



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/561,005	12/04/2014	Howard D. Simms JR.	115.0195USU1 (13-0398US01)	5548
62058	7590	03/03/2020	EXAMINER	
PAULY, DEVRIES SMITH & DEFFNER, L.L.C. Suite 900 121 South 8th Street MINNEAPOLIS, MN 55402-2481			PAULSON, SHEETAL R.	
			ART UNIT	PAPER NUMBER
			3626	
			NOTIFICATION DATE	DELIVERY MODE
			03/03/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docteting@pdsdlaw.com
kds@pdsdlaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HOWARD D. SIMMS JR., VIKTORIA A. AVERINA,
and MAYA BHAT

Appeal 2019-004227
Application 14/561,005
Technology Center 3600

Before JOHN A. JEFFERY, ERIC S. FRAHM, and BETH Z. SHAW,
Administrative Patent Judges.

SHAW, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–2, 6–12, 14–15, and 17–22. *See* Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Cardiac Pacemakers, Inc. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to a multi-patient data visualization system and method. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A system for displaying patient data, comprising:
 - a processing device; and
 - a display and user input device interfaced to the processing device;
 - wherein the processing device is configured to:
 - receive patient data from an external data source, wherein the patient data includes a list of patients and a plurality of clinical variables associated with each patient;
 - receive a selection of a user-selected clinical variable via the user input device, wherein the user-selected clinical variable is selected from among the plurality of clinical variables;
 - display an axis representing values for the user-selected clinical variable;
 - display, in spatial relation to the axis, a representation of the value of the user selected clinical variable associated with each patient, wherein the representation of the value of the user-selected clinical variable associated with each patient is a scatter plot of data points in a space defined by at least two axes, with each data point representing a patient and having coordinates that correspond to the value of the user selected clinical variable associated with that patient;
 - display tracks for one or more data points that visually represent how the value of the user-selected clinical variable has changed for the corresponding patient, wherein the track extends from a previous value to a subsequent value;
 - receive, based on the spatial relation of the values to the axis, via the user input device, a selection of a range of values for the user-selected clinical variable, wherein a subset of patients have associated clinical variables falling within the selected range; and

in response to receiving the selected range, identify the subset of patients as a cohort and display detailed data for each of the patients in the cohort.

REJECTIONS

The Examiner rejected claims 1, 2, 6–12, 14, 15, and 17–22 under 35 U.S.C. § 101. Ans. 3.

The Examiner withdrew the rejection of claims 14, 15 and 17–22 under 35 U.S.C. § 103 in the Answer. Ans. 7.

OPINION

Section 101

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g., Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court’s two-part framework, described in *Mayo* and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4

in petitioners' application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); 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 Court held that “a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the 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.”).

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). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

USPTO Section 101 Guidance

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”).² “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” *Id.* at 51; *see also* October 2019 Update at 1.

Under the Revised Guidance and the October 2019 Update, 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

² In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the “October 2019 Update”) (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

organizing human activity such as a fundamental economic practice, or mental processes) (“Step 2A, Prong One”); and (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) (“Step 2A, Prong Two”).³

Revised Guidance, 84 Fed. Reg. at 52–55.

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

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

Revised Guidance, 84 Fed. Reg. at 52–56. .

Abstract Idea

For the following reasons, we conclude the claims recite a mental process, which is one of certain methods of organizing human activity identified in the Revised Guidance, and thus, an abstract idea. *See* Revised

³ This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* Revised Guidance - §III(A)(2), 84 Fed. Reg. 54–55.

Guidance, 84 Fed. Reg. at 52, 53 (listing mental process” as one of the “enumerated groupings of abstract ideas”).

Appellant addresses the claims as a group, and we select claim 1 as representative. *See* 37 CFR § 41.37(c)(iv). Claim 1 is directed to an abstract idea because it is directed to a mental process, which is one of certain methods of organizing human activity, as discussed below. The steps of claim 1 recite steps of receiving “patient data from an external data source, wherein the patient data includes a list of patients and a plurality of clinical variables associated with each patient,” receiving “a selection of a user-selected clinical variable . . . wherein the user-selected clinical variable is selected from among the plurality of clinical variables,” displaying certain representations and data points, and receiving “a selection of a range of values for the user-selected clinical variable, wherein a subset of patients have associated clinical variables falling within the selected range,” and “in response to receiving the selected range, identify[ing] the subset of patients as a cohort,” and displaying detailed data for each of the patients in the cohort.

