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HANLEY, FLIGHT & ZIMMERMAN, LLC
150 S. WACKER DRIVE
SUITE 2200
CHICAGO, IL 60606

EXAMINER

KUAN, JOHN CHUNYANG

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHAWN WILLIAM ANDERSON and TED DENNIS GRABAU

Appeal 2018-005292
Application 14/491,379
Technology Center 2800

Before KAREN M. HASTINGS, RAE LYNN P. GUEST, and
JEFFREY R. SNAY, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

Appellant¹ filed an appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 2–8, 17–20, and 22² under

¹ Appellant is the Applicant, Fisher Controls International LLC, which, according to the Appeal Brief, is the real party in interest. Appeal Brief (Appeal Br.) 2, filed December 12, 2017.

² Claims 2–8 and 17–22 remain pending after entry of the after-Final Amendments submitted on September 14, 2017 and October 5, 2017. *See* Advisory Action dated September 27, 2017 and Advisory Action dated October 16, 2017. Claim 21 has been withdrawn from consideration for being directed to a non-elected species. Final Office Action (Final Act.) 2, dated July 14, 2017.

35 U.S.C. § 101 as being directed to patent ineligible subject matter.³

We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The Inventors disclose that process control devices, such as rotary control valves, have a flow control member that engages a seal to close a fluid flow passageway. Spec. ¶ 3. According to the Inventors, when the flow control member engages or disengages the seal, the flow control member may subject the seal to stress and/or cause wear to the seal, which can lead to the seal failing during use or being replaced before its useful life has been consumed. *Id.* In view of this, the Inventors disclose an invention for estimating a condition of a seal of a rotary valve, such as estimating the condition of a seal based upon the torque of an actuator operating the flow control member of a rotary valve. *Id.* ¶ 13.

Independent claim 6 is illustrative and is reproduced below from the Claims Appendix of the Appeal Brief.

6. An apparatus, comprising:
 - a housing; and
 - a processor positioned within the housing, the processor to:
 - determine a seal wearing cycle of a flow control member of a rotary valve, the seal wearing cycle comprising movement of the flow control member between a first position in contact with a seal and a second position;
 - determine a torque of an actuator operating the flow control member for the seal wearing cycle;
 - estimate a condition of the seal based on the torque;
 - determine a rate of change of the torque; and
 - determine an estimated remaining number of seal

³ The obviousness-type double patenting rejection, the § 112 ¶ 2 rejection, and the § 103 rejections set forth in the Final Office Action (Final Act. 2–4, 9–18) have been withdrawn by the Examiner. Examiner’s Answer (Ans.) 2 dated February 23, 2018.

wearing cycles until the condition of the seal reaches a predetermined level based on the torque and the rate of change.

Claim 19 is similarly directed to a tangible machine readable storage medium having an executable instructions that perform the processor determinations and estimations of claim 6.

B. DISCUSSION

The first step in analyzing whether a claim is directed to patent-eligible subject matter is determining whether the claim is directed to one of the patent-ineligible concepts: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012)). If a claim is directed to a patent-ineligible concept, the second step in the analysis is to determine whether additional elements of the claim, “both individually and ‘as an ordered combination,’” “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1297, 1298). Thus, “[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.* at 2357.

Here, the Examiner finds that the claims are directed to an abstract idea because the claims are directed to using mathematical relations or algorithms to make the claimed determinations and estimates. Final Act. 4–9. The Examiner finds the additional recitations of the claims do not amount to significantly more than the abstract idea because they are recited at a high level of generality and are not focused on a technological improvement. *Id.* at 5–9.

Appellant contends that determining an estimated remaining number of seal wearing cycles is not an abstract idea that has been previously recognized by the courts and the claimed invention is not similar to any of the cases cited by the Examiner. Appeal Br. 12–24; Reply Br. 3–4, 6–12.

Appellant’s arguments are unpersuasive. The Supreme Court has stated:

a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer. In *Gottschalk v. Benson*, we noted: “It is said that the decision precludes a patent for any program servicing a computer. We do not so hold.” 409 U.S., at 71, 93 S.Ct., at 257. Similarly, in *Parker v. Flook*, we stated that “a process is not unpatentable simply because it contains a law of nature or a mathematical algorithm.” 437 U.S., at 590, 98 S. Ct., at 2526.

Diamond v. Diehr, 450 U.S. 175, 187 (1981).

However, the Supreme Court has also explained, “if a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.” *Parker v. Flook*, 437 U.S. 584, 595 (1978) (internal quotations omitted).

Here, claim 6 recites, among other things, a housing and a processor to determine a seal wearing cycle of a flow control member of a rotary valve by determining a torque of an actuator operating the flow control member and estimating a condition of the seal based on the torque and determining a rate of change of the torque, and estimating the remaining number of seal wearing cycles based on the torque and the rate of change. As indicated by paragraphs 21, 30, 33, and 35 of the Specification, Appellant’s invention uses algorithms and mathematical relationships to perform the claimed

determinations and estimations. Therefore, the determinations and estimations of the processor is configured to make the directed use of mathematical algorithms to manipulate existing information (e.g., DVC pressure measurements to determine torque and rate of change of torque (*see* Spec. ¶ 21)) and generate additional information (e.g., estimates of seal condition and remaining number of seal wearing cycles), which is an abstract idea.

