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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/482,635	05/29/2012	Jeffrey H. Babylon	END920120023US1	9254
76933	7590	06/03/2019	EXAMINER	
IBM (END-KLS) c/o Kennedy Lenart Spraggins LLP 301 Congress Avenue Suite 1350 AUSTIN, TX 78701			ANDERSON, FOLASHADE	
			ART UNIT	PAPER NUMBER
			3623	
			NOTIFICATION DATE	DELIVERY MODE
			06/03/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEFFREY H. BABYLON, JAMES D. JAMISON III,
and MICHAEL J. MUSUMECI

Appeal 2018-004039
Application 13/482,635
Technology Center 3600

Before MAHSHID D. SAADAT, JOHNNY A. KUMAR, and
JOYCE CRAIG, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1, 2, 4–8, 10–14, 16–18, 21, and 22.² We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is International Business Machines Corporation (“IBM”). Br. 2.

² Claims 3, 9, 15, 19, and 20 have been canceled previously.

STATEMENT OF CASE

Introduction

Appellants' Specification describes "methods, apparatus, and products for analyzing engineering requirements." Spec. 1:8–9.

Exemplary Claim

Exemplary claim 1 under appeal reads as follows;

1. A computer-implemented method of analyzing engineering requirements, the method comprising:

identifying, by an engineering requirements analysis component that includes automated computed machinery, a plurality of analysis criteria areas for an engineering project, including identifying the plurality of analysis criteria areas based on a project type for the engineering project; and wherein criteria areas based on project types for engineering projects differ from project type to project type;

identifying, by the engineering requirements analysis component, a plurality of analysis criteria for each analysis criteria area;

setting, by the engineering requirements analysis component, a criteria weight for each analysis criterion;

receiving, by the engineering requirements analysis component, a criterion score for each analysis criterion, at least one criterion score based at least in part on a performance metric, including calculating the performance metric for a software component based at least in part on information resulting from execution by a processor of a predetermined number of iterations of the software component;

determining, by the engineering requirements analysis component, whether a criterion score for a particular analysis criterion indicates the particular analysis is less than a threshold; wherein the threshold is set at a number that corresponds to the particular analysis criterion being less than one hundred percent complete and more than zero percent

complete; wherein the particular analysis criterion is one of user documentation development and process model development;

responsive to determining that the criterion score for the particular analysis is less than the threshold, sending, by an engineering requirements notification component, a notification to one or more registered interested devices; and

calculating, by the engineering requirements analysis component, a project score for the engineering project in dependence upon the criterion score for each analysis criterion and the criteria weight for each analysis criterion.

Rejections on Appeal

Claims 1, 2, 4–8, 10–14, 16–18, 21, and 22 stand rejected under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. *See* Final Act. 4–6.

Claims 1, 2, 4–8, 10–14, 16–18, and 22 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chen (US 8,707,246 B2; iss. Apr. 22, 2014), Brady (US 2009/0113427 A1; Pub. Apr. 30, 2009), Myers (US 2013/0019028 A1; pub. Jan. 17, 2013), and Gangemi (US 2012/0203526 A1; Pub. Aug. 9, 2012). *See* Final Act. 6–13.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Chen, Brady, Myers, Gangemi, and Blackwell (US 2012/0210428 A1; Pub. Aug. 16, 2012). *See* Final Act. 13–14.

ANALYSIS

REJECTION UNDER 35 U.S.C. § 101

Appellants argue the pending claims as a group. Br. 8–13. As permitted by 37 C.F.R. § 41.37, we decide the appeal based on claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner determines that the claims are “directed towards the abstract idea of managing the performance of software applications,” which are “directed towards a mathematical relationship tied to data recognition and storage using categories to organize, store and transmit information.”

