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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 13/627,738 | 09/26/2012 | Michael J. Tompkins | 29DV-164298 | 7004 |
| 69849 | 7590 | 09/30/2020 | EXAMINER | |
| SHEPPARD, MULLIN, RICHTER & HAMPTON LLP | | | GIULIANI, GIUSEPPI J | |
| 379 Lytton Avenue | | | ART UNIT | PAPER NUMBER |
| Palo Alto, CA 94301 | | | 2165 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 09/30/2020 | ELECTRONIC |

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL J. TOMPKINS

Appeal 2019-001191
Application 13/627,738
Technology Center 2100

Before JASON V. MORGAN, JEREMY J. CURCURI, and
IRVIN E. BRANCH, *Administrative Patent Judges*.

BRANCH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE¹

Pursuant to 35 U.S.C. § 134(a), Appellant² appeals from the Examiner’s decision to reject claims 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, and 28. *See* Non-Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We refer to the Specification, filed September 26, 2012 (“Spec.”); Non-Final Office Action, mailed May 11, 2017 (“Non-Final Act.”); Appeal Brief, filed June 14, 2018 (“Appeal Br.”); and Examiner’s Answer, mailed September 6, 2018 (“Ans.”).

² We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Vinesleuth, Inc. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to systems and methods for wine ranking and recommendations. Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method comprising:

[a]receiving, for each of a plurality of predetermined wines, a set of taster-based intensity values associated with a wide range of wine descriptors, the wide range of wine descriptors being used to assist in describing each of the plurality of predetermined wines, the set of taster-based intensity values being generated from subjective intensity values provided by a set of tasters, each wine descriptor of the wide range of wine descriptors being assigned at least one taster-based intensity value of the set of taster-based intensity values;

[b]storing the set of taster-based intensity values assigned to the wide range of wine descriptors within a wine database as a wine core matrix;

[c]receiving wine preferences of a user, the wine preferences enabling identification of a plurality of preferred wine characteristics of the user;

[d]generating a user wine preferences matrix that is specific to the user and is based on the user's preferred wine characteristics, the user wine preferences matrix and the wine core matrix having a same number of wine descriptors;

[e]determining correlation within the user's preferred wine characteristics based on the received wine preferences of the user, the correlation being specific to the user;

[f]transforming the user's preferred wine characteristics using the correlation into uncorrelated vectors that capture a majority of wine character variance of the user, the transformation generating a descriptor matrix;

[g]applying the descriptor matrix to the wine core matrix to project the wine core matrix to a proxy space;

[h]applying the descriptor matrix to the user wine preferences matrix to project the user wine preferences matrix into the proxy space;

- [i] determining one or more wines to recommend based on a shortest distance in the proxy space between the wines of the wine core matrix and the projection of the user wine preferences matrix in the proxy space; and
- [j] recommending the one or more wines.

REJECTIONS³

Claims 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, and 28 stand rejected under 35 U.S.C. § 101 because the claims are directed to ineligible subject matter. