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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LORI N. CROSS

Appeal 2017-010276
Application 11/422,907[1]
Technology Center 3600

Before ERIC S. FRAHM, LARRY J. HUME, and CATHERINE SHIANG, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Non-Final Rejection of claims 1–17, 19–22, and 24–29, which are all claims pending in the application. Appellant has canceled claims 18 and 23. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] According to Appellant, the real party in interest is Cerner Innovation, Inc. Br. 3.

STATEMENT OF THE CASE[2]

The Invention

Appellants' disclosed embodiments and claimed invention "relate[] to computerized methods and systems for automatically documenting fluid intake and output events for a patient." Spec. 25 ("Abstract").

Exemplary Claims

Claims 1 and 9 reproduced below, are representative of the subject matter on appeal (*emphases* added to contested prior-art limitations):

> 1. One or more computer-readable media having computer-executable instructions embodied thereon for causing a computing device to perform a method for automatically documenting a fluid balance event for a patient, the method comprising:
>
> receiving a signal indicating that a fluid balance event associated with an impact value impacts a patient's overall fluid balance, wherein the impact value is a physical quantity associated with fluid intake and output, and wherein the overall fluid balance is a numerical measure of the net fluid intake of the patient;
>
> *automatically and without user interaction extracting the fluid balance event for a patient from clinical event documentation*;
>
> receiving the impact value associated with the fluid balance event that indicates the magnitude of influence that a

[2] Our decision relies upon Appellant's Appeal Brief ("Br.," filed Jan. 17, 2017); Examiner's Answer ("Ans.," mailed May 26, 2017); Non-Final Office Action ("Non-Final Act.," mailed Aug. 16, 2016); and the original Specification ("Spec.," filed June 8, 2006). We note Appellant did not file a Reply Brief in response to the factual findings and legal conclusions in the Examiner's Answer.

particular fluid balance event has on a patient's overall fluid balance;

automatically and without user interaction populating a database with the fluid balance event and the impact value; and

automatically and without user interaction updating an overall fluid balance for the patient utilizing the impact value.

9. The media of claim 1, *wherein the method further comprises determining the fluid balance event is a standard fluid balance event and wherein receiving the impact value includes receiving a standard impact value from a database.*

Prior Art

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Mattson et al. ("Mattson")	US 2002/0132214 A1	Sept. 19, 2002
Schoenberg et al. ("Schoenberg")	US 2005/0125256 A1	June 9, 2005

Rejections on Appeal

R1. Claims 1–17, 19–22, and 24–29[3] stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Non-Final Act. 3.

R2. Claims 1–17, 19–22, and 24–29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Schoenberg and Mattson. Non-Final Act. 6.

[3] It appears that there is a typographical error in the explicit statement of Rejection R1, which indicates that claims "1–17, 19–22, and 24–***19***" are rejected. Non-Final Act. 3 (emphasis added). We take this as harmless error, and the correct statement of Rejection R1 is as indicated above.

CLAIM GROUPING

Based on Appellant's arguments (Br. 6–23) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1–17, 19–22, and 24–29 on the basis of representative claim 1; we decide the appeal of obviousness Rejection R2 of claims 1–8, 10–17, 19–22, and 24–29 on the basis of representative claim 1; and we decide the appeal of separately argued obviousness Rejection R2 of claim 9, *infra*.[4]

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to obviousness Rejection R2 of claims 1–8, 10–17, 19–22, and 24–29 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments.

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[4] "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellants do not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

However, based upon our review of the record, we find a preponderance of the evidence supports particular arguments advanced by Appellants with respect to obviousness Rejection R2 of claim 9 for the specific reasons discussed below.

Further, in light of Appellant's arguments and USPTO Guidance concerning Section 101 rejections discussed herein, we review Rejection R1 of claims 1–17, 19–22, and 24–29 *de novo*, and reverse this rejection.

We highlight and address specific findings and arguments regarding claims 1 and 9 for emphasis as follows.