Under Supreme Court precedent, claims directed purely to an abstract idea are patent ineligible. As set forth in the Revised Guidance, which extracts and synthesizes key concepts identified by the courts, abstract ideas include (1) mathematical concepts, (2) certain methods of organizing human activity, and (3) mental processes.

Claim 1 recites an abstract idea grouping listed in the 2019 Eligibility Guidance: “mental processes.” *See* Revised Guidance, 84 Fed. Reg. at 52, 53 (listing “[m]ental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion)” as one of the

“enumerated groupings of abstract ideas” (footnote omitted)). The guidance explains that “mental processes” include acts that people can perform in their minds or using pen and paper, even if the claim recites that a generic computer component performs the acts. *See* Revised Guidance, 84 Fed. Reg. at 52 n.14 (“If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind.”); *see also Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) (“[W]ith the exception of generic computer-implemented steps, there is nothing in the claims themselves that foreclose them from being performed by a human, mentally or with pen and paper.”), *quoted in* Revised Guidance, 84 Fed. Reg. at 52 n.14; *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324 (Fed. Cir. 2016) (holding that computer-implemented method for “anonymous loan shopping” was an abstract idea because it could be “performed by humans without a computer”); *quoted in* 2019 Eligibility Guidance, 84 Fed. Reg. at 52 n.14.

Claim 1 is similar to claims that courts have concluded recite a mental process. *See, e.g., Univ. of Fla. Res. Found. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (2019) (method and system for integrating physiologic data from at least one bedside machine ineligible; “On its face, the ’251 patent seeks to automate ‘pen and paper methodologies’ to conserve human resources and minimize errors.”). Like the claims in the patent in *University of Florida Research Foundation*, the method recited in claim 1 executes steps that people can perform in their minds or by using pen and paper.

A person can perform the above-quoted steps of claim 1 by using his or her mind (or pen and paper) in the claimed manner. For example, a person can “receive patient data from an external data source, wherein the patient data includes a list of patients and a plurality of clinical variables associated with each patient,” using pen and paper. A person can “receive a selection of a user-selected clinical variable . . . wherein the user-selected clinical variable is selected from among the plurality of clinical variables,” via pen and paper. A person can represent “an exist representing values for the user-selected clinical variable” using pen and paper. A person can represent, via pen and paper, “in spatial relation to the axis, a representation of the value of the user-selected clinical variable associated with each patient, wherein the representation of the value of the user-selected clinical variable associated with each patient is a scatter plot of data points in a space defined by at least two axes, with each data point representing a patient and having coordinates that correspond to the value of the user-selected clinical variable associated with that patient.” A person can represent, via pen and paper, “tracks for one or more data points that visually represent how the value of the user-selected clinical variable has changed for the corresponding patient, wherein the track extends from a previous value to a subsequent value.” A person can “receive a selection of a range of values for the user-selected clinical variable, wherein a subset of patients have associated clinical variables falling within the selected range,” using pen and paper. A person can, “in response to receiving the selected range, identify the subset of patients as a cohort,” using his or her mind or pen and paper. And, a person can, using pen and paper, present “detailed data for each of the patients in the cohort.” Accordingly, claim 1 recites a mental process, and thus an abstract idea.

In accordance with the Revised Guidance, and looking to MPEP §§ 2106.05(a)–(c) and (e)–(h), we determine that the additional elements of claim 1, both individually and as an ordered combination, do not integrate a judicial exception, in this case the abstract idea of a mental process, into a practical application. Claim 1 is directed to the implementation of the abstract idea on generic computer servers and devices. The claimed “processing device,” “display device,” and “user input device” are recited at a high level of generality and merely invoked as tools to perform the process of claim 1. Simply implementing the abstract idea on a generic computer is not a practical application of the abstract idea. *See, e.g.*, Figs. 1A-1B; Spec. p. 2 l. 16 – p. 3 l. 11 (“The processing device may be, for example, a mobile device (e.g., tablet, smart phone, portable computer) or other type of computer (e.g., a medical device programmer) that communicates wirelessly or via direct connection with a data source 150.”).

