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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/094,579	12/02/2013	Ben F. Bruce	2678.003US1	8004

131339 7590 03/28/2019

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EXAMINER	
LUBIN, VALERIE	

ART UNIT	PAPER NUMBER
3626	

NOTIFICATION DATE	DELIVERY MODE
03/28/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BEN F. BRUCE

Appeal 2017-011204
Application 14/094,579[1]
Technology Center 3600

Before DENISE M. POTHIER, CATHERINE SHIANG, and NORMAN H. BEAMER, *Administrative Patent Judges*.

SHIANG, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–3, 5–10, 12–17, 19, and 20, which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellant identifies Trinity Technical Group, Incorporated as the real party in interest. Br. 3.

STATEMENT OF THE CASE

Introduction

The present invention relates

> generally to the field of medical examination, evaluation, triage, diagnosis and treatment, and more particularly to a method, system and program for making specific and unambiguous, or high confidence informed decisions on the diagnosis of medical and trauma conditions using analog, digital and/or digitizing sensors, and inputs from various interfaces to gather patient information that is then processed, analyzed, classified, characterized, recognized and compared with historical patient data if available in order to generate search criteria suitable for use with a diagnostic search engine.

Spec. ¶ 3. Claim 1 is exemplary:

> 1. A computerized method comprising:
> diagnosing a patient, wherein the diagnosing comprises:
> receiving a patient identification of the patient;
> performing the following operations until a diagnosis confidence factor exceeds a high confidence factor threshold,
> determining, using one or more body measurement sensors, one or more current body characteristics of the patient comprising at least one of pulse rate, body temperature, blood pressure, respiration, and skin condition;
> creating a current multimedia representation for each of the one or more current body characteristics determined by using the one or more body measurement sensors;
> comparing the current multimedia representation to previous multimedia representations of each of the one or more body characteristics from other persons;
> selecting a diagnosis and the diagnosis confidence factor for the diagnosis for the patient based on the comparing of the current multimedia representation to the previous multimedia representations of each of one or more the body characteristics;
> determining whether the diagnosis confidence factor exceeds the high confidence factor threshold; and
> in response to the diagnosis confidence factor not exceeding the high confidence factor threshold, selecting a

different body characteristic of the patient to determine to increase the diagnosis confidence factor, wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics; and

in response to the diagnosis confidence factor exceeding the high confidence factor threshold,

selecting the diagnosis for the patient; and

selecting a treatment based on the diagnosis.

References and Rejections[2]

Claims 1–3, 5–10, 12–17, 19, and 20 are rejected under pre-AIA 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Final Act. 4.

Claims 1–3, 5–10, 12–17, 19, and 20 are rejected under 35 U.S.C. § 101 because they are directed to patent-ineligible subject matter. Final Act. 2–3.

Claims 1–3, 6–10, 13–17, and 20 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Brynelsen (US 2011/0087076 A1; publ. Apr. 14, 2011) and Porwancher (US 2008/0064118 A1; publ. Mar. 13, 2008). Final Act. 5–8.

Claims 5, 12, and 19 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Brynelsen, Porwancher, and O'Donnell (US 2011/0082115 A1; publ. Apr. 7, 2011). Final Act. 8–9.

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[2] Throughout this opinion, we refer to the (1) Final Office Action dated April 27, 2016 ("Final Act."); (2) Appeal Brief dated March 24, 2017 ("Br."); and (3) Examiner's Answer dated June 2, 2017 ("Ans.").

ANALYSIS

Pre-AIA 35 U.S.C. § 112, first paragraph

We disagree with Appellant's arguments. To the extent consistent with our analysis below, we adopt the Examiner's findings and conclusions in (i) the Final Office Action from which this appeal is taken and (ii) the Examiner's Answer.

The Examiner rejects claims 1–3, 5–10, 12–17, 19, and 20 because they do not comply with the written description requirement with respect to the claim limitation "wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics." *See* Final Act. 4.

Appellant argues:

> this claim language is at least supported in the Provisional Application No. 61/797,206 (filing date: December 12, 2012) (hereinafter ']206 application) and the detailed description of the current application.
>
> For example, this claim language is supported in the ']206 application at page 3, lines 33-40:
>
> > If a specific, unique and unambiguous diagnosis cannot be obtained with the available patient data, MAADS will produce a list of possible diagnoses with confidence factors for each one and based upon the current circumstances and available patient data, MAADS will either select the highest probability diagnosis consistent with medical protocols, recommend additional specialized testing or refer the patient to a medical doctor or specialist for further treatment. In the event that additional

> specialized testing is required to finalize a diagnosis, specific tests will be recommended in order to minimize the amount of testing required and data acquisition interfaces are provided to accept these test results as they become available.

