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David H. Parker  
3919 Deepwoods Road  
Earlysville,, VA 22936-9777

EXAMINER
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* DAVID H. PARKER

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Appeal 2016-004274  
Application 13/166,759  
Technology Center 3600

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Before JOSEPH L. DIXON, JOHN A. EVANS, and  
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant seeks our review under 35 U.S.C. § 134(a) from a final rejection of claims 19–21 and 23–30, i.e., all pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

*The Invention*

According to the Specification, the invention “utilizes acoustic waves through-the-earth to establish emergency communications in an underground

mine.” Spec. ¶ 1.<sup>1</sup> The Specification explains that a miner “communicate[s] using simple tools available in a mine,” and “a personal electronics device designed to be carried by a miner . . . automatically decode[s] acoustically transmitted text messages.” Abstract.

*Exemplary Claim*

Independent claim 19 exemplifies the subject matter of the claims under consideration and reads as follows:

19. A method for acoustic communication through-the-earth with steps comprising:
  - (a) writing an emergency response plan for an underground mine, the emergency response plan including instructions for;
    - i. determining a second time of day based at least in part on a first time of day, wherein  
the first time of day is marked by an unscheduled event,  
the second time of day follows the first time of day,  
the unscheduled event severs communications between underground personnel inside the underground mine and rescue personnel outside the underground mine, and  
the unscheduled event prevents the underground personnel from leaving the underground mine;

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<sup>1</sup> This decision uses the following abbreviations: “Spec.” for the Specification, filed June 22, 2011; “Final Act.” for the Final Office Action, mailed April 17, 2015; “App. Br.” for the Appeal Brief, filed September 7, 2015; “Ans.” for the Examiner’s Answer, mailed January 21, 2016; and “Reply Br.” for the Reply Brief, filed March 11, 2016.

- ii. determining a first differential time period, wherein the first differential time period is a repetition period;
  - iii. determining a second differential time period, wherein the second differential time period is a communications window; and
  - iv. acoustically encoding at least one binary bit of information, wherein the encoding depends at least in part on the determined repetition period;
- (b) training the underground personnel and the rescue personnel how to execute the emergency response plan;
  - (c) executing the emergency response plan in response to a first unscheduled event, wherein the first unscheduled event is an actual accident in the underground mine;
  - (d) determining by the underground personnel a first estimation of the first time of day, based at least in part on the first unscheduled event and the training;
  - (e) determining by the rescue personnel a second estimation of the first time of day, based at least in part on the first unscheduled event and the training;
  - (f) determining by the underground personnel the second time of day based at least in part on the first estimation [sic] of the first time of day and the emergency response plan;
  - (g) determining by the rescue personnel the second time of day based at least in part on the second estimation of the first time of day and the emergency response plan, wherein the underground personnel and the rescue personnel determine the same second time of day independently;
  - (h) generating by the underground personnel a plurality of acoustic events which encode the at least one binary bit of information in accordance with the emergency response plan, wherein

- i. each of the plurality of acoustic events produces substantially a same acoustic signature to produce a plurality of acoustic signatures;
  - ii. the plurality of acoustic signatures propagate through-the-earth by vibrations of the earth;
  - iii. each of the plurality of acoustic events are spaced apart in time in accordance with the repetition period; and
  - iv. the generating starts at the second time of day and ends following the communications window;
- (i) detecting the plurality of acoustic signatures by at least one transducer that receives the vibrations of the earth and recording a corresponding plurality of digital acoustic signatures produced by each of the at least one transducers from at least the second time of day until the communications window later;
  - (j) digitally processing at least two of the plurality of digital acoustic signatures to produce at least one correlated signal;
  - (k) determining the at least one binary bit of information based at least in part on the at least one correlated signal, the second time of day, the repetition period, and the communications window; and
  - (l) communicating the at least one binary bit of information to the rescue personnel.

App. Br. 46–48 (Claims App.).

