Docket No. 5900-003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:	Roger Alan Mason	Examiner:	Merilyn P. Nguyen
Appl. No.:	13/220,953	Art Unit:	2153
Filing Date:	August 30, 2011	Conf. No.:	2715
Title:	**SYSTEM AND METHOD FOR IMPLEMENTING A DIAGNOSTIC SOFTWARE TOOL**		

AMENDMENT

In response to the non-final Office Action dated August 30, 2017, Applicant respectfully requests reconsideration of this application in view of the amendments and remarks that follow.

Amendments to the Claims begin on page 2 of this amendment; and

Remarks begin on page 10 of this amendment.

A **Petiton to Revive** accompanies this amendment.

Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A computer-implemented interactive system operating in cooperation with a health care institution on behalf of at least one user, the system comprising:

at least one processor and at least one storage medium adapted to implement the following:

interactive processing components for processing information to provide collaborative interaction over a network between the at least one user, at least one primary database, and at least one secondary database associated with a third party, the collaborative interaction including deployment of:

a search module in response to a query associated with a user device;

a diagnostic inquiry module comprising an interactive sequence of at least two linked inquiries transmitted to the user device, wherein the interactive sequence comprises at least a first query and a second query based on the response to the first query;

a record processing system associated with the diagnostic inquiry module, the record processing system being operable to associate a response to each query in the interactive sequence with patient record information stored in the at least one primary database; and

a recording module capable of automatically accessing and updating the patient record information during a recurring appointment associated with the at least one user, and

user interface tools associated with the user device for accepting input from the diagnostic inquiry module, including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of the patient record by a ~~system~~ at least one other user, and correspondingly displaying output as determined by the interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis ~~model~~ module suggesting a format of treatment, and the user interface tools being further operable to display and allow the at least one user to respond to the interactive sequence of the at least two linked inquiries; wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user.

2. (Currently amended) The system of claim 1, wherein the user device is at least one of a smartphone, a tablet device, and a laptop computer.

3-4. (Canceled)

5. (Currently amended) The system of claim 1, wherein the history diagnosis module is operable to transmit to the at least one user, in connection with the at least one primary database, at least one possible diagnosis in response to the diagnostic inquiry module.

6. (Currently amended) The system of claim 5, wherein the history diagnosis module is further operable to transmit to the at least one user, subsequent medical guidance related to treatment of the at least one possible diagnosis.

7. (Previously presented) The system of claim 6, wherein the at least one secondary database guides the transmission of the history diagnosis module to indicate whether the subsequent medical guidance is allowed by applicable rules stored within the secondary database.

8. (Canceled)

9. (Previously presented) The system of claim 1, wherein the patient record information is also transmitted to the user device over the network.

10. (Currently amended) The system of claim 1, wherein the diagnostic inquiry module is operable to assign a weight to the user responses to the interactive sequence of the at least two linked inquiries.

11. (Currently amended) A computer-implemented interactive method for diagnosing a patient operated in cooperation with a health care institution on behalf of at least one user, the method comprising:

processing stored information and user input to provide collaborative interaction between the at least one user and at least one database, the collaborative interaction comprising a search module responsive to a query associated with a user device;

deploying a diagnostic inquiry module associated with the at least one database via a network, the diagnostic inquiry module further comprising an interactive sequence of at least two linked inquiries transmitted to the user device, wherein the interactive sequence of at least two linked inquiries is determined at least in part by the user input ~~or other previously acquired data~~;

accepting the user input from the diagnostic inquiry module, the user input including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of a patient record by a ~~system~~ at least one other user, and correspondingly displaying output on the user device as determined by a processor and interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis ~~model~~ module suggesting a format of treatment~~, and wherein the scheduling code refers to scheduling an opening and closing of a patient record by a system user~~; and,

displaying an interface on a user device, the ~~diagnosis~~ interface operable to allow the at least one user to respond to the interactive sequence of at the least two linked inquiries;

wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user.

12. (Canceled)

13. (Currently amended) The method of claim 11, further comprising transmitting, via ~~a history~~ the history diagnosis module, at least one possible diagnosis in response to the diagnosis inquiry module.