Final Act. 4–5. The Examiner adds that:

The limitations which are directed to the abstract idea are the recitations of “identifying”, “setting”, and “calculating” by managing the iterative software data passed via the system. The dependent method claims are further directed to the abstract idea as they include, for instance, information/data regarding the specific software components, and, thus, do not amount to significantly more than the abstract idea itself. The receiving steps are just data gathering steps that do not amount to significantly more than the abstract idea. The Examiner notes that the instantly pending claims limitations isn’t solving a problem rooted in the realm of computing technology. Instead, the problem being solved is directed to managing the performance of software applications using computer technology. Even though the Applicants solution to the problem is rooted in computer technology, the underlying problem is not. As a result, the argument is not persuasive. The claims do not purport to improve the functioning of the computer itself, or to improve any other technology or technical field.

Final Act. 5. The Examiner further finds that the recited “[u]se of an unspecified, generic computer does not transform an abstract idea into a patent-eligible invention” and therefore “does not amount to significantly more than the abstract idea itself.” *Id.* Based on these determinations, the Examiner concludes that the claims are ineligible under § 101.

Appellants argue that, contrary to the Examiner’s broad characterization of the recited features of claim 1, the claimed invention is not directed to an abstract idea. Br. 9. According to Appellants, the claims

are directed to “improving the functioning of an engineering requirements analysis component of a computer that analyzes engineering requirements” by reciting “operations by the engineering requirements analysis component to improve how the engineering requirements analysis component analysis requirements.” Br. 9. Appellants also argue, even if the claims are directed to a judicial exception, they recite elements that are “significantly more than the judicial exception.” Br. 11. More specifically, Appellants assert “the claims solve a problem (providing a user interface that provides real time feedback regarding the health of a project and providing actionable events for the user related to defined requirements quality activities) with a solution that is necessarily rooted in computer technology.” Br. 12.

The Examiner responds by explaining that “the claimed invention does NOT improve the capabilities of the computer, but rather calls upon the computer as a tool” and finds support in Appellants’ Specification for how generic components are disclosed for performing the recited functions. Ans. 12–13 (citing Spec. 13:1–5). Moreover, the Examiner finds “improving requirements engineering or otherwise is a business problem rather than a technical one,” which is performed by a computer-based system covering activities such as discovering, documenting and maintaining a set of requirements. Ans. 14 (citing Spec. 1:13–20).

Principles of Law

Section 101 of the Patent Act provides that “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof” is patent eligible. 35 U.S.C. § 101. But the Supreme Court has long recognized an implicit exception to this section:

“Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). To determine whether a claim falls within one of these excluded categories, the Court has set out a two-part framework. The framework requires us first to consider whether the claim is “directed to one of those patent-ineligible concepts.” *Alice*, 573 U.S. at 217. If so, we then examine “the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78, 79 (2012)). That is, we examine the claims for an “inventive concept,” “an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice*, 573 U.S. at 217–18 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

In January 2019, the USPTO published revised guidance on the application of § 101. See *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”). Under that 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 activities such as a fundamental economic practice, or mental processes); and

(2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)). Only if a claim (1) recites a judicial exception, and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See Guidance, 84 Fed. Reg. at 56.

Discussion

Abstract Idea

Claim 1 recites a method that includes “identifying, . . . , a plurality of analysis criteria areas for an engineering project” and “identifying, . . . , a plurality of analysis criteria for each of analysis criteria area.” The claim further recites “setting, . . . , a criteria weight for each analysis criterion” and “receiving, . . . , a criterion score for each analysis criterion.” Responsive to “determining, . . . , whether a criterion score for a particular analysis criterion indicates the particular analysis is less than a threshold,” “a notification to one or more registered interested devices” is sent and “a project score for the engineering project in dependence upon the criterion score for each analysis criterion and the criteria weight for each analysis criterion” is calculated.