Moreover, the Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature . . . , mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”). Appellant asserts that the invention of claim 6 “is not a method that can be performed mentally but instead is a particular concrete solution to a problem.” Appeal Br. 23. However, Appellant’s Specification indicates that Appellant’s process may be implemented manually (i.e., by a person). Spec. ¶ 26. Therefore, we agree with the Examiner that claim 6 is directed to an abstract idea under step one of the analysis set forth in *Alice*.

We therefore turn to step two of the analysis under *Alice* and assess whether the additional claim limitations, individually and as an ordered combination, are sufficient to transform the subject matter into patent eligible subject matter.

Appellant asserts claim 6 is similar to the claims found patent eligible in *Diamond v. Diehr*. Appeal Br. 12–13, 18–20. This argument is also unpersuasive. As stated by the Examiner (Ans. 16–17), the claims in *Diamond v. Diehr* included additional steps other than calculating a cure time via the Arrhenius equation from a measured mold temperature, namely providing a computer with the calculated cure time, comparing the calculated cure time with elapsed time, and automatically opening a mold press when the calculated cure time and elapsed time are equivalent. See *Diamond v. Diehr*, 450 U.S. at 178–179, 187, fn. 5. In contrast, Appellant’s claim 6 lacks additional steps beyond the claimed determinations and estimations.⁴

Appellant also contends claim 6 is directed toward a particular, concrete solution to a problem. Appeal Br. 13–25; Reply Br. 4–9, 11. The following summary by the Federal Circuit is relevant to this issue:

As noted by the Supreme Court, “an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Diamond v. Diehr*, 450 U.S. 175, 187, 101 S. Ct. 1048, 67 L.Ed.2d 155 (1981). A claim may be eligible if it includes additional inventive features such that the claim scope does not solely capture the abstract idea. *Alice Corp.*, 573 U.S. —, 134 S. Ct. 2347. But a claim reciting an abstract idea does not become eligible “merely by adding the words ‘apply it.’” *Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1276 (Fed.Cir.2012).

⁴ Appellant further argues claim 6 is analogous to another case before the Board in which claims were found patent eligible. Appeal Br. 24–25. We agree with the Examiner that the additional limitations of claim 6 do not add meaningful additional limitations to the abstract idea it is directed to. Ans. 24.

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Digitech Image Techs., LLC v. Elecs. for Imaging, Inc., 758 F.3d 1344, 1350
(Fed. Cir. 2014). The Federal Circuit further stated:

Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible. “If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.” *Parker v. Flook*, 437 U.S. 584, 595, 98 S. Ct. 2522, 57 L.Ed.2d 451 (1978) (internal quotations omitted).

Id. at 1351.

This issue was further analyzed by the Federal Circuit in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). In *McRO*, the Federal Circuit stated one should look to whether the claims “focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” 837 F.3d at 1314. The Federal Circuit determined “the claims are limited to rules with specific characteristics” and “[t]he specific, claimed features of these rules allow for the improvement realized by the invention.” *Id.* at 1313–1314.

Here, the additional elements of claim 6, both individually and as an ordered combination, do not transform the nature of claim 6 into patent eligible subject matter. The Examiner finds the additional recitations of claim 6 are recited with a high level of generality. Final Act. 5–6; Ans. 17. We agree that the recitations of determining a torque of an actuator operating the flow control member, estimating a condition of the seal based on the torque, determining a rate of change of the torque, and determining an estimated remaining number of seal wearing cycles based on the torque and the rate of change involve the abstract idea of making these calculations with

little or nothing more, whether considered individually or as an ordered combination. Moreover, Appellant's Specification indicates that the structures recited in claim 6 are generic in nature. *See* Spec. ¶ 26.

Nor does claim 6 recite any rules with specific characteristics. Although mathematical relationships and algorithms are implicated in the recitations of claim 6, the recitations do not actually include any particular rules. Such a level of generality does not limit the claim to rules with specific characteristics, as in *McRO*. Indeed, claim 6 is directed to little more than the implementation of the abstract idea; it embodies the implementation of an abstract idea via a generic computer as a tool, as explained by the Examiner. Ans. 6. Therefore, claim 6 is merely directed to the application of the abstract idea, which is not patent eligible.

