UNITED STATES PATENT AND TRADEMARK OFFICE

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Mintz Levin/Fair Isaac
Mintz Levin Cohn Ferris Glovsky and Popeo, P.C.
One Financial Center
Boston, MA 02111

EXAMINER
BROWN, LUIS A

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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 LINYU YANG and JOSEPH P. MILANA

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Appeal 2017-001051
Application 11/825,527
Technology Center 3600

———————

Before DENISE M. POTHIER, JAMES W. DEJMEK, and
JOHN D. HAMANN, *Administrative Patent Judges.*

POTHIER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants[1,2] appeal under 35 U.S.C. § 134(a) from the Examiner's
rejection of claims 1, 3–13, 15–18, and 20. App. Br. 4. Claims 2, 14, and
19 have been canceled as indicated in the Advisory Action (Adv. Act.)
mailed July 27, 2015, which entered the July 17, 2015 amendment. Adv.
Act. 1, Box 7(b). We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

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[1] Throughout this opinion, we refer to (1) the Final Action (Final Act.)
mailed May 14, 2015, (2) the Appeal Brief (App. Br.) filed November 13,
2015 and supplemented April 22, 2016 for the Claims Appendix (Claims
App'x), (3) the Examiner's Answer (Ans.) mailed August 25, 2016, and (4)
the Reply Brief (Reply Br.) filed October 24, 2016.
[2] The real party in interest is listed as Fair Isaac Corporation. App. Br. 2.

Invention

Appellants' invention "relates to detecting anomalous behavior in a computer system or computer network." *See* Spec. ¶ 2.

Claim 1 is reproduced below:

1. A computer-implemented method for detecting fraud in electronic commerce traffic, the method comprising:

determining, by one or more processors, a global conversion rate for electronic commerce traffic to a commercial website, the global conversion rate defining activity related to a purchase made or proxy activity executed that is indicative of non-fraud activity, the global conversion rate representing a fraction of the electronic commerce traffic that leads to the purchase or the proxy activity;

monitoring, by the one or more processors, subsets of the electronic commerce traffic to the commercial website for clusters of activity having a conversion rate that is lower than the global conversion rate by a threshold margin, the conversion rate representing a fraction of a subset out of the subsets of the electronic commerce traffic that leads to the purchase or the proxy activity, the monitoring subsets of the electronic commerce traffic to the commercial website further including:

registering, by the one or more processors, a number of user-initiated input signals associated with an IP address to navigate from each of one or more affiliate websites to the commercial website; and

registering, by the one or more processors, a number of conversions generated from each of the one or more affiliate websites;

detecting, by the one or more processors, of a change in the electronic commerce traffic in an amount of the electronic commerce traffic above or below a predetermined threshold in which the change extends for a predefined threshold term;

scaling, by the one or more processors, the global conversion rate to be a scaled global conversion rate in accordance with the detected change, the scaling comprising adjusting, by the one or more processors, of a tunable parameter

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that modifies the global conversion rate, the adjusting based on
the change; and
     comparing, by the one or more processors, the scaled
global conversion rate to each of the conversion rates in order
to detect anomalous conversion rates; and
     providing data encapsulating the detection of the
anomalous conversion rates.

The Rejections

Claims 1, 13, and 18 are rejected under 35 U.S.C. § 112,
second paragraph as being indefinite. Final Act. 3.

Claims 1, 3–13, 15–18, and 20 are rejected under 35 U.S.C. § 101 as
being directed to patent-ineligible subject matter. Final Act. 3–4.

THE INDEFININTENESS REJECTION

Regarding independent claim 1, the Examiner stated in the July 27,
2015 Examiner-Initiated Interview Summary that "the amendments"
overcome the § 112 rejection. July 21, 2015 Examiner-Initiated Interview
Summary, Substance of Interview included with the July 27, 2015 Advisory
Action. Similarly, the Advisory Action states the "112 and 103 rejections
are overcome by the amendments," which were entered. Adv. Act. 1–2,
Boxes 5 and 7(b).