1. § 101 Rejection R1 of Claims 1–17, 19–22, and 24–29

Issue 1

Appellant argues (Br. 6–17) the Examiner's rejection of claim 1 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

Under the USPTO's Revised Guidance, informed by our governing case law concerning 35 U.S.C. § 101, is claim 1 patent-ineligible under § 101?

PRINCIPLES OF LAW

A. 35 U.S.C. § 101

"Whether a claim is drawn to patent-eligible subject matter is an issue of law that we review de novo." *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1331 (Fed. Cir. 2010).

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101.[5] 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. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (brackets in original) (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

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*. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 217–18 (2014) (citing *Mayo*, 566 U.S. at 75–77). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 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, 69 (1972)). Concepts

[5] This threshold analysis of whether a claim is directed to one of the four statutory categories of invention, i.e., a process, machine, manufacture, or composition of matter, is referred to as "*Step 1*" in the patent-eligibility inquiry under § 101.

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. (15 How.) 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 "[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.").

However, the Federal Circuit has held claims ineligible as directed to an abstract idea when claimed in a certain way such that they merely collect electronic information, display information, or embody mental processes that could be performed by humans. *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1353–54 (Fed. Cir. 2016) (collecting cases). At the same time, "all inventions at some level embody, use, reflect, rest upon, or apply laws of

nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, and mathematical formulas or relationships. *Alice*, 573 U.S. at 217–221. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Id.* at 217 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

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 (quotation marks 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, (alteration in original)). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

B. USPTO Revised Guidance

The PTO recently published revised policy guidance in the Federal Register concerning the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (hereinafter "Revised Guidance") (https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf).

Under the Revised Guidance, 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);[6] and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)).[7]

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 are 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.[8]

See Revised Guidance.

Step 2A(i) – Abstract Idea

Informed by our judicial precedent, the recent Revised Guidance extracts and synthesizes key concepts identified by the courts as abstract

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[6] Referred to as "*Revised Step 2A, Prong 1*" in the Guidance (hereinafter "*Step 2A(i)*").

[7] Referred to as "*Revised Step 2A, Prong 2*" in the Guidance (hereinafter "*Step 2A(ii)*").

[8] Items (3) and (4) continue to be collectively referred to as "*Step 2B*" of the Supreme Court's two-step framework, described in *Mayo* and *Alice*.

ideas to explain that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation:

> (a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;
>
> (b) Certain methods of organizing human activity — fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and
>
> (c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Under the Revised Guidance, if the claim does not recite a judicial exception (a law of nature, natural phenomenon, or subject matter within the enumerated groupings of abstract ideas above), then the claim is patent-eligible at *Step 2A(i)*. This determination concludes the eligibility analysis, except in situations identified in the Revised Guidance.[9]

However, if the claim recites a judicial exception (i.e., an abstract idea enumerated above, a law of nature, or a natural phenomenon), the claim requires further analysis for a practical application of the judicial exception in *Step 2A(ii)*.

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[9] In the rare circumstance in which an examiner believes a claim limitation that does not fall within the enumerated groupings of abstract ideas should nonetheless be treated as reciting an abstract idea, the procedure described in of the Guidance for analyzing the claim should be followed. *See* Guidance, Section III.C.

Step 2A(ii) – Practical Application

If a claim recites a judicial exception in *Step 2A(i)*, we determine whether the recited judicial exception is integrated into a practical application of that exception in *Step 2A(ii)* by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

The seven identified "practical application" sections of the MPEP,[10] cited in the Revised Guidance under *Step 2A(ii)*, are:

(1) MPEP § 2106.05(a) Improvements to the Functioning of a Computer or To Any Other Technology or Technical Field

(2) MPEP § 2106.05(b) Particular Machine

(3) MPEP § 2106.05(c) Particular Transformation

(4) MPEP § 2106.05(e) Other Meaningful Limitations

(5) MPEP § 2106.05(f) Mere Instructions To Apply An Exception

(6) MPEP § 2106.05(g) Insignificant Extra-Solution Activity

(7) MPEP § 2106.05(h) Field of Use and Technological Environment

If the recited judicial exception is integrated into a practical application as determined under one or more of the MPEP sections cited above, then the claim is not directed to the judicial exception, and the patent-eligibility inquiry ends. If not, then analysis proceeds to *Step 2B*.

