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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SETH L. JAHNE, BLAKE JEFFREY HARNDEN,
ERIC R. VAN ALST, JAMES M. CHAN,
JAMES M. KALASKY, and ANDREW PAUL RIHA

Appeal 2018-002866
Application 14/313,401
Technology Center 2800

Before MARK NAGUMO, AVELYN M. ROSS, and
JENNIFER R. GUPTA, *Administrative Patent Judges*.

Opinion for the Board by GUPTA, *Administrative Patent Judge*.

Opinion dissenting by NAGUMO, *Administrative Patent Judge*.

GUPTA, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner’s final decision rejecting claims 1, 2, 4, 18, 21, 23–25, 27, and 29–39. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

The subject matter relates to a system for electronic warfare and cyber missions that includes a group of tactical controllers, a mission controller, and a computer system. Spec. ¶¶ 7–8. Claim 1, reproduced below from the Claims Appendix of the Appeal Brief, is illustrative of the claims on appeal.

1. A techniques deployment system comprising:
 - a display system;
 - a graphical user interface displayed on the display system;
 - a group of tactical controllers that control heterogeneous types of hardware; and
 - a mission controller; wherein the graphical user interface is configured:
 - to display a visualization of information received from the group of tactical controllers;
- wherein the mission controller is configured:
- to receive a selection of an effect for at least one of electronic warfare operations or cyber mission operations;

¹ In this Decision, we refer to the Specification filed June 24, 2014 (“Spec.”), the Final Office Action dated July 19, 2017 (“Final Act.”), the Appeal Brief filed October 13, 2017 (“Appeal Br.”), the Examiner’s Answer dated November 24, 2017 (“Ans.”), and the Reply Brief filed January 24, 2018 (“Reply Br.”).

² Appellant is the Applicant, The Boeing Company, which, according to the Appeal Brief, is the real party in interest. Appeal Br. 2.

to receive parameters for a technique that is specific for controlling a particular type of hardware to generate the effect;

in response to receiving the selection of the effect, to determine whether the particular type of hardware is capable of producing the effect;

in response to determining that the particular type of hardware is capable of producing the effect, to assign a task for producing the effect to a selected tactical controller of the group of tactical controllers; and

wherein the selected tactical controller is configured:

in response to the task assigned by the mission controller, to control the particular type of hardware using the technique and the parameters to generate the effect.

Appeal Br. 15 (Claims App.).

REJECTIONS

The Examiner maintains the following rejections on appeal (Ans. 2, 5):

Rejection 1: Claims 1, 2, 4, 18, 21, 23–25, 27 and 29–39 under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more; and

Rejection 2: Claims 1, 2, 4, 18, 21, 23–25, 27 and 29–39 under 35 U.S.C. 112(b) as indefinite.

DISCUSSION

After review of the cited evidence in light of the Appellant's and the Examiner's opposing positions, we determine that Appellant has not identified reversible error in the Examiner's rejections except where

otherwise explained below. Thus, where we affirm the Examiner’s rejections, we do so for the reasons expressed in the Final Office Action, the Answer, and below.

Rejection 1

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 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 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. Kappas*, 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 182 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, *2019 Revised Patent Subject Matter Eligibility Guidance* (“Revised Guidance”). 84 Fed. Reg. 50 (Jan. 7, 2019).

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)).

See 84 Fed. Reg. at 54–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look 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 84 Fed. Reg. at 56.

We have considered the Examiner's findings and the Appellant's arguments and are persuaded the Examiner erred in rejecting the claims under 35 U.S.C. § 101.

The Examiner finds that the deployment system of claim 1 and the method of claim 18 "are directed to the abstract idea of cyberwarfare without significantly more." Final Act. 6. The Examiner explains that although cyberwarfare has not been deemed an abstract idea by the Federal Circuit, there are Federal Circuit Court decisions discussing numerous examples that are similar to cyberwarfare "in that the power of a computer network is employed toward a particular goal." Ans. 8.

Appellant argues that the claims, which the Examiner characterizes as directed to "cyberwarfare," "do not recite a mathematical algorithm, . . . a fundamental economic or longstanding commercial practice, a method of organizing human activity, or an idea of itself." Appeal Br. 7.

In Step 2A, Prong 1 of the Revised Guidance, we consider whether the Examiner erred in determining that the claims recite a judicial exception.

Claim 1's technique deployment system recites the following limitations: "a display system," "a graphical user interface displayed on the display system," "a group of tactical controllers that control heterogeneous types of hardware," "a mission controller . . . configured[] to receive a selection of an effect for at least one of electronic warfare operations or cyber mission," "to determine whether the particular type of hardware is capable of producing the effect," and "to assign a task for producing the effect to a selected tactical controller of the group of tactical controllers," wherein the selected tactical controller is configured "in response to the task

assigned by the mission controller, to control the particular hardware using the technique and parameters to generate the effect.”³

Claim 18’s method for generating an effect recites the following limitations: “receiving, by a mission controller, mission status information from a group of tactical controllers,” “displaying, by the mission controller, a visualization of the mission status information on a graphical user interface,” “identifying, by a mission controller, the effects for the group of tactical controllers, wherein the group of tactical controllers control heterogeneous types of hardware to generate the effect for at least one of electronic warfare operations or cyber mission operations,” “determining, by the mission controller . . . whether a particular type of hardware controlled by the selected tactical controller is capable of generating the effect,” “assigning, by the mission controller, a task for producing the effect to the selected tactical controller,” and “performing the task by the selected tactical controller to control the particular type of hardware using the technique to generate the effect for the at least one of the electronic warfare operations or the cyber mission operations.”

On this record, we are persuaded that the Examiner erred in finding that independent claim 1’s system and independent claim 18’s method recite mental processes, which is one of the categories of abstract ideas identified by the Office’s recent Revised Guidance⁴ (*see* Ans. 8–11) because both

³ Appellant’s Specification describes “tactical controllers” and “mission controllers” as “software, hardware, firmware or a combination thereof.” Spec. ¶ 53; *see also* Appeal Br. 11 (where Appellant admits that “tactical controllers” would be understood by those skilled in the art as “software, hardware, firmware or a combination thereof” that ‘controls hardware’”).

⁴ The Examiner does not find that independent claims 1 and 18 recite mathematical concepts or certain methods of organizing human activity such

independent claims require the use of a computer for performing electronic warfare operations or cyber mission operations, i.e., cyberwarfare, that cannot practically be performed in a person's mind. Spec. ¶ 54 (“[T]he processes . . . may be comprised entirely of organic components excluding a human being.”); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372, 1376 (Fed. Cir. 2011) (holding that a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under 35 U.S.C. § 101); *SiRF Tech., Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319, 1331–1333 (Fed. Cir. 2010) (holding claims properly directed to patentable subject matter because “they explicitly require the use of a particular machine (a GPS receiver) and could not be performed without the use of such a receiver”). Because the Examiner has not established on this record that claims 1 and 18 are directed to an abstract idea, we do not need to proceed to either Step 2A, Prong 2 or Step 2B of the Revised Guidance. Thus, we do not sustain the Examiner’s rejection of claims 1, 2, 4, 18, 21, 23–25, 27 and 29–39 under 35 U.S.C. § 101.

Rejection 2

The Examiner determines that the following terms in claim 1 are unclear and render Appellant’s claims indefinite: (1) “controllers,” (2) “heterogenous types of hardware,” (3) “generate an effect,” (4) “assign a task using a technique,” and (5) “cyber mission.” Final Act. 10. According to the Examiner, “[e]very one of these are vague, generic terms that can be

as fundamental economic practices, the two other categories identified by the Office’s Revised Guidance. Final Act. 6; Ans. 8–11.

given an almost infinite number of different meanings,” and thus the claims are essentially unbounded. *Id.*

Appellant argues that “the Examiner’s rejection improperly confuses claim breadth with indefiniteness.” Appeal Br. 10. In addition, Appellant cites several paragraphs, for example paragraphs 44⁵, 45, 53, and 56, in the Specification as providing information on interpreting the disputed claim limitations. Appeal Br. 10–11.

