1. Receive patent application
2. Determine relevant prior art
3. Store relevant prior art with End User Profile

[0196] Determine relevant prior art based on end user profile and patent application data

1. Receive end user log in
2. Retrieve end user profile
3. Receive Patent Application
4. Determine relevant prior art for patent application based on patent application data and end user profile
5. Generate relevance score for each piece of relevant prior art based on patent application data and end user profile
6. Sort relevant prior art in order of relevance score
7. Output sorted relevant prior art

[0197] End User Rates Relevance of Prior Art Cited

1. Receive patent application data
2. Generate prior art based on application data
3. Output prior art based on application data
4. Receive relevance rating of prior art from end user

5. Store relevance rating of prior art with prior art for subsequent scoring

[0198] Certified Search of Issued Patent

1. Retrieve Issued Patent Record
2. Generate prior art based on Issued Patent Data
3. Apply relevancy score to prior art
4. Store prior art and score with Issued Patent record.

[0199] Real Time Output of Prior Art as Patent is Drafted

1. Receive patent application data
2. Determine prior art based on patent application data
3. Output prior art based on patent application data
4. Receive request to incorporate prior art into patent application data
5. Incorporate prior art into patent application data

[0200] Retrieve more prior art relevant to cited prior art

1. Receive patent application data
2. Determine prior art based on patent application data
3. Output prior art based on patent application data
4. Receive request for additional prior art relevant to output prior art
5. Determine additional prior art relevant to output prior art
6. Output additional prior art

[0201] Submit patent application for time stamp

1. Receive patent application data
2. Receive request for time stamp
3. Receive unpublished or published preference
4. Time stamp patent application data
5. Store patent application data with time stamp and unpublished or published preference
6. Publish patent application data if published preference is received

[0202] According to another embodiment, the present disclosure provides a patent examination system utilizing enhanced search techniques and end user feedback on prior art data. According to one aspect of this embodiment, a patent application is submitted for filing with the patent office via a web-based central system. Prior to its submission, or immediately thereafter, the system performs a prior art search against

its prior art database. Prior Art is scored as to its relevancy to the patent application and ranked in order of its relevance. The most relevant or all results are certified and stored with the patent application and the certified search results can be used by patent examiners to perform office actions or to conduct further review.

[0203] If the search was performed prior to the patent application being submitted for filing, the end user filing the application could also have provided notes to distinguish the invention over the prior art cited. These notes are associated with and/or stored with the patent application and certified search results and can be considered or used as the first office action of the invention.

[0204] According to one embodiment, prior art is scored as relevant by a statistical, rules-based or artificial intelligence system based on any one or several criteria including:

1. Common words and phrases in the patent application and the prior art
2. The class and sub class of the patent application and the prior art
3. The amount of time the prior art was considered by the end user, search professional, patent attorney and/or examiner on the same or similar patent applications
4. The notes an end user or patent examiner has attached to the prior art
5. The office actions performed by the system or patent examiners utilizing the same prior art on similar patent applications (and their rejection rates)
6. The patent application data of the patent application and the data of the prior art
7. The number of examiners and or end users who have reviewed or cited the prior art for similar patent applications in the past
8. The seniority or ranking of patent examiners who have cited the prior art for the similar patent applications in the past
9. The number of times the prior art data is cited in similar patent applications
10. The number of times the prior art data is accessed or the duration of such access by one or more end users and patent examiners to conduct searches on similar patent applications

11. The existence of any published or unpublished applications pending or previously reviews and/or rejected.

[0205] According to an embodiment, a patent examiner can review the submitted patent application, the certified prior art search, any notes and the distinguishing language provided by the end user and draft an office action using the three files. The office action may contain notes about the prior art, the patent application, and the distinguishing data that will be stored with both the patent application and the prior art to be used to score them against new patent applications later.

[0206] According to another embodiment, as patent applications are filed, they become prior art for subsequent patent applications. For example, based on the end user preference, the patent application can be published or unpublished prior art. If it is unpublished prior art, it can only be reviewed by patent examiners, who can use it as prior art on subsequent patent applications. The central system can also conduct certified searches using published and/or unpublished prior art acquired in this manner. When such a prior art document is cited as a reference, the end user is optionally made aware that there may be prior art that could invalidate his patent application, but he must rely on the patent examiner to examine the application and the unpublished prior art and notify him as to whether the unpublished prior art could or does invalidate his patent. If an end user is notified by a patent examiner that unpublished prior art invalidates his patent, he can request a reexamination of the patent by another examiner or submit the matter to a review process established for such purposes.

[0207] Alternatively or additionally, the end user may be able to request that the unpublished prior art be published.

[0208] According to another embodiment, if the patent applications are published, they can be viewed by the end users and patent examiners of subsequent patent applications alike.

[0209] According to some embodiments, notes attached to prior art can also be published or unpublished by the central system. Unpublished notes would be available to patent examiners, their peers, and the central system and/or any other authorized end users for review of subsequent patent applications. Published notes can be reviewed by patent examiners and end users alike and can be used by both parties and the AI search system to consider the validity of subsequent patent application claims.

[0210] As with patent applications, published notes may be reviewed by other inventors, researchers, attorneys, etc., any of whom may challenge the application or notes by submitting their notes or opinions to the system. They may also assign a weighting factor to their commentary (from low to high). These rankings can be tracked and measured to determine the relative value and weight each contributor should receive regarding any such existing and/or future commentaries. In this way the system, either statistically based, manually based, rules based or AI based, can establish a track record for each critic, which can then be used to weight any future submissions. In this way, a comment from critic that regularly contributes commentary and is insightful or "right" most of the time will carry more weight than critics that prove "wrong" more often. This would push comments to the top of the list that the examiner might review.

[0211] Alternatively or additionally, when a critic submits commentary, the system could search its own database or other databases, e.g., via the Internet to determine the credentials of the critic. Submissions from unknown persons might carry less weight, whereas submissions from people having a known reputation, such as the Chief Justice of the Supreme Court of the United States, could carry greater weight. This would provide a means to weight comments, especially early in the systems' life cycle, when there is no track record.

[0212] Furthermore, in addition to or instead of a system ranking, the examiners could provide the system with feedback on the relative usefulness of any given critics' commentary. The database should track human and machine derived rankings on any commentary for every critic. These then can be used after the examination to determine which sources are best able to provide meaningful input as it relates to the actual / final outcome of each application.

[0213] According to another embodiment, the system could automatically require the examination of a patent application by two or more examiners if the prior art cited that invalidates the patent claims is unpublished. In this manner, two (or more) examiners will have reviewed the unpublished prior art data before an office action is submitted to the central system for distribution back to the end user.

[0214] Any such peer review might be either public or anonymous, i.e., the primary examiner may or may not be informed as to who the second (or additional) examiner is/are. Using this method the system could randomly assign internal reviews, and/or the system could learn which peer to use for each type of application, using similar or

dissimilar relevancy and efficiency scores. If the review is anonymous, the examiner could request a conference with the examiner so as to ask questions face-to-face. If the anonymous reviewer refuses, the system could, instead, arrange a time for an anonymous instant message session so that each person could "discuss" the reviewer's point of view. Alternatively, the peer reviewer might only agree to an anonymous dialog via messages (via e-mail but using an anonymous temporary alias account that is forwarded and managed between the parties).

[0215] According to another embodiment, the certified search submitted with the patent application can be periodically refreshed by the search system to insure that newly acquired prior art with early filing dates is included in the certified search query and subsequent scored results.

[0216] According to another embodiment, if new prior art is found that may also have a high relevance score to a patent application and the patent application has not yet been reviewed by the patent examiner, the end user can be notified, for example, via an alert, that new prior art has been found and included as part of the certified search. Suitable alerts are described, for example, in U.S. Patent Application No. 11/676,848, which is incorporated by reference. The end user can then be given the opportunity to distinguish over the new prior art and his distinguishing language can be included as part of the first office action notes he submits to the patent office for review. In this manner, the central system can conduct a more thorough, ongoing search of prior art for a filed patent application thereby improving the quality of the patent applications and office actions. Any third parties that may have submitted notes/commentary/argument may also be notified of any such "new prior art" to be given the same opportunity to review such additional prior art and/or to submit additional notes.

[0217] The end user, a researcher, or the patent examiner, can also conduct a manual search, i.e. one performed without using the artificial intelligence or other search program(s) of the central system. Should the examiner find relevant prior art in a manual search that was not included in the certified search, that prior art can be added to the certified search, along with notes. Such addition of prior art may be accomplished via any applicable means, including, copying or referencing the prior art using a hyperlink into the prior art database, or by listing such prior art's title, application or other identification number or means The artificial intelligence program can use the prior art that is manually submitted in this manner to improve its own

database of information, and/or improve its search or other rules, methods or algorithms so that later certified searches that it performs are generally more accurate. In this manner, end users and patent examiners teach the artificial intelligence program or other determination methods how to do a better job of certified searching.

[0218] In order to acquire its first learning, the artificial intelligence system can revisit the steps taken by patent examiners on previously examined patent applications. File wrappers of previous patent applications can be analyzed by the artificial intelligence and used as a first criteria to develop or preload an initial set of rules to conduct certified searches on subsequent patent applications that are submitted to the patent office via the central web-based system.

[0219] Alternatively, existing search engine algorithms may serve as the Genetic Programming system as its base programs. These then can be subjected to normal GP techniques such as cross mutation, etc., to create a self-improving network (search tool).

[0220] The system can be built utilizing three different architectural methods: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian or other Genetic Algorithms.

[0221] According to another embodiment, examiners could submit questions or requests to existing patent holders (prior art to the pending application) or others with similar patents, or researchers or attorneys, to get their input about the pending patent application. Since the application is already filed, those queried could not claim authorship, but would / may have a vested interest in the application and may have opinion as to the validity of the pending application. Such feedback could become part of the application notes. In some embodiments, end users that provide such opinions may be paid a fee for such opinions. Such fees may be determined via any applicable means, including based upon any available factors, for example, such end users qualifications and/or rankings and/or based upon the frequency or extent such opinions are used or otherwise relied upon by any person, e.g., patent examiner, etc.

[0222] If availability of the applicant and the examiner do not coincide, an off-line communications may be established using e-mail or recorded voice or text messages or a combination of these, for example, an email message may include a title and an attachment of a voice message.

[0223] Accordingly, a system 500 as shown in Fig. 5 may be configured to perform the various functions described above and may incorporate one or more servers

capable of running any number and/or combination of software modules configured to perform various tasks. Exemplary combinations of servers and software modules useful for the presently-described system include:

[0224] Central Server 502, which may host or otherwise be in communication with:

1. Certified Search Program 511
2. Examination Program 512
3. Reexamination Program 513
4. Notes Program 514
5. Alerts Program 515

[0225] A system according to the present disclosure may further include a number of databases configured to store and associate the various types of data that are used by the system to perform the functions described above. Exemplary database architectures useful for the presently-described system include:

[0226] End User Database 521, which may be configured to collect, store, and interrelate data such as:

1. End User ID
2. End User Profile
3. End User Billing Info
4. End User Score
5. End User Historical Information
6. Qualifications 1 - N

[0227] Patent Examiner Database 522, which may be configured to collect, store, and interrelate data such as:

1. Examiner ID
2. Examiner Profile
3. Examiner Word Load
4. Examiner Score
5. Cases Pending / Prosecuted 1 – N
6. Qualifications

[0228] Patent Application Database

1. Application ID
2. End User ID
3. Examiner ID
4. Application Data

5. Application Status
6. Certified Search ID
7. Application Filing Date
8. Distinguishing Language Data
9. Response to Distinguishing Language Data
10. Additional Relevant Prior Art Data
11. Response to Additional Prior Art Data
12. Notes 1 – N

[0229] Certified Search Database

1. Search ID
2. Researcher ID
3. Prior Art Reference 1-N

[0230] Prior Art Database

1. Prior Art ID
2. Prior Art Type
3. Prior Art Date
4. Prior Art Content
5. Prior Art Notes 1-N
6. Note Taker ID 1-N
7. Prior Art Note Dates 1-N

[0231] Accordingly, a system such as that described herein will be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples of methods that may be performed by a system according to the present disclosure include the following:

[0232] Conduct Certified Prior Art Search and First Office Action

1. Receive Patent Application Data
2. Retrieve Prior Art
3. Compare Patent Application Data to Prior Art
4. Identify Relevant Prior Art Documents
5. Store Relevant Prior Art Documents with Patent Application and Time Stamp
6. Notify End Users

[0233] Receive Response to First Office Action

1. Output Patent Application Data with Relevant Prior Art Documents
2. Receive Distinguishing Language over Prior Art
3. Store Distinguishing Language with Patent Application Data and Time Stamp
4. Receive Request to File Patent Application Data
5. Create Patent Application ID Number
6. Determine Patent Application Class and Subclass
7. Determine Fee for Patent Application Filing
8. Apply fee to End User Account

[0234] Create Second Office Action

1. Receive Request to Examine Patent Application
2. Output Patent Application, Relevant Prior Art, and Distinguishing Language
3. Receive Response to Distinguishing Language
4. Receive Additional Relevant Prior Art
5. Receive Comments on Additional Prior Art
6. Store Response to Distinguishing Language, Additional Relevant Prior Art and Comments on Additional Prior Art with Patent Application and Time Stamp

[0235] Receive Response to Second Office Action

1. Receive request to review Response to First Office Action
2. Output Patent Application, Response to Distinguishing Language, Additional Relevant Prior Art, and Comments on Additional Prior Art
3. Receive Additional Distinguishing Language
4. Store Patent Application with Additional Distinguishing Language and Time Stamp
5. Determine Fee for Office Action
6. Apply Fee to End User Account

[0236] Receive Reexamination Request if Prior Art Cited in Second Office Action Was Unpublished

1. Receive request to review Response to First Office Action

2. Output Patent Application, Response to Distinguishing Language, Additional Relevant Prior Art, and Comments on Additional Prior Art
3. Receive Request for Reexamination if Additional Prior Art Cited was Unpublished.

[0237] Automatic Second Opinion if prior art is unpublished

1. Receive Request to Examine Patent Application
2. Output Patent Application, Relevant Prior Art, and Distinguishing Language
3. Receive Response to Distinguishing Language
4. Receive Additional Relevant Prior Art
5. Receive Comments on Additional Prior Art
6. Store Response to Distinguishing Language, Additional Relevant Prior Art and Comments on Additional Prior Art with Patent Application and Time Stamp
7. If Additional Prior Art Cited was unpublished, determine a Second Examiner and Place Patent Application in Second Examiner Queue
8. Output notification to End User that Patent Application is Receiving Second Examination because Additional Prior Art cited by first examiner was unpublished.

[0238] Automated Refresh of Search Results

1. Retrieve Patent Application Data and Certified Search
2. Compare Patent Application Data to Prior Art Data
3. Generate list of Relevant Prior Art
4. Compare list to Certified Search
5. If list has additional prior art references, store references with Patent Application Data
6. Output notice to end user that patent application has received additional prior art references.

[0239] Redo First Office Action if New Prior Art is found

1. Receive request to review additional prior art
2. Output Patent Application Data and Additional Prior Art
3. Receive Additional Distinguishing Language over Additional Prior Art

4. Store Additional Distinguishing Language with Patent Application and Time Stamp
5. Determine Fee for filing Additional Distinguishing Language
6. Apply Fee to End User Account.

[0240] Improve Artificial Intelligence Search Results Based on Manual Prior Art

1. Output Patent Application Data and Certified Search
2. Receive Additional Prior Art References
3. Use Additional Prior Art References to Enhance Genetic Algorithm that created Certified Search.

[0241] Additions to Certified Search Results

1. Output Patent Application Data and Certified Search
2. Receive Additional Prior Art References
3. Store Additional Prior Art References as Part of Certified Search and Time Stamp

[0242] Use File Wrapper Data to Train Artificial Intelligence Program

1. Receive File Wrapper Data
2. Use File Wrapper Data To Train Genetic Algorithm to Conduct Certified Searches

[0243] According to yet another embodiment, the present disclosure provides an electronic patent file wrapper system and method for managing electronic correspondence for a patent application. According to one aspect of this embodiment, an end user creates a patent application by entering patent application data into a web-based system. The date that the patent application was received is time stamped and stored with the file. A fee is generated for submitting the application and the end user account is charged the fee. The system generates a notice that a fee has been charged and transmits the notice to the end user.

[0244] Upon receipt of payment, or an equivalent promise to pay, by the applicant, the system can determine relevant researchers to conduct prior art research on the patent application and outputs an offer to the end user to transmit the patent application to the researcher. Alternatively, the applicant can conduct and submit their own research and/or engage their own firm. The date that the request for research was received is time stamped and stored with the file. If the end user accepts the offer, the patent application is stored and a notice is sent to the researcher that a patent application needs to be researched.

[0245] When the researcher has completed his research of the patent application, the prior art files can be added to a search folder linked to the patent application file along with any notes or commentary provided by the researcher. The date that search folder was completed and received and/or updated is time stamped and stored with the file. When the researcher completes the prior art file folder and submits it to the central system via a web based form or other submission tool, the end user may be notified that the prior art search is complete.

[0246] According to a further embodiment, a fee is generated for researching the application and, for example, the end user account is charged the fee, and the researcher account is credited a portion of the fee. The system generates a notice that a fee has been charged and transmits the notice to the end user. The system generates a notice that a credit has been applied, and transmits the notice to the researcher.

[0247] According to another embodiment, the end user or other authorized end users can log in to the system to review the prior art file. The end user can also retrieve the patent application and add more data to or change it. Whenever the patent application file is accessed and or amended, a time stamp is recorded along with the end user's id and the amendment and stored with the patent application file. Amendments may be recorded as "change tracking" or stored as a new file.