[10] *See* MPEP § 2106.05(a)–(c), (e)–(h). Citations to the MPEP herein refer to revision [R-08.2017].

Step 2B – "Inventive Concept" or "Significantly More"

Under our precedent, it is possible that a claim that does not "integrate" a recited judicial exception under *Step 2A(ii)* is nonetheless patent eligible. For example, the claim may recite additional elements that render the claim patent eligible even though a judicial exception is recited in a separate claim element.[11] The Federal Circuit has held claims eligible at the second step of the *Alice/Mayo* test (USPTO *Step 2B*) because the additional elements recited in the claims provided "significantly more" than the recited judicial exception (e.g., because the additional elements were unconventional in combination).[12] Therefore, if a claim has been determined to recite a judicial exception under *Revised Step 2A*, we must evaluate the additional elements individually and in combination under *Step 2B* to determine whether they provide an inventive concept (i.e., whether the additional elements amount to significantly more than the exception itself).[13]

Under the Revised Guidance, we must consider in *Step 2B* whether an additional element or combination of elements: (1) "Adds a specific limitation or combination of limitations that are not well-understood,

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[11] *See, e.g.*, *Diehr*, 450 U.S. at 187.

[12] *See, e.g.*, *Amdocs (Israel), Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1304 (Fed. Cir. 2016); *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016); *DDR Holdings v. Hotels.com*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014).

[13] The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016). In particular, "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

routine, conventional activity in the field, which is indicative that an inventive concept may be present;" or (2) "simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present." *See* Revised Guidance, III.B.[14]

In the *Step 2B* analysis, an additional element (or combination of elements) is not well-understood, routine or conventional unless the examiner finds an evidentiary basis, and expressly supports a rejection in writing with, one or more of the following:

> 1. A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s).
>
> 2. A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element(s).
>
> 3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s).

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[14] In accordance with existing *Step 2B* guidance, an Examiner's conclusion that an additional element (or combination of elements) is well understood, routine, conventional activity must be supported with a factual determination. For more information concerning evaluation of well-understood, routine, conventional activity, *see* MPEP § 2106.05(d), as modified by the USPTO *Berkheimer* Memorandum (USPTO Commissioner for Patents Memorandum dated Apr. 9, 2018, "Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)" (hereinafter "*Berkheimer Memo*").

> 4. A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s).

See Berkheimer Memo.

The analysis in *Step 2B* further determines whether an additional element or combination of elements:

> (a) Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present; or
>
> (b) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present.

Revised Guidance, *and see Berkheimer* Memo.

If the Examiner or the Board determines under *Step 2B* that the element (or combination of elements) amounts to significantly more than the exception itself, the claim is eligible, thereby concluding the eligibility analysis.

However, if a determination is made that the element and combination of elements does not amount to significantly more than the exception itself, the claim is ineligible under *Step 2B*, and the claim should be rejected for lack of subject matter eligibility.

ANALYSIS

Step 1

Claim 1 recites "[o]ne or more computer-readable media," which is one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101, i.e., a "manufacture." Therefore, the issue before us is whether claim 1 recites a judicial exception without significantly more.

Step 2A(i): Does the Claim Recite a Judicial Exception?

The Examiner determined the claims are

> directed to extracting the fluid balance event (new information), receiving the impact value (new information), automatically populating a database (stored information), and updating an overall fluid balance (comparing new and stored information and using rules to identify options). This similar to the abstract ideas of comparing new and stored information and using rules to identify options (SmartGene) because the claims use rules to identify options of extracting the fluid balance event (new information), receiving the impact value (new information), automatically populating a database (stored information), and updating an overall fluid balance (comparing new and stored information and using rules to identify options).