Section 112(b) requires that the specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b). “As the statutory language of ‘particular[ity]’ and ‘distinct[ness]’ indicates, claims are required to be cast in clear—as opposed to ambiguous, vague, indefinite—terms.” *In re Packard*, 751 F.3d 1307, 1313 (Fed. Cir. 2014). During prosecution, the applicant bears the burden of precise claim drafting, as the applicant is in the best position to resolve ambiguities through amendment and argument. *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997). Placing such a burden on the applicant has the following procedural effect:

[W]hen the USPTO has initially issued a well-grounded rejection that identifies ways in which language in a claim is ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention, and thereafter the applicant fails to provide a satisfactory response, the USPTO can properly reject the claim as failing to meet the statutory requirements of § 112(b). The satisfactory response by the applicant can take the form of a modification of the language identified as unclear, a

⁵ The disclosure quoted from paragraph 43 of Appellant’s Specification at page 11 of the Appeal Brief actually appears in paragraph 44 of the Specification.

separate definition of the unclear language, or, in an appropriate case, a persuasive explanation for the record of why the language at issue is not actually unclear.

Packard, 751 F.3d at 1311.

Appellant’s arguments are not sufficient to persuade us of reversible error. Appellant does not explain adequately how a skilled artisan would be able to define the disputed terms based on the guidance provided in the Specification. *See* Spec. ¶ 44 (describing examples of “hardware” as including “at least one of a radio, a wireless access point, a phased array antenna, *test equipment, a proprietary system, or some other suitable hardware*”) (emphasis added); *id.* ¶ 45 (describing an “effect” as “to spoof information, interrupt communications, degrade performance, bypass a firewall, collect information, rewrite packets, block wireless signals, and *other suitable effects*”) (emphasis added). Thus, on this record we are not persuaded that the Examiner reversibly erred in determining that the claims nor the Specification indicate what controllers, heterogeneous types of hardware, effects, tasks, techniques, and cyber missions fall within the metes and bounds of Appellant’s claims.⁶ Final Act. 10–11; Ans. 12–14. Accordingly, we affirm the rejection of claims 1, 2, 4, 18, 21, 23–25, 27, and 29–39 under 35 U.S.C. § 112(b).

DECISION

The rejection of claims 1, 2, 4, 18, 21, 23–25, 27 and 29–39 under 35 U.S.C. § 101 is reversed.

⁶ Even if we were persuaded that the term “effect” is definite, in our view a person of ordinary skill in the art would not have been able to reasonably ascertain a definite meaning for the term “hardware” based on the guidance provided in paragraph 44 of Appellant’s Specification.

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The rejection of claims 1, 2, 4, 18, 21, 23–25, 27 and 29–39 under 35 U.S.C. 112(b) 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

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Appeal 2018-002866
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JENNIFER R. GUPTA, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*, dissenting.

I join the Decision and that part of the Opinion reversing the rejection of all claims under § 101. However, I would reverse the rejection of all claims under § 112(b) for indefiniteness.

The critical term, “effect for at least one of electronic warfare operations [“EWOps”] or cyber mission operations [“CMOps”],” and the associated terms, “tactical controller [“TC”]” and “mission controller [“MC”],” are all functionally defined, and therefore potentially extremely broad. *In re Swinehart*, 439 F.2d 210, 213, (CCPA 1971) (“‘Functional’ terminology may render a claim quite broad. By its own literal terms a claim employing such language covers any and all embodiments which

perform the recited function.”) The “effects” illustrated by the Specification (Spec. ¶ 45) indicate that any activity that can carry out or enhance EWOp or CMOp are within the scope of the claims. It follows that any TCs and MCs that are capable of specifying and controlling the hardware (human beings being excluded expressly (Spec. ¶ 54)) that can produce such effects can be used within the scope of the claims.

That it might be difficult to specify everything that might be within the scope of the claims is of little moment regarding the definiteness or not of the claims, in the absence of a demonstration that it would not be possible to show that any particular effect is, or is not, an EWOp effect or a CMOp effect. No such example has been made of record, and, not being able to produce one myself, I find myself in agreement with Appellants that the Examiner, and the Majority, have conflated breadth with indefiniteness.

Thus, I would reverse the rejection for indefiniteness, and I dissent, respectfully.