In the detailed description of the current application, this claim language is also supported at [0009]:

> The diagnosing includes creating a current multimedia representation for each of the one or more current body characteristics determined by using the sensor. The diagnosing includes comparing the current multimedia representation to previous multimedia representations of each of the one or more body characteristics from other persons. The diagnosing includes selecting a diagnosis and a diagnosis confidence factor for the diagnosis for the patient based on the comparing of the current multimedia representation to the previous multimedia representations of each of one or more the body characteristics. The diagnosing includes determining whether the diagnosis confidence factor exceeds a high confidence factor threshold. The diagnosing includes in response to the diagnosis confidence factor not exceeding the high confidence factor threshold, selecting a different current body characteristic of the patient to determine to increase the diagnosis confidence factor. The diagnosing includes in response to the diagnosis confidence factor exceeding the high confidence factor threshold, selecting the diagnosis for the patient.

Br. 13–14 (emphasis omitted).

To satisfy the written-description requirement, the disclosure must reasonably convey to skilled artisans that Appellant possessed the claimed invention as of the filing date. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*,

598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). Specifically, the description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" and

> the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.

Id. (citations omitted).

Further, the written-description statute "requires that the written description *actually* or *inherently* disclose the claim element." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306–07 (Fed. Cir. 2008).

> [I]t is []not a question of whether one skilled in the art *might* be able to construct the patentee's device from the teachings of the disclosure . . . . Rather, it is a question whether the application *necessarily discloses* that particular device[]. . . . A description which renders *obvious* the invention for which an earlier filing date is sought is not sufficient.

Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997) (internal quotation marks and citations omitted) (emphases added).

While the cited excerpts state "[i]n the event that additional specialized testing is required to finalize a diagnosis, specific tests will be recommended in order to minimize the amount of testing required" ('206 application p. 3), they do not provide sufficient details to "*actually* or *inherently* disclose" "wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional

selections of different body characteristics," as required by the claims. *PowerOasis,* 522 F.3d at 1306–07.

Because Appellant has not persuaded us the Examiner erred, we sustain the Examiner's rejection of claims 1–3, 5–10, 12–17, 19, and 20 under pre-AIA 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 101

We have reviewed the Examiner's rejection in light of Appellant's contentions and the evidence of record. We concur with Appellant's contention that the Examiner erred in this case.

Section 101 of the Patent Act provides "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (internal quotation marks and citation omitted).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement

risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and, thus, patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula

to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (citation omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The PTO recently published revised guidance on the application of § 101. USPTO's 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Memorandum"). Under the guidance set forth in the Memorandum, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) (Step 2A, Prong 1); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) § 2106.05(a)–(c), (e)–(h)) (9th Ed., Rev. 08.2017, 2018) (Step 2A, Prong 2).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. (Step 2B.)

See Memorandum, 84 Fed. Reg. at 54–56.

Even if claim 1 recites an abstract idea, the Federal Circuit explains the "directed to" inquiry is not simply asking whether the claims involve a patent-ineligible concept:

> The "directed to" inquiry . . . cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon—after all, they take place in the physical world. *See Mayo*, 132 S.Ct. at 1293 ("For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas."). Rather, 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); *see also Diehr*, 450 U.S. at 188 ("In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole."); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (the question is whether the claims as a whole "focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery").

Therefore, we proceed to Step 2A, Prong 2 of the Memorandum to determine whether additional elements of the claim integrate the mental

processes into a practical application. Such additional elements may reflect an improvement to a technology or technical field. *See* Memorandum, 84 Fed. Reg. at 55. We determine additional elements of claim 1 integrate the mental processes into a practical application, as the additional elements ("determining, using one or more body measurement sensors, one or more current body characteristics of the patient comprising at least one of pulse rate, body temperature, blood pressure, respiration, and skin condition," "creating a current multimedia representation for each of the one or more current body characteristics determined by using the one or more body measurement sensors," and "in response to the diagnosis confidence factor not exceeding the high confidence factor threshold, selecting a different body characteristic of the patient to determine to increase the diagnosis confidence factor, wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics") reflect technology improvement of a medical analysis and diagnosis system. *See* claim 1; *see also DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (holding the claims satisfy *Alice* step two because "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks").