Non-Final Act. 4. The Examiner modified this determination in the Answer. "Claims 1–17, 19–22 and 24–29 is/are directed to the abstract idea of 'automatic documentation of patient intake and output events in a computerized healthcare environment', etc.," and "are directed to information processing . . . . [which] is a fundamental building block of human ingenuity . . . [and which] is an abstract idea." Ans. 10.

We find claim 1 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate whether claim 1 recites

an abstract idea based upon the Revised Guidance. We conduct our review for abstractness *de novo*.

The Specification provides context as to what the claimed invention is directed to. In this case, the Specification discloses that the invention solves problems related to "automatically documenting a patient's I/O and including traditionally undocumented I/O events, such as laboratory procedures and radiological procedures, which would not rely on manual entry." Spec. ¶ 6.

Appellants' Abstract provides additional description of the invention:

> The present invention relates to computerized methods and systems for automatically documenting fluid intake and output events for a patient. In one method, a fluid balance event is extracted, an impact value associated with the fluid balance event is received, and a database is populated with the fluid balance event and associated impact value. In another method, a clinical event is received and analyzed to determine whether the event has an impact on the patient's overall fluid balance. If the event is determined to have an impact on the fluid balance, the event is managed as a fluid balance event and an impact value is received for the event. A fluid balance is then updated for the patient using the received impact value.

Spec. 25.

Claim 1 recites "[o]ne or more computer-readable media having computer-executable instructions embodied thereon for causing a computing device to perform a method for automatically documenting a fluid balance event for a patient, wherein the method includes the steps of:

> (1) "receiving a signal indicating that a fluid balance event associated with an impact value impacts a patient's overall fluid balance, wherein . . . the overall fluid balance is a numerical measure of the net fluid intake of the patient."

> (2) "automatically and without user interaction extracting the fluid balance event for a patient from clinical event documentation."
>
> (3) "receiving the impact value associated with the fluid balance event that indicates the magnitude of influence that a particular fluid balance event has on a patient's overall fluid balance."
>
> (4) "automatically and without user interaction populating a database with the fluid balance event and the impact value."
>
> (5) "automatically and without user interaction updating an overall fluid balance for the patient utilizing the impact value."

Claims App'x.

Under the broadest reasonable interpretation standard,[15] and aside from the recitations of "automatically and without user interaction," we conclude limitations (1) through (5) recite steps that would ordinarily occur when documenting patient intake and output events. *See* Non-Final Act. 5; Ans. 10.

[15] During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under this standard, we interpret claim terms using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

For example, extracting fluid balance event information from patient documentation (limitation (2)), receiving or determining an impact value[16] associated with the fluid balance event (limitation (3)), populating a record (e.g., a database) with the fluid balance event and impact value (limitation (4)), and updating the overall fluid balance utilizing the impact value (limitation (5)) are operations that occur when documenting a fluid balance event for a patient.

Thus, under *Step 2A(i)*, we generally agree with the Examiner that claim 1 recites abstract ideas, and we particularly conclude claim 1 recites mental processes as concepts that may be performed in the human mind, including observations, evaluations, judgments, and opinions, and that may be performed using pen and paper. This type of activity, i.e., reviewing patient records to extract fluid balance event information from clinical documentation and updating the patient record based upon a fluid balance event includes longstanding conduct that existed well before the advent of computers and the Internet, and could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").[17]

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[16] An impact value is described as, e.g., volumes, masses, weights, flow rates, densities, concentrations and other physical quantities associated with fluid intake and output. *See* Spec. ¶ 23.

[17] Our reviewing court recognizes that "[a]n abstract idea can generally be described at different levels of abstraction." *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, "impact the patentability analysis." *Id.* at 1241.

We conclude claim 1, as a whole, under our Revised Guidance, recites a judicial exception of mental processes, i.e., concepts that may be performed in the human mind, including observations, evaluations, judgments, and opinions, and thus an abstract idea.

Step 2A(ii): Judicial Exception Integrated into a Practical Application?