The Examiner does not determine, nor do we, that the claims recite “mathematical concepts.” Although the Examiner does not state his conclusion in these terms, it appears that, based on the authority cited by the Examiner (*FairWarning IP, LLC. v. Iatric System, Inc.* 839 F.3d 1089 (Fed. Cir. 2016) and *Enfish, LLC v. Microsoft Corp.* 822 F.3d 1327 (Fed. Cir. 2016)), the Examiner concludes the claims are directed to an abstract idea in the form of mental processes. *Cf. FairWarning IP, LLC. v. Iatric System, Inc.* 839 F.3d 1089 (Fed. Cir. 2016) (noting that the patent was drawn to an abstract idea, the concept of collects information, analyzes the information according to one of several rules to make a determination and provide notification based on that determination).

The Examiner also determines that:

With respect to independent claim 1, the claimed limitations “identifying . . . a plurality of analysis criteria areas for an engineering project . . . identifying . . . a plurality of analysis criteria for each analysis criteria area . . . receiving . . . a criterion score for each analysis criterion” are the equivalent of FairWarning’s collecting information. The claimed limitations of “determining . . . whether a criterion score for a particular analysis criterion indicates the particular analysis is less than a threshold . . . calculating . . . a project score for the engineering project” are the equivalent of FairWarning’s analyzing the information according to one of several rules to make a determination. The claimed limitation of “responsive to determining that the criterion score for the particular analysis is less than the threshold, sending . . . a notification to one or more registered interested devices” are the equivalent of FairWarning’s providing notification based on that determination.

Ans. 11–12.

We are not persuaded of error in the Examiner’s determination that the claims recite abstract ideas comprising steps that could be performed as mental processes and/or represent mathematical concepts, one of the abstract idea groupings listed in the 2019 Eligibility Guidance. *See* 2019 Eligibility Guidance, 84 Fed. Reg. Here, apart from the “engineering requirements analysis component” and the “engineering requirements notification component” in claim 1 and the processor, memory and the computer program instructions configured to cause the apparatus of claim 7 to perform the recited functions, every limitation of claims 1 and 7 recite an abstract idea, namely mathematical concepts, or a mental process.³

For example, the “identifying” limitations encompass a user having reviewed a plurality of analysis criteria areas their analysis criteria, and thus is susceptible of being performed as a mental process. Similarly, the “setting, . . . , a criteria weight” and “receiving, . . . , a criterion score” for each analysis criterion, as well as comparing the score with a threshold, also encompass a mental process in the form of “observation, evaluation, judgement, or opinion.” Additionally, “determining, . . . , whether a criterion score for a particular analysis criterion indicates the particular analysis is less than a threshold” and “calculating, . . . , a project score” involve mathematical relationships and calculations. These identifying, setting a criteria weight, and receiving score steps required for analysing of engineering requirements for engineering projects do not require a machine, let alone a particular machine, to implement and therefore fit squarely within

³ Mental processes are concepts performed in the human mind including an observation, evaluation, judgment, or opinion. Mathematical concepts include mathematical relationships, formulas/equations, and/or calculations. *See* 2019 Eligibility Guidance, 84 Fed. Reg. at 52.

the mathematical concepts and mental processes categories of the agency's guidelines. *See* 2019 Eligibility Guidance, 84 Fed. Reg. at 52. In other words, apart from the processor, memory and the computer code configured to cause the apparatus to perform the recited functions, claim 1 recites an abstract idea, namely mental processes and mathematical concepts.

Practical Application

Although claim 1 recites an abstract idea based on these mathematical concepts and mental processes, we nevertheless must still determine whether the abstract idea is integrated into a practical application, namely whether the claim applies, relies on, or uses the abstract idea in a manner that imposes a meaningful limit on the abstract idea, such that the claim is more than a drafting effort designed to monopolize the abstract idea. *See* 2019 Eligibility Guidance, 84 Fed. Reg. at 54–55. We therefore (1) identify whether there are any additional recited elements beyond the abstract idea, and (2) evaluate those elements individually and collectively to determine whether they integrate the exception into a practical application. *See id.*