Our determination is supported by the Specification, which describes the technology improvements, such as utilizing the improved medical analysis and diagnosis system in urban or remote areas that have emergency medical requirements:

> Some example embodiments may utilize a mobile computer system with specialized hardware, firmware, software and databases, and a basic sensor suite . . . to gather patient information such as weight, pulse rate, pulse characterization and pattern recognition, respiration rate, respiration and body sounds characterization and pattern recognition, body temperature, blood pressure, oxygen saturation, perfusion, skin temperature, skin moisture level, electrocardiogram, imaging and/or video of eyes, ears, nose and throat, and imaging and/or video for skin, scalp and extremities to collect data to be transmitted to and processed by the mobile system. . . . . One or more expert systems, state machines or other methodologies may implemented as a diagnostic search engine or engines and such diagnostic search engines should utilize all available search criteria derived from the collected patient data, signs, symptoms and historical data, if available, to search the diagnostic database and make a unique and unambiguous diagnosis or a high confidence informed decision on a diagnosis of an illness, malady, disease, infection, condition or trauma afflicting the patient. In the event that a unique and unambiguous diagnosis or a high confidence informed decision on a diagnosis cannot be made based upon the collected patient data, signs and symptoms, the system may recommend additional testing that will aid in producing a unique and unambiguous diagnosis or a high confidence informed decision on a diagnosis with as few tests as possible. . . . Once a diagnosis is finalized, the system should have the capability to look up the recommended treatment regime associated with the diagnosis along with any associated prescription or nonprescription pharmaceuticals. Finally, the system may print off hard copies of the diagnosis and treatment regime, and print out a list of any associated non-prescription pharmaceuticals and/or prescriptions for any prescription pharmaceuticals. The system will then save all current patient data into the patient's file for future reference. *Such mobile systems could be easily transported to or utilized in urban or remote areas which have emergency medical requirements* or that are underserved by trained medical doctors and specialists. Such systems could provide medical and trauma related

> diagnostic services equivalent to a general practitioner or family doctor in an office environment.

Spec. ¶ 24 (emphasis added).

Because the additional elements of claim 1 integrate the mental processes into a practical application, we determine claim 1 is not directed to an abstract idea. *See* Memorandum, Step 2A, Prong 2. For similar reasons, each of claims 2, 3, 5–10, 12–17, 19, and 20 integrates the mental processes into a practical application, and is not directed to an abstract idea.

Therefore, we reverse the rejection of claims 1–3, 5–10, 12–17, 19, and 20 under 35 U.S.C. § 101.

Pre-AIA 35 U.S.C. § 103

We have reviewed the Examiner's rejections in light of Appellant's contentions and the evidence of record. We concur with Appellant's contention that the Examiner erred in determining the cited prior art portions teach "wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics," as recited in independent claim 1. *See* Br. 16–18.

First, the Examiner determines "[t]he language 'to increase the diagnosis confidence factor' is directed to the intended result of selecting a different body characteristic to determine and does not further limit the method step" (Final Act. 6; Ans. 6). However, the Examiner has not provided adequate analysis to support that determination. In particular, the

Examiner cites *Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1375–76 (Fed. Cir. 2001), but does not adequately explain why that case is applicable here. To the contrary, *Bristol-Myers* is inapplicable here, as it deals with language in *the preamble*—not the body of the claim. *Id.* Therefore, the Examiner has failed to assign the appropriate patentable weight to the recited "to increase the diagnosis confidence factor."

Second, the Examiner finds "Brynelsen does not" teach the above limitation, and cites Porwancher's paragraphs 21 and 53 instead. Final Act. 6. The Examiner responds to Appellant's arguments by further citing Porwancher's paragraph 52. Ans. 2–3. We have reviewed the cited Porwancher portions, and they do not provide sufficient details to describe "based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics," let alone "wherein selection of the different body characteristic is based on the one or more current body characteristics of the patient previously determined and based on an order of selection in order to exceed the high confidence factor threshold with a minimum number of additional selections of different body characteristics," as required by claim 1. Absent further explanation from the Examiner, we do not see how the cited Porwancher portions teach the disputed claim limitation.

Because the Examiner fails to provide sufficient evidence or explanation to support the rejection, we are constrained by the record to reverse the Examiner's rejection of claim 1.

Each of independent claims 8 and 15 recites a claim limitation that is substantively similar to the disputed limitation of claim 1. *See* claims 8 and

15. Therefore, for similar reasons, we reverse the Examiner's rejection of independent claims 8 and 15.

We also reverse the Examiner's rejections of corresponding dependent claims 2, 3, 5–7, 9, 10, 12–14, 16, 17, 19, and 20. Although the Examiner cites an additional reference for rejecting some dependent claims, the Examiner has not shown the additional reference overcomes the deficiency discussed above in the rejection of claim 1.

DECISION

We affirm the Examiner's decision rejecting claims 1–3, 5–10, 12–17, 19, and 20 under pre-AIA 35 U.S.C. § 112, first paragraph.

We reverse the Examiner's decision rejecting claims 1–3, 5–10, 12–17, 19, and 20 under 35 U.S.C. § 101.

We reverse the Examiner's decision rejecting claims 1–3, 5–10, 12–17, 19, and 20 under pre-AIA 35 U.S.C. § 103.

Because we affirm at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision rejecting claims 1–3, 5–10, 12–17, 19, and 20. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED