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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL CANNON, CHARLES DONNICI,
TANNER MARVIN, and JOSHUA BRASEL

Appeal 2018-001809
Application 14/266,362¹
Technology Center 3600

Before JENNIFER S. BISK, LARRY J. HUME, and
JULIET MITCHELL DIRBA, *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 Final Rejection of claims 1–20, which are all claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is Cerner Innovation, Inc. App. Br. 3.

STATEMENT OF THE CASE²

The Invention

Appellants' disclosed embodiments and claimed invention "relate to techniques to improve patient search in clinical computing environments." Spec. ¶ 3.

*Exemplary Claim*³

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

1. One or more computer storage media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform operations comprising:

receiving user input entered by a user using a patient search user interface for performing a patient search on a patient database;

prior to querying the patient database using the user input:

² Our decision relies upon Appellants' Appeal Brief ("Br.," filed July 21, 2017); Examiner's Answer ("Ans.," mailed Oct. 2, 2017); Final Office Action ("Final Act.," mailed Feb. 24, 2017); and the original Specification ("Spec.," filed Apr. 30, 2014). Appellants did not file a Reply Brief in response to the factual findings and legal conclusions in the Examiner's Answer.

³ We note typographical errors in claim 1 conditional limitation "if the user input corresponds with a common name." It appears that instead of a comma (","), there should be a colon (":") between the words "name" and "providing." Further, there appears to be a missing comma (" ,") between the words "name" and "receiving." We take these omissions as harmless error, and we analyze the claim as indicated above.

querying a common name data store based on the user input, the common name data store being separate from the patient database; and

determining whether the user input corresponds with a common name in the common name data store;

if the user input corresponds with a common name[:]

providing a notice for presentation that indicates the user input corresponds with the common name[,]

receiving additional user input, and querying the patient database using the user input and the additional user input; and

if the user input does not correspond with a common name, querying the patient database using the user input.

Prior Art

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

Mishkanian et al. (“Mishkanian”)	2009/0077071 A1	Mar. 19, 2009
Brewer et al. (“Brewer”)	2011/0087686 A1	Apr. 14, 2011
Skocic (“Skocic”)	2013/0103422 A1	Apr. 25, 2013

Rejections on Appeal

R1. Claims 1–20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 2.

R2. Claims 1, 2, and 4–20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Brewer and Mishkanian. Final Act. 6.

R3. Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Brewer, Mishkanian, and Skocic. Final Act. 10.

CLAIM GROUPING

Based on Appellants' arguments (App. Br. 5–18) 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 1–20 on the basis of representative claim 1; and we decide the appeal of obviousness Rejection R2 of claims 1, 2, and 4–20 on the basis of representative claim 1.

Remaining claim 3 in Rejections R3, not argued separately, stands or falls with independent claim 1 from which it depends.⁴

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellants. To the extent Appellants have 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 Appellants' arguments with respect to Rejection R1 of claims 1–20 under 35 U.S.C. § 101 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and

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).

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 Appellants' arguments.

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 Rejections R2 and R3 of claims 1–20 for the specific reasons discussed below.

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

1. § 101 Rejection R1 of Claims 1–20

Issue 1

Appellants argue (App. Br. 5–16) 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 our governing case law and Revised Guidance concerning 35 U.S.C. § 101, did the Examiner err in concluding claim 1 is directed to a judicial exception, i.e., an abstract idea, without significantly more, and thus is patent-ineligible under 35 U.S.C. § 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*, 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, 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 USPTO’s patent-eligibility analysis under § 101. MPEP § 2106.

determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diehr*, 450 U.S. at 191); “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.* (citation omitted) (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.”).

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 217–21. 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 (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.* (alterations in original) (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.*

B. USPTO Revised Guidance

The PTO recently published revised 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* Manual for Patent Examining Procedure (“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 Revised Guidance extracts and synthesizes key concepts identified by the courts as abstract 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;

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

⁷ Referred to as “*Revised Step 2A, Prong 2*” in the Revised 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*.