[0248] According to an embodiment, the system determines relevant attorneys to complete and enhance the patent application data and outputs an offer to the end user to transmit the patent application to the attorney. If the end user and/or attorney accepts the offer, the patent application is stored and a notice is sent to the attorney that a patent application needs to be researched. The date that the request for an attorney was received may be time stamped and stored with the file, along with the attorney's identifier code.

[0249] According to an embodiment, when the attorney has completed and or enhanced the patent application, the patent application can be resubmitted to the central system. The date that the patent application was submitted may be time stamped and stored with the file. When the patent application is resubmitted by the attorney, the end user may be notified, such as via an electronic notification. Amendments may be recorded as "change tracking" or stored as a new or associated file.

[0250] According to an embodiment, a fee is generated for completed and or enhancing the application, for example, the end user account could be charged the fee,

and the attorney and/or the examination office/system account is credited all or a portion of the fee. The system may generate a notice that a fee has been charged and transmits the notice to the end user. The system may further generate a notice that a credit has been applied, and transmit the notice to the attorney or any applicable parties using any suitable means.

[0251] According to an embodiment, the end user can then submit the patent application to the central system for a certified prior art search. The request for a certified search is time stamped and stored with the patent application file. The certified prior art search is conducted by the central system and the prior art file is stored with the patent application along with a time / date stamp and other relevant information. When the prior art file is stored with the patent application data, the end user is notified that the certified search is complete via electronic transmission. A fee may be charged to the end user account and a notice of the fee sent to the end user via, for example, electronic transmission.

[0252] According to an embodiment, the system could allow end users to embed notes or hyperlinks in a patent application that reference prior art. The examiner can then easily read through an application, checking prior art or notes as he progresses through the document. If there is more than one note or document associated with one or more hyperlinks, any suitable method may be used to provide all the notes and/or documents to the examiner. For example, a pop up window with a listing may appear and allow the user select one, or more, of the notes or documents, such popup window may also includes sort, select or filter options to present a list of notes or documents in a preferred order and/or by including or excluding one or more notes based on any available criteria, including, for example, date, time, alphabetically, relevancy, by provider, end user, or any combination of the forgoing. Alternatively, when a user clicks a link, the most relevant source appears, and a new list appears listing the other remaining documents. Instead, users might have the option to "right click" on the link to see the list and select from that point. Another option provides a different color code depending of whether there is only one or multiple links. In addition to or instead of the color coding, the hyperlink system could automatically insert a super or subscripted number in parentheticals that indicates the number of links, e.g. hyperlink (3).

[0253] According to some embodiments, and as described in greater detail herein, an end user can review the prior art file and enter notes to distinguish the patent

application over the prior art filed. The notes may be attached to the file and a time stamp generated and stored with the notes and the patent application file along with information about the end user that submitted such notes. Moreover, instead of, or in addition to, time stamping the file, the notes could be date stamped.

[0254] According to an embodiment, the system may be configured to track the parts of the patent application that are missing and need to be completed before the patent application can be filed with the patent office. A notice of missing parts can be electronically generated and transmitted to the appropriate end user(s) on a periodic basis or on demand via any applicable means, including via alerts. End users can request sample text for each missing part and/or use a "wizard" that steps them through the process to fill out each section. Once all missing parts have been completed, the end user can submit the patent application to the patent office for examination. The file is time stamped with the date it was submitted to the patent office for examination. A fee may be charged to the end user account to submit the patent application to the patent office. The system may generate a notice that the patent application was submitted and that the appropriate fee charged and send the notice to the appropriate end user(s), for example, via electronic submission.

[0255] According to one embodiment, a fee structure that is based on the size, and/or complexity, and/or scope of the application, rather than a fixed fee could be used by the system. For example, fees for patent filings may be based on the number of claims, the number of images, the number of pages of text, or the number of prior art references cited for enablement.

[0256] In one example, a system according to the present disclosure may work as follows:

[0257] The system selects the appropriate examiner and notifies the examiner that they have a new patent application to examine via electronic transmission. An electronic notice is sent to the end user informing him of the patent examiner assigned to the case and the position in the examination queue of the application. The end user is offered the opportunity to pay to move his patent up in the queue. If the end user accepts, he is given the opportunity to pay for a different position in the examination queue. The end user selects the queue position, and a fee is charged to his account. An electronic notice is transmitted to the end user confirming his position in the queue (and all others currently ahead of him) and the fee charged to his credit card (alternatively the fee could be charged when the patent is examined). The system

could notify all end users with patent applications ahead of the patent application in the queue or that otherwise have priority over such application, e.g., based upon demonstrated need or the age of the applicant, giving the end users a "first right of refusal" to maintain their position in the queue. Maintaining such position may or may not require a payment. Such applicants could also appeal to the examiner not to move their application down in the list. U.S. Patent Application No., 11/611,024, which is hereby incorporated by reference, discloses one applicable method for dealing with items in queue.

[0258] Whenever the patent application's position in the examination queue changes, i.e. by being outbid by another end user or when an patent application in the queue ahead of the patent has been examined, the system notifies the end user via electronic transmission that the position in the examination queue of the patent application has changed.

[0259] The end user can elect to change the position of the patent application in the examination queue at any time. The system notifies the end user of any changes in the position of the patent application in the examination queue via electronic submission.

[0260] When the patent examiner begins his examination of a patent application, an electronic transmission is sent to the end user informing him that the examination has begun. The notice can also include an expected date when the examination will be completed and/or any other relevant or available information, including information such as the examiner's name, qualifications, prior cases, outcome of those cases, etc. Alternatively, the examiner and end users could communicate anonymously with one another during the examination process. All commentary in this embodiment would be time stamped and stored in the file wrapper.

[0261] When the examiner completes his examination of a patent, and/or at any other appropriate point, he can submit an office action, that includes, for example, the patent application, the certified search, the distinguishing notes, any additional prior art found by the examiner, and examiner or third party notes questioning or providing evidence against the patentability of the patent application to the central system. The central system stores the office action along with any notes and notifies the end user that the office action has been completed via electronic submission.

[0262] An end user can respond to the office action by submitting additional distinguishing notes to the central system. The central system stores the additional distinguishing notes with the patent application.

[0263] Patent examiners receiving the patent application, the certified search file, and the distinguishing notes conduct an examination of the patent. Patent Examiners can review the certified search, add prior art documents to the certified search, and add notes to the distinguishing language to argue against the patentability of the patent application. The prior art documents and any notes added by the patent examiner are filed with the central system as an office action on the patent application.

[0264] End Users receive notice that an office action has been received for a patent application. End Users can log in to the central system to retrieve the office action document along with any notes or other information. End Users can add notes, argument, and/or additional distinguishing language to the patent application a resubmit the application for a second examination. The central system notifies the patent examiner that the patent application was received for a second examination via electronic notification. The patent application is again placed in the examination queue.

[0265] The system also notifies that end user that the patent application was received with such notes, argument and/or additional distinguishing language and the patent application's position in the examination queue.

[0266] According to yet another embodiment, when an examiner determines that the claims of a patent application are acceptable, he can provide a notice of allowance to the system. The end user is notified that he has received a notice of allowance and that the patent application is in queue for missing parts and corrections.

[0267] The system determines an appropriate draftsperson to review the figures included in the patent application using a method similar to the method it uses to select an examiner for each submitted patent application.

[0268] A notification is sent to the draftsperson that a patent application has received a notice of allowance.

[0269] The draftsperson reviews the drawings and specifies errors and/or omissions in the drawings that need to be corrected and/or attaches one or more notes. The draftsperson drawing review is submitted to the central system. The central system notifies the end users that the drawings submitted with a patent application have errors and omissions that need to be corrected.

[0270] The end user can correct the error and omissions of the drawings submitted with the patent application and resubmit the patent application to the central system.

The central system notifies the draftsperson that the errors and omissions to the drawings have been corrected. The draftsperson can then accept the drawing revisions or submit another error and omissions report.

[0271] When the drawings are accepted, a notice of allowance is submitted to the end user. A fee may be assessed for issuing the patent and the end user account is charged the fee. A patent number is assigned to the patent application and the patent is issued. A notice is sent to the end user that the patent has been issued.

[0272] According to yet another embodiment, the system could notify authorized and/or interested parties that a patent has been issued or an application has been published. End users would only receive such notices on applications and patents in which they have an interest. Interested parties would be given an opportunity to object to any pending or issued patents. Any individual, corporation or other entities (such as potential licensees) can subscribe to the "published and issued patents notification system," which will send e-mail (or other form of communications, e.g., an alert) to any interested party. When subscribing, subscribers indicate the types of patents, e.g., classes, sub-classes, etc., that they have interest in and/or may do so by indicating or describing the field of use and/or may cite prior art and any applications or issued patents that include such prior art are considered "of interest". End users could indicate patents applications that they are interested in via check box selection, listing of "similar patents or prior art" which a GA could use to help ID new applications that are "similar" to, e.g., use the "relevancy scoring" process.) Subscribers could indicate the relevancy score above which they have an interest.

[0273] According to yet another embodiment, any time an end user or patent examiner logs in to the patent application file, corresponding search file, corresponding distinguishing notes, or other notes, corresponding and certified search, corresponding office action(s), an access and amendment log is created and time stamped. End Users can elect to be notified whenever and by whom the patent application is accessed and or amended and or challenged.

[0274] According to another embodiment, potential licensees of the patent application can review the patent application to determine if they want to license the invention. A log is kept of every instance that the patent application was reviewed. A log is also kept of each subsequent patent application where the issued patent application is cited as prior art. Such logs may be generally available, available only

to authorized end users, and/or available for a fee, or based upon any other applicable terms and conditions or any combination of the forgoing.

[0275] A potential licensee can elect to license the patent. The potential licensee can notify the central system that they would like to license the patent. The central system can notify the end user that an anonymous potential licensee would like to license the patent via electronic transmission. A fee is charged to the potential licensee and the potential licensee is notified that the end user has been notified and a fee has been charged to his account. Such fee may be determined via any applicable means available, including, for example, based upon such factors as: exclusive vs. non-exclusive licenses, term of the license, field of use, novelty score, type of patent, e.g., device vs. method vs. design patents, or based upon input or rules or pricing established by the inventor or her assignee.

[0276] The central system can generate an electronic transmission to the potential licensee and the end user to determine if the patent was licensed. If the patent was licensed, the central system records that the patent application was licensed to a particular licensee and the dollar value and other terms and conditions of the license. In some embodiments, the data is kept unpublished, but is used by the central system to determine the strength of the patent application on subsequent prior art and patent strength searches. Potential licensees could be given the opportunity to buy an exclusive or non-exclusive license.

[0277] According to some embodiments, serial numbers for patent applications can be assigned in various ways, such as the following:

[0278] Numbers are assigned by a central system as patent applications are filed

[0279] Numbers can be distributed in blocks to various sub entities and assigned by the sub entities.

[0280] Sub entities can request numbers from a central system as end users file patent applications with them.

[0281] The class and subclass of a patent application can be generated by the system, assigned by the end user, or assigned by a person in the patent office. If the patent class and subclass are suggested and/or assigned by the system, the system may determine the appropriate class and subclass based on, for example, (i) scanning the text of the patent application and assigning it an appropriate class and subclass based on similar text in patent applications that have already been filed, (ii) asking the end user a series of questions about the application and assigning it a class and subclass

based on the answers to the questions (iii) reviewing relevancy scores of included or attached or referenced prior art, or (iv) any combination of the forgoing. An end user could be presented with and select from a suggested class and subclass and or assign a class and subclass to the patent application by answering a series of questions about the application and selecting an appropriate class and subclass based on the answers to the questions.

[0282] The system can be built utilizing three different or complementary architectural methods: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian Algorithm.

[0283] Accordingly, as shown in Fig. 6, a system 600 may incorporate one or more programs or modules configured to perform the various functions described herein. These programs may be housed on one or more servers, including system or client servers. As a non-limiting example, system 600 may include the following programs housed on one or more servers:

[0284] Central Server 602 (or a combination of servers, not shown)

1. Electronic Notification Program 611
2. Fee Processing Program 612
3. Status and Content Change Time Stamp Program 613

[0285] The system may further include one or more databases configured to collect and associate various data. Non-limiting examples of databases that would be suitable in the presently described system include:

[0286] End User Database 621, which may be configured to collect, store, and interrelate data such as:

1. End User ID
2. End User Contact Information
3. End User Billing Information

[0287] Patent Application Database 622, which may be configured to collect, store, and interrelate data such as:

1. Application ID
2. End User ID
3. Application Data
4. Application Status
5. Application Score

[0288] Patent Examiner Database 623, which may be configured to collect, store, and interrelate data such as:

1. Examiner ID
2. Examiner Profile
3. Examiner Score

[0289] Notification Database 624, which may be configured to collect, store, and interrelate data such as:

1. Notification ID
2. Notification Descriptor
3. Notification Rules and/or Conditions 1-N
4. Notification Fee

[0290] Fee Database 625, which may be configured to collect, store, and interrelate data such as:

1. Fee ID
2. Fee Descriptor
3. Fee Amount
4. Fee Conditions

[0291] Moreover, the system may be configured to perform various method steps such as, but not limited to:

[0292] Notify parties of status change of patent application

1. Receive Request to Change Status of Patent Application
2. Change Status of Patent Application and Time Stamp
3. Output notification that status of Patent Application has changed

[0293] Charge fees to end users based on status change of patent application

1. Receive indication that status of Patent Application has changed
2. Determine fees for change in status of Patent Application
3. Apply fee to end user account

[0294] Add electronic time stamp to changes in status and or content of patent application file wrapper data

1. Receive indication that status and or content of Patent Application has changed
2. Store change in status and/or content of Patent Application Data
3. Time Stamp changes in status and/or content of Patent Application Data

[0295] According to yet another embodiment, the present disclosure provides a method and systems to provide undisclosed prior art to invalidate an issued patent and/or one or more of its claims. According to one aspect of this embodiment, after receiving notice from the central notification system, and/or after an end user discovers a pending or issued patent through his own initiative, an end user attaches a prior art file along with any notes to an issued patent application record via a web-based system. The end user requests that the patent be reexamined in light of the prior art file and attached arguments and/or notes. The patent application is flagged as needing reexamination. In an embodiment, a fee is applied to the end user account for submitting the prior art and for requesting the reexamination of the patent application.

[0296] The patent application is assigned to an examiner and placed in his examination queue. The patent examiner can reexamine the issued patent application using the prior art submitted by the end user. The patent examiner can also verify that the submitted prior art is legitimate by cross checking the reference and certifying that the prior art reference and date are true and accurate.

[0297] The end user who submits the prior art reference and requests the reexamination can be charged a fee when he submits the reference, when the patent is reexamined, or when the patent is or is not invalidated in light of the prior art.

[0298] If the issued patent is invalidated in light of the prior art submitted, a refund equal to, less than or greater than the original fee can be given to the end user who submitted the prior art and requested the reexamination of the issued patent. For example, such refund may include the full amount paid, plus interest.

[0299] According to some embodiments, the Artificial Intelligence or other search system will also be receiving more prior art files over time. Periodically, the system can reexamine pending and issued patents and add prior art, e.g., prior art with an origin date that precedes the application, to their certified search files, including the insertion of hyperlinks. In the case of pending patents, a notice can be sent to the end user who submitted the patent application that additional prior art has been found and needs to be distinguished over. In the case of issued patents, the system can flag the issued patent as potentially needing to be reexamined (along with a "probability score" and, if the score is above a certain level, place it in an examiner's queue, but not if it has already passed the reexamination process.

[0300] According to an embodiment, the artificial intelligence system that conducted the certified search on the patent application can use the added prior art reference as another method of training itself to conduct better searches in the future.

[0301] In an embodiment, the AI system could automatically check to see if the prior art that was manually submitted to invalidate a patent is in its prior art database but not disclosed. If the prior art is in the database, the AI system can certify the validity of the prior art reference before it is reviewed by an examiner. In some embodiments, the system may determine if such manually submitted prior art was submitted by an end user whose prior submissions were found valid or invalid. If prior submissions were found to be invalid, such new submissions may be discounted or be subjected to further review. On the other hand, if such end user's prior submissions were found to be valid, new submissions from such end users may carry more relevancy or the probability score may be increased accordingly. Over time, as end users submit such prior art, their scores or rankings can increase or decrease accordingly, which information can be used by the system to improve its results and/or by patent examiner's in deciding which prior art to consider.

[0302] In one or more embodiments, the system could also receive the submission of an expert testimony. For example, in a case where an application makes claims for a step that is clearly obvious to one skilled in the art, but isn't necessarily in the prior art anywhere. Such expert testimony may be provided via any applicable means, including, for example, via notes or alerts.

[0303] An alternate embodiment allows end users to submit prior art to a central system and link it to a particular patent application. When an end user submits a piece of prior art, they also indicate the type and/or source of the prior art, i.e. Patent, Lexis Nexus, article, website, etc. The central system verifies that the prior art cited is stored in one of the prior art databases and verifies the prior art date from those databases. In this manner an independent third party system can generally verify the validity and date of prior art cited.

[0304] The system can be built utilizing three different architectural methods: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian Algorithm or any combination of these methods.

