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EXAMINER
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MEGNA FUENTES, ANTHONY W

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MELVIN CLARK THOMPSON and  
DAVID WILLIAM BECK

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Appeal 2018-000168  
Application 14/356,991  
Technology Center 2800

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Before LINDA M. GAUDETTE, JAMES C. HOUSEL, and  
JENNIFER R. GUPTA, *Administrative Patent Judges*.

GUPTA, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Appellant<sup>2</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 3–7, 9, 11–14, 16–20, and 22–26 under 35 U.S.C. § 101. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> In this decision, we refer to the Specification filed May 8, 2014 (“Spec.”), the Non-Final Office Action mailed December 30, 2016 (“Non-Final Act.”), the Appeal Brief filed May 23, 2017 (“Appeal Br.”), the Examiner’s Answer mailed August 9, 2017 (“Ans.”), and the Reply Brief filed October 4, 2017 (“Reply Br.”).

<sup>2</sup> Appellant is the Applicant, Chevron U.S.A., Inc., which, according to the Appeal Brief, is the real party in interest. Appeal Br. 2.

The subject matter on appeal relates to a system and method for detecting structural integrity of a well casing. Spec. ¶ 2. According to the Specification, current systems sense characteristics inside a well, not structural characteristics of the well casing itself. *Id.* ¶ 3. The system may comprise a conductive well casing, conductive tubing, one or more sensors, one or more processors, and/or other components. *Id.* ¶ 4. The one or more sensors may be configured to generate output signals conveying information related to a structural integrity of the casing. *Id.* ¶ 6. The one or more sensors may include fluid level sensors, voltage sensors, acoustic sensors, pressure sensors, motion sensors, strain sensors, and/or other sensors. *Id.* The at least one or more sensors may be electrically coupled with the tubing and the casing separately. *Id.* ¶ 7. For example, the at least one of the one or more sensors may be electrically coupled with the tubing and the casing separately, may be located in the wellhead, may be located at one or more locations along the tubing within the casing, or may be located within the casing at or near a tubing hanger between the wellhead and the tubing. *Id.*

Appellant argues claims 1, 3–7, 9, 11–14, 16–20, and 22–26 subject to the § 101 rejection as a group in their Appeal Brief. *See generally* Appeal Br. 7–17. Accordingly, we decide the appeal as to the claims on appeal on the basis of claim 1 alone. *See* 37 C.F.R. § 41.37(c)(iv). Claim 1 is reproduced below from the Claims Appendix of the Appeal Brief.

1. A system configured to detect structural integrity of a well casing in a well, the system comprising:
  - a conductive well casing configured to surround conductive well tubing, the tubing being configured to communicate liquid and/or gas from an underground reservoir to above ground extraction equipment at or near a wellhead, the casing being embedded in a geologic structure;

one or more sensors configured to generate output signals conveying information related to a structural integrity of the casing and/or a casing-tubing pair, and

one or more processors configured to:

determine, based on the output signals, one or more extraction parameters that indicate whether the well is operating in a production phase or a pre-production phase;

determine one or more well parameters based on the output signals that characterize a current physical condition of the well;

determine one or more well parameter production phase and one or more pre-production phase threshold levels; and

detect casing structural integrity events based on the output signals, the extraction parameters, the well parameters, and the threshold levels responsive to:

one or more of the well parameters breaching one or more of the pre-production phase threshold levels while the well is in the pre-production phase and/or;

one or more of the well parameters breaching one or more of the production phase threshold levels while the well is in the production phase; and

generate casing structural integrity event notifications that correspond to the detected casing structural integrity events for delivery to a user responsive to the detections, the casing structural integrity events including one or both of structural failures of the casing or potential structural failures of the casing.

Appeal Br. 31–32.

Claim 14 is directed to a method for detecting structural integrity of a well casing in a well, and includes “determining,” “detecting,” and “generating” steps akin to the “determine,” “detect,” and “generate” limitations recited in claim 1. Appeal Br. 34–35.

## DISCUSSION

The Examiner maintains the rejection of claims 1, 3–7, 9, 11–14, 16–20, and 22–26 under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., an abstract idea) without significantly more. Non-Final Act. 10.<sup>3</sup>

We have reviewed the ground of rejection set forth by the Examiner, Appellant’s arguments, and the Examiner’s response. On this record, we are unpersuaded that the Examiner erred reversibly in determining that the claims do not comply with 35 U.S.C. § 101 for the reasons set forth by the Examiner in the Non-Final Office Action and the Examiner’s Answer. We add the following.

35 U.S.C. § 101 defines the scope of patent-eligible subject matter as “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an exception: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (“*Alice*”) (internal quotation and citation omitted). A two-step framework for determining whether claimed subject matter is judicially-excepted from patent eligibility under § 101 is set forth in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78–79 (2012) (“*Mayo*”), and further explained in *Alice*. The first step requires determining whether the claims at issue are directed to a patent-ineligible concept, such as an abstract idea. *See Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at

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<sup>3</sup> The rejections of claims 1, 3–7, 9, 11–14, 16–20, and 22–26 under 35 U.S.C. § 112 were withdrawn by the Examiner in the Answer. Ans. 2.

