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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* THOMAS WILLIAM EVANS, JONATHAN MARK MALEK, MATTHEW CHRISTOPHER DOUGLASS, and RYAN PAUL HOWARD

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Appeal 2019-002450
Application 14/318,500
Technology Center 3600

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Before MICHAEL C. ASTORINO, NINA L. MEDLOCK, and KENNETH G. SCHOPFER, *Administrative Patent Judges*.

MEDLOCK, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–5, 7–9, 11–15, 17, 18, and 20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the term "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Our decision references Appellant's Appeal Brief ("Appeal Br.," filed August 6, 2018) and Reply Brief ("Reply Br.," filed January 30, 2019), and the Examiner's Answer ("Ans.," mailed November 30, 2018) and Final Office Action ("Final Act.," mailed December 7, 2017). Appellant identifies Allscripts Software, LLC as the real party in interest (Appeal Br. 2).

## CLAIMED INVENTION

Appellant describes that the claimed invention "is generally related to interfacing with electronic health record systems" (Spec. ¶ 1).

Claims 1, 11, and 17 are the independent claims on appeal. Claim 1, reproduced below with bracketed notations added, is illustrative of the claimed subject matter:

> 1. A computer-implemented method to help an application operate more efficiently on data elements of an electronic health record (EHR) system, comprising:
>
> [(a)] receiving, from the application operated by a member of a medical practice interacting with a patient, a context application program interface (API) call; and in response to the context API call:
>
> [(b)] retrieving a current status of the member in the application with respect to the patient,
>
> [(c)] determining, based on the current status, a plurality of keys, each key identifying one possible EHR element that is related to information of the patient in the EHR system,
>
> [(d)] for each key, calculating, by an adaptive algorithm based on historical activity of the member within a status similar to the current status of the application, a confidence value indicating how likely that key is to be selected by the member,
>
> [(e)] selecting, by the adaptive algorithm from the determined plurality of keys, a key that identifies a possible EHR element, the key selected based on whether the calculated confidence value for the selected key is above a threshold value, and
>
> [(f)] returning the selected key to the application, wherein responsive to receiving the selected key, the application prompts the member to verify that the selected key corresponds to a correct EHR element such that after the verification, the application uses the selected key to operate on the correct EHR element in the EHR system.

REJECTIONS

Claims 1–5, 7–9, 11–15, 17, 18, and 20 are rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.

Claims 1–5, 7–9, 11–15, 17, 18, and 20 are rejected under 35 U.S.C. § 112(b) as indefinite for failing to particularly point out and distinctly claim the subject matter that the inventors regard as the invention.

Claims 1–5, 7–9, 11–15, 17, 18, and 20 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

ANALYSIS

*Written Description*

"The 'written description' requirement implements the principle that a patent must describe the technology that is sought to be patented"; the requirement, thus, serves both to "satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v. Eshhar*, 418 F.3d 1349, 1357 (Fed. Cir. 2005). The purpose of the written description requirement is "to ensure the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification." *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1345 (Fed. Cir. 2000).

Here, in rejecting the pending claims under 35 U.S.C. § 112(a), the Examiner finds that the Specification lacks sufficient written description for "calculating, by an adaptive algorithm based on historical activity of the member within a status similar to the current status of the application, a confidence value indicating how likely that key is to be selected by the

member" and "selecting, by the adaptive algorithm from the determined plurality of keys, a key that identifies a possible EHR element, the key selected based on whether the calculated confidence value for the selected key is above a threshold value," i.e., limitations (c) and (d), as recited in claim 1, and similarly recited in claims 11 and 17 (Final Act. 2–4).

Referencing paragraph 60 of Appellant's Specification, the Examiner asserts that although, "[a]s disclosed, the invention . . . uses adaptive algorithms that are known in the art at the time the application was filed," the invention, "[a]s claimed, . . is not specifically limited to those algorithms that were presently known at filing"; "[i]nstead, the claim is directed towards any algorithm capable of calculating a confidence value, including those algorithms that have not been yet invented" (*id.* at 3). The Examiner concludes, "[f]or this reason, the Specification as originally filed does not appear to provide adequate support for all embodiments of this algorithm, and specifically does not support embodiments of the algorithm that has not yet been invented" (*id.*).