[0305] Accordingly, as Shown in Fig. 6, the presently described system may incorporate one or more programs or modules configured to perform the various

functions described herein. These programs may be housed on one or more servers, including system or client servers. As a non-limiting example, the system may include the following programs housed on the following server:

[0306] Central Server 702

1. Reexamination Program 711
2. Prior Art Validation Program 712

[0307] The system may further include one or more databases configured to collect and associate various data. Non-limiting examples of databases that would be suitable in the presently described system include:

[0308] End User Database 721, which may be configured to collect, store, and interrelate data such as:

1. End User ID
2. End User Profile
3. End User Billing Information

[0309] Prior Art Database 722, which may be configured to collect, store, and interrelate data such as:

1. Prior Art ID
2. Prior Art Data
3. End User ID
4. Prior Art Submission Date
5. Prior Art Creation Date

[0310] Patent Application Database 723, which may be configured to collect, store, and interrelate data such as:

1. Application ID
2. End User ID
3. Prior Art ID 1-N
4. Prior Art Submitted by 1-N
5. Patent Application Status

[0311] Fee Database 724, which may be configured to collect, store, and interrelate data such as:

1. Fee ID
2. Fee Rules and/or Conditions
3. Fee Amount

[0312] Moreover, the system may be configured to perform various method steps such as, but not limited to:

[0313] Create Reexamination File

1. Receive request to add a prior art reference to patent application data
2. Store prior art reference with patent application data and time stamp.
3. Flag patent application record as having additional reference and set status for potential reexamination.

[0314] Process Reexamination File

1. Output patent application with additional prior art reference
2. Receive reexamination results of patent application
3. Store reexamination results of patent application
4. Output reexamination results of patent application to end user.

[0315] Adjust Search Algorithms based on Reexamination file and process

1. Retrieve additional prior art reference and reexamination file
2. Use reference and reexamination file to train genetic algorithm to improve later search results

[0316] Validate Prior Art Reference Submitted in Reexamination File

1. Receive a prior art reference to a filed patent application
2. Validate that prior art reference is authentic by finding reference in third party archive
3. Validate creation date of prior art reference by finding creation date of reference in third party archive
4. Flag prior art reference as authentic

[0317] In various embodiments, the present disclosure provides systems and methods in which various patent related documents are entered into a system and stored electronically. As described above, in many of these embodiments, end users and patent examiners can access the documents via a web-based or other networked system. Moreover, not only can the documents be reviewed, but notes can be added to them. These notes can be used, for example, to generate relevance scores for prior art documents as they related to submitted patent applications. Accordingly, in one embodiment the present disclosure provides methods and systems for facilitating certified prior art note taking and a method for using the same.

[0318] According to various embodiments, notes can be flagged as published or unpublished. According to some embodiments, unpublished notes can be viewed by patent examiners, but not by end users or only by authorized end users. Notes, whether published or not, may be encrypted to better control access by authorized users. The notes could be flagged with several layers of administrative clearance if necessary. Notes may take any suitable form including, but not limited to, blogs, overlays, hyperlinks, threads, or any other method for attaching or embedding words, comments, documents, or the like, into a digital document. For example, the end user and/or examiner could add notes that appear as a rollover overlay to a section of a patent application. However attached, according to one embodiment, the notes will be associated with the patent application so that they can be partially or completely viewed simultaneously with the patent application. For the purposes of the present disclosure, a note may be viewed "simultaneously" whenever the note, a portion thereof, or a link thereto, can be viewed at the same time as a portion of the patent application. According to various embodiments, such simultaneous viewing should be available with a minimal amount of effort by the viewer. For example, the viewer may be required to roll their cursor over a portion of the patent application in order to view some or all of the note or a link thereto. However, in this embodiment, a viewer should not be required to separately search for and download the note.

[0319] According to some embodiments, some, or all, of the prior art identified or referred to by the notes may be hosted by the system. Alternatively, some or all of the prior art may reside in or on other systems (e.g., electronic documents available through the library of Congress). Accordingly, a link in a note may or may not lead to a document hosted on the same server as the patent submission system described herein.

[0320] According to some embodiments, examiners or other users may be able to highlight sections of prior art with different colors. The different colors may be ranked to indicate various factors such as, but not limited to, the degree of relevance and/or the degree of potential infringement. The end user and/or examiner could then add feedback to indicate whether the art was flagged with the appropriate highlight color.

[0321] The system can be built utilizing three different architectural methods: 1) a simple, table based method 2) a rules based system or 3) an artificial intelligence (AI) system such as Neural Net, or Bayesian Algorithm.

[0322] Accordingly, as shown in Fig. 8, system 800 such as that described herein may be configured to perform the various functions described above and may incorporate one or more servers capable of running any number and/or combination of software modules configured to perform various tasks. Exemplary combinations of servers and software modules useful for the presently-described system include:

[0323] Central Server

1. Note Addition Program
2. Note Review Program

[0324] A system according to the present disclosure may further include a number of databases configured to store and associate the various types of data that are used by the system to perform the functions described above. Exemplary database architectures useful for the presently-described system include:

[0325] Prior Art Database

1. Prior Art Type
2. Prior Art ID
3. Prior Art Date
4. Prior Art Data
5. Note 1-N
6. End User ID

[0326] Note Database

1. Note Type
2. Note ID
3. Note Date
4. End User ID
5. Prior Art 1-N

[0327] End User Database

1. End User Type
2. End User ID
3. End User Profile
4. End User Billing Information

[0328] Accordingly, a system such as that described herein will be configured to perform various functions, such as those described above, by performing various method steps in order to accomplish one or more given tasks. Non-limiting examples

of methods that may be performed by a system according to the present disclosure include the following:

[0329] Add Certified Note to Prior Art File

1. Retrieve Prior Art File
2. Output Prior Art File
3. Receive Note for Prior Art File and Note Type
4. Attach Note and Note Type to Prior Art File
5. Store Prior Art File with Note
6. Time Stamp date when Note was Added to Prior Art File

[0330] Review Certified Note Attached to Prior Art File

1. Retrieve Prior Art File with attached Note
2. Determine Note Type
3. Determine End User Type
4. If End User Type matches Note Type, Output Prior Art File with Attached Note

[0331] According to various embodiments, the present disclosure provides a document examiner comment system. According to one embodiment, a document is examined and an opinion is rendered by an examiner. End users can log into a system that permits partial or complete access to one or more of the documents and/or examiner opinions and gives the end user the option to submit a comment about the examiner or the examiner's rendered opinion. These comments are used to provide a rating for the examiner. The comments and ratings can be viewed or used by end users of a search engine database. The comments can be used to assign new documents to an examination queue.

[0332] Such a comment system may be a separate application provided by a document examining authority, such as the USPTO or a third party. The system may or may not be integrated with the examining authority's software. In certain embodiments, the presently described system may be provided as an add-on module or plug-in to an existing system or application, for example, Google's search engine, or a Patent Application Drafting Tool (PDT) such as that described in U.S. Patent Application No.11/627,263, which is hereby incorporated by reference. Accordingly, the system herein described may be added to the examining authority's existing applications or provided as a stand alone product offered by the examining authority or a third party.

[0333] According to an embodiment, the examiner commenting system described herein may be implemented through the creation of a notes system. Exemplary methods to provide attachment of notes into documents and/or associate notes with documents, or words, or other data are disclosed in US Patent Application Nos. 11/690,095 "Facilitating Certified Prior Art Note Taking and Method for Using Same," filed March 22, 2007; 11/697,480 entitled "Note Overlay System," filed April 6, 2007; and 11/697,486 entitled "Document Examiner Comment System," filed April 6, 2007; each of which is incorporated herein by reference. When using a notes system, such system may be a part of a generic notes system, or it may be a separate notes system provided primarily for the purpose of providing examiner opinions and/or notes regarding such opinions. In certain embodiments, a generic notes system may be modified to add specific features, functions and design improvements in support of any one or more of the herein disclosed inventions and methods.

[0334] According to an embodiment, when an examiner renders and enters one or more opinions, such opinion(s) are recorded and entered into a database, for example, a notes database. When such opinion(s) are entered or recorded, one or more parties or end users may be notified, including any one or more or any combination of: the examiner's supervisor, the inventor(s), the assignee, the attorney of record, and/or any other third parties, including, for example, interested inventors, patent attorneys, and/or entities. For example, various parties may indicate fields of use, classes, subclasses, inventors, assignees, or any other category in which they have an interest and, when an opinion is rendered to an application that satisfies the indicated area of interest a copy of, or link to, the rendered opinion may be provided to or made available to the interested party. Interest may be indicated via overt means, e.g., though a process wherein the party requests to receive such notifications, and/or may be determined by any other suitable means, for example, by tracking third parties' searching activities. Notifications may be provided via any applicable means, including, for example an alert or email message. Exemplary methods to determine alert events and/or to send alerts are disclosed for example, in U.S. Patent Application Serial No. 11/676,848 "Virtual Environment with Alerts" filed February 20, 2007 which is incorporated herein by reference.

[0335] According to various embodiments, examiners may render and record opinions at any time and/or may be limited to specific or approved times at various steps throughout the examination process. Examiners may copy an opinion from one

application, in whole or in part, to another related or otherwise relevant application or whenever such copying is desired or useful. A copy and paste option may save the examiner time and effort in rendering an opinion. Prior or subsequent to pasting a copied opinion, the examiner may be given the option of making changes to the copied opinion. The original source of the copies information may or may not be stored with the copied information or otherwise made identifiable and may or may not be made available to the end user, applicant, assignee, attorney of record, etc.

[0336] According to another embodiment, once an opinion has been recorded, end users may be notified, for example, via an alert. Furthermore, end users may be permitted to provide comments regarding the opinion. Comments can be provided by any one or more of the following, including:

5. Patent Examiners
6. Submitter of the original document
7. Submitter of subsequent documents
8. A certified commenter
9. Any other authorized end user.

[0337] A comment can include (if permitted / authorized / available):

10. A word, sentence, paragraph or longer text entry
11. A score, grade or ranking
12. A note
13. A hyperlink
14. A document, figure, or attachment
15. A copy of another opinion, prior opinions and/or commentary or notes from the examiner and/or other examiner's relating to the current or unrelated patent applications / opinions

[0338] Comments may be made via any suitable means, including, for example, via a blog or notes system.

[0339] Comments may or may not be reviewable by the patent examiner and/or a supervisor or other third parties. Such access may or may not require end user or other authorization/permission.

[0340] According to various embodiments, certain opinions and/or comments may be entered and flagged as public or private and/or may carry any applicable designation, which may generally grant and/or restrict access to certain users or classes of end users. For example, an inventor may choose to affix a comment that only the patent

examiner can see or review and/or respond to. Alternatively or additionally, a particular comment may only be viewable by such patent examiner's supervisor, the inventor's patent attorney, other persons or end users designated by the inventor submitting such commentary, and/or any other party or combination thereof.

[0341] In certain embodiments, notes may also include priority or other attributes or designations. For example, a note may be flagged as being of high or low importance and/or relating to claims or prior art. Such classifications or flags may be limited to those options permitted or otherwise included by the owner / developer of the system, and/or may be flexible, including an option to permit the creation and maintenance of any number or type of such classes. In some embodiments, classes may include sub-classes.

[0342] In certain embodiments, feedback or scores or grades may be aggregated and made available for subsequent review by any one or more of: the patent examiner(s), supervisors, end users, inventors, patent attorneys, private companies or any third parties, perhaps only as authorized, and/or any combination of the forgoing. Such scores may be aggregated using any applicable means, for example, an average or a weighted average score may be determined. In the case of a weighted score, certain end user's votes or feedback or commentary may carry more or less weight than other end users. For example, the feedback or score provided by peers of the examiner may carry more weight than either the examiner's supervisor and/or the inventor.

[0343] In certain embodiments, a system to permit or support such calculations may include a table or rules based system, which permits authorized users to determine such relative rankings, and/or a self adapting or learning system may be implemented to provide a system which learns which scores should carry more or less weight. For example, a system based upon the use of one or more genetic algorithms may be implemented. By receiving feedback from large numbers of users, the system could determine, over time, which users and/or classes of users are more adept at providing such feedback or scores and/or which end users and/or classes of user's feedback is more or less accurate or useful.

[0344] Use and applications of rules based, expert systems and/or genetic algorithms are well known in the prior art and may be implemented using any applicable means. For example, methods to develop rules, expert systems and/or genetic algorithms are discussed and disclosed in various issued and pending patents and reference and other materials, including the following books entitled: "Genetic Algorithms in Search,

Optimization, and Machine Learning", by David E. Goldberg, and "An Introduction to Genetic Algorithms," by Melanie Mitchell, and "Expert Systems: Design and Development," by John Durkin," and "Logical Foundations for Rule-Based Systems (Studies in Computational Intelligence)," by Antoni Ligeza, each of which are incorporated herein by reference.

[0345] According to another embodiment, inventors or other interested parties, e.g., patent attorneys, may make use of such ranking and/or grades in determining which field of use and/or examiner they desire to submit or change submission and/or priority for a given application, inventor or group or class of applications. Exemplary methods for priority queuing documents are disclosed for example in U.S. Patent Application Nos. 11/462,621 11/462,621, "Fee-Based Priority Queuing for Insurance Claim Processing," filed August 4, 2006; 11/611,024 "System and Method for Prioritizing Items in a Queue" filed December 14, 2006; and PCT Application No. PCT/US06/340347, "Insurance Form Priority Queuing;" each of which are incorporated herein by reference.

[0346] A system such as that described herein may also be affected by a feedback mechanism that includes information regarding the eventual outcome or activities associated with any one or more such applications and/or examiners. For example, a system could be implemented that provides information about the ultimate issuance or rejection of one or more applications reviewed by one or more examiners. If a given examiner's cases are more frequently upheld in a court of law, then such examiner's opinions could be ranked higher than those of other, less successful examiners. Meanwhile, if one or more end user's scores for a given patent examiner or group of examiners turns out to be more or less accurate, i.e., does or does not serve as a good predictor of the eventual outcomes, then such end user's opinions or scores may carry a higher or lower weight as compared with other end users that have provided opinions or scores that have proven more or less accurate as predictors of such examiner(s)' performance. In this fashion, a system is disclosed that can determine which examiner's and/or end user's opinions are more or less valid and/or which should be weighted more or less heavily, in general and/or within fields of use or other classifications.

[0347] In certain embodiments, end users, e.g., inventors, examiners, examiners' supervisors and/or patent attorneys may use scores and opinions to determine which examination queue they prefer for a given patent application or group of applications.

For example, using the scores and opinions provided by this disclosed invention, a patent attorney may determine that a new application would be best served by being examined by a particular examiner and/or within a specific examination queue. In addition or in the alternate, such attorney may further conclude that, since a similar or related application has been or is about to be examined within a given queue or by a particular examiner, that his client would best be served if his application is reviewed sooner rather than later, as relevant information and decisions are or have been recently made by a particular examiner and/or within particular queue. In such cases, an end user, e.g., inventor or patent attorney, may be in a position or otherwise desire to pay or request for a change in venue, examiner, and/or queue or queue position. Such changes and fees, if any, for such change requests may be made by any applicable means.

[0348] In another embodiment, whenever a comment, note or score or other information is provided regarding an examiner and/or an examiner's opinions or comments, such examiner and/or his supervisor or other applicable party may be notified of such entry via an alert, for example, via an email message.

[0349] In another embodiment, examiners' pay may be based in whole or in part upon feedback from end users and/or results outcomes, e.g., patents being upheld or overturned, whether in court or via any review processes. For example, examiners may receive a pay increase or bonus if their opinions are ranked highly and/or are upheld when such examiner's cases are tested in a court of law.

[0350] In an embodiment, when submitting an opinion or comment, end users may desire access to prior opinions and/or comments. Therefore, a system may include a user interface that permits access to any such historical data. Such access may or may not require authorization. Such data may or may not be encrypted in order to provide added levels of security for such information. For example, in the case where large groups of end users are accessing the USPTO's database, certain of its information may be encrypted and/or carry a higher level of encryption and/or other security measures, e.g., user id and/or passwords, to ensure system integrity and to maintain the confidence of certain information, including, for example, unpublished pending patents and/or private communications or opinions. When an end user is authorized or is otherwise permitted to access such opinions or comments, the user interface may assist or aid such an end user by providing a search tool to permit scanning or

searching for relevant opinions or comments, and/or any other accessible information, e.g., examiner scores or rankings.

[0351] Search results may be determined and sorted or presented via any suitable means, including, for example, in order of relevancy to the patent examiner, patent applicant, patent attorney, assignee, date, time, or any other relevant discriminating characteristic and/or any combination of the forgoing.

[0352] In addition to the novel relevancy ranking methods disclosed herein, other methods to determine relevancy between and among documents and/or websites are well known within the prior art, including, for example, the methods discussed in the book entitled "Text Databases and Document Management: Theory and Practice, by Amita Goyal Chin, which is incorporated by reference.

[0353] According to another embodiment, search results may include a list of hyperlinks that permit the end user to click on to be redirected to any such additional information or results data. Such a search tool may be based upon existing search engines, such as Google, and/or using any applicable means, including, for example, use of a plug-in module to enhance an existing or new search engine. Exemplary methods for providing patent and prior art searches are disclosed in U.S. Patent Application Nos. 11/671,380, "Automated Patent Searches" filed February 5, 2007; 11/693,555 "Providing Certified Patent Searches Conducted by Third Party Researchers" filed March 29, 2007; and 11/697,447 entitled "Enhanced Patent Prior Art Search Engine," filed April 6, 2007; each of which is hereby incorporated by reference.

[0354] In addition to or instead of using relevancy scores or ranking methods to aid in searching or selecting opinions or comments, they system may provide end users with sort and/or other selection criteria, including, for example, filters which can sort and/or filter by any applicable means, including: a) date, b) time, c) examiner, d) end user, f) patent attorney, g) patent application or patent number(s), h) supervisor, i) opinion type, class, subclass, or number, j) prior art references, k) case id or number, l) note id, m) and/or any combination of the above and/or by alphabetical or numeric sorting of any of the above in ascending and/or descending order, n) and/or any other data or variables stored or available in the database or connected databases or systems.