76–77). The second step requires examining “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*, 134 S. Ct. at 2357 (quoting *Mayo*, 566 U.S. at 72, 79). Claims directed to, or reciting, systems are also ineligible under § 101 if the hardware recited by the claims add nothing significantly more than the underlying abstract idea. *Alice*, 134 S. Ct. at 2360.

The Examiner has adequately explained why the recitations of the claims as a whole are directed to abstract ideas that our reviewing court has previously deemed patent-ineligible. Non-Final Act. 10–11; *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (treating collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas). The Examiner finds that independent claims 1 and 14 as a whole “are directed to receiving/obtaining and comparing information (i.e.,] the determining and detecting steps) for transmission (i.e.,] delivery to a user)[,] which are similar to concepts that have been identified as abstract by the courts” under the *Alice* test. Non-Final Act. 10. In addition, the Examiner finds that the claims “do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements when considered both individually and as a combination do not amount to significantly more than the abstract idea.” *Id.* at 11. Specifically, the Examiner finds that the additional elements of a conductive well casing, a conductive well tubing, and the one or more sensors are already known in the art by the teachings of Thigpen et al.,

US 7,805,248 B2, issued September 28, 2010) (“Thigpen”). Non-Final Act. 11.

Appellant argues that the claims are not directed to an abstract idea. Appeal Br. 8. Specifically, Appellant argues that the Examiner discounts recited physical elements including a conductive well casing, a conductive well tubing, one or more sensors, and one or more processors. *Id.*

Appellant’s argument is not persuasive of reversible error because the Examiner has considered the physical elements recited in the claims. The Examiner finds that the physical elements are already known in the art, as evidenced by Thigpen, and merely provide a field of use for the abstract idea. Ans. 9–10.

Appellant argues that like the claims in *Thales Visionix, Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017) (“*Thales*”), the claimed system (1) recites the use of physical sensors; and (2) uses information received from the sensors; (3) for early and accurate detection of well casing failures and potential failures, and alerting users (e.g., engineers) to these critical events (and thus provides an improvement to another technology or technical field). Appeal Br. 9–10. Thus, Appellant argues that like the claims in *Thales*, the instant claims are also patent eligible.

*Thales*’ claims were found to be patent eligible because the claims are directed to systems and methods that use inertial sensors in a non-conventional manner to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame. Although the claims on appeal include sensors, unlike *Thales*, the claimed system and method use the claimed sensors (e.g., fluid level sensors, voltage sensors, acoustic sensors, pressure sensors, motion sensors, strain sensors, and/or

other sensors) in a conventional and routine manner to generate an output signal. Thus, we are not persuaded that the Examiner erred in finding that the claims on appeal are directed to an abstract idea of obtaining and analyzing data.

Appellant cites *McRo, Inc. v. Bandai Nameco Games America Inc.*, 837 F.3d 1299, 1314 (2016) (“*McRo*”), and argues that a patent examiner cannot properly reject a claim under § 101 if the examiner does not provide any evidence that at least a non-computer implemented version of a computer-implemented process required by the claims exists in the prior art. Appeal Br. 14. We disagree, and find no reason to read *McRo* as altering the two-step framework set forth in *Alice* by requiring the Examiner to provide evidence of at least a non-computer implemented version of a computer-implemented process for a claim to be properly rejected under § 101.

Appellant’s argument that the claims recite inventive ordered combinations of elements is not persuasive of reversible error. Appeal Br. 15–17. As the Examiner explains, the claimed systems and methods are not directed to a new and useful technique for using sensors, rather, the claims are directed to the abstract idea of obtaining and comparing (i.e., analyzing) information, and the structural elements (i.e., well casing, well tubing, and sensors) merely provides a field of use for the abstract idea. Ans. 4–5.

Appellant argues that the Examiner’s conclusion that the claims are directed to an abstract idea is not supported by sufficient evidence, and contradicted at least by the implicit acknowledgement in the Office Action that no single reference or in combination of multiple references teaches what is recited in claims 1 and 14. Appeal Br. 17.



Appellant’s argument is not persuasive of reversible error. Contrary to Appellant’s argument, the Examiner’s findings and reasoning in support of the rejection is supported by sufficient evidence—i.e., comparing the claims with the claims present in *Electric Power*, and providing evidence that the physical elements are known in the art and being employed in the claimed system and method in a conventional manner, as evidenced by Thigpen. Appellant does not dispute that the claimed systems and methods use the well casing, well tubing, and sensors in a conventional and routine manner. *See generally* Appeal Br. 7-17; *see generally* Reply Br. 2-6. Moreover, the question of whether a single prior art reference or combination of references teaches what is recited in claims 1 and 14 is not dispositive of whether claims are directed to a judicial exception without significantly more, and thus, are properly rejected under 35 U.S.C. § 101. *Diamond v. Diehr*, 450 U.S. 175, 190 (1981) (“[t]he question . . . of whether a particular invention is novel is ‘wholly apart from whether the invention falls into a category of statutory subject matter.’” (citation omitted))

In sum, we have carefully considered Appellant’s arguments, but we are not persuaded of reversible error in the Examiner’s § 101 analysis. Accordingly, we sustain the rejection of claims 1, 3–7, 9, 11–14, 16–20, and 22–26.

#### DECISION

For the above reasons, the rejection of claims 1, 3–7, 9, 11–14, 16–20, and 22–26 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