However, in the Examiner's Answer, the Examiner maintains the
indefiniteness rejection under 35 U.S.C. § 112, second paragraph. Ans. 2.
The Examiner states "the conversion rate" in claims 1, 13, and 18 has "no
proper antecedent basis," because the claims only recite prior steps with a
global conversion rate and a scaled global conversion rate. *Id.*

In the Reply Brief, Appellants discuss the indefiniteness rejection.
Appellants argue claims 1, 13, and 18, as currently amended, recite

"comparing . . . the scaled conversion rate to each of the conversion rates in order to detect anomalous conversion rates," and "each of the conversion rates" refers to the previously recited "conversation rate" in the monitoring step and not a global conversion rate or scaled global conversion rate. Reply Br. 4–5.

Claim 1 recites "monitoring . . . subsets of the electronic commerce traffic to the commercial website for clusters of activity having a conversion rate that is lower than the global conversion rate by a threshold margin" and "comparing . . . the scaled global conversion rate to the each of the conversion rates in order to detect anomalous conversion rates." App. Br. 2–3 (Claims App'x). We agree with Appellants that the recited "each of the conversion rates" in the "comparing" step has proper antecedent basis with "a conversion rate" for each activity cluster in the "monitoring" step. *See id.* Thus, claims 1, 13, and 18 particularly point out and distinctly claim the subject matter Appellants regard as the invention and are definite.

For the foregoing reasons, Appellants have persuaded us of error in the rejection under 35 U.S.C. § 112, second paragraph of (1) independent claim 1 and (2) independent claims 13 and 18, which recite commensurate limitations.

THE PATENT INELIBIGLITY REJECTION

Appellants argue claims 1, 3–13, 15–18, and 20 as a group. App. Br. 10–15. We select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv)(2015).

Regarding representative claim 1, the Examiner finds the claims "are directed towards determining a global conversion rate for electronic

commerce traffic and monitoring a subset of the traffic that has a lower conversion rate. Determining a global conversion rate for electronic commerce and monitoring commercial activity are fundamental economic practices, and thus the claims include an abstract idea." Final Act. 3–4. The Examiner also states the claims do not have limitations that are significantly more than the abstract idea because they "do not include an improvement to another technology or technical field, an improvement to the functioning of the computer itself, or meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment." *Id.* at 4.

Appellants argue the claims are directed to "specific and tangible steps taken to solve a technical problem. Specifically, the claim solves the problem of detecting and quantifying fraudulent activity in electronic traffic in a time-sensitive manner," which is not an abstract idea. App. Br. 11; *see also id.* at 12–13 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). Appellants assert claim 1 parallels the findings in *Messaging Gateway Solutions, LLC v. Amdocs, Inc.*, No. 14-732, 2015 WL 1744343 (D. Del. April 15, 2015) where the "solution provided is clearly tethered to the technology that created the problem" and only "in the most remote manner" is claim 1 drawn to an abstract idea. *Id.* at 12. Appellants further contend the claimed combination amounts to significantly more than an abstract idea and is similar to Example 21 (claim 2) of the Office's July 2015 Update: Subject Matter Eligibility, which addresses an Internet-centric challenge of alerting a subscriber with information when the subscriber's computer is offline. *Id.* at 13–14.

ISSUE

Under § 101, has the Examiner erred in rejecting claim 1 by finding the claim is directed to patent-ineligible subject matter?

ANALYSIS

Based on the record, we find no error in the rejection of claim 1. Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "'long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.'" *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013)). The Supreme Court in *Alice* reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 82–84 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355.

The first step in that analysis is to determine whether the claims are directed to one of the patent-ineligible concepts, such as an abstract idea. Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 2355–57. If the claims are not directed to a patent-ineligible concept, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered "individually and 'as an ordered combination' to determine

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whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* at 2355 (quoting *Mayo*, 566 U.S. at 79, 78).

Applying the *Alice/Mayo* step one, claim 1 is directed to detecting fraud in electronic commerce traffic. App. Br. 2 (Claims App'x). As the Specification discusses, search engines derive revenue based on user actions, such as Pay-Per-Click (PPC) advertising, where advertisers pay a search engine to place links to a website and the search engine is paid each time a user clicks on a displayed link. Spec. ¶ 3. This business model results in various types of fraud (e.g., Click Fraud) or anomalous activities that the claimed invention attempts to detect. *Id.* ¶¶ 2, 5–7, 10.