14. (Currently amended) The method of claim 13, further comprising transmitting, to the at least one user, subsequent medical guidance related to treatment of the at least one possible diagnosis.

15. (Currently amended) The method of claim 14, further comprising displaying, by the ~~user~~ interface ~~tools~~, at least one indication that the subsequent medical guidance is allowed by applicable rules within a rules database.

16. (Previously presented) The method of claim 11, further comprising accessing, by the diagnostic inquiry module, at least one patient record within a record processing system, the record processing system associating the diagnosic inquiry module with the patient record stored in a patient database.

17. (Original) The method of claim 16, further comprising transmitting the patient record to the user device.

18. (Currently amended) The method of claim 11, further comprising assigning a weight to the user responses to the interactive sequence of at the least two linked inquiries.

19. (Currently amended) A computer-implemented interactive system for use in diagnosing a patient, the system comprising:

a user device associated with a preloaded module that includes at least one database associated with a catalogue of medical symptoms and conditions;

at least one processor and at least one non-transitory storage medium adapted to implement the following components:

interactive processing components for processing information to provide collaborative interaction between a user and the at least one database, the collaborative interaction including deployment of:

a search module in response to a query associated with the user device; and

a diagnostic inquiry module comprising an interactive sequence of at least two linked inquiries transmitted to the user device;

wherein the interactive sequence of at the least two linked inquiries is determined at least in part by user input ~~or other previously acquired data~~; and,

user interface tools associated with the user device for accepting input from the diagnostic inquiry module, the user input including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of a patient record by a ~~system~~ at least one other user, and correspondingly displaying output as determined by the interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis ~~model~~ module suggesting a format of treatment, and wherein the user interface tools are operable to display and allow the user to respond to the interactive sequence of at the least two linked inquiries as user responses to the interactive sequence;

wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user.

20. (Currently amended) The system of claim 19, wherein the diagnostic inquiry module is operable to assign a weight to the user responses to the interactive sequence of the at least two linked inquiries.

21. (New) The method of claim 11, wherein the acuity assignment determines a remuneration schedule for the at least one user.

22. (New) The method of claim 15, wherein the applicable rules comprise at least one government regulation restricting at least one procedure in the format of treatment.

23. (New) The method of claim 15, further comprising:

displaying, by the interface, at least one further indication that the subsequent medical guidance is not allowed by applicable rules within a rules database;

providing an override function for the at least one user to prescribe the subsequent medical guidance; and

requesting approval from an insurance representative for the subsequent medical guidance.

24. (New) The method of claim 11, wherein the history diagnosis module is further operable to:

direct a physical examination of a patient based on responses to the interactive sequence; and

direct testing of the patient based on the list of potential differential diagnoses.

25. (New) The method of claim 11, wherein the subsequent medical guidance comprises at least one surgical procedure; and further comprising:

prompting audibly at least one clinician performing the at least one surgical procedure; and

receiving at least one verbal description from the at least one clinician while performing the at least one surgical procedure.

REMARKS

This application has been reviewed in view of the non-final Office Action dated August 30, 2017. Claims 1, 2, 5-7, 9-11, and 13-25 are pending, with claims 1, 11, and 19 being independent. By the present amendment, claims 3, 4, and 12 are canceled, claims 1, 2, 5, 6, 10, 11, 13-15, and 18-20 are amended, and new claims 21-25 are presented. No new matter is added by the amendments and new claims, which are supported throughout the Specification and the original claims, and at least by paragraphs [0027]-[0034] of the Specification as filed. In view of the foregoing amendments and following remarks, reconsideration of this application is respectfully requested.

Claim Objections

Claims 11 and 13 are objected to based on informalities. Applicant amends these claims in a manner believed to overcome the objections, and consequently requests that the objections be withdrawn.

Claim Rejections under 35 U.S.C. § 112

Claims 1, 2, 5-7, 9-11, and 13-20 (claims 3, 4, and 12 being canceled) are rejected under U.S.C. § 112, second paragraph, as being indefinite. Applicant amends these claims in a manner believed to overcome the rejections, and consequently requests that the objections be withdrawn.