(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)*.

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

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.

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]. Sections 2106.05(a), (b), (c), and (e) are indicative of integration into a practical application, while sections 2106.05(f), (g), and (h) relate to limitations that are not indicative of integration into a practical application.

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 be directed to 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

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, L.P.*, 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).

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 (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).

¹⁴ In accordance with existing *Step 2B* guidance, an Examiner’s finding that an additional element (or combination of elements) is well understood, routine, conventional activity must be supported with at least one of the four specific types of evidence required by the USPTO *Berkheimer* Memorandum, as shown above. 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. 19, 2018, “Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)” (hereinafter “*Berkheimer Memo*”).

3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .

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, as a computer storage media (manufacture) claim, recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. Therefore, the issue before us is whether it is directed to a judicial exception without significantly more.

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

The Examiner determined that claim 1

recites an abstract idea . . . identified as: collecting user input, analyzing the user input with stored common data and stored patient data, and displaying a notice that the user input corresponds with the common data and querying the patient data with the user input.

Final Act. 3.

We conclude claim 1 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate, *de novo*, whether claim 1 recites an abstract idea based upon the Revised Guidance.

Claim 1 recites, in pertinent part, “one or more computer storage media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform operations,” that includes the steps of:

(1) “[R]eceiving user input entered by a user . . . for performing a patient search on a patient database.”

(2) “[P]rior to querying the patient database using the user input, querying a common name data store based on the user input, the common name data store being separate from the patient database.”

(3) “[P]rior to querying the patient database using the user input, determining whether the user input corresponds with a common name data store.”

(4) “[I]f the user input corresponds with a common name, providing a notice . . . that indicates the user input corresponds with the common name.”

(5) “[I]f the user input corresponds with a common name, receiving additional user input.”

(6) “[I]f the user input corresponds with a common name, querying the patient database using the user input and the additional user input.”

(7) “[I]f the user input does not correspond with a common name, querying the patient database using the user input.”

Claims App’x.

The Specification provides context as to what the claimed invention is directed to. In this case, the Specification discloses that the invention is “directed to computerized methods and systems that provide improvements to patient searches.” Spec. ¶ 23.

Appellants’ Abstract describes the invention as:

Computerized systems and methods facilitate patient searches by identifying instances in which search input includes a common name that may return a large number of search results. A common name data store is generated that includes common names identified in a patient database. When a user enters search input into a patient search tool, the common name data store is queried to determine if the search input matches a common name. If so, a notification may be provided to the user to indicate the search input matches a common name. In some instances, a search may not be allowed on the patient database if the search input matches a common name.

Spec. 29.

Appellants argue the claims are similar to those held patent-eligible in *McRO*. Br. 10–11 (generally citing *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). However, the claims in *McRO* recited a “specific . . . improvement in computer animation” using “unconventional rules that relate[d] sub-sequences of phonemes, timings, and morph weight sets.” *McRO*, 837 F.3d at 1302–03, 1307–08, 1314–15. In *McRO*, “the incorporation of the claimed rules, not the use of the computer,” improved an existing technological process. *Id.* at 1314. Appellants do not, however, identify how claim 1 improves an existing technological process. *See Alice*, 134 S. Ct. at 2358 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”). Rather, claim 1 concerns “[o]ne or more computer storage media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform [various data processing] operations.” Appellants argue:

In the present application, the claims recite a *particular* way to prevent ambiguous search queries from being performed on patient databases. In particular, the claims recite features in which a new data store — a common name data store — is provided. The common name data store is separately searchable from the patient database and is searched first when a search query is received prior to searching the patient database.

Br. 10.

We are not persuaded by Appellants’ argument that the addition of a second data store (database) provides a specific improvement to computer operation. In addition, Appellants do not direct us to any evidence that the

claimed querying, determining, and providing steps correspond to unconventional rules.