*The Prior Art Supporting the Rejections on Appeal*

As evidence of unpatentability, the Examiner relies on the following prior art:

Reagor et al. (“Reagor”)	US 2006/0148514 A1	July 6, 2006
Barrett	US 8,294,568 B2	Oct. 23, 2012 (filed July 10, 2007)

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Mine Improvement and New Emergency Response Act of 2006, Pub. L. No. 109-236, 120 Stat. 493 (2006) (“MINER Act”)

Easysurf.cc (Sept. 22, 2010), <http://web.archive.org/web/20100922072611/http://easysurf.cc/tspan.htm> (“Easysurf”)

*The Rejections on Appeal*

Claims 19–21 and 23–30 stand rejected under 35 U.S.C. § 112 ¶ 1 as failing to comply with the written-description requirement. Final Act. 2–3; Ans. 3, 5–6.

Claims 19–21 and 23–30 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Final Act. 4; Ans. 3–5.

Claims 19–21 and 23–30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the MINER Act, Easysurf, Reagor, and Barrett. Final Act. 5–12; Ans. 3, 6.

ANALYSIS

We have reviewed the rejections of claims 19–21 and 23–30 in light of Appellant’s arguments that the Examiner erred. For the reasons explained below, we concur with the Examiner’s conclusion that the claims recite patent-ineligible subject matter. But we disagree with the Examiner’s determinations under § 112 ¶ 1 and § 103(a). We adopt the Examiner’s findings and reasoning in the Final Office Action (Final Act. 4) and Answer (Ans. 4–5) that relate to the § 101 rejection. We add the following to address and emphasize specific findings and arguments.

*The § 112 ¶ 1 Rejection of Claims 19–21 and 23–30*

Section 112’s written-description requirement serves to “clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336,

1351 (Fed. Cir. 2010) (en banc) (alteration in original) (quoting *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)); see *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016). “[T]he test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351; *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1296 (Fed. Cir. 2017). The “test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Ariad*, 598 F.3d at 1351. The written-description requirement does not, however, “demand any particular form of disclosure” or require that “the specification recite the claimed invention *in haec verba*.” *Id.* at 1352. The analysis for sufficiency of disclosure may consider “such descriptive means as words, structures, figures, diagrams, formulas, etc.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Here, in the Appeal Brief’s Summary of Claimed Subject Matter, Appellant cites various portions of the Specification supporting the claims under consideration. App. Br. 8–16. In the Answer, the Examiner does not identify any deficiency in Appellant’s citations or any limitation lacking support in the Specification. Ans. 5–6. Based on an analysis of the Specification, we agree with Appellant that the Specification reasonably conveys to those skilled in the art that Appellant had possession of the claimed subject matter as of the filing date. Hence, we do not sustain the § 112 ¶ 1 rejection of claims 19–21 and 23–30.

*The § 101 Rejection of Claims 19–21 and 23–30*

INTRODUCTION

The Patent Act defines patent-eligible subject matter broadly: “Whoever 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. In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012), and *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 “contains an important implicit exception” for laws of nature, natural phenomena, and abstract ideas. *See Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter: First, “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea. *Alice*, 134 S. Ct. at 2355. If so, “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements” add enough to transform the “nature of the claim” into “significantly more” than a patent-ineligible concept. *Id.* at 2355, 2357 (quoting *Mayo*, 566 U.S. at 79); *see Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Step one in the *Mayo/Alice* framework involves looking at the “focus” of the claims at issue and their “character as a whole.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). Step two involves the search for an “inventive concept.” *Alice*, 134 S. Ct. at 2355; *Elec. Power Grp.*, 830 F.3d at 1353. An “inventive concept” requires more

than “well-understood, routine, conventional activity already engaged in” by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80).

*MAYO/ALICE* STEP ONE: CLAIM 19

For *Mayo/Alice* step one, the Examiner determines, and we agree, that the claims are directed to the abstract ideas of: (1) “Outlining an order of operations/instructions for personnel (underground and above ground) in the case of a mining emergency”; and (2) “Receiving acoustical data, . . . Processing/Decoding the acoustical data, . . . and Reporting/Transmitting Data to Emergency Personnel.” Ans. 4. The Examiner reasons that those abstract ideas correspond to methods of organizing human activity and organizing information through mathematical correlations, respectively. *Id.* Appellant does not assert that claim 19 recites patent-eligible subject matter under *Mayo/Alice* step one. Reply Br. 4–12; *see* App. Br. 26–35.