Claim Rejections under 35 U.S.C. § 101

Claims 1, 2, 5-7, 9-11, and 13-20 (claims 3, 4, and 12 being canceled) are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant traverses this rejection.

As amended, claim 1 relates to a computer-implemented interactive system operating in cooperation with a health care institution on behalf of at least one user. The computer-implemented interactive system of amended claim 1 includes:

> **at least one processor and at least one storage medium** adapted to implement the following:
>
> interactive processing components for processing information to provide collaborative **interaction over a network between the at least one user, at least one primary database, and at least one secondary database associated with a third party**, the collaborative interaction including deployment of:
>
> a search module in response to a query associated with a user device;
>
> a diagnostic inquiry module comprising an interactive sequence of at least **two linked inquiries transmitted to the user device**, wherein **the interactive sequence comprises at least a first query and a second query based on the response to the first query**;
>
> a record processing system associated with the diagnostic inquiry module, the record processing system being operable to associate a response to each query in the interactive sequence with patient record information stored in the at least one primary database; and
>
> a recording module capable of automatically accessing and updating the patient record information during a recurring appointment associated with the at least one user, and
>
> user interface tools associated with the user device for **accepting input from the diagnostic inquiry module**, including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of the patient record by a at least one other user, and correspondingly **displaying output** as determined by the interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis module suggesting

> a format of treatment, and the **user interface tools being further operable to display and allow the at least one user to respond to the interactive sequence of the at least two linked inquiries**;
> wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, **the acuity being displayed to the at least one user**.

(Emphasis added). Applicant submits that the claimed processor and storage medium, with the implemented interactive processing components, results in a special purpose computer by virtue of the programming required to achieve this result. Additionally, this special purpose computer communicates over a network with at least two distinct databases. Applicant submits that the networked components recited in claim 1 are tangible, and therefore not abstract.

Additionally, pursuant to MPEP 2106:

> Second, the claimed invention also must qualify as patent-eligible subject matter, i.e., the claim must not be directed to a judicial exception unless the claim as a whole includes additional limitations amounting to significantly more than the exception. The judicial exceptions (also called "judicially recognized exceptions" or simply "exceptions") are **subject matter that the courts have found to be outside of, or exceptions to, the four statutory categories of invention, and are limited to abstract ideas**, laws of nature and natural phenomena (including products of nature). Alice Corp. Pty. Ltd. v. CLS Bank Int'l,573 U.S. _, 134 S. Ct. 2347, 2354, 110 USPQ2d 1976, 1980 (2014) (citing Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. _, 133 S. Ct. 2107, 2116, 106 USPQ2d 1972, 1979 (2013). See MPEP § 2106.04 for detailed information on the judicial exceptions.

(Emphasis added). The Office Action argues that the claims are directed to an abstract idea. (Office Action, page 4, middle). However, Applicant submits that, beyond the special purpose computer recited in the claim, the recited system provides several tangible, and therefore not abstract, outputs based on various inputs. In particular, the claimed system displays linked inquiries to a user, adapts a second query based on a response to a first query, and displays an

acuity based on a co-morbidity to the user. Therefore, Applicant submits that the claimed system is not abstract, and consequently fails this second step of the Alice/Mayo framework.

Further, Applicant notes that the Federal Circuit, in *BASCOM Global Internet Services v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), held that the ordered combination of conventional elements may provide an inventive concept sufficient to make the combination patent eligible. Applicant submits that the particular combination of claimed elements provides sufficient inventive concept, pursuant to the Federal Circuit's holding in *BASCOM*, to support the finding that the current claims are patent eligible.

CLAIMS 11 and 19 ....

Accordingly, Applicant respectfully requests that the rejections of claims 1, 2, 5-7, 9-11, and 13-20 under 35 U.S.C. § 101 be withdrawn.