We determine that claim 1, as a whole, recites a mental process that may also be performed by pen and paper and/or in the human mind. This type of activity, i.e., searching for a patient by receiving user input, querying a data store, providing a notice, receiving additional user input, and querying a database, as recited in each of limitations (1) through (7), for example, 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*.”).¹⁵

Under the broadest reasonable interpretation standard,¹⁶ we conclude limitations (1) through (7) recite steps that would ordinarily occur when

¹⁵ 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. Further, “[t]he Board’s slight revision of its abstract idea analysis does not impact the patentability analysis.” *Id.* Moreover, merely combining several abstract ideas does not render the combination any less abstract. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract.”); *see also FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining the pending claims were directed to a combination of abstract ideas).

¹⁶ 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*

searching patient data for a particular patient. *See* Final Act. 3. For example, “receiving user input” is an operation that generally would occur before performing a patient search on a patient database. Further, “providing a notice for presentation” that the user input corresponds with a common name and then receiving additional user input would typically be a step taken when ambiguities arise in a search for a patient, whether initiated person-to-person, on paper, or using a computer.

Thus, under *Step 2A(i)*, we agree with the Examiner that claim 1’s recitation of operations includes an abstract idea. We conclude claim 1, as a whole, under our Revised Guidance, recites a judicial exception of a mental process, i.e., concept performed in the human mind including an observation, evaluation, judgment, and opinion, and thus is 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

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).

(b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

Appellants argue:

[I]nstead, as explained above and bolstered by the Specification’s teachings, the claims provide a technical solution for ensuring that search queries can be properly performed on a patient database. The claims recite features directed to a new data store – a common names data store – that is separate from the patient database and must be queried before the search query is submitted to the patient database. This ensures that an ambiguous search query that would fail is not submitted to the patient database. This is not simply “collecting user input, analyzing the user input with the stored common data and stored patient data, and displaying a notice that the user input corresponds with the common data and querying the patient data with the user input,” as suggested by the Examiner.

Br. 9.

Even considering the use of a second database, i.e., the common names data store, we find each of the limitations of claim 1 recite abstract ideas as identified in *Step 2A(i)*, *supra*, and none of the limitations integrate the judicial exception of the recited mental process into a practical application as determined under one or more of the MPEP sections cited above. The claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a tool to perform the abstract idea.

Thus, on this record, Appellants have not shown under the guidance of Manual of Patent Examining Procedure section 2106.05(a) (“Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field”) or section 2106.05(e) (“Other Meaningful

Limitations”) that the judicial exception is integrated into a practical application. Nor do Appellants advance any arguments in the Brief that are directed to the *Bilski* machine-or-transformation test, which would only be applicable to the method (process) claims 11–15 on appeal. See MPEP §§ 2106.05(b) (Particular Machine) and 2106.05(c) (Particular Transformation).

Here, we do not identify any limitations separate from the abstract ideas recited in the limitations identified in *Step 2A(i)*, *supra*, of claim 1. In particular, as concluded above, the various steps of “receiving,” “querying,” “determining,” “providing,” and “receiving” may be categorized as mental processes under the Revised Guidance.

Accordingly, we conclude the recited judicial exception is not integrated into a practical application as determined under one or more of the MPEP sections cited above, such that the claim is directed to the judicial exception.

Therefore, we conclude the abstract idea is not integrated into a practical application, and thus the claim is directed to the judicial exception.

Step 2B – “Inventive Concept” or “Significantly More”

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the “inventive concept” step. For *Step 2B* we must “look with more specificity at what the claim elements add, in order to determine ‘whether they identify an “inventive concept” in the application of the ineligible subject matter’ to which the claim is directed.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258 (Fed. Cir. 2016) (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

In applying step two of the *Alice* analysis, our reviewing court guides we must “determine whether the claims do significantly more than simply describe [the] abstract method” and thus transform the abstract idea into patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any “additional features” in the claims that constitute an “inventive concept,” thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 573 U.S. at 221. Those “additional features” must be more than “well-understood, routine, conventional activity.” *Mayo*, 566 U.S. at 79.