[0355] In certain embodiments, search algorithms and/or search results may be refined through the use of survey or other questions presented to the end user or

examiner using the search tool to find and/or view comments and/or opinions or other notes. Such surveys may be provided using any applicable means. Exemplary methods to provide for survey questions and gathering of data are disclosed by applicants in U.S. Patent Application Nos. 60/774,177, entitled "Survey Based Qualification of Keyword Searches," 11/278,123, also entitled "Survey Based Qualification of Keyword Searches" 11/562,738 "Survey Based Qualification of Keyword Searches" and 11/608,150, entitled "Map and Inventory Based On-Line Purchases" which applications are incorporated herein by this reference.

[0356] According to various embodiments, any of the disclosed methods for searching and/or sorting opinions and notes and/or other information, may be included in an existing or new search engine. Methods to create or modify search engines are well known and understood within the prior art and by any person of ordinary skill. For example, methods to design and build a search engine are disclosed and discussed by the authors of the following books, including, for example "Understanding Search Engines: Mathematical Modeling and Text Retrieval (Software, Environments, Tools), Second Edition, by Michael W. Berry and Murray Browne, which is incorporated by reference. Methods to create WebPages, hyperlinks and hypertext are well known in the prior art and any person with ordinary skill in the art can design and create such hyperlinks. Methods to design and create hypertext and/or hyperlinks are discussed and disclosed by the authors of the following reference and other materials, including, for example: "Intelligent Hypertext: Advanced Techniques for the World Wide Web (Lecture Notes in Computer Science), by Charles Nicholas and James Mayfield," "Information Architecture for the World Wide Web: Designing Large-Scale Web Sites [ILLUSTRATED], by Louis Rosenfeld (Author), Peter Morville," Creating Web Pages with HTML Simplified, by Sherry Willard Kinkoph (Author)," "Master Visually Web Design (With CD-ROM) by Carrie F. Gatlin and Michael S. Toot," and "Creating Internet Intelligence: Wild Computing, Distributed Digital Consciousness, and the Emerging Global Brain (IFSR International Series on Systems Science and Engineering), by Ben Goertzel." All of which are incorporated by reference.

[0357] In certain embodiments, one or more fees may be charged to practice or use of one or more of the systems or methods disclosed herein. For example, applicants may be charged a fee for access to and/or searching or reviewing or commenting one or more of an examiner's notes, comments and/or opinions and/or to copy and/or paste

or use such information and/or to contest any opinion, statements, comment, or the like.

[0358] In certain embodiments, the disclosed invention may be practiced in the real or virtual world. For example, a video game may include a virtual patent office. Exemplary methods and systems for providing protection of intellectual property in a virtual environment are disclosed, for example, in U.S. Patent Application Nos. 11/428,263, "Video Game Environment" filed June 30, 2006; 11/620,563 "Copyright of Digital Works in a Virtual Environment," filed January 5, 2007; 11/689,977, "Digital Rights Management in a Virtual Environment," filed March 22, 2007; 11/671,373 "Video Game with Control of Quantities of Raw Materials" filed February 5, 2007; 11/680,960 "System for the Creation and Registration of Ideas and Concepts in a Virtual Environment," filed March 1, 2007; each of which is incorporated herein by reference. Accordingly, the disclosed invention may be applied to a suitable virtual environment, world or video game(s). For example, commentary and opinions and/or scoring, such as those disclosed herein may be created, used and/or delivered in the virtual world. For example, virtual patent examiners (which may or may not be real world patent examiners too), may be used to provide patent opinions regarding a player's or player character's patent application for a virtual object.

[0359] The disclosed invention could be also be used for the creation of agreements between or among real or virtual end users, players, player characters or other third parties. In such cases, methods to ensure that agreements are enforceable and that advertising fees are collected in such virtual environments are desirable. Exemplary methods for providing such contract enforcement and collection of fees are disclosed, for example, in U.S. Patent Application Nos. 11/279,991 "Securing Virtual Contracts with Credit," filed April 17, 2006; 11/624,662 "Securing Contracts in a Virtual World," filed January 18, 2007; 11/559158 "Financing Options in a Virtual World" filed November 13, 2006; 11620,542 "Satisfaction of Financial Obligations in a Virtual Environment Via Virtual and Real World Currency," filed January 5, 2007; 11/421,025 "Financial Institutions and Instruments in a Virtual Environment," filed May 30, 2006, and 11/380,489 "Multiple Purchase Options for Virtual Purchases," filed April 27, 2006; each of which are hereby incorporated herein by reference.

[0360] In other embodiments, comments, opinions and/or notes may also be used to provide feedback regarding game play, enjoyment, features, desired features,

discovered errors, and/or any other form of communication and/or ranking information.

[0361] All embodiments herein which refer to a patent are equally applicable to a patent application, and vice versa, unless explicitly stated otherwise with respect to a particular embodiment. Any reference to a patent (or to a patent application) is for reasons of brevity only.

[0362] Those having skill in the art will recognize that there is little distinction between hardware and software implementations. The use of hardware or software is generally a choice of convenience or design based on the relative importance of speed, accuracy, flexibility and predictability. There are therefore various vehicles by which processes and/or systems described herein can be effected (e.g., hardware, software, and/or firmware) and that the preferred vehicle will vary with the context in which the technologies are deployed.

[0363] At least a portion of the devices and/or processes described herein can be integrated into a data processing system with a reasonable amount of experimentation. Those having skill in the art will recognize that a typical data processing system generally includes one or more of a system unit housing, a video display device, memory, processors, operating systems, drivers, graphical user interfaces, and application programs, interaction devices such as a touch pad or screen, and/or control systems including feedback loops and control motors. A typical data processing system may be implemented utilizing any suitable commercially available components to create the gaming environment described herein.

[0364] Accordingly, as shown in Fig. 9, a system 900 may comprise a plurality of various hardware and/or software components such as those shown and described below. It will be appreciated that for ease of description, the variously described hardware and software components are described and named according to various functions that it is contemplated may be performed by one or more software or hardware components within the system. However, it will be understood that the system may incorporate any number of programs configured to perform any number of functions including, but in no way limited to those described below. Furthermore, it should be understood that while, for ease of description, multiple programs and multiple databases are described, the various functions and/or databases may, in fact, be part of a single program or multiple programs running in one or more locations.

[0365] Exemplary programs include:

1. Document Submission and Queue Program 911
2. Opinion, Notes and Comment Program 912
3. Alert Program 913
4. Rating and Scoring Program 914
5. Survey Program 915
6. Search / Review Program 916
7. Billing / Collections Programs 917

[0366] Exemplary database architecture includes:

[0367] Examiner Database 921, which may be configured to collect, store, and interrelate data such as:

1. Examiner ID
2. Name
3. Areas of practice / Fields of Use 1 - N
4. Contact Information
5. Qualifications 1 – N
6. Current Cases ID 1 – N
7. Prior Cases ID 1 – N
8. Notes 1 – N
9. Rating / Score Summary
10. Rating / Score Details
    a. Rating / Score Transaction ID – 1 – N
    b. Notes 1 - N

[0368] User Database 922, which may be configured to collect, store, and interrelate data such as:

1. User ID
2. Name
3. Account Type
4. Description
5. Terms and Conditions ID
6. Text
7. Documents ID 1 – N
8. Attorney ID 1 - N
9. Notes 1 - N

[0369] Attorney Database 923, which may be configured to collect, store, and interrelate data such as:

1. Attorney ID
2. Name
3. Address
4. Description
5. Qualifications 1 - N
6. Notes 1 – N
7. Rating / Score Summary
8. Rating / Score Details
    a. Rating / Score Transaction ID – 1 – N
    b. Notes 1 - N

[0370] Document Database, 924 which may be configured to collect, store, and interrelate data such as:

1. Document ID
2. Document Description
3. Document Owner ID
4. Hyperlinks (e.g., document locations) 1 - N
5. Group
    a. Class 1 – N
        1. Subclass 1 – N
6. Type 1 – N
    a. Subtype 1 – N
7. Date / Time Stamps
    a. Submitted / Found / Indexed On
    b. Submitted / Found / Indexed By ID or Hyperlink
    c. Revised On 1 – N
    d. Revised By 1 – N
    e. Before Image 1 - N
    f. After Image 1 - N
8. Notes 1 – N
9. Security Rules ID 1 – N
10. Rating / Score Summary
11. Rating / Score Details

a. Rating / Score Transaction ID – 1 – N
b. Notes 1 - N

[0371] Opinion / Note Database 925, which may be configured to collect, store, and interrelate data such as:

1. Opinion / Note ID
2. Examiner ID
3. User ID
4. Document ID
5. Description Short
6. Description Long
7. Group ID
8. Class ID 1 - N
9. Subclass ID 1 - N
10. Opinion / and/or Note Attachments 1 – N
11. Text
12. Related Notes ID 1 – N
13. Related Documents ID 1 – N
14. Security Rules ID 1 - N
15. Hyperlinks 1 - N
16. Change Tracking Data
    a. Modifications 1 – N
    b. Submitted By ID
    c. Modification Submission Date / Time
    d. Short Description
    e. Long Description
    f. Hyperlinks 1 – N
    g. Change Image 1 - N
        1. Before Change
        2. After Change

[0372] Examiner Rules Database 926, which may be configured to collect, store, and interrelate data such as:

a. Rule ID 1 - N
b. Rule Description
c. Rules 1 – N

1. Notes 1 – N
2. Security Rules ID 1 - N

[0373] Qualifications Database 927, which may be configured to collect, store, and interrelate data such as:

1. Qualification ID
2. Description
3. Qualification Type
4. Years Experience
5. Fields of Use Applicable 1 – N
6. Permissions
7. Restrictions
8. Notes 1 - N

[0374] Billing Terms and Conditions Database 928, which may be configured to collect, store, and interrelate data such as:

1. Billing Method ID
2. Billing Type
3. Description
4. Billing Frequency
5. Due by # days
6. Late by # days
7. Interest Rate Fixed
8. Interest Rate Variable
9. Interest Accrues after days
10. Notes 1 - N

[0375] Accounts Receivable Database 929, which may be configured to collect, store, and interrelate data such as:

1. Advertiser / Note Owner ID
2. Total Amount Owed
3. Transaction Detail Records 1 – N
    a. Date of Transaction
    b. Type
    c. Advertisement ID
    d. Word ID
    e. Hyperlinks 1 – N

f. Amount per impression or click through

4. Notes 1 - N

[0376] Search Database 930, which may be configured to collect, store, and interrelate data such as:

1. Document ID
2. Document Location / Hyperlink
3. Notes 1 - N

[0377] Transaction Database 931, which may be configured to collect, store, and interrelate data such as:

1. Transaction ID
2. Description
3. Date / Time
4. Type
5. User ID
6. Examiner ID
7. Advertisement / Note Owner Rules Used 1 – N
8. Billing T&C's 1 - N
9. Billing Method ID
10. Transaction Amount
11. Notes 1 - N
12. Results 1 - N
    a. Note Added, Changed, Deleted, and/or Accessed
    b. Hyperlink Clicked
    c. Sub-Hyperlinks Clicked 1 - N
        1. Advertisement / Note and/or Webpage) Displayed 1 - N
        2. Click Through y/n
        3. Duration of view
        4. Conversion y / n
        5. Conversion dollar amount

[0378] Document Class Database 932, which may be configured to collect, store, and interrelate data such as:

1. Class ID
2. Description
3. Notes 1 - N

[0379] Document Sub Class Database 933, which may be configured to collect, store, and interrelate data such as:

1. Subclass ID
2. Description
3. Notes 1 - N

[0380] Document Type Database 934, which may be configured to collect, store, and interrelate data such as:

1. Type ID
2. Description
3. Notes 1 - N

[0381] Document Sub Type Database 935, which may be configured to collect, store, and interrelate data such as:

1. Subtype ID
2. Description
3. Notes 1 - N

[0382] Group Database 936, which may be configured to collect, store, and interrelate data such as:

1. Group ID
2. Description
3. Notes 1 - N

[0383] Word Count Database 937, which may be configured to collect, store, and interrelate data such as:

1. Word ID
2. Number of Occurrences
3. Hyperlinks 1 – N
4. Notes 1 - N

[0384] Survey Database 938, which may be configured to collect, store, and interrelate data such as:

1. Survey ID
2. Survey Description
3. Advertiser ID
4. Survey Question ID 1 – N
    a. Question
    b. Answer Options 1 – N

5. Notes 1 - N

[0385] Results Database 939, which may be configured to collect, store, and interrelate data such as:

1. Result ID
2. User ID
3. Survey Questions 1 – N
4. Survey Answers 1 – N
5. Date / Time Stamp
6. Narrative or Text Responses 1 – N
7. Notes 1 - N

[0386] Rules Database 940, which may be configured to collect, store, and interrelate data such as:

1. Rule ID
2. Rule Description
3. Rules 1 – N
4. Notes 1 - N

[0387] Notes Database 941, which may be configured to collect, store, and interrelate data such as:

1. Note ID
    a. Hyperlinks 1 - N
    b. Note Description Short
    c. Note Description Long
    d. Note Group ID
    e. Note Class ID
    f. Note Subclass ID
    g. Note and/or Note Attachments 1 – N
        1. Owner / Submitted By ID
        2. Original Submission Date / Time
    h. Notes 1 - N
2. Modifications 1 – N
    a. Owner / Submitted By ID
    b. Modification Submission Date
    c. Short Description
    d. Long Description

1. Owner / Submitted By ID
2. Original Submission Date / Time
3. Hyperlinks 1 – N
4. Change Image 1 - N
    a. Before Change
    b. After Change

e. Notes 1 - N

[0388] Suppression Rules Database 942

[0389] Hyperlink Database 943, which may be configured to collect, store, and interrelate data such as:

1. Hyperlink ID
2. Hyperlink
3. Description
4. Owner ID
5. Advertiser ID
6. Notes 1 - N

[0390] User Database 944, which may be configured to collect, store, and interrelate data such as:

1. User ID
2. Name
3. Account Type
4. Description
5. Terms and Conditions ID
6. Text
7. Notes 1 – N

[0391] Document Group Database 945, which may be configured to collect, store, and interrelate data such as:

1. Group ID
2. Description
3. Includes Sub-Groups / Sub-Class IDs 1 – N
4. Notes 1 - N

[0392] Document Class 946, which may be configured to collect, store, and interrelate data such as:

1. Class ID

2. Description
3. Includes Sub-Class IDs 1 – N
4. Notes 1 - N

[0393] Document Sub Class 947, which may be configured to collect, store, and interrelate data such as:

1. Subclass ID
2. Description
3. Notes 1 - N

[0394] Note Class 948, which may be configured to collect, store, and interrelate data such as:

1. Note Class ID
2. Description
3. Includes Sub-Class IDs 1 – N
4. Notes 1 - N

[0395] Note Subclass 949, which may be configured to collect, store, and interrelate data such as:

1. Note Subclass ID
2. Description
3. Notes 1 - N

[0396] Alert Event Rules Database 950, which may be configured to collect, store, and interrelate data such as:

1. Alert Event Rule ID
2. Alert Event Description
3. Alert Event Rules 1 – N
    a. Event Condition
    b. Alert Recipient ID 1 – N
        1. Alert Method 1 - N
    c. Alert Database ID 1 - N
4. Notes 1 - N

[0397] Alert Database 951, which may be configured to collect, store, and interrelate data such as:

1. Alert Database ID
2. Alert Contents, one or more of:
    a. Text

b. Variable Data

c. Executable

3. Notes 1 - N

[0398] Alert Methods Database 952, which may be configured to collect, store, and interrelate data such as:

1. Alert Method ID
2. Method Type
3. Delivery Method (cell phone, pager, e-mail, PDA, database, executable, etc.)
4. Notes 1 - N

[0399] Alert Recipient Database 953, which may be configured to collect, store, and interrelate data such as:

1. Alert Recipient ID (e.g., end user ID)
2. Description
3. Alert Method Preferences ID 1 – N
4. Notes 1 - N

[0400] Document Queue Database 954, which may be configured to collect, store, and interrelate data such as:

1. Queue ID
2. Document IDs 1 – N
   a. Queue Position Number
   b. Date Submitted
   c. Priority
   d. Notes 1 – N
   e. Assigned Examiner ID 1 - N

[0401] Rating / Score Transaction Database 955, which may be configured to collect, store, and interrelate data such as:

1. Rating Transaction ID
2. Rating Type (e.g., Document, Examiner, Note, Opinion, etc.)
3. Rating / Score
4. Relevancy Score
5. Rules 1 - N
6. Submitted By
   a. ID

b. Date / Time

7. Notes 1 - N

[0402] Rating / Score Rules Database 956, which may be configured to collect, store, and interrelate data such as:

1. Rule ID
2. Description
3. Permissions
4. Limitations
5. Rules 1 – N
6. Notes 1 – N

[0403] Plug in Database 957, which may be configured to collect, store, and interrelate data such as:

1. Plug-in ID
2. Short Description
3. Long Description
4. Purpose
5. Developer ID 1 - N
6. Features 1 – N
7. Limitations 1 – N
8. Authorized Users 1 – N
9. Terms and Conditions for Use 1 – N
    a. Fees for Use
    b. Fee sharing rules (if any), e.g., share with USPTO
    c. Limitations on Use
    d. License / Sublicense / Modification Rights / Limitations
10. Known Errors 1 – N
11. Proposed Enhancements 1 - N
12. API Standard's ID 1 – n
13. Date / Time Stamps
    a. Submitted On
    b. Expected Next Review Date
    c. Reviewed On – 1 – N
    d. Reviewed by Examiner ID 1 - N
    e. Rejected / Accepted On

f. Rejected Reasons ID 1 - N
g. Supervisor ID 1 – N
h. Notes 1 - N

14. Plug-In (i.e., attachment, e.g., file and/or source and/or object code)
15. End User Or Examiner Review Notes ID 1 – N
16. Notes 1 – N