The Examiner's position, as best understood, is that the Specification does not include adequate written description support for the full scope of what is claimed. Yet, what the inventors are claiming is the use of an adaptive algorithm of the type known in the art to perform the recited calculating and selecting features based on historical activity of a member of a medical practice within a status similar to a current status of an application, not an adaptive algorithm alone. The Examiner has not sufficiently demonstrated that the disclosure of known adaptive algorithms, and the disclosed use of such algorithms, is inadequate to demonstrate that

the inventors had possession of the claimed invention, including all of its limitations, at the time the present application was filed.

Therefore, we do not sustain the Examiner's rejection of claims 1–5, 7–9, 11–15, 17, 18, and 20 under 35 U.S.C. § 112(a).

*Indefiniteness*

In rejecting the pending claims under 35 U.S.C. § 112(b), the Examiner takes the position that because "the claims can encompass any [adaptive] algorithm," including "those not yet invented," a person of ordinary skill in the art would not be able to ascertain the metes and bounds of the claims (Final Act. 5). "Therefore, the claims [are] indefinite" (*id.*).

Appellant argues, and we agree, that the term "adaptive algorithm" is a term of art, and would be understand by a person of ordinary skill in the art to refer to an algorithm that changes its behavior at the time it is run, based on computational resources available or a recent history of received data (Appeal Br. 10). The Specification describes, in paragraph 60 of the written disclosure, that the adaptive algorithm is used to assign confidence levels to the determined contexts, and lists factors used by the algorithm (i.e., user customization information, behavioral information, and past accuracy statistics) both there and in the claim language.

In our view, a person of ordinary skill in the art would understand what is claimed when the claims are read in light of the Specification. *See Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (The test for definiteness under 35 U.S.C. § 112, second paragraph [now § 112(b)], is whether "those skilled in the art would understand what is claimed when the claim is read in light of the

specification."). Therefore, we do not sustain the Examiner's rejection of claims 1–5, 7–9, 11–15, 17, 18, and 20 under 35 U.S.C. § 112(b).

*Patent-Ineligible Subject Matter*

Under 35 U.S.C. § 101, an invention is patent eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice Corp.*, 573 U.S. at 217. The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* If the claims are not directed to a patent-ineligible concept, e.g., an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Id.* (quoting *Mayo*, 566 U.S. at 79, 78). This is "a search for an 'inventive concept' — *i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* at 217–18 (alteration in original).

After Appellant's Appeal Brief was filed, and the Examiner's Answer mailed, the U.S. Patent and Trademark Office (the "USPTO") published revised guidance for use by USPTO personnel in evaluating subject matter eligibility under 35 U.S.C. § 101. 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50, 57 (Jan. 7, 2019) (the "2019 Revised Guidance"). That guidance revised the USPTO's examination procedure with respect to the first step of the *Mayo*/*Alice* framework by (1) "[p]roviding groupings of subject matter that [are] considered an abstract idea"; and (2) clarifying that a claim is not "directed to" a judicial exception if the judicial exception is integrated into a practical application of that exception. *Id.* at 50. The 2019 Revised Guidance, by its terms, applies to all applications, and to all patents resulting from applications, filed before, on, or after January 7, 2019. *Id.*[2]

*Independent Claim 1 and Dependent Claims 2–5 and 7–9*

The first step in the *Mayo*/*Alice* framework, as mentioned above, is to determine whether the claims at issue are "directed to" a patent-ineligible concept, e.g., an abstract idea. *Alice Corp.*, 573 U.S. at 217. This first step, as set forth in the 2019 Revised Guidance (i.e., Step 2A), is a two-prong test; in Step 2A, Prong One, we look to whether the claim recites a judicial exception, e.g., one of the following three groupings of abstract ideas: (1) mathematical concepts; (2) certain methods of organizing human activity, e.g., fundamental economic principles or practices, commercial or

[2] The USPTO issued an update on October 17, 2019 (the "October 2019 Update: Subject Matter Eligibility," available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf) clarifying the 2019 Revised Guidance in response to comments solicited from the public.

legal interactions; and (3) mental processes. 2019 Revised Guidance, 84 Fed. Reg. at 54. If so, we next consider whether the claim includes additional elements, beyond the judicial exception, that "integrate the [judicial] exception into a practical application," i.e., that apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception ("Step 2A, Prong Two"). *Id.* at 54–55. Only if the claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application do we conclude that the claim is "directed to" the judicial exception, e.g., an abstract idea. *Id.* As described in more detail below, we are persuaded that the Examiner erred in determining that claim 1 is directed to an abstract idea.