Appellant also argues that the claims are eligible as increasing the efficiency of computers, analogous to the claims *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356, 1363 (Fed. Cir. 2018). Appeal Br. at 10–11. In *Core Wireless*, the claimed invention specified particular technological functionality in the form of “an application summary that can be reached directly from [a] menu” such that the summary window “is displayed while the one or more applications are in an un-launched state.” *Core Wireless*, 880 F.3d at 1362–63. The court in *Data Engine Technologies* characterized the claimed invention in *Core Wireless* as not “merely directed to the abstract idea of indexing information,” but instead providing “an improved user interface for electronic devices” such that the claim was “directed to ‘an improvement in the functioning of

computers.” *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1009 (Fed. Cir. 2018).

In *Data Engine Technologies*, the court addressed a set of claims directed to a specific method of navigating three-dimensional spreadsheets through the use of tabs. *Id.* at 1008–09. The inventive tabs permitted easy access to spreadsheet workspaces that previously required a user to “search through complex menu systems” and “memorize frequently needed commands.” *Id.* at 1008. Certain claims “require[d] at least one user-settable identifying character to label the notebook tab and describes navigating through the various spreadsheet pages . . . that are identified by their tabs.” *Id.* The court found the claims to require a “specific interface and implementation for navigating complex three-dimensional spreadsheets using techniques unique to computers.” *Id.* at 1009. The court distinguished the claimed invention from one that would merely recite “a generic method of labeling and organizing” spreadsheet data. *Id.* at 1008–09.

The court in *Data Engine* further addressed claims that recited “associating each of the cell matrices with a user-settable page identifier” without “the specific implementation of a notebook tab interface.” *Id.* at 1012. The court held that these were claims not limited to the “specific technical solution and improvement in electronic spreadsheet functionality” set forth in the eligible tab claims and were, thus, found ineligible. *Id.*

Claim 1 in the present application does not recite an interface such as was found to provide eligibility in *Core Wireless*. The claim recites “a scatter plot of data points in a space defined by at least two axes,” as well as “tracks for one or more data points that visually represent how the value” of a variable has changed for the patient. Claim 1 does not set forth any

particular improvement of an interface itself, and is therefore more akin to the ineligible claims in *Data Engine* than to the eligible claims in *Core Wireless*.

To the extent that Appellant alleges improvement to computer efficiency (Appeal Br. 11), such alleged improvement is not to the technological implementation set forth in claim 1, but instead to the decision making that is part of the abstract idea (e.g., identifying a subset of patients). The claimed displaying of detailed data for each patient does not reduce the memory required, or improve the operation of a computer system. Even assuming, without deciding, that the claimed invention can identify a subset of patients faster than before, any speed increase comes from the capabilities of the generic computer components—not the recited process itself. *See FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (citing *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.”)); *see also Intellectual Ventures I LLC v. Erie Indemnity Co.*, 711 F. App’x 1012, 1017 (Fed. Cir. 2017) (unpublished) (“Though the claims purport to accelerate the process of finding errant files and to reduce error, we have held that speed and accuracy increases stemming from the ordinary capabilities of a general-purpose computer ‘do[] not materially alter the patent eligibility of the claimed subject matter.’”). Like the claims in *FairWarning*, the focus of claim 1 is not on an improvement in computer processors as tools, but on certain independently abstract ideas that use

generic computing components as tools. *See FairWarning*, 839 F.3d at 1095 (citations and quotation marks omitted).