Claim 1 recites several steps for detecting electronic commerce traffic fraud, including (1) determining a global conversion rate for electronic commerce traffic to a commercial website, (2) monitoring subsets of electronic commerce traffic for activity clusters having a conversion rate that is lower than the global conversion rate by a certain threshold, (3) detecting a change in the electronic commerce traffic in an amount above or below a predetermined threshold for a predefined term, (4) scaling the global conversion rate in accordance with the detected change by adjusting a tunable parameter that modifies the global conversion rate, (5) comparing the scaled global conversion rate to each of the conversion rates monitored in step (2) to detect anomalous conversions rates, and (6) providing data. App. Br. 2–3 (Claims App'x).

As the Examiner notes (Ans. 3), the above steps involving collecting, analyzing, and providing information, including when limited to particular content (e.g., fraudulent activities in electronic commerce traffic to a commercial website as recited in claim 1), are similar to or analogous to

steps people perform in their mind and are "within the realm of abstract ideas." *See Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016); *see also Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369–70 (Fed. Cir. 2015).[3] Steps of data collection, recognition, and storage, like those in claim 1, have been determined to be well-known concepts equivalent to those performed by humans and are directed to an abstract idea. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) *see also Content Extraction and Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1347 (Fed. Cir. 2014).

Also, as the Examiner notes (Ans. 6), steps that involve recognizing and storing data have been determined to be directed to well-known concepts as well as abstract ideas. *See Smart Systems Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1372 (Fed. Cir. 2017) (citing *Elec. Power*, 830 F.3d at 1353; *see also Content Extraction*, 776 F.3d at 1347. For example, claim 1's step of "monitoring" electronic commerce website subsets (App. Br. 2 (Claims App'x)) is similar to recognizing and analyzing data and the further steps of (1) registering a number of user-initiated input signals associated with an IP address to navigate from each of one or more affiliate websites to the commercial website and (2) registering a number of conversions generated from each of the one or more affiliate websites (*id.*) are similar to storing data. As such, claim 1's steps of monitoring subsets of electronic commerce traffic, which further

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[3] Given claim 1 requires these steps to be performed by "one or more processors" (App. Br. 2–3 (Claims App'x)), we are not stating the recited steps are performed mentally as argued. Reply Br. 8. Rather, the claimed steps are analogous to steps perform mentally.

involves registering certain data, are known concepts directed towards abstract ideas. *See Smart Systems*, 873 F.3d at 1372.

Moreover, a method of detecting fraud or misuse in a computer environment based on analyzing data has been found to be within the realm of abstract ideas. *See FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016); *see also CyberSource*, 654 F.3d at 1372–73, *cited in* Ans. 3. Similarly, claim 1 is directed to concepts of analyzing data/activity to detect anomalous activities/fraud in electronic commerce and is likewise directed to abstract ideas. *See FairWarning*, 839 F.3d at 1093–94. That is, claim 1's invention is directed to detecting fraud in electronic commerce traffic by (1) determining a global conversion rate for electronic commerce traffic to a commercial website, this rate (a) "defining activity related to a purchase made or proxy activity executed that is indicative of non-fraud activity" and (b) "representing a fraction of the electronic commerce traffic that leads to the purchase or the proxy activity," (2) monitoring subsets of the electronic commerce traffic to the commercial website for activity clusters having conversion rates lower than the global conversion rate by a threshold, (3) detecting a change in the electronic commerce above or below a threshold for a threshold term, (4) scaling the global conversion rate in accordance with the detected change, and (5) comparing the scaled conversion rate with each of the conversion rates in step (2). App. Br. 2–3 (Claims App'x). The above steps similarly involve analyzing data within a computer environment (e.g., electronic commerce traffic to a commercial website) to detect fraud (e.g., an abstract idea).

We thus agree with the Examiner (Final Act. 3–4) that claim 1 relates to a fundamental economic practice for detecting fraud in business commerce and is directed to an abstract idea under *Alice/Mayo* step one.