*MAYO/ALICE* STEP TWO: CLAIM 19

Instead, Appellant maintains under *Mayo/Alice* step two that claim 19 includes “significantly more” than the abstract ideas identified by the Examiner and “does not ‘tie up’ or ‘pre-empt others’ from using” those abstract ideas. Reply Br. 7; *see* App. Br. 28. Appellant contends that claim 19 does not “‘tie up’ or pre-empt others from methods for establishing emergency communication in a mining accident, i.e., the actual invention.” Reply Br. 7; *see* App. Br. 29. Based on those contentions, Appellant asserts that claim 19 satisfies § 101’s requirements under the streamlined eligibility analysis for *Mayo/Alice* step two in the “2014 Interim Guidance on Patent Subject Matter Eligibility,” 79 Fed. Reg. 74618, 74625 (Dec. 16, 2014). Reply Br. 7–8; *see* App. Br. 29.

Appellant’s arguments regarding preemption do not persuade us of Examiner error. While preemption may denote patent ineligibility, its absence does not demonstrate patent eligibility. *See FairWarning, IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016). For claims covering a patent-ineligible concept, preemption concerns “are fully addressed and made moot” by an analysis under the *Mayo/Alice* framework. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015).

Appellant contends that claim 19 includes “significantly more” than a patent-ineligible concept because it “recite[s] an improvement to another technology or technical field.” Reply Br. 9; *see* App. Br. 30. In particular, Appellant contends that “the claimed invention is an ‘improvement’ to the existing MSHA approved system,” i.e., a “truck mounted seismic [location] system [that] is obsolete, takes too long to deploy, and has never located a missing miner.” Reply Br. 10; *see* App. Br. 31; *see also* Mine Safety & Health Admin., U.S. Dep’t of Labor, *Internal Review of MSHA’s Actions at the Sago Mine Wolf Run Mining Company Sago, Upshur County, West Virginia 2*, 122–24 (June 2007). Instead of reciting a seismic location system, however, claim 19 covers a “method for acoustic communication through-the-earth.” App. Br. 46–48 (Claims App.). Because Appellant’s contentions are not commensurate with claim 19’s scope, they do not persuade us of Examiner error.

While claim 19 covers a novel—and seemingly advantageous—communication method, that does not suffice to confer patent eligibility. “[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 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). “[A] claim for a *new* abstract idea is still an abstract idea.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016). “The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novelty.” *Id.*

Appellant additionally contends that claim 19 “qualifies as ‘something more’ because it recites particular machines,” i.e., a “transducer, recorder, and digital processor that correlates signals.” Reply Br. 11; *see* App. Br. 32. But “not every claim that recites concrete, tangible components escapes the reach of the abstract-idea inquiry.” *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016). Implementing an abstract idea using conventional machines or devices “add[s] nothing of substance” and, therefore, does not transform the nature of the claim into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2360; *Mayo*, 566 U.S. at 84–85 (citing *Gottschalk v. Benson*, 409 U.S. 63, 64–65, 71 (1972)). In *Alice*, the Supreme Court rejected the notion that claims reciting specific hardware necessarily satisfy § 101’s requirements. 134 S. Ct. at 2360.