In rejecting claim 1 under 35 U.S.C. § 101, the Examiner determined that claim 1 is directed to "selecting a key with a confidence value sufficient to identify a patient," i.e., to a concept similar to other concepts that the courts have held abstract, and that the claim does not include additional elements or a combination of elements sufficient to amount to significantly more than the judicial exception (Final Act. 6–9). The Examiner determined that the remaining claims are patent ineligible for substantially the same reasons (*id.* at 9–13).

The Federal Circuit has explained that "the 'directed to' inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a

specific improvement in relevant technology or on a process that itself qualifies as an "abstract idea" for which computers are invoked merely as a tool. *See id.* at 1335–36.

Here, the Specification is titled "ELECTRONIC HEALTH RECORD SYSTEM CONTEXT API," and describes, in the Background section, that traditionally medical records have been paper-based documents (*id.* ¶ 2). The emergence of electronic medical records ("EMRs"), i.e., digital versions of the paper chart that contains all of a patient's medical history from one medical practice, "offers medical professionals and patients with new functionalities and efficiencies that paper-based medical records cannot provide"; EMRs are considered a "drastic improvement over paper-based medical records" (*id.* ¶¶ 2, 3). Yet, according to the Specification, although "the advantages of EHRs are significant, they also carry concerns, including high costs, lost productivity during EHR implementation or computer downtime, and lack of EHR usability" (*id.* ¶ 5). For example, although there are commercially available devices that observe aspects of a patient's health (e.g., a commercially available blood glucose monitor collects blood glucose readings using a smartphone application) and also available devices that improve doctor productivity (e.g., healthcare speech recognition solutions that allow a doctor to dictate healthcare information), these devices do not directly integrate with current EHR systems (*id.* ¶¶ 13, 14). Instead, the data often must be manually retyped into the patient record within the EHR, or, in some cases, the collected data may be sent to a doctor's practice as a facsimile, which must be converted to portable document format ("PDF") and imported into the patient's record (*id.* ¶ 14).

The claimed invention, as described in the Specification, addresses these issues by increasing the efficiency and usability of applications that interface with EHR systems, and thereby encouraging healthcare providers to "adopt the use of EHR systems, which is advantageous for both the providers and patients" (*id.* ¶ 15). More particularly, in one embodiment, a context server receives a context application program interface ("API") call from an application, e.g., a medical transcription application, being operated in real-time by a member of a medical practice (*id.* ¶¶ 16, 28). Upon receipt of the API call, a current status of the member is retrieved (e.g., a doctor running the medical transcription application on his cellphone or a receptionist running a patient scheduling application on a handheld device (*see, e.g.*, *id.* ¶¶ 37, 46–48, 50, 52)), and based on the member status, a plurality of likely desired contexts related to patient information in the EHR system is determined and displayed as a set of keys (*id.* ¶ 53).[3] For example, in the doctor's case, the context application may return a key, "JohnDoe23," for a patient context or a key for the patient's current chart note (*id.* ¶¶ 37, 53). Upon the member's, in this example, the doctor's, verification of the

[3] The Specification discloses, at paragraph 44, with reference to Figure 3, a hierarchy of possible desired contexts, including a EHR system context 302 (which a doctor seeing a patient for the first time may desire in order to create a new patient in the EHR system) and a patient context, e.g., patient 312 with Patient ID P1 (where the doctor wishes to save a new chart note for a patient already in the system). Also, as shown in Figure 3, finer contexts may include chart note and patient scheduling contexts (e.g., for saving examination information immediately after an examination or for scheduling a new appointment in real-time); even finer contexts may include particular fields in the chart note, e.g., objective field 332 and assessment field 334 of chart note 324 (*see* Spec. ¶ 45, Fig. 3).

desired context, the transcription data is saved to the patient's record or the specific chart note in the EHR system (*see, e.g.*, *id.* ¶¶ 37, 54, 55).

Consistent with this disclosure, claim 1 recites a method to help an application operate more efficiently on data elements of an EHR system by "receiving, from the application operated by a member of a medical practice interacting with a patient, a context application program interface (API) call" (step (a)); and in response to the API call: (1) "retrieving a current status of the member in the application with respect to the patient" (step (b)); (2) "determining, based on the current status, a plurality of keys, each key identifying one possible EHR element that is related to information of the patient in the EHR system" (step (c)); (3) calculating a confidence level for each key and selecting a key based on whether its confidence value is above a threshold value, i.e.,

