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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* YOSHIHIRO NAKAYAMA, KOJI TOYAMA,  
and SATOSHI SUEHIRO

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Appeal 2018-006097  
Application 14/240,962<sup>1</sup>  
Technology Center 2800

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Before JENNIFER S. BISK, CATHERINE SHIANG, and  
JASON M. REPKO, *Administrative Patent Judges*.

SHIANG, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 3–5, 7, and 8, which are all the claims pending and rejected in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> Appellants identify Mitsubishi Aircraft Corporation as the real party in interest. App. Br. 2.

## STATEMENT OF THE CASE

### *Introduction*

According to the Specification, the present invention relates to “checking a connection route in a wiring structure in which a plurality of electronic devices are connected to each other with electric wires (hereinafter also referred to as cables) via connectors.” Spec. 1. Claim 1 is exemplary:

1. A wiring connection check method in a wiring structure in which one or a plurality of first terminal devices and one or a plurality of second terminal devices are connected with a cable via one or a plurality of relay devices and the cable is connected to the first terminal devices, the second terminal devices, and the relay devices via connectors, the method comprising:

providing connection information, the connection information including cable information and indicating a connecting relation between the connectors and the cable and a connecting relation between the connectors and any of the first terminal devices, the second terminal devices, and the relay devices;

designating a target connector to be checked from among the connectors;

identifying a connection route from the target connector to a connection end thereof by sequentially tracing the connection information; and

when a plurality of the connection routes from the target connector to the connection end are present, identifying the plurality of the connection routes, and determining whether the cable information for each of the connection routes is consistent with each other by checking the plurality of identified routes against each other.

*Rejection*<sup>2</sup>

Claims 1, 3–5, 7, and 8 are rejected under 35 U.S.C. § 101 because they are directed to a patent-ineligible subject matter. Final Act. 9–15.

ANALYSIS

We disagree with Appellants’ arguments. To the extent consistent with our analysis below, we adopt the Examiner’s findings and conclusions in (i) the action from which this appeal is taken and (ii) the Answer.<sup>3</sup>

The Examiner rejects the claims under 35 U.S.C. § 101 because they are directed to patent-ineligible subject matter. *See* Final Act. 9–15; Ans. 3–6. In particular, the Examiner concludes the claimed processes or functions can be performed by a human using a pen and paper. *See* Final Act. 10; Ans. 3. The Examiner determines the claims do not identify an inventive concept to transform the nature of the claims into a patent-eligible application. *See* Final Act. 10–15; Ans. 3–6. Appellants argue the Examiner erred. *See* App. Br. 3–6; Reply Br. 2–5.

Appellants have not persuaded us of error. Section 101 of the Patent Act provides, “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. However, the Supreme

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<sup>2</sup> Throughout this Decision, we refer to the (1) Final Rejection dated June 1, 2017 (“Final Act.”); (2) Appeal Brief dated October 30, 2017 (“App. Br.”); (3) Examiner’s Answer dated March 28, 2018 (“Ans.”); and (4) Reply Brief dated May 24, 2018 (“Reply Br.”).

<sup>3</sup> To the extent Appellants advance new arguments in the Reply Brief without showing good cause, Appellants have waived such arguments. *See* 37 C.F.R. § 41.41(b)(2).

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. Pty. Ltd. 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 Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* 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, 69 (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 water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 183 n.7 (quoting *Corning v. Burden*, 56 U.S. 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 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 176; *see also id.* at 192 (“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.* (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.*

The PTO recently published revised guidance on the application of

§ 101. USPTO’s January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* (“Memorandum”). 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 activity such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

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, 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.

*See* Memorandum.

Turning to *Alice* step one (Step 2A, Prong 1 of the Memorandum), we agree with the Examiner that the rejected claims are patent ineligible because they are directed to processes or functions that can be performed by a human using a pen and paper. *See* Final Act. 10; Ans. 3; *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011) (“All of claim 3’s method steps can be performed in the human mind, or by a human using a pen and paper. . . . Such a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible

under § 101.”); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146 (Fed. Cir. 2016) (“[W]e continue to ‘treat[ ] analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.’”) (citation omitted).