Accordingly, the claim as a whole does not integrate the abstract idea into a practical application because the claim limitations do not impose any meaningful limits on practicing the abstract idea. Stated differently, the claims do not (1) improve the functioning of a computer or other technology, (2) are not applied with any particular machine (except for generic computer components), (3) do not effect a transformation of a particular article to a different state, and (4) are not applied in any meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim, as a whole, is more than a drafting effort designed to monopolize the exception. *See* MPEP §§ 2106.05(a)–(c), (e)–(h).

Inventive Concept

Because we determine that claim 1 is “directed to” an abstract idea, we next consider whether claim 1 recites an “inventive concept.” The Examiner determined that claim 1 does not recite an inventive concept because the additional elements in the claim do not amount to “significantly more” than an abstract idea. *See* Final Act. 4–5.

We agree with the Examiner’s determination in this regard. The additional elements recited in claim 1 include a “processing device,” “display device,” and “user input device.” The claim recites the “processing device,” “display device,” and “user input device” at a high level of generality, and the written description indicates that the elements are generic. *See, e.g.*, Figs. 1A-1B; Spec. p. 2 l. 16 – p. 3 l. 11 (“The processing device may be, for example, a mobile device (e.g., tablet, smart phone,

portable computer) or other type of computer (e.g., a medical device programmer) that communicates wirelessly or via direct connection with a data source 150.”).

Using generic computer components to perform abstract ideas does not provide the necessary inventive concept. *See Alice*, 573 U.S. at 223 (“[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”). Thus, these elements, taken individually or in combination, do not amount to “significantly more” than the abstract idea itself.

To the extent Appellant contends that the recited limitations, including those detailed above, add significantly more than the abstract idea to provide an inventive concept (*see* Appeal Br. 9–11), these limitations are not *additional* elements *beyond* the abstract idea, but rather are directed to the abstract idea as noted previously. *See* Revised Guidance, 84 Fed. Reg. at 56 (instructing that *additional* recited elements should be evaluated in *Alice/Mayo* step two to determine whether they (1) *add* specific limitations that are not well-understood, routine, and conventional in the field, or (2) simply *append* well-understood, routine, and conventional activities previously known to the industry (citing MPEP § 2106.05(d)).

Appellant contends various elements recited in the claim provide the necessary inventive concept. Appeal Br. 9–10. Appellant also argues that the Examiner must provide support for elements that are dismissed as “well-understood, routine, or conventional.” Appeal Br. 12–14. Appellant refers to the *Berkheimer* memorandum.⁴ *Id.* Yet, these elements form part of the

⁴ Memorandum on *Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (Berkheimer v.*

recited abstract ideas and thus are not “additional elements” that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78); *see also* Revised Guidance, 84 Fed. Reg. at 55 n.24 (“USPTO guidance uses the term ‘additional elements’ to refer to claim features, limitations, and/or steps that are recited in the claim *beyond the identified judicial exception.*” (Emphasis added)).

Rather, the recited “processing device,” “display device,” and “user input device” are the additional recited elements whose generic computing functionality is well-understood, routine, and conventional. *See Intellectual Ventures*, 792 F.3d at 1368 (noting that a recited user profile (i.e., a profile keyed to a user identity), database, and communication medium are generic computer elements); *Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (noting that components such as an “interface,” “network,” and “database” are generic computer components that do not satisfy the inventive concept requirement); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”). Accord *Ans. 14–17* (Concluding that the claims’ additional generic computer components are commercially available.); *see also* Spec. Figs. 1A-1B; Spec. p. 2 l. 16 – p. 3 l. 11 (“The processing device may be, for example, a mobile device (e.g., tablet, smart phone, portable computer) or other type of computer (e.g., a

HP, Inc.) (Apr. 19, 2018) available at:
<https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF>.

Appeal 2019-004227
Application 14/561,005

medical device programmer) that communicates wirelessly or via direct connection with a data source 150.”).

Accordingly, we sustain the Examiner’s rejection of the pending claims under 35 U.S.C. § 101 as directed to patent-ineligible subject matter.

CONCLUSION

The Examiner’s rejection is affirmed.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 6–12, 14, 15, 17–22	101	Eligibility	1, 2, 6–12, 14, 15, 17–22	

TIME PERIOD FOR RESPONSE

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

AFFIRMED