[0404] Change Tracking Database 958, which may be configured to collect, store, and interrelate data such as:

1. Change Tracking ID
2. Word ID
3. Change Type (e.g., Add, change, delete)
4. Change Description
5. Date / Time
6. User ID
7. Before Image
8. After Image
9. Relevancy or score
10. Notes 1 - N

[0405] Administrative Hierarchy Database 959, which may be configured to collect, store, and interrelate data such as:

1. Hierarchy ID
2. Description
3. Supervisor ID
   a. Examiner ID 1 – N
4. Related Hierarchy (i.e., higher / lower)
   a. Hierarchy ID
   b. Type (superior / inferior)

[0406] Security Rules Database 960, which may be configured to collect, store, and interrelate data such as:

1. Security Rule ID
2. Description
3. Applications
4. Limitations
5. Security Permission Rules 1 - N

6. Notes 1 - N

[0407] It will be appreciated that the various software and hardware components described above will be configured to perform a variety of functions and methods. Listed below are some exemplary methods that might be performed by the systems as described herein:

[0408] Assign Document To Queue

1. Receive Document
2. Determine Appropriate Queue
3. Determine Queue Position
4. Place Document in Queue

[0409] Add Opinion

1. Receive an examiner log in
2. Generate and Output document queue
3. Receive a request to add an opinion to a document
4. Output opinion form
5. Receive opinion data
6. Store opinion data with document
7. Add Comment
8. Receive a request to add a comment to a document about an opinion
9. Generate and Output comment form
10. Receive comment data
11. Store comment data with document and opinion

[0410] Alert Users

1. Receive an indication that an addition has been made to a document record
2. Determine appropriate users
3. Alert users of addition

[0411] Score Opinion

1. Receive a request to score an opinion about a document
2. Output score form
3. Receive score
4. Store score

[0412] Score User

1. Retrieve user data
2. Generate/Receive user score based on data
3. Store user score

[0413] Score Examiner

1. Retrieve opinion data from an examiner
2. Retreive Score data about opinions
3. Score examiner based on opinion scores

[0414] Rate User

1. Retrieve user score
2. Generate user rating based on score and rules
3. Store user rating

[0415] Rate Examiner

1. Retrieve examiner score
2. Generate examiner ratings based on score and rules
3. Store examiner rating

[0416] Or Event Driven Models:

[0417] Load Databases

1. Initially populate or create empty databases
2. Update Databases

[0418] Primary Application / Watchdog

1. Load Database(s)
2. Determine if one or more sub-applications should be executed
3. Execute appropriate sub-applications (see below)
4. Update Database(s)
5. Repeat Process as Necessary / Desired / Indicated

[0419] User Interface Application

1. Load database(s)
2. Display graphical user interface for each application / feature as requested / desired
3. Receive input from end users
4. Execute functions as requested / required and/or load additional applications / GUIs
5. Update databases

[0420] Security Application

1. Load Database(s)
2. Determine if requested action and/or end user is permitted
3. If not, notify application and/or end user
4. If yes, permit requested step and/or loading of application or other authorized action(s)
5. Update Database(s)

[0421] End User Preferences Application

1. Load Databases
2. Present Preferences GUI if required
3. Receive End User Preferences / Feedback / Usage Tracking Information, including:
    a. Filter Criteria or Rules
    b. Sort Criteria or Rules
    c. Relevancy Information
    d. Weighting Factors, Criteria or Rules
    e. Security Preferences
    f. Feedback / Tracking Preferences
    g. Notes
    h. Usage habits / patterns
    i. Display preferences

[0422] Opt In / Sign Up Application

1. Load Databases
2. Receiving Indication of new user sign up
3. Record any and all or available information regarding one or more patent applicant's, end users, examiners, attorneys and/or third parties
4. Update databases

5. Create / Maintain Document Database
6. Load Databases
7. Determine available or participating documents
8. Periodically search all available documents
9. Create / update index for all found (or participating) documents
10. Receive indication of add / change / delete request(s)

11. If required, queue and review request(s)
12. If required, approved or reject request(s)
13. Create / update document databases
14. Update databases

[0423] Document, Opinion, Notes Search / Indexing Program

1. Load Database(s)
2. Determine Search / Index Procedure is necessary or desired
3. Search World Wide Web or all accessible or participating databases
4. Index Documents, Opinions, Notes and Hyperlinks
5. Store Results
6. Update Database(s)

[0424] Document Submission / Filing Application

1. Load Database(s)
2. Receive request to submit document with patent applications and/or one or more words, synonyms, antonyms, figures and/or related documents to database, repository or processing agency, e.g., USPTO
3. Capture image of all relevant materials, including then current definitions, along with Time / Date stamp information
4. If desired, encrypt any or all output materials, e.g., patent application, definitions, words, synonyms, antonyms, figures and/or related documents and/or supporting materials to prevent or otherwise control subsequent access and/or modifications
5. Update Database(s)

6. End User Contest Application
7. Load Database(s)
8. Receive Indication that one or more end users and/or third parties, e.g., patent examiner, contests one or more notes, opinions and/or other documents, maps and/or supporting materials
9. Determine relevancy / validity of the contest by any one or all of the following if desired / applicable
    a. Solicit other end user / third party votes / scores / ranking

b. Use GA

c. Submission to authorized end user or third party

d. Preponderance of feedback

10. If contest is determined valid, accept requested changes

11. Otherwise reject requested changes

12. Update Database(s)

[0425] Word Search / Indexing Program

1. Load Database(s)

2. Determine Search / Index Procedure is necessary or desired

3. Search World Wide Web or all accessible or participating databases / words

4. Index Words and Hyperlinks

5. Store Results

6. Update Database(s)

[0426] Opinion / Note Attachment Program

1. Load Database(s)

2. Provide Attachment Creation GUI

3. Receive New Opinion / Note from End User, e.g. Examiner

4. Create Opinion / Note

5. Create Opinion / Note Hyperlink

a. Associate Opinion / Note with Document, e.g., patent application, Word and/or Hyperlink (as applicable), by, e.g., inserting or otherwise associating Note Hyperlink with Document, Word and/or Hyperlink

b. Update Database(s)

[0427] Opinion / Note Modification Program

1. Load Database(s)

2. Provide Modification GUI

3. Receive Opinion / Note Change / Delete Request from End User, e.g., examiner

4. Create Opinion / Note Modification

5. If required, Create Revised Opinion / Note Hyperlink

6. Associate Revised Opinion / Note with Document, Word and/or Hyperlink, by inserting or otherwise associating Note Hyperlink with Document, Word and/or Hyperlink
7. Else, if required, delete Opinion / Note Hyperlink
8. Update Database(s)

[0428] Opinion / Note Access / Use Program

1. Load Database(s)
2. Provide Access / Use GUI
3. Receive opinion / note access / use / activation request from end user (or application), e.g., patent applicant or attorney
4. Apply Relevancy Filter (if applicable / requested / desired)
5. Determine action steps, e.g., execute program or hyperlink:
    a. If applicable, perform one or more of the following:
        1. Display appropriate opinion / note contents
        2. Display like notes, opinions, documents or hyperlinks to like documents, and/or words, hyperlinks, etc.
        3. Execute program or hyperlink
        4. Display opinion, document, note and/or advertisement
        5. If desired / applicable, open new window to display opinion / note contents or advertisement and/or GUI's
        6. Execute opinion / note attachment program
6. Update Database(s)

[0429] Opinion / Note Attachment Program

1. Receive indication of new or modified or deleted opinion / note
2. Load Database(s)
3. If desired, capture before / after change images
4. Create or update or remove hyperlink(s) as required
5. Update database(s)

[0430] Find Like Opinions, Notes, Documents, Words, Hyperlinks Program

1. Load database(s)
2. Receive indication an opinion, note, document, or hyperlink has been indexed
3. Search for relevant opinions, notes, documents, or hyperlinks
4. Index results

5. Update database(s)

[0431] Opinion / Note Relevance Program

1. Load Database(s)
2. Receive Relevancy Input from End Users
3. Or use automated application to determine relevancy, e.g., via GA
4. Associate Relevancy with Opinions / Notes and/or Documents
5. Update Database(s)

[0432] Opinion / Note Search Review Program

1. Load Databases
2. Present Search GUI
3. Receive Prior Art, Opinions, Notes or Documents or other Search String Request
4. If desired, needed or requested, retrieve synonyms and display in separate search string box
5. Receive indication that end user prefers or clicks on synonym or other hyperlink
6. Determine if additional information and/or a survey is needed desired
7. If needed or desired, execute survey program
8. Determine if advertisement should be displayed
9. Display advertisement if desired, needed, requested
10. Based upon available information, e.g., search string, synonyms and/or survey results, Search any or all available and/or participating databases and/or data warehouses
11. Retrieve results including opinions, notes, prior art, other documents, synonyms, antonyms, advertisements, notes, hyperlinks, cases, and other search results data based upon any one or more of the forgoing and/or other search criteria
12. Determine weights, sort, filter and other system and/or end user search criteria of end user requesting search
13. Determine relevancy of results text / data / documents, etc. based upon any one or more criteria including:
    a. Opinion / Note Type, Group, Class or Subclass
    b. Document Type, Group, Class or Subclass

c. User Type
d. Security Privileges – Permissions or denials
e. User Preferences, weighting criteria
f. Computer Type
g. Search Engine Type or Provider Preferences
h. Relevancy Conditions / Information
i. Document results section weighting
j. Survey Questions and/or responses
k. Past or present end user feedback

14. Determine if results data should be displayed in one or more separate page(s), popup or other window(s)

15. Display results, in whole or in part, based upon relevancy, weighting factors, document section information, and/or in sorted / filtered order and/or store results in certified or encrypted database for subsequent user or examiner or third party access, and/or other available relevancy, sorting, display options criteria

16. Display one or more of the following, in whole or in part, if indicated, requested, needed or otherwise desired including, but not limited to:

a. Results data
b. Opinions
c. Notes
d. Comments
e. Prior art
f. Relevancy information
g. End user weighting, criteria, sort, filter and/or display and/or other preferences or system settings
h. Mapping information
i. Synonyms and/or antonyms
j. Definitions
k. Figures
l. Text
m. One or more Documents
n. Hyperlinks

o. Advertisements
p. Notes
q. Any or all other data as desired / requested / necessary

17. Update Databases

[0433] Feedback and Performance Improvement Application

1. Load Databases
2. Receive indication of end user or system activity
3. Determine if end user feedback is indicated, required, necessary offered or is otherwise submitted or provided
4. Determine feedback category, including any one or more of the following categories/items, including the relevancy, accuracy, usefulness, completeness, effectiveness or appeal of any one or more of the following system settings, and/or data including, but not limited to:
   a. Results data
   b. Opinions
   c. Notes
   d. Comments
   e. Prior art
   f. Relevancy information
   g. End user weighting, criteria, sort, filter and/or display or other preferences or system settings
   h. Mapping information
   i. Synonyms and/or antonyms
   j. Definitions
   k. Figures
   l. Text
   m. One or more Documents
   n. Hyperlinks
   o. Advertisements
   p. Ease of application or feature use
   q. Any or all other data as desired / requested / necessary
5. Request feedback and/or changes to and/or opinions regarding or relating to one or more affected end users regarding one or more

feedback categories as defined / determined above and receive feedback information including at least one or more of the following, including, but not limited to:

a. Relevancy rankings
b. Scores
c. Weighting factors or weights
d. Sorting preferences
e. Filtering preferences
f. Display preferences
g. Subjective criteria
h. Notes

6. Use on screen feedback option or survey to solicit feedback
7. Receive end user feedback
8. Determine and update relevancy, weighting criteria and/or other scores
9. If feedback warrants, or so indicates, request additional feedback on the feedback
10. Modify applicable / affected criteria including, but not limited to any relevant settings such as those relating to any one or more or part or all of a/an/the:

a. Genetic or other learning algorithms
b. Relevancy or scoring algorithms
c. System, end user and/or other settings, weights, preferences, sort, selection, display criteria.
d. End user or system weighting, criteria, sort, filter and/or display and/or other preferences or system settings
e. Mapping information
f. Opinions
g. Synonyms and/or antonyms
h. Definitions
i. Figures
j. Text
k. Documents
l. Hyperlinks

m. Advertisements
n. Notes
o. Any or all other data as desired / requested / necessary

11. Update databases

[0434] Usage Tracking and Optimization Program

1. Load Databases
2. Receive indication of end user or system activity
3. Store / analyze activity
4. When / if requested generate usage tracking / activity reports
5. Display reports and/or export data as requested / desired / needed
6. Determine if activity affects or is related to and/or is otherwise correlated to/with and/or could improve any results data including or system performance, including for example:
   a. Relevancy and/or scoring calculation methods or algorithms
   b. Accuracy and/or quality of opinions / notes / comments, and/or
   c. Advertising results
   d. Click through results
   e. Conversion rates
   f. End user feedback
   g. End user skills
   h. Search methods or algorithms
   i. Hyperlink use or relevancy
   j. Sort and/or filter methods, calculations and/or options
7. Provide performance data to genetic or other algorithm(s)
8. Modify methods and/or algorithms and/or end user or other options based upon performance data
9. Update Databases

[0435] Billing Program

1. Load Database(s)
2. Receive indication that billing activity has occurred
3. Determine affected parties, e.g., payer and payee
4. Determine billing rules, terms and conditions
5. Determine billing amounts due

6. Create Invoice and A/P or A/R notices / entries
7. Send Invoices and notices
8. Update Databases
9. Await Payment
10. Receive payment indication
11. Apply payments
12. Notify A/P or A/R systems / and/or affected parties
13. Determine if payments are timely / sufficient
14. If not, execute collections program
15. Update Database(s)

[0436] Collections Program

1. Receive indication payments are late and/or insufficient
2. Load Database(s)
3. If applicable, execute one or more of the following steps:
    a. Send late notice
    b. Send insufficient payment or funds notice
    c. Limit or prevent further use until payment terms are partially or fully satisfied, each according to billing terms and conditions and/or rules
    d. Collect funds due from primary and/or secondary credit cards on file.
    e. Notify affected parties
4. Update Database(s)

[0437] Mapping Program

1. Load Databases
2. Receive indication that one or more patent applications, opinions, notes, comments, words, synonyms, antonyms and/or other documents or notes have been added or changed or removed from one or more databases
3. Receive or determine relevancy information
4. Determine mapping relationships among any one or more of the forgoing

5. Monitor patent application, notes, opinions, commentary, word, synonym, antonym, and/or other documents and/or notes and/or mapping usage
6. Receive feedback from end users and/or determine change in mapping relationships and/or relevancy
7. If desired or required, submit any such changes for review / approval
8. If approved, update mapping relationship data accordingly
9. Update Databases

[0438] Survey Program

1. Load Databases
2. Receive indicator that relevancy information should be updated and/or search results may be improved with survey results data
3. And/or periodically submit one or more survey questions to one or more end users
4. Determine questions based upon survey database rules and/or based upon prior effectiveness of one or more survey questions
5. Determine respondent or target end users
6. Submit questions to respondent(s)
7. Receive results
8. Determine new relevancy scores
9. Update relevancy information and/or modify hyperlinks or advertisements based upon new or revised relevancy scores and/or other end user feedback
10. And/or use GA to determine relevancy scores and/or hyperlink and/or advertisements
11. Update databases

[0439] Alerts Program

1. Load Database(s)
2. Determine if Alert Event has occurred
3. Determine Alert Contents based upon alert rules
4. Determine Alert Recipients and Contents and Delivery Method(s)
5. Send Alert(s)
6. Update Database(s)

[0440] Of course it will be appreciated that the systems methods described herein are provided for the purposes of example only and that none of the above systems methods should be interpreted as necessarily requiring any of the disclosed components or steps nor should they be interpreted as necessarily excluding any additional components or steps. Furthermore, it will be understood that while various embodiments are described, such embodiments should not be interpreted as being exclusive of the inclusion of other embodiments or parts of other embodiments.

[0441] The invention is described with reference to several embodiments. However, the invention is not limited to the embodiments disclosed, and those of ordinary skill in the art will recognize that the invention is readily applicable to many other diverse embodiments and applications as are reflected in the range of real world financial institutions, instruments and activities. Accordingly, the subject matter of the present disclosure includes all novel and nonobvious combinations and subcombinations of the various systems, methods configurations, embodiments, features, functions, and/or properties disclosed herein.

[0442] A reference to “another embodiment” in describing an embodiment does not necessarily imply that the referenced embodiment is mutually exclusive with another embodiment (e.g., an embodiment described before the referenced embodiment), unless expressly specified otherwise.

[0443] The terms “include”, “includes”, "including", "comprising" and variations thereof mean "including but not limited to", unless expressly specified otherwise.

[0444] The term "consisting of" and variations thereof includes "including and limited to", unless expressly specified otherwise. The terms "a", "an" and "the" mean "one or more", unless expressly specified otherwise.

[0445] The term "plurality" means "two or more", unless expressly specified otherwise.

[0446] The term "herein" means "in this patent application, including anything which may be incorporated by reference", unless expressly specified otherwise.

[0447] The phrase "at least one of", when such phrase modifies a plurality of things (such as an enumerated list of things) means any combination of one or more of those things, unless expressly specified otherwise. For example, the phrase "at least one of a widget, a car and a wheel" means either (i) a widget, (ii) a car, (iii) a wheel, (iv) a widget and a car, (v) a widget and a wheel, (vi) a car and a wheel, or (vii) a widget, a car and a wheel.

[0448] The phrase "based on" does not mean "based only on", unless expressly specified otherwise. In other words, the phrase "based on" describes both "based only on" and "based at least on".