If the claims recite a patent-ineligible concept, as we conclude above, we proceed to the "practical application" *Step 2A(ii)* in which we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

In addition to the abstract steps recited in limitations (2) through (4)[18] identified in *Step 2A(i)*, *supra*, claim 1 recites (1) "receiving a signal indicating that a fluid balance event associated with an impact value impacts a patient's overall fluid balance, wherein . . . the overall fluid balance is a numerical measure of the net fluid intake of the patient."

We conclude limitation (1), "receiving," recites insignificant data gathering. *See* MPEP § 2106.05(g). Data gathering, as performed by the steps or function in Appellants' claims, is a classic example of insignificant extra-solution activity. *See, e.g.*, *In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008) (en banc), *aff'd sub nom*, *Bilski v. Kappos*, 561 U.S. 593 (2010).

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[18] We identified these steps as abstract, *supra*, except for the portions of the limitations that recite carrying out the actions "automatically and without user intervention."

However, for the reasons discussed below, we conclude limitations (2), (4), and (5), especially in light of the portions that recite "automatically and without user intervention," integrate the abstract idea into a practical application as determined under at least the MPEP sections cited above.[19]

Appellant's Specification discloses:

> Embodiments of the present invention are directed to systems and methods for automatic documentation of patient intake and output events in a computerized healthcare environment. The present invention allows for the fluid balance impact of various clinical events to be automatically documented for a clinical patient so as to avoid omission of these events, such as can occur with a manual fluid balance documentation process. Other embodiments of the present invention specifically provide for automatic documentation of fluid intake and output in settings such as a radiology environment or laboratory environment, where fluid balance is typically not documented today.

Spec. ¶ 20. Appellant argues:

> [T]he claims of the present Application address a technological problem. In particular, the claims address a problem of maintaining an accurate electronic account of a patient's fluid balance. As explain in the Specification, in the realm of computerized health care systems, fluid intake and output are traditionally performed by manually entering the data into a particular fluid balance portion of a patient's electronic medical record, which can lead to errors from omitted or inaccurate data entry.[ ] For example, many procedures from disparate healthcare departments may have an impact on a patient's fluid balance but are not traditionally documented with respect to the electronic record of the patient's fluid balance.[ ] Even though the impact for a single event may be

[19] For example, *See* MPEP § 2106.05(a) "Improvements to the Functioning of a Computer or To Any Other Technology or Technical Field," and § 2106.05(e) "Other Meaningful Limitations."

> small, such as with blood draws and collection of urine samples, these events may accumulate to have a significant impact on the patient's fluid balance.[ ] Though a patient's electronic record may include the data relating to an impact value for these events, such data is not utilized with respect to fluid balance. *The claimed invention solves these problems by providing an approach to electronically track the patient's fluid balance by extracting fluid balance event information from various electronic sources*.
>
> As such, Appellant respectfully submits that the claims recite an inventive system and method to automatically document the fluid balance impact of a fluid balance event.

Br. 14 (citing to Spec. ¶¶ 4, 5) (emphasis added).

We find Appellants' argument persuasive that "automatically and without user intervention" carrying out the steps of: (2) "extracting the fluid balance event for a patient from clinical event documentation;" (4) "populating a database with the fluid balance event and the impact value;" and (5) "updating an overall fluid balance for the patient utilizing the impact value" provide improvements to the underlying technology or technical field, namely, computerized health care systems. *See* MPEP § 2106.05(a) or, alternatively, § 2106.05(e) "Other Meaningful Limitations."

With respect to these other meaningful limitations, Appellants argue:

> [T]he claims include features that are not directed to merely implementing an abstract idea on a computer. Instead, the claims recite an inventive concept by including features that recite an inventive concept directed to ***how*** to automatically document fluid balance events. As in *DDR*, the features of the claims are necessarily rooted in technology and provide an improvement to a technological process. As in *Bascom*, the patent application "describes how its particular arrangement of elements is a technical improvement over prior art ways."[ ] Accordingly, the claims at issue recite an inventive concept in

> the ordered combination of claim limitations that transform any abstract idea into a practical application, thus providing patent-eligible claims.

Br. 15 (citing *DDR Holdings v. Hotels.com*, 773 F.3d 1245 (Fed. Cir. 2014) and *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016)).