Various courts have held that claims reciting concrete, tangible components did not pass muster under § 101. As an example, in *TLI Communications*, the Federal Circuit decided that claims reciting a “telephone unit,” a “digital pick up unit” for “recording images” (a digital camera), and a “server” for “storing the digital images” were directed to an abstract idea and failed to satisfy § 101’s requirements. 823 F.3d at 610–13. As another example, in *RaceTech, LLC v. Kentucky Downs, LLC*, 167 F. Supp. 3d 853, 860–61, 863–64, 867–68 (W.D. Ky. 2016), *aff’d*,

676 F. App'x 1009 (Fed. Cir. 2017), the district court ruled that claims requiring a “video server,” a “game server,” a “gateway,” and “game terminals” were directed to an abstract idea and failed to satisfy § 101’s requirements. As a further example, in *Planet Bingo, LLC v. VKGS, LLC*, 961 F. Supp. 2d 840, 850–51, 853, 857 (W.D. Mich. 2013), *aff’d*, 576 F. App'x 1005 (Fed. Cir. 2014), the district court ruled that claims requiring a “computer,” an “input device,” and an “output device” were directed to an abstract idea and failed to satisfy § 101’s requirements. *See also Multimedia Plus, Inc. v. PlayerLync, LLC*, 198 F. Supp. 3d 264, 265–66, 271–72 (S.D.N.Y. 2016) (invalidating under § 101 claims reciting a “system . . . comprising” a “local computer,” a “first human-computer interface,” a “remote computer server,” and a “second interface”), *aff’d*, 2017 WL 3498637, \_\_\_ F. App'x \_\_\_\_ (Fed. Cir. Aug. 16, 2017); *CertusView Techs., LLC v. S & N Locating Servs., LLC*, 111 F. Supp. 3d 688, 699–700, 724–29 (E.D. Va. 2015) (invalidating under § 101 claims reciting an “apparatus comprising” a “communication interface,” a “display device,” a “user input device,” a “memory,” and a “processing unit”), *aff’d*, 2017 WL 3443246, \_\_\_ F. App'x \_\_\_\_ (Fed. Cir. Aug. 11, 2017).

Here, the “transducer, recorder, and digital processor” in claim 19 are well-understood, routine, and conventional components previously used by the relevant community. *See, e.g.*, Spec. ¶¶ 54–56, 58, 83, 100–01; Reagor reference ¶¶ 6, 14, 17–18, 33–35; *see also* Final Act. 4; Ans. 4–5. For instance, the Specification describes various prior-art systems with transducers. Spec. ¶¶ 54–56, 58. In addition, the Specification states, “Digital signal processing techniques are also well known in the art.” *Id.* ¶ 83. Accordingly, the additional elements in claim 19 do not provide an

“inventive concept” that transforms the nature of the claim into a patent-eligible invention.

Further, Appellant asserts that claim 19 includes “specific limitation[s] that confine the claim to a particular useful application” as well as “other meaningful limitations.” Reply Br. 11; *see* App. Br. 32. But “limiting an abstract idea to one field of use” does not impart patent eligibility. *See Bilski v. Kappos*, 561 U.S. 593, 612 (2010); *see also Parker v. Flook*, 437 U.S. 584, 589–90 (1978); *Affinity Labs*, 838 F.3d at 1259.

#### SUMMARY FOR INDEPENDENT CLAIM 19

For the reasons discussed above, Appellant’s arguments have not persuaded us that the Examiner erred in rejecting claim 19 under § 101. Hence, we sustain the rejection of claim 19.

#### DEPENDENT CLAIMS 20, 21, 24 AND 25

Claims 20, 21, 24, and 25 depend from claim 19. Appellant does not make any separate substantive patentability arguments for these dependent claims. App. Br. 26–35; Reply Br. 4–13. Because Appellant does not argue the claims separately, we sustain the § 101 rejection of claims 20, 21, 24, and 25 for the same reasons as claim 19. *See* 37 C.F.R. § 41.37(c)(1)(iv).