Limitations referenced in *Alice* that are not enough to qualify as “significantly more” when recited in a claim with an abstract idea include, as non-limiting or non-exclusive examples: adding the words “apply it” (or an equivalent) with an abstract idea¹⁷; mere instructions to implement an abstract idea on a computer¹⁸; or requiring no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.¹⁹

With respect to this step of the analysis, Appellants argue “[t]he claims recite elements other than what is well-understood, routine, and conventional in the field, or unconventional steps that confine the claim to a particular useful application.” App. Br. 11 (formatting omitted). Appellants

¹⁷ *Alice*, 573 U.S. at 221–23.

¹⁸ *Alice*, 573 U.S. at 221, *e.g.*, simply implementing a mathematical principle on a physical machine, namely a computer (citing *Mayo*, 566 U.S. at 84–85).

¹⁹ *Alice*, 573 U.S. at 225, *e.g.*, using a computer to obtain data, adjust account balances, and issue automated instructions.

further contend, “the claim elements taken as a whole contain an inventive concept that is sufficient to ensure the claim amounts to significantly more than an abstract idea when they provide for a specific, unconventional technological solution to a technological problem that does not foreclose alternative solutions.” App. Br. 12 (referencing prior USPTO Guidance, *BASCOM*, and *Amdocs*).²⁰

Further, in this regard, Appellants allege:

Conventionally, patient search systems do not employ separately searchable databases. The technological solution claimed necessarily requires a search system to operate in an unconventional manner by requiring a search to be performed on a common name data store before the search query can be submitted to the patient database. In this manner, the inventive concept provides an improvement in the functionality of the patient search system by providing an unconventional computer architecture and process that solves the problem of how to handle ambiguous search queries on patient databases.

Additionally, the inventive concept ensures that the claims are significantly more than an abstract idea because they do not foreclose alternative solutions, e.g., do not seek to simply claim a formula for use in a particular industry (*Flook*). As mentioned above, conventional methods for searching patient databases exist although such search system may fail to properly deal with ambiguous search queries. Instead, the claim elements as a whole present a specific, unconventional

²⁰ See *BASCOM Global Internet v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016); *Amdocs Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300–01 (Fed. Cir. 2016). We note Appellants merely cite to *Bascom* and *Amdocs*, and allege “under USPTO Guidance, *Bascom*, and *Amdocs*, the claim elements taken as a whole contain an inventive concept that is sufficient to ensure the claim amounts to significantly more than an abstract idea when they provide for a specific, unconventional technological solution to a technological problem that does not foreclose alternative solutions.” Br. 12.

architecture and approach that is not known to the prior art and does not foreclose other methods for searching patient databases. Therefore, even if the claims were found to recite an abstract idea, the claims, when viewed as a whole, recite significantly more than the abstract idea and are, thus, patent eligible.

App. Br. 13.

In *BASCOM*, the claims were directed to the inventive concept of providing customizable Internet-content filtering which, under Step 2 of the Alice analysis, was found to transform the abstract idea of filtering content into a patent-eligible invention. Although the underlying idea of filtering Internet content was deemed to be abstract, under step 2 of the Alice analysis, the claims carved out a specific location for the filtering system, namely a remote Internet service provider (ISP) server, and required the filtering system to give users the ability to customize filtering for their individual network accounts. *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016).

In response to Appellants' reliance upon *BASCOM*, *supra*, there is no evidence of record to substantiate the assertion that the claims recite non-conventional and non-generic arrangement of known, conventional elements, as in *BASCOM*. Moreover, we find no analogy between Appellants' claimed computer storage media that carries out operations to query a patient database (a mental process) using two databases and the Internet content filtering claims in *BASCOM*.