We find guidance in the Manual for Patent Examining Procedure section 2106.05(e), which summarizes and relies upon our reviewing court's holdings in *Diamond v. Diehr*, cited *supra*, *and Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057 (Fed. Cir. 2011) (decision on remand from the Supreme Court, which had vacated the lower court's prior holding of ineligibility in view of *Bilski v. Kappos*).

In *Diamond*, the Court evaluated the additional non-abstract limitations, and found them to be meaningful, because they sufficiently limited the use of the [abstract idea] mathematical equation to the practical application of molding rubber products. MPEP § 2106(e) (citing *Diamond*, 450 U.S. at 184, 187).

In *Classen*, the Court held that, although the analysis step was an abstract mental process that collected and compared known information, the [practical application] immunization step was meaningful because it integrated the results of the analysis into a specific and tangible method that resulted in the method "moving from abstract scientific principle to specific application." MPEP § 2106(e) (citing *Classen*, 659 F.3d at 1066–68).

We find these other meaningful limitations identified above provide a technological improvement to computerized healthcare management. Br. 16. Accordingly, we conclude, when the claim is considered as a whole,

the recited judicial exception is integrated into a practical application as determined under either MPEP sections 2106.06(a) or 2106.05(e) cited above, such that the claim is patent-eligible.

Because the claims are directed to a patent-eligible concept, this concludes the patent-eligibility inquiry.

Therefore, based upon the findings and legal conclusions above, on this record and in consideration of the Revised Guidance, we are persuaded the claims are drawn to patent-eligible subject matter, such that we do not sustain the § 101 rejection of claim 1, and grouped claims 2–17, 19–22, and 24–29, which stand therewith. *See* Claim Grouping, *supra*.

2. § 103(a) Rejection R2 of Claims 1–8, 10–17, 19–22, and 24–29

Issue 2

Appellant argues (Br. 17–21) the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over the combination of Schoenberg and Mattson is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests "[o]ne or more computer-readable media having computer-executable instructions embodied thereon for causing a computing device to perform a method for automatically documenting a fluid balance event for a patient," wherein the method includes, *inter alia*, the steps of
(a) "automatically and without user interaction extracting the fluid balance event for a patient from clinical event documentation," and
(b) "automatically and without user interaction populating a database with the fluid balance event and the impact value," as recited in claim 1?

Analysis

The Examiner finds Schoenberg teaches or suggests limitations (a) and (b) because Schoenberg teaches a medical information system that receives patient information from a wide variety of sources, for example, patient monitoring equipment. Non-Final Act. 6 (citing Schoenberg Abstract, ¶¶ 3, 9, 12, 18, 19, 41, and 47). The Examiner further relies upon Mattson as teaching or suggesting fluid balance monitoring, i.e., evaluating a fluid balance and an impact value for a fluid balance event for the patient, as one type of patient monitoring incorporated into the teachings of Schoenberg. Non-Final Act. 7 (citing Mattson ¶¶ 7, 10, 378, and 4029).

Appellant contends "[t]here is no mention in Shoenberg [sic] of populating any information related to a fluid balance event or the impact value into the database" (Br. 19), and "Mattson merely makes references to training modules involving 'Fluid Balance' that are often used to educate dialysis patients." *Id.* "Appellant has found nothing in Mattson that teaches an overall fluid balance as being *a numerical measure of the net fluid intake of a patient or teaching automatically and without user interaction updating the overall fluid balance for the patient utilizing the impact value*." Br. 20.