#### DEPENDENT CLAIMS 23 AND 26–28

Appellant argues that dependent claims 23 and 26–28 include “significantly more” than a patent-ineligible concept because they each recite the “additional limitations of a particular machine.” Reply Br. 12; *see* App. Br. 33. For example, claim 23 recites “generating [acoustic events] . . . using a hammer or battering ram powered by a human.” App. Br. 48 (Claims App.). As in claim 19, however, the additional elements in claims 23 and 26–28 are well-understood, routine, and conventional

components previously used by the relevant community. *See, e.g.*, Spec. ¶¶ 6–7, 11, 58, 87–90, 124, 126; Reagor reference ¶¶ 10, 33, 39. For instance, the Specification notes that during the 2002 Quecreek mine disaster trapped miners “bang[ed] on the rock ceiling with a hammer” and rescuers “tapp[ed] on the drill shaft with a hammer.” *See* Spec. ¶¶ 3–8. Accordingly, the additional elements in claims 23 and 26–28 do not provide an “inventive concept” that transforms the nature of the claims into a patent-eligible invention.

#### INDEPENDENT CLAIM 29 AND DEPENDENT CLAIM 30

Appellant argues that independent claim 29 and dependent claim 30 recite patent-eligible subject matter “for at least the same reasons as claim 19” and because they include “additional particular machine limitations,” i.e., “a personal electronic device” (claim 29) and “a vibrator, a pile driver, a jack hammer, a low frequency pipe organ, and a resonant cavity” (claim 30). Reply Br. 13; *see* App. Br. 35. As in claim 19, however, the additional elements in claims 29 and 30 are well-understood, routine, and conventional components previously used by the relevant community for performing functions specified in the claims. *See, e.g.*, Spec. ¶¶ 59–60, 87, 91–93, 95; Barrett reference 14:21–63, Fig. 1 (bi-directional pager/short-message device 106), Fig. 2 (transceiver module 202), Fig. 9 (mobile location transponder 920). Accordingly, the additional elements in claims 29 and 30 do not provide an “inventive concept” that transforms the nature of the claims into a patent-eligible invention.

#### *The § 103(a) Rejection of Claims 19–21 and 23–30*

Appellant argues that the Examiner erred in rejecting claims 19 and 29 under § 103(a) because the references do not teach or suggest steps

(a)(i)–(a)(iv), including “determining a first differential time period . . . [that] is a repetition period” and “determining a second differential time period . . . [that] is a communications window.” *See* App. Br. 38–39, 45. Appellant asserts that the claimed invention results in “a significant improvement in the signal-to-noise ratio by windowing the time in which the signals are transmitted.” *Id.* at 40. Appellant also asserts that “the Examiner has not clearly articulated how the MINER Act would be modified” by the secondary references to produce the claimed invention. *Id.* at 42.

The Examiner relies on Easysurf for teaching “determining a first differential time period . . . [that] is a repetition period” and “determining a second differential time period . . . [that] is a communications window.” Final Act. 6. Easysurf discloses (1) a time-duration calculator that determines the amount of time between a user-entered start time and a user-entered end time and (2) a clock-math calculator that determines an end time based on a user-entered start time and a user-entered time increment or decrement. Easysurf 1–2. Easysurf does not describe a repetition period or a communications window. *Id.*

Based on the record before us, the Examiner has not adequately explained how the cited portions of Easysurf teach or suggest “determining a first differential time period . . . [that] is a repetition period” and “determining a second differential time period . . . [that] is a communications window.” *See* Final Act. 6; Ans. 6. Thus, we do not sustain the obviousness rejection of claims 19 and 29.

Claims 20, 21, and 23–28 depend from claim 19, and claim 30 depends from claim 29. For the reasons discussed regarding claims 19

and 29, we do not sustain the obviousness rejection of claims 20, 21, 23–28, and 30.

Because we do not sustain the obviousness rejection for the reasons discussed above, we need not address Appellant’s additional arguments regarding Examiner error. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (explaining that an administrative agency may render a decision based on “a single dispositive issue”).

#### DECISION

We reverse the rejection of claims 19–21 and 23–30 under 35 U.S.C. § 112 ¶ 1.

We affirm the rejection of claims 19–21 and 23–30 under 35 U.S.C. § 101.

We reverse the rejection of claims 19–21 and 23–30 under 35 U.S.C. § 103(a).

Because we affirm at least one ground of rejection for each claim on appeal, we affirm the Examiner’s decision to reject all of the claims on appeal.

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