In *Amdocs*, the Federal Circuit held that claim 1 of the patent at issue is also like the claims in *BASCOM* because even though the system in the '065 patent relies upon some arguably generic limitations, when all limitations are considered individually and

as an ordered combination, they provide an inventive concept through the use of distributed architecture. This is similar to the design in *BASCOM* which permitted the invention to have a filtering tool with the benefits of a filter on a local computer and the benefits of a filter on an ISP server. The benefits in *BASCOM* were possible because of customizable filtering features at specific locations remote from the user. Similarly, the benefits of the '065 patent's claim 1 are possible because of the distributed, remote enhancement that produced an unconventional result—reduced data flows and the possibility of smaller databases. This arrangement is not so broadly described to cause preemption concerns. Instead, it is narrowly circumscribed to the particular system outlined. As in *BASCOM*, this is a technical improvement over prior art technologies and served to improve the performance of the system itself.

Amdocs (Israel) Limited v. Openet Telecom, Inc., 841 F.3d 1288, 1302 (Fed. Cir. 2016).

Again, we determine Appellants' reliance upon *Amdocs* is unavailing because there is no indication that claim 1 on appeal provides unconventional results produced by a distributed, remote enhancement that reduces data flows and allows for the possibility of smaller databases.²¹

In further response to Appellants' arguments, we note the Manual of Patent Examining Procedure, based upon binding precedent, provides additional considerations with respect to analysis of the well-understood, routine, and conventional nature of the claimed computer-related components.

²¹ Indeed, Appellants' claimed invention recites the use of *two* databases, i.e., a "patient database," and a "common name data store," and not smaller databases as in *Amdocs*.

Another consideration when determining whether a claim recites significantly more than a judicial exception is whether the additional elements amount to more than a recitation of the words “apply it” (or an equivalent) or are more than mere instructions to implement an abstract idea or other exception on a computer. As explained by the Supreme Court, in order to transform a judicial exception into a patent-eligible application, the additional element or combination of elements must do “more than simply stat[e] the [judicial exception] while adding the words ‘apply it’”. *Alice Corp. v. CLS Bank*, 573 U.S. ___, 134 S. Ct. 2347, 2357, 110 USPQ2d 1976, 1982-83 (2014) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72, 101 USPQ2d 1961, 1965). Thus, for example, claims that amount to nothing more than an instruction to apply the abstract idea using a generic computer do not render an abstract idea eligible. *Alice Corp.*, 134 S. Ct. at 2358, 110 USPQ2d at 1983. *See also* 134 S. Ct. at 2389, 110 USPQ2d at 1984 (warning against a § 101 analysis that turns on “the draftsman’s art”)

In *Alice Corp.*, the claim recited the concept of intermediated settlement as performed by a generic computer. The Court found that the recitation of the computer in the claim amounted to mere instructions to apply the abstract idea on a generic computer. 134 S. Ct. at 2359-60, 110 USPQ2d at 1984. The Supreme Court also discussed this concept in an earlier case, *Gottschalk v. Benson*, 409 U.S. 63, 70, 175 USPQ 673, 676 (1972), where the claim recited a process for converting binary-coded decimal (BCD) numerals into pure binary numbers. The Court found that the claimed process had no substantial practical application except in connection with a computer. *Benson*, 409 U.S. at 71-72, 175 USPQ at 676. The claim simply stated a judicial exception (e.g., law of nature or abstract idea) while effectively adding words that “apply it” in a computer. *Id.*

MPEP § 2106.05(f) (“Mere Instructions To Apply An Exception”).

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we conclude it lacks an inventive concept that transforms the abstract idea of

the mental process of searching for a patient in a database into a patent-eligible application of that abstract idea.

The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader*, 811 F.3d at 1325. 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*, 881 F.3d at 1368.