Appellant's contention does not persuade us of error on the part of the Examiner because the Appellant is responding to the rejection by attacking the references separately, even though the rejection is based on the combined teachings of the references. Nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Moreover, in response to Appellant's contentions, the Examiner finds, "Mattson . . . is in the field of Appellant's endeavor and/or is reasonably pertinent to the particular problem with which Appellant is concerned . . . . [because it] is directed to 'systems and methods for medical patients directed to achieving desirable patient outcomes.'" Ans. 6. The Examiner further finds:

> The (training) systems and methods and/or modules of Mattson et al. would necessarily teach (a patient) that a fluid balance event associated with an impact value impacts a patients [sic] overall fluid balance, indicate (to a patient) the magnitude of influence that a particular fluid balance event has on a patient's overall fluid balance, and teach (a patient) that one possible impact value is a physical quantity associated with fluid intake and output, and wherein the overall fluid balance is a numerical measure of the net fluid intake of the patient , etc. as part of an education system to produce desired outcomes for a patient. The capabilities and teachings of the systems and methods of Mattson et al. could easily and readably be combined with the automated systems and methods of Schoenberg et al. by one of reasonable skill in the art at the time of Appellant's invention producing expected results.

Br. 7 (emphases omitted).

The Examiner further finds (*id.*) motivation to combine Schoenberg with Mattson in the manner suggested because the claimed invention is merely a combination of old elements. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). In *KSR*, the Court stated "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S. at 416.

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of

> ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill . . . . [A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id. at 417.

We agree with the Examiner's findings and legal conclusions that the combination of Schoenberg and Mattson teach or suggest the contested limitations of representative claim 1. We further note Appellant does not file a Reply Brief to rebut the Examiner's findings and legal conclusions.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitations of claim 1, nor do we find error in the Examiner's resulting legal conclusion of obviousness.

3. § 103(a) Rejection R2 of Claim 9

Issue 3

Appellant argues (Br. 21–22) the Examiner's rejection of claim 9 under 35 U.S.C. § 103(a) as being obvious over the combination of Schoenberg and Mattson is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests the media of claim 1, "wherein the method further comprises determining the fluid balance event is a *standard fluid balance event* and

wherein receiving the impact value includes receiving a standard impact value from a database," as recited in claim 9 (emphasis added)?

Analysis

Appellant's Specification discusses the concept of a "standard fluid balance event" as follows:

> The fluid balance events stored in database cluster 24 can be standard fluid balance events, which have standard associated impact values that are also stored in database cluster 24. For example, packed red blood cells (PRBCs) may come in standard 125 mL bags. Thus, a standard fluid balance event of transfusion of one 125 mL bag of PRBCs can have an associated standard impact value of 125 mL of fluid intake.

Spec. ¶ 24; *and see* Spec. ¶ 38 for examples of "standard fluid balance events." Appellant further points out, "[t]he Specification defines a standard fluid balance event as a fluid balance event that has an associated standard impact value.[ ] For example, particular laboratory tests require a standard quantity of blood or fluid taken, making those events standard output events." Br. 21 (citation omitted).

The Examiner generally cites to several portions of Schoenberg as teaching or suggesting the contested limitation of claim 9. Non-Final Act. 9 (citing Schoenberg Abstract, ¶¶ 3, 9, 12, 18, 19, 41, and 47).

However, we have searched the cited portion of Schoenberg, as well as Schoenberg and Mattson in their entirety, and find no teaching or suggestion of "determining the fluid balance event is a *standard fluid balance event* and wherein receiving the impact value includes receiving a standard impact value from a database" as recited in dependent claim 9.

Based upon the findings above, on this record, we are persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitation of claim 9 such that we do not sustain the Examiner's obviousness rejection of dependent claim 9.

CONCLUSIONS

(1) Under the Revised Guidance and our governing case law, we do not sustain Rejection R1 of claims 1–17, 19–22, and 24–29 under 35 U.S.C. § 101.

(2) The Examiner did not err with respect to obviousness Rejection R2 of claims 1–8, 10–17, 19–22, and 24–29 under 35 U.S.C. § 103(a) over the cited prior art combination of record, and we sustain the rejection.

(3) The Examiner erred with respect to obviousness Rejection R2 of claim 9 under 35 U.S.C. § 103(a), and we do not sustain the rejection.

DECISION

We affirm the Examiner's decision rejecting claims 1–8, 10–17, 19–22, and 24–29.

We reverse the Examiner's decision rejecting claim 9.

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-IN-PART