Claim Rejections under 35 U.S.C. § 103

Claims 11 and 13-20 (claim 12 being canceled) are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2011/0301441 to Bandic in view of U.S. Patent Application Publication No. 2006/0004605 to Donoghue, and further in view of U.S. Patent Application Publication No. 2012/0035959 to Berdia. Applicant respectfully traverses.

Independent claim 11 recites a computer-implemented interactive method for diagnosing a patient operated in cooperation with a health care institution on behalf of at least one user. Amended independent claim 11 recites, in relevant part:

processing stored information and user input to provide collaborative interaction between the at least one user and at least one database, the collaborative interaction comprising a search module responsive to a query associated with a user device;

deploying a diagnostic inquiry module associated with the at least one database via a network, the diagnostic inquiry module further comprising an interactive sequence of at least two linked inquiries transmitted to the user device, wherein **the interactive sequence of at least two linked inquiries is determined at least in part by the user input**;

accepting the user input from the diagnostic inquiry module, the user input including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of a patient record by a at least one other user, and correspondingly displaying output on the user device as determined by a processor and interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis model module suggesting a format of treatment; and,

displaying an interface on a user device, the interface operable to allow the at least one user to respond to the interactive sequence of at the least two linked inquiries;

wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user.

(Emphasis added.) Applicant submits that none of the cited references disclose or suggest a method in which an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, as claimed. In fact, none of the references even mention co-morbidity, and consequently, Applicant submits that the combination of the references does not disclose or suggest the features of the amended claims.

Applicant further submits that none of the references disclose or suggest the feature of claim 11 of "the interactive sequence of at least two linked inquiries is determined at least in part by the user input." The Office Action cites Bandic at paragraphs [0098], [0421], [0553], [0554], and [0507] as alleged disclosure of the feature. However, paragraph [0507] merely states:

> Referring to FIG. 21, an experience page of a user interface of a skin care system is depicted. The experience page allows users to provide a detailed report of experience with a product or regimen 118. For example, the user may note the effectiveness of a product or regimen 118, such as by answering questions. For example, the questions may be "How effective is it?", "How does it feel?", "How is its fragrance?", "How does it absorb?", "Does it cause breakouts?", and the like. The experience page may also allow a user to update a user profile with age, gender, nickname, location, a photo, skin type, skin color, goal, and the like. The user may be able to query other users for their experience or make a general inquiry by submitting a request to an email, MMS, SMS, phone number, mobile device, social network, and the like.

Applicant submits there is no disclosure or suggestion in the cited section of an inquiry that is based on a user input. Likewise, none of the other cited paragraphs disclose or suggest a sequence or queries determined in part by user input. Therefore, for at least this additional reason, Applicant submits that claim 11 is allowable.

Applicant submits that the present technology provides the significant benefit of enabling the system to zero in on a diagnosis by following up pertinent questions with queries directed based on the responses to previous queries. Applicant therefore submits that the communication to the first user device of the second user data is not disclosed or suggested by the cited prior art.

Applicant submits that Bandic, Donoghue, and Berdia fail to teach or reasonably suggest "wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user", or "the interactive sequence of at least two linked inquiries is determined at least in part by the user input", as recited in amended independent claim 11. Therefore, Applicant respectfully submits that independent claim 11 is patentable.

Claims 13-18 depend from independent claim 11. Therefore, Applicant respectfully submits that these dependent claims are also patentable for at least the same reasons that independent claim 11 is patentable.

Independent claim 19 has been amended in a manner similar to claim 11, and therefore claim 19 is allowable for at least the same reasons as claim 11 is allowable.

Claim 20 depends from independent claim 19. Therefore, Applicant respectfully submits that this dependent claim is also patentable for at least the same reasons that independent claim 19 is patentable.

Accordingly, Applicant respectfully requests that the rejections of claims 11 and 13-20 under 35 U.S.C. § 103(a) be withdrawn.

Claims 1, 2, 5-7, 9, and 10 (claims 3 and 4 being canceled) are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bandic in view of U.S. Patent Application Publication No. 2011/0040572 to Chmiel, Donoghue, and Berdia. Applicant respectfully traverses.