Here, an engineering requirements analysis component and an engineering requirements notification component, as recited in claim 1, and the processor, memory and the computer program instructions configured to cause the apparatus to perform the recited functions of those analysis and notification components, as recited in claims 7 and 13, are the only recited elements beyond the abstract idea, but these additional elements do not integrate the abstract idea into a practical application when reading claim 1 as a whole. In another words, the claimed invention here merely uses generic computing components to identify a criteria area, a score, and a criterion weight related to an engineering project and to provide a

notification when the score is above a threshold—a generic computer implementation that is directed to mathematical concepts and mental processes. Therefore, we are not persuaded that the claimed invention improves the computer or its components’ functionality or efficiency, or otherwise changes the way those devices function.⁴

Also, contrary to Appellants’ argument (Br. 10), such computer implementation fails to improve the functionality of the underlying computer technology as was the case in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016). *See also McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (determining whether the claims “focus on a specific means or method that improves the relevant technology” or are “directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.”)

Appellants’ Specification also discloses that the recited engineering requirements analysis component, engineering requirements notification component, as recited in claim 1, encompass generic components such as a general-purpose computer to implementing the recited functions. *See, e.g.*,

⁴ Although the steps or functions recited in Appellants’ claims may be performed faster or more efficiently with the recited “computer-implemented method” of independent claim 1, or the recited “processor” and “memory” of claim 7, or the recited “computer readable medium” and “computer program instructions” of claim 13, we find the resultant speed increase comes from a “general-purpose computer, rather than from the patented method itself,” and does “not materially alter the patent eligibility of the claimed [invention].” *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (citation omitted); *see also Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1279 (Fed. Cir. 2012) (“Using a computer to accelerate an ineligible mental process does not make that process patent-eligible.”).

Spec. 3:6–19, 18:4–14 (“These computer program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus . . .”). Simply programming a general-purpose computer to perform abstract ideas does not integrate those ideas into a practical application. *See* 2019 Eligibility Guidance, 84 Fed. Reg. at 55 (identifying “merely includ[ing] instructions to implement an abstract idea on a computer” as an example of when an abstract idea has not been integrated into a practical application).

Based on the analysis above, the claims do not (1) improve the functioning of a computer or other technology, (2) are not applied with any particular machine (except for a generic computer), (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). Thus, the claims do not integrate the judicial exception into a practical application.

Inventive Concept

Because we determine claim 1 is “directed to” an abstract idea, we consider whether claim 1 recites an “inventive concept.” The Examiner determined 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. 5–6, Ans. 4–5, 16.

We agree. The additional elements recited in the claim include the “engineering requirements analysis component” and “engineering requirements notification component,” as recited in claim 1. The claim

recites these elements at a high level of generality, and the written description indicates that these elements are generic computer components. *See, e.g.*, Spec. 3:6–19, 7:6–21, and 18:4–14. 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 together, do not amount to “significantly more” than the abstract ideas themselves.

Appellants contend various elements recited in the claims provide the necessary “inventive concept” by solving the specific problem of “providing a user interface that provides real time feedback regarding the health of a project and providing actionable events for the user related to defined requirements quality activities” by performing “unconventional steps that confine the abstract idea (e.g., ‘managing the performance of software applications directed towards a mathematical relationship tied to data recognition and storage using categories to organize, store and transmit information’) to a particular useful application.” Br. 12.

However, these elements form parts of the 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* 2019 Eligibility 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)). Moreover, Appellants’ arguments are conclusory and unsupported by persuasive evidence and

technical reasoning. As a result, considering claim 1 as a whole, we agree with the Examiner and determine that the additional elements recited in the claim do not provide “a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field.” 2019 Eligibility Guidance, 84 Fed. Reg. at 56. Rather, these elements “simply append[] well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality.” 2019 Eligibility Guidance, 84 Fed. Reg. at 56. Accordingly, we agree with the Examiner that claim 1 does not have an inventive concept.