As evidence of the conventional nature of the recited “patient search user interface . . . patient database, . . . [and] a common name data store” in media claim 1; “a patient search user interface . . . patient database . . . a common name data store, . . . [and] one or more computing devices” in method claim 11; and “a patient database . . . common name data store . . . one or more processors . . . one or more computer storage media storing instructions . . . [and] a patient search user interface” in system claim 16, the Specification discloses:

[0029] With continued reference to FIG. 1, the exemplary medical information computing system environment 100 includes a general purpose computing device in the form of a server 102. Components of the server 102 may include, without limitation, a processing unit, internal system memory, and a suitable system bus for coupling various system components, including database cluster 104, with the server 102. The system bus may be any of several types of bus structures, including a memory bus or memory controller, a peripheral bus, and a local bus, using any of a variety of bus architectures.

[0030] The server 102 typically includes, or has access to, a variety of computer readable media, for instance, database cluster 104. Computer readable media can be any available media that may be accessed by server 102, and includes volatile and nonvolatile media, as well as removable and non-

removable media. By way of example, and not limitation, computer readable media may include computer storage media and communication media. Computer storage media may include, without limitation, volatile and nonvolatile media, as well as removable and nonremovable media implemented in any method or technology for storage of information, such as computer readable instructions, data structures, program modules, or other data. In this regard, computer storage media may include, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVDs) or other optical disk storage, magnetic cassettes, magnetic tape, magnetic disk storage, or other magnetic storage device, or any other medium which can be used to store the desired information and which may be accessed by the server 102.

Spec. ¶¶ 29–30.

Thus, because the Specification describes the additional elements in general terms, without describing the particulars, we conclude the claim limitations may be broadly but reasonably construed as reciting conventional computer components and techniques, particularly in light of Appellants’ Specification, as quoted above.²²

With respect to the *Step 2B* analysis, we conclude, similar to *Alice*, the recitation of a storage media that includes instructions to carry out operations using “a patient search user interface . . . a patient database . . . [and] a common name data store” (claim 1) as argued by Appellants; and similarly for independent method claim 11 (“a patient search user interface . . . a patient database . . . a common name data store . . . [and] one or more

²² Claim terms are to be given their broadest reasonable interpretation, as understood by those of ordinary skill in the art and taking into account whatever enlightenment may be had from the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

computing devices”) and independent system claim 16 (“a patient database . . . a common name data store . . . one or more processors . . . one or more computer storage media storing instructions . . . [and] a patient search user interface”), is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention under *Step 2B*. See *Alice*, 573 U.S. at 221 (“[C]laims, which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.”).

We conclude the claims fail the *Step 2B* analysis because claim 1, in essence, merely recites various computer-based elements along with no more than mere instructions to implement the identified abstract idea using the computer-based elements.

Therefore, because the claims fail under both the *Step 2A* and *Step 2B* analyses, we sustain the Examiner’s § 101 rejection of independent claim 1, and grouped claims 2–20, not argued separately, and which fall therewith. See *Claim Grouping, supra*.

2. § 103 Rejection R2 of Claims 1, 2, and 4–20

Issue 2

Appellants argue (App. Br. 16–18) the Examiner’s rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over the combination of Brewer and Mishkanian 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 storage media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform operations” that

include, *inter alia*, the steps of “determining whether the user input corresponds with a common name in the common name data store,” and, conditionally, “if the user input corresponds with a common name, providing a notice for presentation that indicates the user input corresponds with the common name,” as recited in claim 1?

Analysis

Appellants allege the cited prior art combination does not teach or suggest checking for common names using a common name database, and providing a notification if a common name is found. Specifically:

Brewer doesn't check for common names using a common name database and provide a notification if a common name is found. More broadly, Brewer doesn't even teach or suggest having two separately searchable databases and searching one database before searching the other. Instead, Brewer just checks for stop words.