Independent claim 1 recites a computer-implemented interactive system operating in cooperation with a health care institution on behalf of at least one user. Amended independent claim 1 recites, in relevant part:

> at least one processor and at least one storage medium adapted to implement the following:
>
> interactive processing components for processing information to provide collaborative interaction over a network between the at least one user, at least one primary database, and at least one secondary database associated with a third party, the collaborative interaction including deployment of:
>
> a search module in response to a query associated with a user device;
>
> a diagnostic inquiry module comprising an interactive sequence of at least two linked inquiries transmitted to the user device, wherein the

> interactive sequence comprises **at least a first query and a second query based on the response to the first query**;
>
> a record processing system associated with the diagnostic inquiry module, the record processing system being operable to associate a response to each query in the interactive sequence with patient record information stored in the at least one primary database; and
>
> a recording module capable of automatically accessing and updating the patient record information during a recurring appointment associated with the at least one user, and
>
> user interface tools associated with the user device for accepting input from the diagnostic inquiry module, including an alphabetical, numerical, or alphanumerical scheduling code referring to scheduling an opening and closing of the patient record by a at least one other user, and correspondingly displaying output as determined by the interactive processing components, wherein the output comprises a list of potential differential diagnoses displayed by a history diagnosis module in order of descending likelihood of diagnosis, the history diagnosis module suggesting a format of treatment, and the user interface tools being further operable to display and allow the at least one user to respond to the interactive sequence of the at least two linked inquiries;
>
> **wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user**.

(Emphasis added.) Applicant submits that none of the cited references disclose or suggest a method in which an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, as claimed. In fact, none of the references even mention co-morbidity, and consequently, Applicant submits that the combination of the references does not disclose or suggest the features of the amended claims.

Applicant further submits that none of the references disclose or suggest the feature of claim 11 of "interactive sequence comprises at least a first query and a second query based on the response to the first query." The Office Action cites Bandic at paragraphs [0098], [0421], [0553], [0554], and [0507] as alleged disclosure of the feature. The Office Action further states that "[s]ince the questions are all related to the diagnostic inquiry about skin care, the questions are

related/linked to each other". (Office Action; page 11, top). However, Applicant submits there is no disclosure or suggestion in the cited section of a second query **based on the response** to the first query. Being related in subject matter is not the same as a second query being based on a response, as claimed. Therefore, for at least this additional reason, Applicant submits that claim 11 is allowable.

Applicant submits that Bandic, Chmiel , Donoghue, and Berdia fail to teach or reasonably suggest "wherein an acuity is assigned to at least one diagnosis of the potential differential diagnoses based on a co-morbidity associated with the at least one diagnosis, the acuity being displayed to the at least one user", or "interactive sequence comprises at least a first query and a second query based on the response to the first query", as recited in amended independent claim 1. Therefore, Applicant respectfully submits that independent claim 1 is patentable.

Claims 2, 5-7, 9, and 10 depend from independent claim 1. Therefore, Applicant respectfully submits that these dependent claims are also patentable for at least the same reasons that independent claim 1 is patentable.

Accordingly, Applicant respectfully requests that the rejections of claims 1, 2, 5-7, 9, and 10 under 35 U.S.C. § 103(a) be withdrawn.

New Claims

New claims 21-25 depend from allowable claim 1, and are therefore allowable for at least the same reasons as claim 1 is allowable. Additionally, Applicant submits that claims 21-25 also recite features rendering them allowable over the cited prior art. Therefore, Applicant respectfully requests that new claims 21-25 be allowed.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application are in condition for allowance.

If the Examiner should have any questions concerning this communication or feels that an additional interview would be helpful, the Examiner is requested to call the Applicant's undersigned attorney at the Examiner's convenience.

Please charge any deficiency as well as any other fee(s) that may become due under 37 C.F.R. § 1.16 and/or 1.17 at any time during the pendency of this application, or credit any overpayment of such fee(s), to Deposit Account No. 60-0114.

Dated: May 15, 2018

Respectfully submitted,

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