Conclusion

For at least the above reasons, we agree with the Examiner that claim 1 is “directed to” an abstract idea and does not include additional elements that integrate the abstract idea into a practical application, nor recite an “inventive concept.” Accordingly, we sustain the Examiner’s rejection of claim 1, other independent claims 7, and 13 which recite a generic “processor,” “memory” and “computer program instructions configured to cause the apparatus to perform” the recited functions, as well as the remaining claims which fail to include additional elements that add significantly more to the abstract idea, under 35 U.S.C. § 101.

REJECTIONS UNDER 35 U.S.C. § 103

In rejecting independent claims 1, 7, and 13, the Examiner finds Chen discloses a system and method of analyzing engineering requirements including the recited “identifying and “sending” steps of the claims, and further relies on Brady as disclosing the “setting” and “calculating” steps, on

Myers as disclosing the “determining” step, and on Gangemi as disclosing performance metrics calculation for software components. Final Act. 7–10. The Examiner further finds the combination would have been obvious to one of ordinary skill in the art because Brady’s program management effectiveness and Myers’s workflow system, in combination with Gangemi’s software management would improve the monitoring the performance of applications in Chen. *See* Final Act. 8–10.

Appellants contend the Examiner’s rejection is in error because characterizing the system for managing content creation of Myers as the recited “determining, by the engineering requirements analysis component, whether a criterion score for a particular analysis criterion violates a predetermined criterion score threshold” is inconsistent with the reference disclosure. Br. 14–15. Appellants argue “[t]he cited portions of Myers are generally concerned with a system for managing content creation, which includes dividing the development of the content into a plurality of phases.” Br. 15 (citing Myers ¶ 84). According to Appellants, paragraphs 85 and 89 of Myers describe how each phase “may have a desired begin and end date” and is determined to be incomplete if a deliverable within the phase is open. *Id.* Based on these assertions, Appellants argue that Myer’s determination of whether a phase is complete is “not based on a completion of user determination development and a completion of process model development.” Br. 16.

We are not persuaded by Appellants’ arguments that the Examiner erred. The Examiner correctly finds and we agree that Myers’ “deliverables or phases may be linked to the number of defects still open in the electronic content such that a deliverable or phase may not be completed until the

number of defects open falls below a specific threshold.” Ans. 17. The Examiner specifically finds the following:

In other examples, project managers may also link certain tasks, or “to-dos” to deliverables or phases such that those certain tasks must be completed prior to completion of a deliverable and/or phase. To-Do’s are individual instructions or tasks (e.g., “update links in document””, (Myers [0085]) and “In some examples, content may be built on-demand at the request of a contributor. In other examples, the publishing pipeline 1090 may monitor the content on the content management component 1060 and build the content automatically upon occurrence of an event related to the content. In some examples, these events can include content changes, new versions of the electronic content or a portion of the electronic content, changes to the state of one or more defects (e.g. certain defects being fixed), defect thresholds (e.g., the content is built after the total number of identified defects goes below a certain threshold)”. (Myers [0089])

Ans. 17–18. The Examiner also correctly concludes Myers’ “tasks (e.g. content built on-demand) are the same as the engineering requirements and the criterion being that the content be free from defects,” which results in counting the defect repairs (i.e., scores) and comparing the count to a known threshold. Ans. 18.

For the above-stated reasons, we are not persuaded by Appellants’ arguments that the Examiner erred in finding the disclosure of Myers in combination with Chen, Brady, and Gangemi teaches or suggests the disputed features of claims 1, 7, and 13. Therefore, we sustain the 35 U.S.C. § 103(a) rejection of independent claims 1, 7, and 13, and the remaining claims which are not argued separately with sufficient particularity. *See* Br. 16–17.

DECISION

We affirm the Examiner's rejection of claims 1, 2, 4–8, 10–14, 16–18, 21, and 22 under 35 U.S.C. § 101.

We affirm the Examiner's rejections of claims 1, 2, 4–8, 10–14, 16–18, 21, and 22 under 35 U.S.C. § 103.

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).

AFFIRMED