[0449] The term "represent" and like terms are not exclusive, unless expressly specified otherwise. For example, the term "represents" does not mean "represents only", unless expressly specified otherwise. In other words, the phrase "the data represents a credit card number" describes both "the data represents only a credit card number" and "the data represents a credit card number and the data also represents something else".

[0450] The term "whereby" is used herein only to precede a clause or other set of words that express only the intended result, objective or consequence of something that is previously and explicitly recited. Thus, when the term "whereby" is used in a claim, the clause or other words that the term "whereby" modifies do not establish specific further limitations of the claim or otherwise restricts the meaning or scope of the claim.

[0451] The terms “such as”, "e.g." and like terms means “for example”, and thus does not limit the term or phrase it explains. For example, in the sentence “the computer sends data (e.g., instructions, a data structure) over the Internet”, the term “e.g.” explains that “instructions” are an example of “data” that the computer may send over the Internet, and also explains that “a data structure” is an example of “data” that the computer may send over the Internet. However, both “instructions” and “a data structure” are merely examples of “data”, and other things besides “instructions” and “a data structure” can be “data”.

[0452] The term "determining" and grammatical variants thereof (e.g., to determine a price, determining a value, determine an object which meets a certain criterion) is used in an extremely broad sense. The term "determining" encompasses a wide variety of actions and therefore "determining" can include calculating, computing, processing, deriving, investigating, looking up (e.g., looking up in a table, a database or another data structure), ascertaining and the like. Also, "determining" can include receiving (e.g., receiving information), accessing (e.g., accessing data in a memory) and the like. Also, "determining" can include resolving, selecting, choosing, establishing, and the like. It does not imply certainty or absolute precision, and does not imply that mathematical processing, numerical methods or an algorithm process

be used. Therefore "determining" can include estimating, predicting, guessing and the like.

[0453] It will be readily apparent to one of ordinary skill in the art that the various processes described herein may be implemented by, e.g., appropriately programmed general purpose computers and computing devices. Typically a processor (e.g., one or more microprocessors, one or more microcontrollers, one or more digital signal processors) will receive instructions (e.g., from a memory or like device), and execute those instructions, thereby performing one or more processes defined by those instructions.

[0454] A "processor" may include one or more microprocessors, central processing units (CPUs), computing devices, microcontrollers, digital signal processors, or like devices or any combination thereof. Thus a description of a process is likewise a description of an apparatus for performing the process. The apparatus can include, e.g., a processor and those input devices and output devices that are appropriate to perform the method. Further, programs that implement such methods (as well as other types of data) may be stored and transmitted using a variety of media (e.g., computer readable media) in a number of manners. In some embodiments, hard-wired circuitry or custom hardware may be used in place of, or in combination with, some or all of the software instructions that can implement the processes of various embodiments. Thus, various combinations of hardware and software may be used instead of software only.

[0455] The term “computer-readable medium” includes any medium that participates in providing data (e.g., instructions, data structures) which may be read by a computer, a processor or a like device. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media include, for example, optical or magnetic disks and other persistent memory. Volatile media include dynamic random access memory (DRAM), which typically constitutes the main memory. Transmission media include coaxial cables, copper wire and fiber optics, including the wires that comprise a system bus coupled to the processor. Transmission media may include or convey acoustic waves, light waves and electromagnetic emissions, such as those generated during radio frequency (RF) and infrared (IR) data communications. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, any other magnetic medium, a CD-ROM, DVD, any other optical

medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, an EPROM, a FLASH-EEPROM, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read.

[0456] Various forms of computer readable media may be involved in carrying data (e.g. sequences of instructions) to a processor. For example, data may be (i) delivered from RAM to a processor; (ii) carried over a wireless transmission medium; (iii) formatted and / or transmitted according to numerous formats, standards or protocols, such as Ethernet (or IEEE 802.3), SAP, ATP, Bluetooth™, and TCP/IP, TDMA, CDMA, and 3G; and / or (iv) encrypted to ensure privacy or prevent fraud in any of a variety of ways well known in the art.

[0457] Thus a description of a process is likewise a description of a computer-readable medium storing a program for performing the process. The computer-readable medium can store (in any appropriate format) those program elements which are appropriate to perform the method.

[0458] Just as the description of various steps in a process does not indicate that all the described steps are required, embodiments of an apparatus include a computer / computing device operable to perform some (but not necessarily all) of the described process.

[0459] Likewise, just as the description of various steps in a process does not indicate that all the described steps are required, embodiments of a computer-readable medium storing a program or data structure include a computer-readable medium storing a program that, when executed, can cause a processor to perform some (but not necessarily all) of the described process.

[0460] Where databases are described, it will be understood by one of ordinary skill in the art that (i) alternative database structures to those described may be readily employed, and (ii) other memory structures besides databases may be readily employed. Any illustrations or descriptions of any sample databases presented herein are illustrative arrangements for stored representations of information. Any number of other arrangements may be employed besides those suggested by, e.g., tables illustrated in drawings or elsewhere. Similarly, any illustrated entries of the databases represent exemplary information only; one of ordinary skill in the art will understand that the number and content of the entries can be different from those described

herein. Further, despite any depiction of the databases as tables, other formats (including relational databases, object-based models and / or distributed databases) are well known and could be used to store and manipulate the data types described herein. Likewise, object methods or behaviors of a database can be used to implement various processes, such as the described herein. In addition, the databases may, in a known manner, be stored locally or remotely from any device(s) which access data in the database.

[0461] Various embodiments can be configured to work in a network environment including a computer that is in communication (e.g., via a communications network) with one or more devices. The computer may communicate with the devices directly or indirectly, via any wired or wireless medium (e.g. the Internet, LAN, WAN or Ethernet, Token Ring, a telephone line, a cable line, a radio channel, an optical communications line, commercial on-line service providers, bulletin board systems, a satellite communications link, or a combination of any of the above). Each of the devices may themselves comprise computers or other computing devices, such as those based on the Intel® Pentium® or Centrino™ processor, that are adapted to communicate with the computer. Any number and type of devices may be in communication with the computer.

[0462] In an embodiment, a server computer or centralized authority may not be necessary or desirable. For example, the present invention may, in an embodiment, be practiced on one or more devices without a central authority. In such an embodiment, any functions described herein as performed by the server computer or data described as stored on the server computer may instead be performed by or stored on one or more such devices.

[0463] Those having skill in the art will recognize that there is little distinction between hardware and software implementations. The use of hardware or software is generally a choice of convenience or design based on the relative importance of speed, accuracy, flexibility and predictability. There are therefore various vehicles by which processes and/or systems described herein can be effected (e.g., hardware, software, and/or firmware) and that the preferred vehicle will vary with the context in which the technologies are deployed.

[0464] At least a portion of the devices and/or processes described herein can be integrated into a data processing system with a reasonable amount of experimentation. Those having skill in the art will recognize that a typical data processing system

generally includes one or more of a system unit housing, a video display device, memory, processors, operating systems, drivers, graphical user interfaces, and application programs, interaction devices such as a touch pad or screen, and/or control systems including feedback loops and control motors. A typical data processing system may be implemented utilizing any suitable commercially available components to create the environment described herein.

[0465] Where a limitation of a first claim would cover one of a feature as well as more than one of a feature (e.g., a limitation such as "at least one widget" covers one widget as well as more than one widget), and where in a second claim that depends on the first claim, the second claim uses a definite article "the" to refer to the limitation (e.g., "the widget"), this does not imply that the first claim covers only one of the feature, and this does not imply that the second claim covers only one of the feature (e.g., "the widget" can cover both one widget and more than one widget).

[0466] Each claim in a set of claims has a different scope. Therefore, for example, where a limitation is explicitly recited in a dependent claim, but not explicitly recited in any claim from which the dependent claim depends (directly or indirectly), that limitation is not to be read into any claim from which the dependent claim depends.

[0467] When an ordinal number (such as "first", "second", "third" and so on) is used as an adjective before a term, that ordinal number is used (unless expressly specified otherwise) merely to indicate a particular feature, such as to distinguish that particular feature from another feature that is described by the same term or by a similar term. For example, a "first widget" may be so named merely to distinguish it from, e.g., a "second widget". Thus, the mere usage of the ordinal numbers "first" and "second" before the term "widget" does not indicate any other relationship between the two widgets, and likewise does not indicate any other characteristics of either or both widgets. For example, the mere usage of the ordinal numbers "first" and "second" before the term "widget" (1) does not indicate that either widget comes before or after any other in order or location; (2) does not indicate that either widget occurs or acts before or after any other in time; and (3) does not indicate that either widget ranks above or below any other, as in importance or quality. In addition, the mere usage of ordinal numbers does not define a numerical limit to the features identified with the ordinal numbers. For example, the mere usage of the ordinal numbers "first" and "second" before the term "widget" does not indicate that there must be no more than two widgets.

[0468] When a single device or article is described herein, more than one device / article (whether or not they cooperate) may alternatively be used in place of the single device / article that is described. Accordingly, the functionality that is described as being possessed by a device may alternatively be possessed by more than one device / article (whether or not they cooperate).

[0469] Similarly, where more than one device or article is described herein (whether or not they cooperate), a single device / article may alternatively be used in place of the more than one device or article that is described. For example, a plurality of computer-based devices may be substituted with a single computer-based device. Accordingly, the various functionality that is described as being possessed by more than one device or article may alternatively be possessed by a single device / article.

[0470] The functionality and / or the features of a single device that is described may be alternatively embodied by one or more other devices which are described but are not explicitly described as having such functionality / features. Thus, other embodiments need not include the described device itself, but rather can include the one or more other devices which would, in those other embodiments, have such functionality / features.

[0471] Numerous embodiments are described in this patent application, and are presented for illustrative purposes only. The described embodiments are not, and are not intended to be, limiting in any sense. The presently disclosed invention(s) are widely applicable to numerous embodiments, as is readily apparent from the disclosure. One of ordinary skill in the art will recognize that the disclosed invention(s) may be practiced with various modifications and alterations, such as structural, logical, software, and electrical modifications. Although particular features of the disclosed invention(s) may be described with reference to one or more particular embodiments and / or drawings, it should be understood that such features are not limited to usage in the one or more particular embodiments or drawings with reference to which they are described, unless expressly specified otherwise.

[0472] The present disclosure is neither a literal description of all embodiments of the invention nor a listing of features of the invention which must be present in all embodiments.

[0473] Neither the Title (set forth at the beginning of the first page of this patent application) nor the Abstract (set forth at the end of this patent application) is to be taken as limiting in any way as the scope of the disclosed invention(s). An Abstract

has been included in this application merely because an Abstract of not more than 150 words is required under 37 C.F.R. § 1.72(b).

[0474] The title of this patent application and headings of sections provided in this patent application are for convenience only, and are not to be taken as limiting the disclosure in any way.

[0475] Devices that are described as in communication with each other need not be in continuous communication with each other, unless expressly specified otherwise. On the contrary, such devices need only transmit to each other as necessary or desirable, and may actually refrain from exchanging data most of the time. For example, a machine in communication with another machine via the Internet may not transmit data to the other machine for long period of time (e.g. weeks at a time). In addition, devices that are in communication with each other may communicate directly or indirectly through one or more intermediaries.

[0476] A description of an embodiment with several components or features does not imply that all or even any of such components / features are required. On the contrary, a variety of optional components are described to illustrate the wide variety of possible embodiments of the present invention(s). Unless otherwise specified explicitly, no component / feature is essential or required.

[0477] Although process steps, algorithms or the like may be described in a sequential order, such processes may be configured to work in different orders. In other words, any sequence or order of steps that may be explicitly described does not necessarily indicate a requirement that the steps be performed in that order. On the contrary, the steps of processes described herein may be performed in any order practical. Further, some steps may be performed simultaneously despite being described or implied as occurring non-simultaneously (e.g., because one step is described after the other step). Moreover, the illustration of a process by its depiction in a drawing does not imply that the illustrated process is exclusive of other variations and modifications thereto, does not imply that the illustrated process or any of its steps are necessary to the invention, and does not imply that the illustrated process is preferred.

[0478] Although a process may be described as including a plurality of steps, that does not imply that all or any of the steps are essential or required. Various other embodiments within the scope of the described invention(s) include other processes

that omit some or all of the described steps. Unless otherwise specified explicitly, no step is essential or required.

[0479] Although a product may be described as including a plurality of components, aspects, qualities, characteristics and / or features, that does not indicate that all of the plurality are essential or required. Various other embodiments within the scope of the described invention(s) include other products that omit some or all of the described plurality.

[0480] Unless expressly specified otherwise, an enumerated list of items (which may or may not be numbered) does not imply that any or all of the items are mutually exclusive. Therefore it is possible, but not necessarily true, that something can be considered to be, or fit the definition of, two or more of the items in an enumerated list. Also, an item in the enumerated list can be a subset (a specific type of) of another item in the enumerated list. For example, the enumerated list "a computer, a laptop, a PDA" does not imply that any or all of the three items of that list are mutually exclusive - e.g., an item can be both a laptop and a computer, and a "laptop" can be a subset of (a specific type of) a "computer".

[0481] Likewise, unless expressly specified otherwise, an enumerated list of items (which may or may not be numbered) does not imply that any or all of the items are collectively exhaustive or otherwise comprehensive of any category. For example, the enumerated list "a computer, a laptop, a PDA" does not imply that any or all of the three items of that list are comprehensive of any category.

[0482] Further, an enumerated listing of items does not imply that the items are ordered in any manner according to the order in which they are enumerated.

[0483] In a claim, a limitation of the claim which includes the phrase "means for" or the phrase "step for" means that 35 U.S.C. § 112, paragraph 6, applies to that limitation.

[0484] In a claim, a limitation of the claim which does not include the phrase "means for" or the phrase "step for" means that 35 U.S.C. § 112, paragraph 6 does not apply to that limitation, regardless of whether that limitation recites a function without recitation of structure, material or acts for performing that function. For example, in a claim, the mere use of the phrase "step of" or the phrase "steps of" in referring to one or more steps of the claim or of another claim does not mean that 35 U.S.C. § 112, paragraph 6, applies to that step(s).

[0485] With respect to a means or a step for performing a specified function in accordance with 35 U.S.C. § 112, paragraph 6, the corresponding structure, material or acts described in the specification, and equivalents thereof, may perform additional functions as well as the specified function.

[0486] Computers, processors, computing devices and like products are structures that can perform a wide variety of functions. Such products can be operable to perform a specified function by executing one or more programs, such as a program stored in a memory device of that product or in a memory device which that product accesses. Unless expressly specified otherwise, such a program need not be based on any particular algorithm, such as any particular algorithm that might be disclosed in this patent application. It is well known to one of ordinary skill in the art that a specified function may be implemented via different algorithms, and any of a number of different algorithms would be a mere design choice for carrying out the specified function.

[0487] Therefore, with respect to a means or a step for performing a specified function in accordance with 35 U.S.C. § 112, paragraph 6, structure corresponding to a specified function includes any product programmed to perform the specified function. Such structure includes programmed products which perform the function, regardless of whether such product is programmed with (i) a disclosed algorithm for performing the function, (ii) an algorithm that is similar to a disclosed algorithm, or (iii) a different algorithm for performing the function.

[0488] The present disclosure provides, to one of ordinary skill in the art, an enabling description of several embodiments and / or inventions. Some of these embodiments and / or inventions may not be claimed in this patent application, but may nevertheless be claimed in one or more continuing applications that claim the benefit of priority of this patent application. Applicants intend to file additional applications to pursue patents for subject matter that has been disclosed and enabled but not claimed in this patent application.

What is claimed is:

1. A method comprising:

providing an automated patent submission system configured to:

receive a patent application;

store the patent application in electronic form;

receive an electronic transmission containing a note from an entity regarding the patent application;

associate the note with the patent application;

displaying the patent application; and

displaying the note simultaneously with the patent application.

2. The method of claim 1 wherein the note comprises material selected from the group consisting of: the text of one or more prior art references and a hyperlink to the text of one or more prior art references.

3. The method of claim 1 further comprising displaying the note as hyperlinked text in the patent application.

4. The method of claim 1 further comprising displaying the note in a pop-up window when a viewer moves a curser over a portion of the patent application.

5. The method of claim1 further comprising displaying the note in a sidebar adjacent to the patent application.

6. The method of claim 1 wherein the note is automatically displayed with the patent application.

7. The method of claim 1 further comprising receiving a request from a viewer to view one or more notes.

8. The method of claim 7 further comprising determining if the viewer is entitled to view a note.

9. The method of claim 8 further comprising determining that the viewer is entitled to view a note if the viewer is an examiner.

10. The method of claim 8 wherein determining if the viewer is entitled to view the note comprises determining if the note comprises material that is not otherwise publicly available.

11. The method of claim 10 wherein the note comprises material that is selected from the group consisting of: one or more unpublished patent applications and a hyperlink to one or more unpublished patent applications.

12. The method of claim 1 wherein the note includes visible indicia configured to indicate the relevance of the note to the patent application with which it is associated.

13. The method of claim 1 wherein the visible indicia is color coded highlighting.

14. A system comprising:

a database of patent applications;

a database of notes, wherein each note is associated with at least one patent application;

a patent application display interface configured to simultaneously display a patent application from the database of patent applications and the notes associated with the patent application.

15. The system of claim 14 further comprising a security mechanism configured to identify a viewer attempting to access the notes associated with a patent application.

16. The system of claim 15 further comprising a user interface configured to:

receive notes from one or more entities; and

store the notes in the database.