For example, claim 1 (with emphases) recites:

1. A wiring connection check method in a wiring structure in which one or a plurality of first terminal devices and one or a plurality of second terminal devices are connected with a cable via one or a plurality of relay devices and the cable is connected to the first terminal devices, the second terminal devices, and the relay devices via connectors, the method comprising:

*providing connection information, the connection information including cable information and indicating a connecting relation between the connectors and the cable and a connecting relation between the connectors and any of the first terminal devices, the second terminal devices, and the relay devices;*

*designating a target connector to be checked from among the connectors;*

*identifying a connection route from the target connector to a connection end thereof by sequentially tracing the connection information; and*

*when a plurality of the connection routes from the target connector to the connection end are present, identifying the plurality of the connection routes, and determining whether the cable information for each of the connection routes is consistent with each other by checking the plurality of identified routes against each other.*

Because all of the above processes can be performed mentally or using a pen and paper, we disagree with Appellants’ argument that the Examiner ignores claim elements (App. Br. 4). Therefore, we conclude claim 1 is directed to the abstract idea of mental processes. *See*

Memorandum, Step 2A, Prong 1 (Groupings of Abstract Ideas). Although independent claim 5 recites a “database” and “processor,” it recites similar features that can be otherwise performed using a pen and paper. Therefore, claim 5 is also directed to the abstract idea of mental processes. *See* Memorandum, Step 2A, Prong 1 (Groupings of Abstract Ideas). The dependent claims are directed to similar processes or functions, and Appellants have not shown such claims are directed to other non-abstract functions or processes. *See* claims 3, 4, 7, 8.

Appellants’ assertion (Reply Br. 4) about *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) is unpersuasive. In *McRO*, the Court determines:

Claim 1 of the ’576 patent is focused on *a specific asserted improvement in computer animation*, i.e., the automatic use of rules of a particular type. . . . It is the incorporation of the claimed rules, not the use of the computer, that “improved [the] existing technological process” by allowing the automation of further tasks. . . .

Further, the automation goes beyond merely “organizing [existing] information into a new form” or carrying out a fundamental economic practice. *The claimed process uses a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters.*

*McRO*, 837 F.3d at 1314–15 (emphases added) (citations omitted).

This case is different from *McRO* because unlike the claims of *McRO*, the rejected claims are not directed to “a specific asserted improvement in computer animation,” let alone “us[ing] a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters.” *McRO*, 837 F.3d at 1314–15. Contrary to the claims of *McRO* and as

discussed above, the rejected claims are directed to patent-ineligible mental processes.

Turning to *Alice* step two (Step 2A, Prong 2 of the Memorandum), contrary to Appellants' assertion (App. Br. 3–6; Reply Br. 2–5), Appellants have not shown the claims in this case require any “‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221.<sup>4</sup>

Appellants argue the claims are directed to “improvements to the technical field of circuit and wiring design” because in prior art, “‘an enormous database library including information about wiring components and cables has to be reconstructed . . . when a new design support system is introduced.’” App. Br. 4. In contrast,

the Specification proclaims that the claimed subject matter “provide[s] a wiring connection check method and connection check system allowing a person other than a system designer to easily check a connection route for each single line even in a large system” and thus “a person other than the system designer can easily identify a connection route for each single electric wire.”

App. Br. 4–5; *see also* Reply Br. 4–5.

The above arguments are unpersuasive because “a claim for a *new* abstract idea is still an abstract idea.” *Synopsys*, 839 F.3d at 1151. “[U]nder the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of

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<sup>4</sup> Appellants argue the Examiner erred regarding the “transformation” requirement. App. Br. 5; Reply Br. 3–4. That argument is unpersuasive of reversible error. As shown above, *Alice* requires the transformation. *See Alice*, 573 U.S. at 221. Our analysis does not require any transformation beyond the *Alice* standard.

that discovery for the inventive concept necessary for patent eligibility . . . .” *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016) (citations omitted). Contrary to Appellants’ arguments, claim 1 is directed to an abstract idea—not an improvement in circuit and wiring design.

Further, contrary to Appellants’ arguments (App. Br. 12–21; Reply Br. 10–16), the claims are similar to the claims of *Synopsys*, and do not contain the requisite inventive concept. *See Synopsys*, 839 F.3d at 1152. To the extent the claims add anything to the abstract idea (such as a “database” or “processor” in claim 5), such additions “merely aid in mental [processes] as opposed to computer efficacy, are not an inventive concept that takes the . . . [c]laims beyond their abstract idea.” Similar to the claims of *Synopsys*, the rejected claims “do not introduce a technical advance or improvement. They contain nothing that ‘amounts to significantly more than a patent upon the [abstract idea] itself.’” *Synopsys*, 839 F.3d at 1152 (citation omitted).

As a result, we conclude the rejected claims do not recite additional elements that integrate the judicial exception into a practical application. *See Memorandum, Step 2A, Prong 2.* Appellants do not persuasively argue any specific limitation is not well-understood, routine, or conventional in the field. Nor do Appellants persuasively argue the Examiner erred in that aspect. As a result, Appellants have not persuaded us the Examiner erred with respect to the Memorandum’s Step 2B analysis. *See Memorandum, Step 2B.*

Because Appellants have not persuaded us the Examiner erred, we sustain the Examiner’s rejection of claims 1, 3–5, 7, and 8 under 35 U.S.C. § 101.

Appeal 2018-006097  
Application 14/240,962

DECISION

We affirm the Examiner's decision rejecting claims 1, 3–5, 7, and 8.

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