Turning to *Alice/Mayo* step two, we consider the elements of claim 1 individually and as an ordered combination to determine whether its additional elements transform the nature of the claim into a patent-eligible application (e.g., an inventive concept). Claim 1 recites the use of existing Internet technology (e.g., electronic commerce traffic to a commercial website) to collect, recognize, analyze, and store data (e.g., detecting a global conversion rate, monitoring cluster activity having a conversion rate lower than the global conversion rate, detecting changes in electronic commerce traffic, scaling a global conversion rate, and comparing the scaled global conversion rate to the monitored conversion rates to detect anomalies and to provide data related to the anomalies). *See* App. Br. 2–3 (Claims App'x). This claim does not recite significantly more than these routine activities or the abstract idea itself. *See id.*

We further disagree that the Office is omitting or ignoring claim language in claim 1 or reinterpreted its claim language incorrectly as Appellants assert. *See* Reply Br. 11–12. We refer above for more details and to our discussion addressing other court decisions that determined features similar to those in claim 1 are known or routine within the context of patent eligibility. Also, despite the Examiner not presenting a prior art rejection (*see id.* at 12–13), "§ 101 subject-matter eligibility is a requirement separate from other patentability inquiries." *See Return Mail, Inc. v. United States Postal Service*, 868 F.3d 1350, 1370 (Fed. Cir. 2017); *see also Mayo*, 566 U.S. at 90 and *Diamond v. Diehr*, 450 U.S. 175, 190 (1981) ("The

question . . . of whether a particular invention is novel is 'wholly apart from whether the invention falls into a category of statutory subject matter.'").

Reciting "one or more processors" to perform or execute the steps related to electronic commerce traffic and websites in claim 1 (App. Br. 2–3 (Claims App'x)) does not impose sufficiently meaningful limits on claim 1's scope or convert a general purpose processor into a new machine programmed to perform particular functions. *See CyberSource*, 654 F.3d at 1374–75; *see Alice*, 134 S. Ct. at 2358 ("[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention"); *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1348 (Fed. Cir. 2016) ("An abstract idea on 'an Internet computer network' or on a generic computer is still an abstract idea."); *Elec. Power*, 830 F.3d at 1355 ("We have repeatedly held that such invocations of computers and networks that are not even arguably inventive are 'insufficient to pass the test of an inventive concept in the application' of an abstract idea."). For example, despite Appellants' assertion to the contrary (Reply Br. 10–11), claim 1's recited steps individually and as an ordered combination recite routine steps and there is no inventive concept in using generic processors to perform routine activities commonly used in the industry. *See Content Extraction*, 776 F.3d at 1348.

Moreover, limiting a processor's use to a particular environment (e.g., fraud in electronic commerce) or limiting the claim to an environment that does not wholly pre-empting an abstract idea (*see* Reply Br. 8–9) is insufficient to save a claim from patent ineligibility. *Id.* (citing *Alice*, 134 S. Ct. at 2358 and *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014)).

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Turning to the Specification, the disclosure does not purport to improve on the functioning of the recited "one or more processors" of claim 1. The Specification provides insufficient evidence that anything other than conventional tools (e.g., generic processors and storage devices) and activities (e.g., routine processes using information) are used to collect, analyze, store, and provide the recited information or data, including "data[,] encapsulating the detection of the anomalous conversion rates" in claim 1. *See* Spec. ¶¶ 49, 53, Fig. 3 (elements 110-130); *see also* Ans. 3. To be sure, the Specification discusses "special purpose microprocessors" (Spec. ¶ 53) but the disclosure does not provide and claim 1 does not recite more details regarding the "special purpose microprocessors." Even when viewing claim 1 as a whole, Appellants have not rebutted adequately that these processors are significantly more than generic or known processors. *See* App. Br. 11–15; Reply Br. 6–8.

Nor is claim 1 directed to improving on the processor(s) or its function. App. Br. 11–15. Rather, claim 1 detects fraud in electronic commerce traffic to a commercial website based on certain determined, monitored, detected, and scaled values by at least one processor. Claim 1 is also not directed to improving (1) a computer's function or operation (e.g., a particular database having a self-referential table as discussed in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016)) or (2) computers as tools (*see Elec. Power*, 830 F.3d at 1354). Rather, claim 1 uses existing processors as tools for assisting in performing the claimed method steps directed to abstract ideas. App. Br. 2–3 (Claims App'x). Claim 1 also is not directed to a specific way to automate the creation of a composite website by a provider that incorporate elements from multiple

sources to solve a problem faced by Internet websites, in contrast with the claims in *DDR*[4] as argued by Appellants. App. Br. 12–13. Rather, claim 1 is directed to detecting fraudulent electronic commerce from activity clusters with lower conversion rates than a global conversion rate. *Id.* at 2–3 (Claims App'x).