17. The system of claim 14 wherein the notes comprise the text of prior art documents.

18. The system of claim 14 wherein the notes comprise hyperlinks to prior art documents.

19. The system of claim 14 wherein the notes comprise commentary regarding the relevance of prior art documents.

20. The system of claim 19 wherein the commentary is displayed in the form of color-coding of the note.

21. A method comprising:

providing a database of electronic patent documents;

receiving a note regarding a first patent document from an end user, wherein the note contains comments from the end user related to the content of the first document, but does not alter the appearance or content of the first document;

associating the note with the patent document so that at least some end users who access the original document will also have access to the note.

22. The method of claim 21 wherein the note is related to the patentability of the invention described in the patent document.

23. The method of claim 22 wherein the end user is the inventor.

24. The method of claim 22 wherein the end user is an entity other than the inventor.

25. The method of claim 22 wherein the end user is a patent examiner.

26. The method of claim 21 further comprising:

determining authorized viewers of the note; and

barring access to any user who is not an authorized viewer.

27. The method of claim 26 wherein authorized viewers include the inventor associated with the patent document.

28. The method of claim 26 wherein authorized viewers include the assignee associated with the patent document.

29. The method of claim 26 wherein authorized viewers include the authorized representative of the inventor associated with the patent document.

30. The method of claim 21 further comprising receiving multiple notes associated with the same patent document from multiple end users.

31. The method of claim 30 further comprising sorting the multiple notes based on the date and time the note was submitted.

32. The method of claim 30 further comprising sorting the multiple notes based on the author of each note.

33. The method of claim 32 wherein sorting the multiple notes based on the author of each note comprises determining the relationship of the author to the invention associated with the patent document.

34. The method of claim 33 wherein determining the relationship of the author to the invention associated with the patent document comprises determining if the author is:

an inventor associated with the patent document;

an assignee associated with the patent document;

a representative of an inventor or assignee associated with the patent document;

a patent examiner assigned to the patent document; or

a third party.

35. The method of claim 34 wherein notes authored by an inventor, assignee, representative or an inventor or assignee, or patent examiner, are given preferential display order over notes authored by a third party.

36. The method of claim 30 further comprising:

determining the frequency with which each note is viewed by other end users;

ranking the notes based on the determined frequency.

37. The method of claim 36 further comprising sorting the notes based on the frequency ranking.

38. The method of claim 21 wherein the note contains a hyperlink to another document.

39. The method of claim 38 wherein the other document is identified by the end user as being prior art to the patent document.

40. The method of claim 38 wherein the other document is identified by the end user as being relevant to the patentability of the patent document.

41. A method comprising:

providing an examiner's rendered opinion regarding a patent application available to a plurality of end users via an electronic system;

receiving commentary on the examiner's opinion from at end user via the electronic system;

storing the commentary in an electronic format along with the patent application;

determining the applications the examiner has been assigned to examine that have not yet been examined and identifying these applications as being in the examiner's application queue;

altering the examiner's application queue based on the commentary.

42. The method of claim 41 wherein altering the examiner's application queue comprises adding an application to the examiner's application queue.

43. The method of claim 41 wherein altering the examiner's application queue comprises removing an application from the examiner's application queue.

44. The method of claim 41 wherein the commentary is received from a party other than the inventor, assignee, or attorney of record for the patent application.

45. The method of claim 41 wherein the commentary is received from another examiner.

46. The method of claim 41 wherein the commentary is provided in the format of a rating.

47. The method of claim 41 wherein the commentary is provided in the form of a ranking.

48. The method of claim 41 further comprising:

receiving a request from an end user to be alerted when an opinion is rendered by an examiner in a given patent application;

determining that an opinion has been rendered in the patent application; and

alerting the end user that an opinion was rendered.

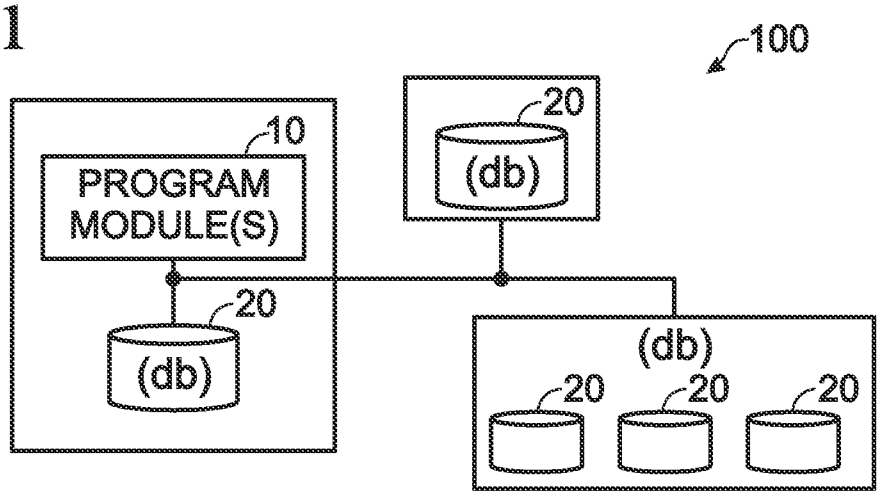
49. A method comprising:

accessing an electronic database of patent applications file wrappers;

reviewing an opinion rendered by a patent examiner in an application submitted by an unrelated third party; and

submitting a review of the examiner's opinion.

Fig. 1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(db)
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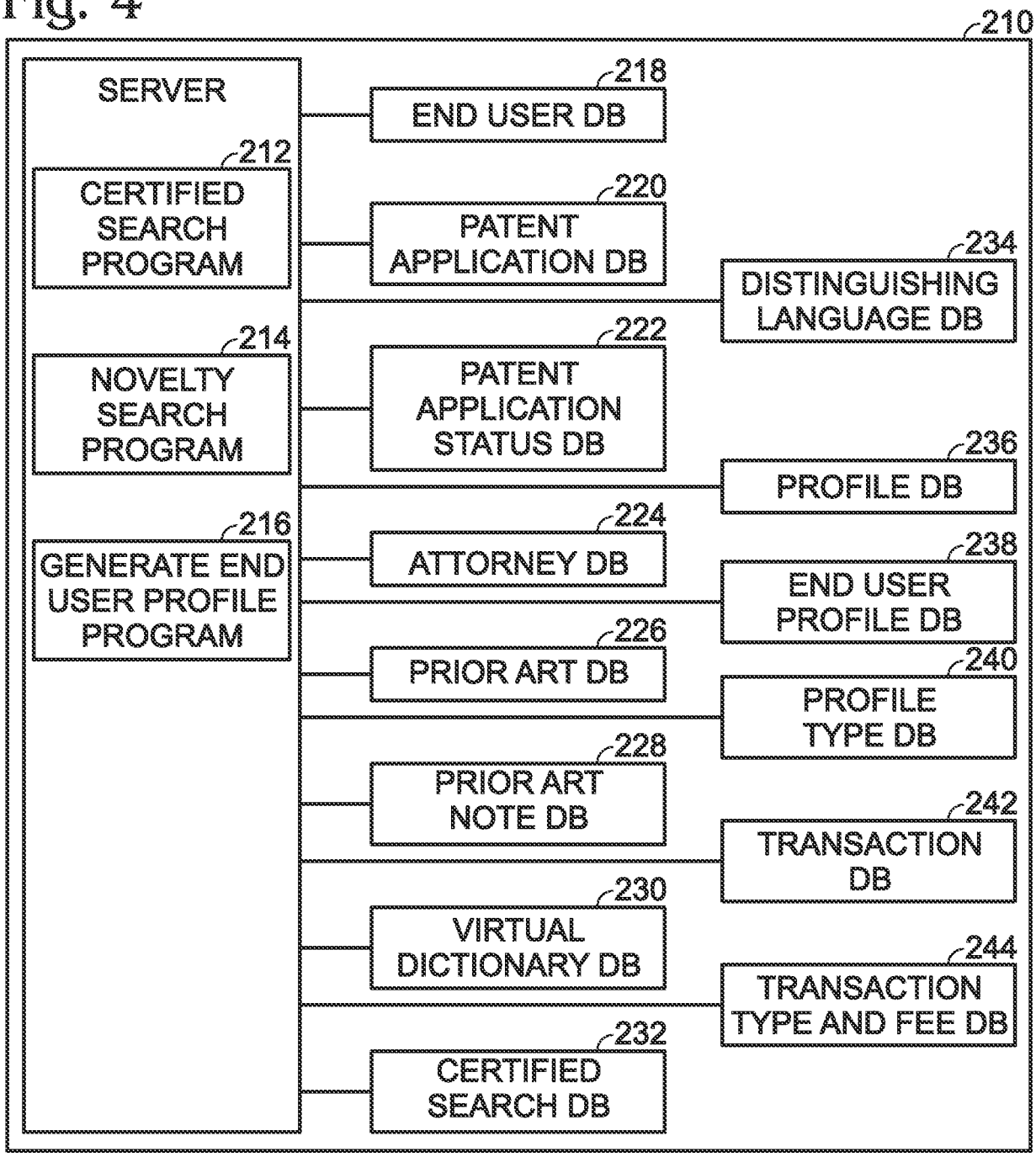
Fig. 4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PATENT APPLICATION STATUS DB
224
ATTORNEY DB
226
PRIOR ART DB
228
PRIOR ART NOTE DB
230
VIRTUAL DICTIONARY DB
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CERTIFIED SEARCH DB
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DISTINGUISHING LANGUAGE DB
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TRANSACTION DB
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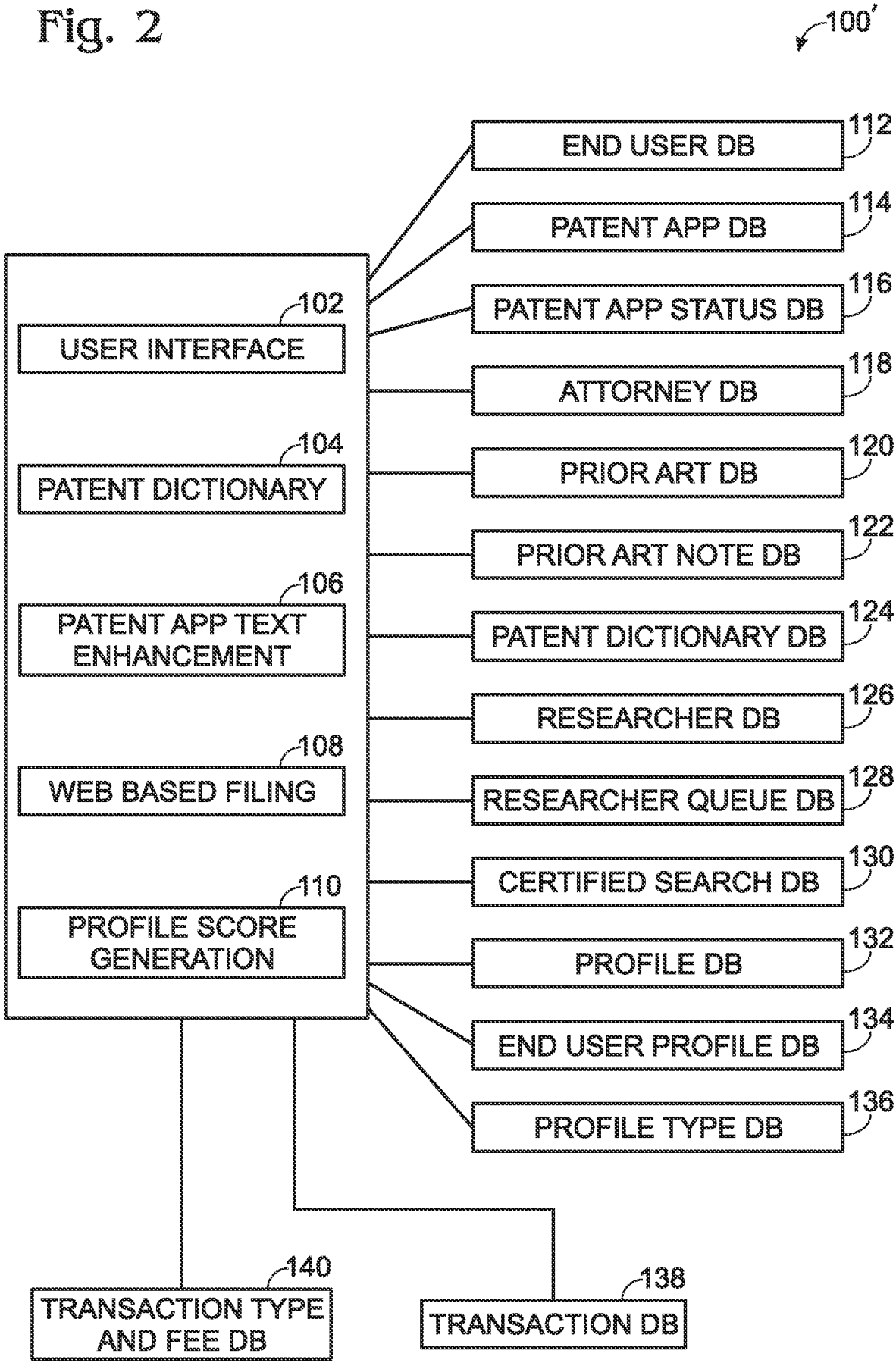
TRANSACTION TYPE AND FEE DB

Fig. 2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RESEARCHER DB
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PROFILE DB
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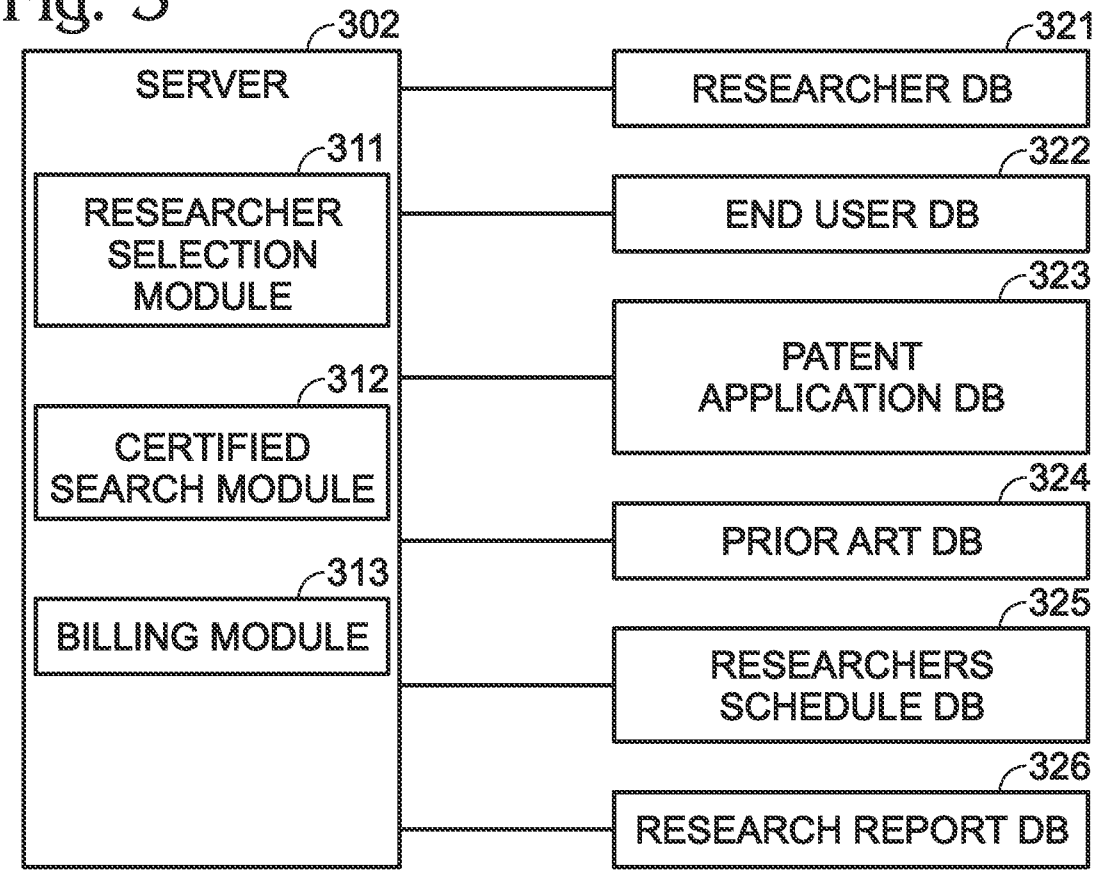
TRANSACTION DB