Appellant also argues the claimed invention does not give rise to preemption and does not attempt to broadly capture the underlying algorithm. Appeal Br. 25–28; Reply Br. 4, 7–8, 12. These arguments are also unpersuasive. When discussing exceptions to patent eligibility under § 101, the Supreme Court has stated “the concern that drives this exclusionary principle as one of pre-emption.” *See Alice*, 134 S. Ct. at 2354. However, characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the test for patent eligibility. As our reviewing court has explained, “[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability” and “[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354). Thus, “[w]hile preemption may signal patent ineligible subject matter,

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the absence of complete preemption does not demonstrate patent eligibility.” *Id.*

To the extent Appellant asserts the claims are novel in view of the lack of a prior art rejection (*see* Reply Br. 3–4), and therefore patent eligible under § 101, such an arguments is also unpersuasive. Case law (e.g., *Parker v. Flook* and *Digitech*) demonstrates claim 6 is directed to an abstract idea and the above analysis explains the additional recitations of claim 6 are insufficient to transform the subject matter into patent eligible subject matter. Moreover, the mere fact an abstract idea is novel or non-obvious does not render the subject matter eligible under § 101. The Supreme Court has stated “[g]roundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.” *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013). A novel and non-obvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 132 S.Ct at 1303–1304. Further, in response to an argument a claim contained an inventive concept because it was not shown to be anticipated under § 102 or obvious under § 103, the Federal Circuit has stated:

[t]hat position misstates the law. It is true that “the § 101 patent-eligibility inquiry and, say, the § 102 novelty inquiry might sometimes overlap.” *Mayo*, 132 S. Ct. at 1304. But, a claim for a *new* abstract idea is still an abstract idea. The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novelty.

Synopsys, Inc. v. Mentor Graphics Corp., 839 F.3d 1138, 1151 (Fed. Cir. 2016).

In view of the above, Appellant’s arguments do not identify a reversible error in the Examiner’s § 101 rejection of claim 6.

With regard to claims 2–4 and 18–20, Appellant reiterates their argument that the claims are analogous to those of *Diamond v. Diehr*, and argues the additional recitations provide “further clarity” to the claim they depend from. Appeal Br. 28–34. Independent Claim 19 recites a tangible machine readable storage medium that performs determinations similar to those recited in claim 6. Therefore, claim 19 has the same deficiencies discussed above for claim 6. Claims 2–4, 18, and 20 recite additional information about the determinations and calculations recited in claims 6 and 19 but these recitations are also recited with a high level of generality without rules with specific characteristics.

In addition, Appellant asserts the Examiner has not examined each claim individually, has ignored the actual language of dependent claims, and thus has not met the burden of setting forth a prima facie case of obviousness. Appeal Br. 8–11; Reply Br. 1–3. This argument is also unpersuasive. Where the Examiner has addressed dependent claims as a group (e.g., Final Act 8–9), the claims include the same deficiencies, having recitations that are general in nature and do not present subject matter, when considered individually or as an ordered combination, that is significantly more than the abstract idea they are directed to.

Dependent claims 5, 17, and 22 recite alerts or notifications based upon calculations or determinations. Appellant argues claims 5, 17, and 22 are also like the claims of *Diamond v. Diehr* and recite substantially more than an abstract idea. Appeal Br. 28–29, 31–32, and 34–35. These arguments, however, are also unpersuasive because the Federal Circuit has explained that “claims focused on ‘collecting information, analyzing it, and displaying certain results of the collection and analysis’ are directed to an abstract idea.” *SAP America, Inc. v. Investpic, LLC*, 890 F.3d 1016, 1021

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(Fed. Cir. 2018) (citing *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)). As a result, claims 5, 17, and 22 are directed to abstract ideas (i.e., the collection of information, the analysis of information, and presenting (displaying) a result via notification or alert).

With regard to whether the additional recitations of claims 5, 17, and 22 transform the subject matter into patent eligible subject matter, we consider the following summary by the Federal Circuit in *SAP America, Inc.*:

We have explained that claims focused on “collecting information, analyzing it, and displaying certain results of the collection and analysis” are directed to an abstract idea. *Electric Power*, 830 F.3d at 1353. “Information as such is an intangible,” hence abstract, and “collecting information, including when limited to particular content (which does not change its character as information), [i]s within the realm of abstract ideas.” *Id.* (citing cases). So, too, is “analyzing information . . . by mathematical algorithms, without more.” *Id.* at 1354 (citing cases, including *Parker v. Flook*, 437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), and *Gottschalk v. Benson*, 409 U.S. 63, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972)). And “merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.” *Id.* (citing cases). The claims here are directed [to] abstract ideas under those principles.

890 F.3d at 1021.

Here, claims 5, 17, and 22 merely present the result of calculations or determinations by reciting alerts or notifications without adding more to the calculations or determinations. Thus, like claim 6, claims 5, 17, and 22 are not directed to a concrete solution to a problem, as asserted by Appellant, but are the mere application of an abstract idea because their recitations are

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general in nature and do not amount to significantly more than the abstract idea they are directed to.

For these reasons and those set forth in the Examiner's Answer, we sustain the Examiner's § 101 rejection of claims 2–8, 17–20, and 22.

C. DECISION

The decision of the Examiner is *affirmed*.

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

AFFIRMED