Granted, the claims invoke processors (*see* App. Br. 2–3 (Claims App'x)) to obtain the values and to assist in detecting fraud, which has been described as challenging. *See* Spec. ¶¶ 8–10. However, such recitations do not contain an inventive concept sufficient to transform the generically recited processors and storage devices into a patent-eligible application. *See Alice*, 134 S. Ct. at 2358. Rather, as previously discussed, claim 1 amounts to performing steps that implement an abstract idea of detecting fraud in electronic commerce traffic with routine tools/activities.

We thus agree with the Examiner claim 1 does include an improvement to a technology/technical field or to computer functions, such that it transforms claim 1's abstract idea into an inventive concept. *See* Final Act. 4.

Lastly, Appellants refer to *Messaging Gateway*, drawing parallels between this case, where the claims were found patent eligible under § 101, and the instant claims. App. Br. 12. Appellants further point to *Ex parte Ismail*, No. 2014-005477, 2016 WL 3569659 (PTAB June 29, 2016). Reply Br. 10–11. Neither *Messaging Gateway* nor *Ismail* are precedential decisions. Even so, in contrast with Appellants' contention (App. Br. 11–12), claim 1 is directed to advertising fraud, which is not a problem unique to a technology like *Message Gateway*. Moreover, the claims in

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[4] *DDR*, 773 F.3d at 1259.

Ismail concern a method of characterizing a microorganism and were found to be directed to a practical application of spectral-image analysis, which differs from instant claim 1, which is directed to detecting fraud in electronic commerce traffic.

Additionally, Appellants refer to Example 21 of the Office's July 2015 Update: Subject Matter Eligibility in asserting claim 1 is patent eligible. App. Br. 13–14. Specifically, Example 21 of the *July 2015 Update Appendix 1: Examples*[5] includes two hypothetical claimed methods of distributing stock quotes over a network to a remote computer. *July 2015 Update Appendix 1: Examples*, pp. 2–3. Claim 1 is directed to patent ineligible subject matter; claim 2 is directed to patent eligible subject matter. *Id.* at 3–5. Claim 1 of the instant application is more akin to the patent-ineligible method claim in Example 21. *See July 2015 Update Appendix 1: Examples*, Example 21, pp. 3–4. That is, although claim 1 of Example 21 addresses internet-centric challenges with an ordered combination of features, the claim is patent-ineligible because the claimed steps simply organize and compare data analogous to steps that can be performed mentally and are similar to concepts that have been identified by the courts as abstract as previously discussed. Moreover, unlike hypothetical claim 2 in Example 21, claim 1 in the instant application (and in the hypothetical Example 21) do not recite significantly more the claimed abstract idea as previously addressed. *See* July 2015 Update Appendix 1: Examples, Example 21, pp. 3–5.

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[5] July 2015 Update Appendix 1: Examples, pp. 1–5, *available at* https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-app1.pdf.

Although claims 13 and 18 are not separately argued, claim 13 recites a method with similar steps and is also directed to patent-ineligible subject matter (i.e., an abstract idea without significantly more). App. Br. 5–6 (Claims App'x). As discussed above, such steps have been determined to be directed to well-known concepts (*see Smart Systems*, 873 F.3d at 1372) and methods of detecting fraud or misuse in a computer environment based on analyzing data have been found to be within the realm of abstract ideas (*see FairWarning*, 839 F.3d at 1093). Additionally, claim 18 recites a "computer readable medium for detecting fraud in electronic commerce traffic," the medium[6] comprising "a global conversion rate tool" for performing steps similar to claims 1 and 13 and "a web traffic monitor" for performing steps similar to claims 1 and 13. App. Br. 7–8 (Claims App'x). However, the mere recitation of a computer readable medium cannot transform a patent-ineligible abstract idea into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2358.

Accordingly, Appellants have not persuaded us of error in the rejection of independent claim 1 and claims 3–13, 15–18, and 20, which are not separately argued.

DECISION

We affirm the Examiner's rejection of claims 1, 3–13, 15–18, and 20 under 35 U.S.C. § 101.

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[6] Claim 18 recites a "medium" and "the system" in its preamble. App. Br. 7 (Claims App'x). "[T]he system" lacks antecedent basis. We presume for purposes of this Opinion "the system" was intended to be "the medium."

We reverse the Examiner's rejection of claims 1, 13, and 18 under 35 U.S.C. § 112, second paragraph.

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, the Examiner's decision is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

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).

<u>AFFIRMED</u>