Fig. 3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BILLING MODULE
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PRIOR ART DB
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RESEARCHERS SCHEDULE DB
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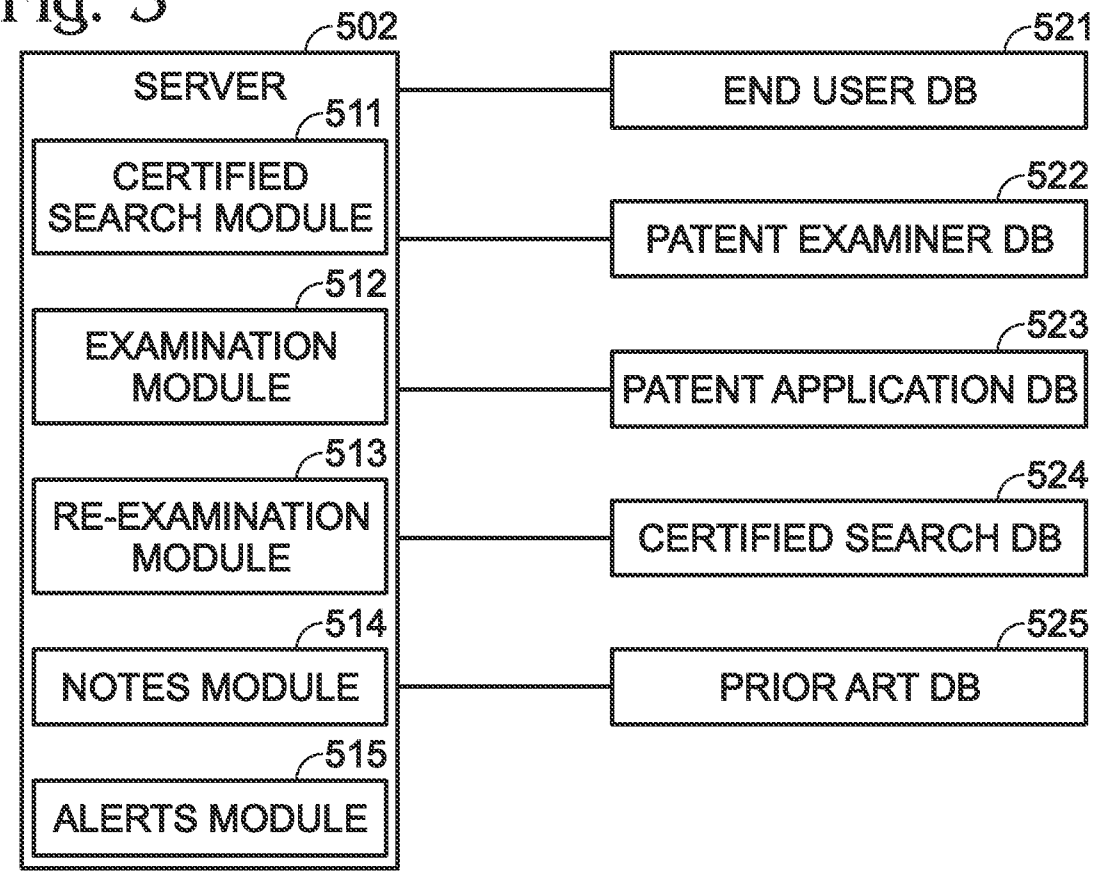
RESEARCH REPORT DB

Fig. 5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EXAMINATION MODULE
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PRIOR ART DB

Fig. 6

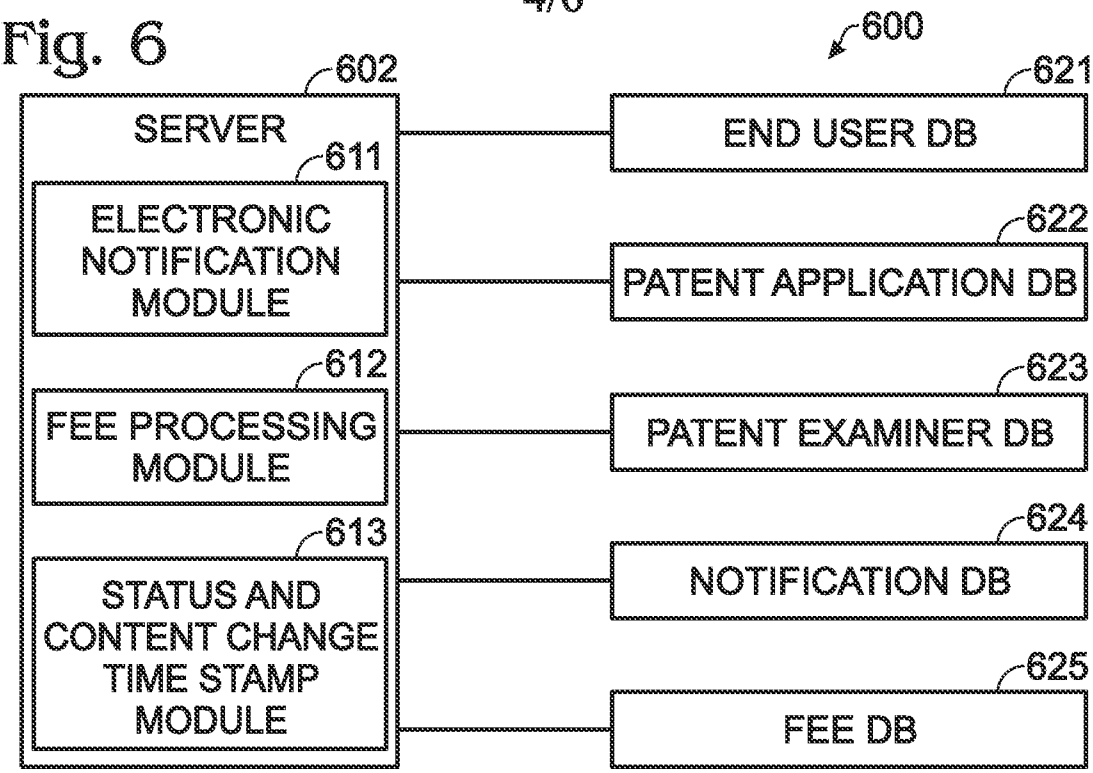


Fig. 7

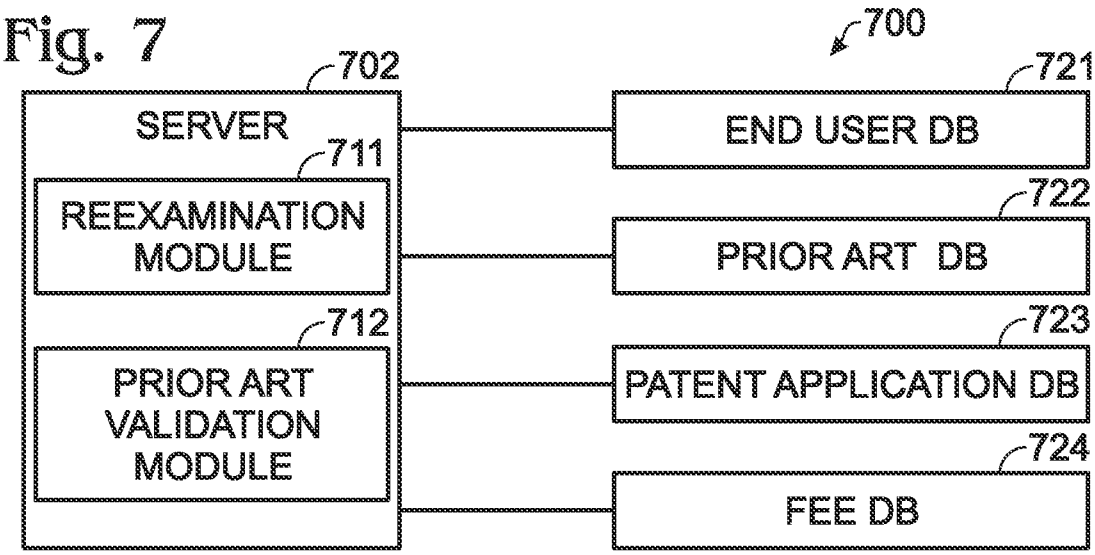


Fig. 8

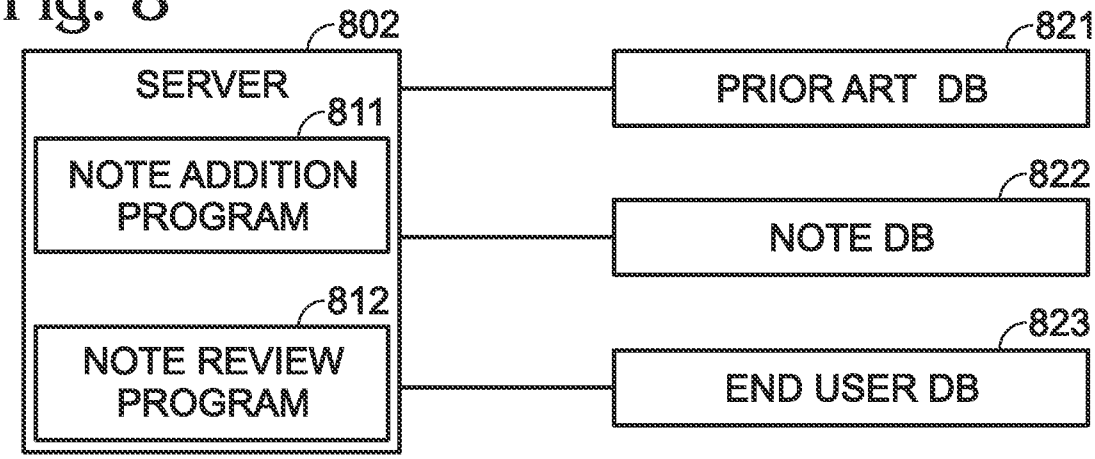
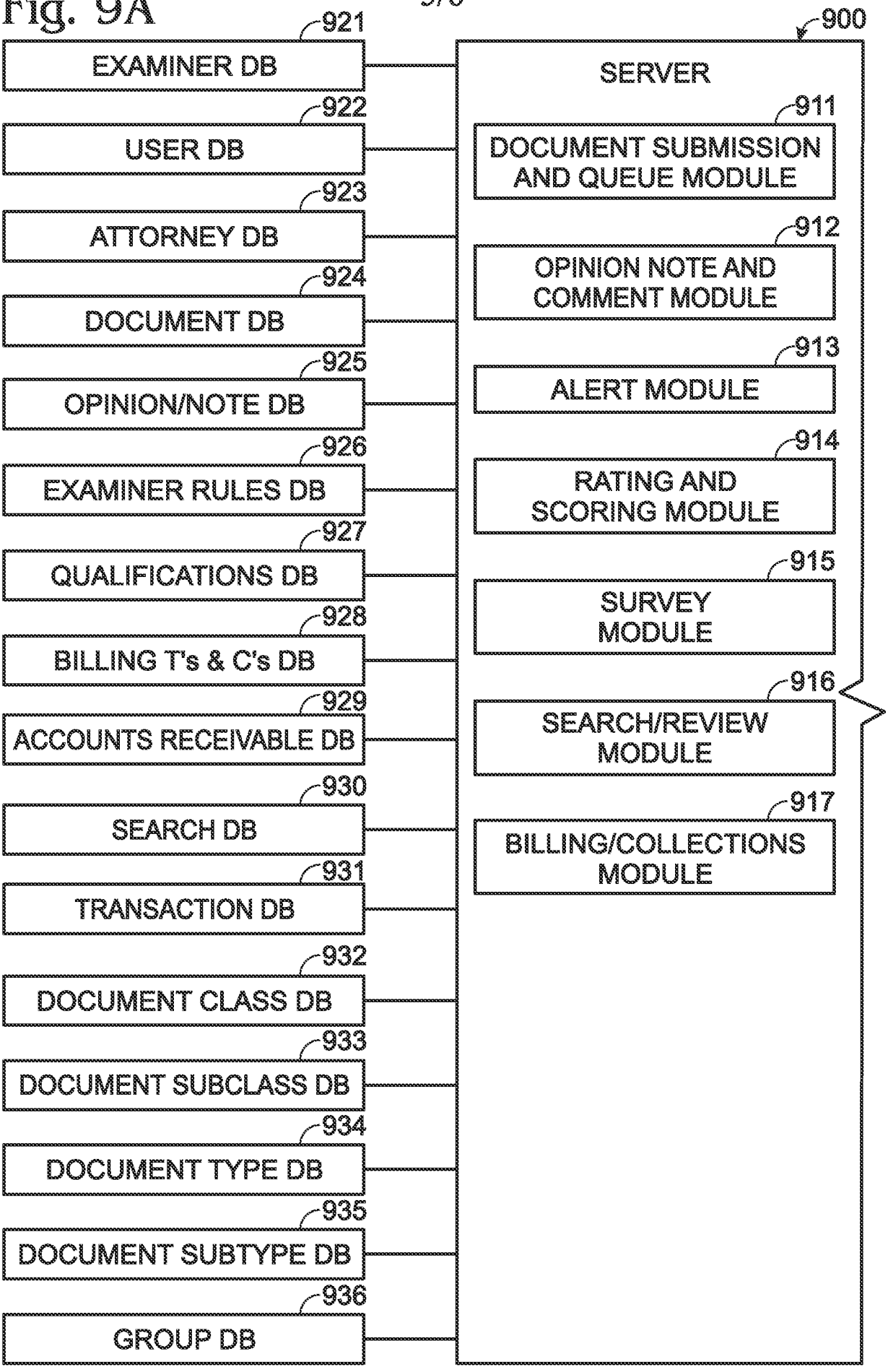


Fig. 9A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DOCUMENT SUBMISSION AND QUEUE MODULE
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OPINION NOTE AND COMMENT MODULE
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ALERT MODULE
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RATING AND SCORING MODULE
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SURVEY MODULE
916
SEARCH/REVIEW MODULE
917
BILLING/COLLECTIONS MODULE
921
EXAMINER DB
922
USER DB
923
ATTORNEY DB
924
DOCUMENT DB
925
OPINION/NOTE DB
926
EXAMINER RULES DB
927
QUALIFICATIONS DB
928
BILLING T's & C's DB
929
ACCOUNTS RECEIVABLE DB
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SEARCH DB
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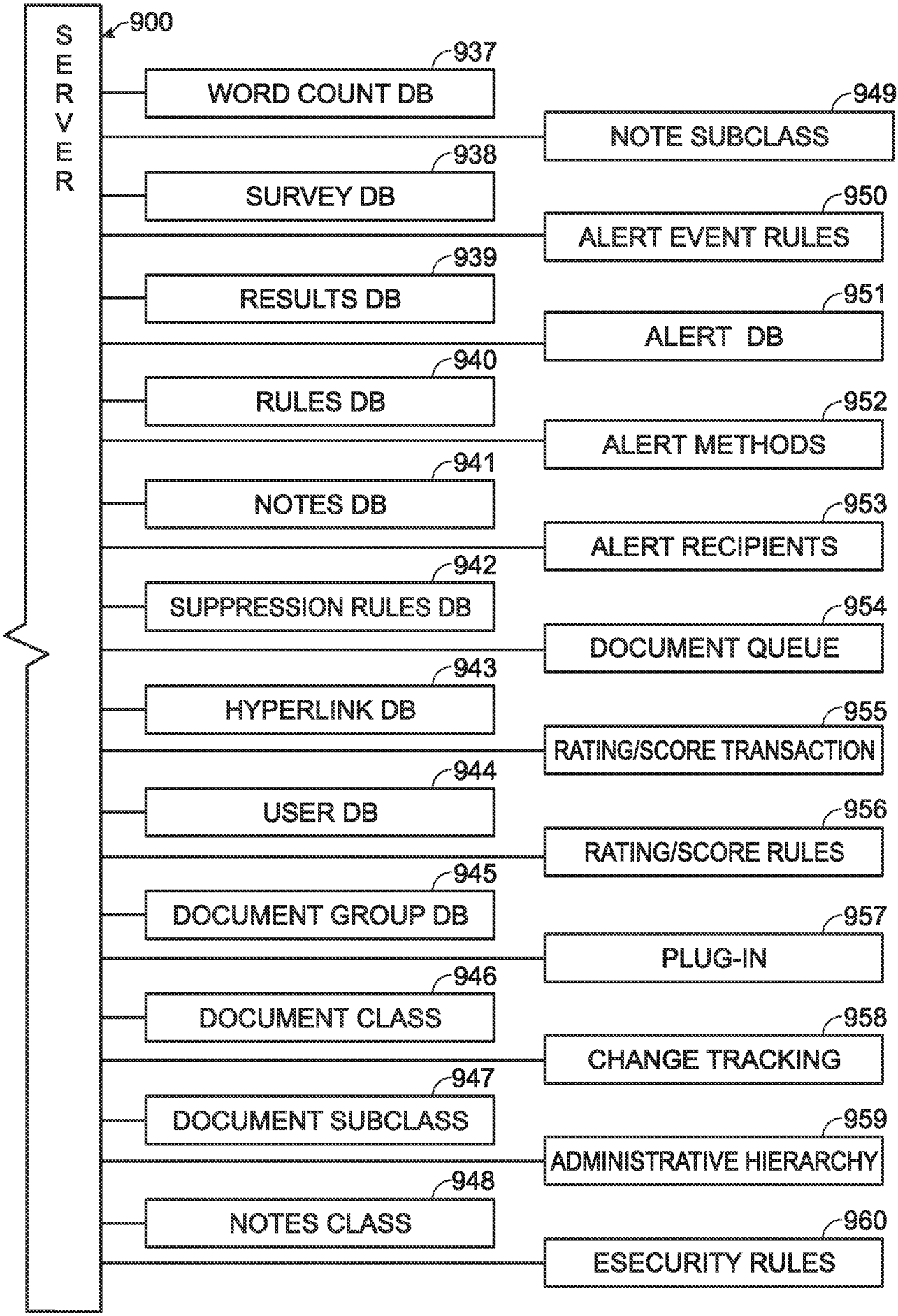
DOCUMENT SUBTYPE DB
936
GROUP DB

Fig. 9B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USER DB
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DOCUMENT GROUP DB
946
DOCUMENT CLASS
947
DOCUMENT SUBCLASS
948
NOTES CLASS
949
NOTE SUBCLASS
950
ALERT EVENT RULES
951
ALERT DB
952
ALERT METHODS
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ALERT RECIPIENTS
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DOCUMENT QUEUE
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RATING/SCORE TRANSACTION
956
RATING/SCORE RULES
957
PLUG-IN
958
CHANGE TRACKING
959
ADMINISTRATIVE HIERARCHY
960
ESECURITY RULES

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/66687

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **G06F 17/00**(2006.01)

USPC: 705/500
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)
U.S. : 705/500

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 practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7,069,592 B2 (Porcari) 27 June 2006 (27.06.2006), see entire document.	1-49

☐ Further documents are listed in the continuation of Box C. ☐ 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 application or patent 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
27 May 2008 (27.05.2008)

Date of mailing of the international search report
24 JUN 2008

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Form PCT/ISA/210 (second sheet) (April 2007)