> for each key, calculating, by an adaptive algorithm based on historical activity of the member within a status similar to the current status of the application, a confidence value indicating how likely that key is to be selected by the member, [and]
>
> selecting, by the adaptive algorithm from the determined plurality of keys, a key that identifies a possible EHR element, the key selected based on whether the calculated confidence value for the selected key is above a threshold value

(steps (d) and (e)); and (4) prompting the member to verify that the selected key corresponds to the desired EHR element and, after the selected key is verified, using the key to operate on the EHR element in the EHR system, i.e.,

> returning the selected key to the application, wherein responsive to receiving the selected key, the application prompts the member to verify that the selected key corresponds to a correct EHR element such that after the verification, the

application uses the selected key to operate on the correct EHR element in the EHR system

(step (f)). Applying the 2019 Revised Guidance, we are persuaded that even if claim 1 recites an abstract idea, as the Examiner determined, the Examiner has not sufficiently established that the claim fails to improve an existing technology, i.e., EHR systems (and, therefore, in the context of the 2019 Revised Guidance, that the claim fails to integrate the abstract idea into a practical application) or that the claim otherwise fails to recite significantly more than an abstract idea.

The Examiner determined here, as described above, that claim 1 is directed to "selecting a key with a confidence value sufficient to identify a patient." And the Examiner remarked that the claim "merely performs various calculations to determine a key that can have sufficient confidence value to identify the patient" (Final Act. 7). Yet, the method of claim 1 goes beyond merely calculating a confidence value and selecting a key. It enables applications running on devices, e.g., a vitals monitor, a cell phone, an MRI, being operated by members of a medical practice to interact with an EHR system such that data produced by these devices can be seamlessly entered into the EHR system. Thus, rather than requiring a user to manually enter data produced by an application external to the EHR system into a patient record within the EHR, or to convert the collected data into an intermediate format (e.g., PDF) for importation into the patient record, the application initiates an API call to a context server, which determines the EHR element on which the application is to operate and returns a corresponding key. After the key is verified by the practice member as corresponding to the desired EHR element, the collected data is saved to the EHR element, thereby integrating the application with the EHR system.

Responding to Appellant's arguments, the Examiner opines in the Answer that

> [t]he claims are directed to the abstract ideas of receiving data, processing data, appending data, and storing data to determine a key, which are akin to at least the claims in Electric Power,[4] which "though lengthy . . . the claims d[id] not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology." *Id.* at 1351.

Ans. 4–5. But the Examiner has not addressed whether the integration provided by the claimed method entails an improvement in the field of EHR systems. The Specification details, as described above, the shortcomings associated with then existing EHR systems, including the difficulties involved in entering data collected using external devices into the EHR system. The claimed invention addresses these shortcomings by providing a method that enables the integration of applications running on devices being operated by members of a medical practice with the EHR.

The Examiner has not addressed whether this functionality, viewed in light of Appellant's Specification, entails an improvement in EHR technology. And, as such, the Examiner has not established that claim 1 fails to integrate the asserted abstract idea into a practical application. Therefore, we do not sustain the Examiner's rejection of independent claim 1 under 35 U.S.C. § 101. For the same reasons, we also do not sustain the Examiner's rejection of dependent claims 2–5 and 7–9.

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[4] We understand the Examiner's reference is to *Electric Power Group, LLC v. Alstom, S.A.*, 830 F.3d 1350 (Fed. Cir. 2016).

*Independent Claims 11 and 17 and Dependent Claims 12–15, 18, and 20*

Independent claims 11 and 17 include limitations substantially similar to the limitations of claim 1, and stand rejected based on the same rationale applied with respect to claim 1. Therefore, we do not sustain the Examiner's rejection under 35 U.S.C. § 101 of independent claims 11 and 17, and claims 12–15, 18, and 20, which depend therefrom, for the same reasons set forth above with respect to claim 1.

## CONCLUSION

In summary:

| Claims Rejected | 35 U.S.C. § | Reference(s)/ Basis | Affirmed | Reversed |
|---|---|---|---|---|
| 1–5, 7–9, 11–15, 17, 18, 20 | 112(a) | Written Description | | 1–5, 7–9, 11–15, 17, 18, 20 |
| 1–5, 7–9, 11–15, 17, 18, 20 | 112(b) | Indefiniteness | | 1–5, 7–9, 11–15, 17, 18, 20 |
| 1–5, 7–9, 11–15, 17, 18, 20 | 101 | Eligibility | | 1–5, 7–9, 11–15, 17, 18, 20 |
| **Overall Outcome** | | | | 1–5, 7–9, 11–15, 17, 18, 20 |

REVERSED