Mishkanian fails to cure the deficiencies of Brewer. Mishkanian discusses blocking keywords from use in searches using a blocked keyword list. If a keyword in a search query is on the blocked keyword list, it cannot be used to perform a search. The blocked keyword list is not a common name database as in claim 1. The blocked keyword list does not contain any common names. Mishkanian is not concerned with the common name problem addressed by the claimed invention. Mishkanian also does not provide a notification that indicates the user input includes a common name as in claim 1. Instead, Mishkanian simply blocks keywords from being used without any notification.

App. Br. 17.

In response, the Examiner finds:

[T]he Examiner asserts that Brewer clearly teaches to having two separately searchable databases and

searching one database before the other. Brewer teaches to searching a refinement database as a user enters a search query into an interface (para. 38, 46). The stored information containing refinement information in Brewer is considered by the Examiner as analogous to the common name data store claimed by Appellant. Brewer further teaches to querying a separate data store after the refinement data store has been queried (Fig. 4; para. 56). The Examiner also asserts that Mishkanian does not teach away from the invention of claim 1 and that a combination of Brewer and Mishkanian was used to teach the limitations of claim 1. Mishkanian was used to teach the limitation that a notice of presentation is provided to a user when the user input corresponds with existing data.

Ans. 7.

We disagree with the Examiner's finding that Mishkanian discloses two databases used in the manner recited in claim 1, and we particularly disagree with the Examiner that the cited prior art combination teaches or suggests the conditional limitation "if the user input corresponds with a common name, providing a notice that indicates the user input corresponds with the common name," as recited in claim 1.

We disagree with the Examiner because Mishkanian does not cure the deficient teaching in Brewer of the disputed conditional limitation, i.e., where the Examiner specifically found: "Brewer does not expressly teach if the user input corresponds with a common name, providing a notice for presentation that indicates the user input corresponds with the common name." Final Act. 7.

In our review of the reference, we find Mishkanian does not teach or suggest the conditional limitation of "if the user input corresponds with a

common name, providing a notice that indicates the user input corresponds with the common name.” Instead, Mishkanian teaches searching *blocked keywords* against current keywords, removing blocked keywords from the participating websites, and when no keywords are left, canceling the search and issuing a webpage with an error message. *Id.* (citing Mishkanian ¶ 95).

For essentially the same reasons argued by Appellants (*id.*), we reverse the Examiner’s rejection of independent claim 1, and also the rejection of independent claims 11 and 16, which recite the disputed limitations in commensurate form. For the same reasons, we also reverse the rejections of all claims that depend therefrom.²³

Therefore, based upon the findings above, on this record, we are persuaded of at least one error in the Examiner’s reliance on the cited prior art combination to teach or suggest the disputed limitations such that we do not sustain the Examiner’s obviousness rejection of independent claim 1, and grouped claims 2 and 4–20 which stand therewith. *See Claim Grouping, supra.*

3. § 103 Rejection R3 of Claim 3

Issue 3

In light of our reversal of obviousness Rejection R2 of independent claim 1, *supra*, we also reverse obviousness Rejection R3 of claim 3, which

²³ Because we agree with at least one of the dispositive arguments advanced by Appellant, we need not reach the merits of Appellants’ other arguments. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (finding an administrative agency is at liberty to reach a decision based on “a single dispositive issue”).

depends from claim 1. On this record, the Examiner has not shown how the additionally cited tertiary Skocic reference overcomes the aforementioned deficiencies with the combination of Brewer and Mishkanian, as discussed above regarding claim 1.

CONCLUSIONS

(1) Under our Revised Guidance, governed by relevant case law, we conclude claims 1–20 are patent-ineligible under 35 U.S.C. § 101, and we sustain Rejection R1.

(2) The Examiner erred with respect to obviousness Rejection R2 and R3 of claims 1–20 under 35 U.S.C. § 103(a) over the cited prior art combinations of record, and we do not sustain the rejections.

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision. *See* 37 C.F.R. § 41.50(a)(1).

DECISION

We affirm the Examiner's decision rejecting claims 1–20.

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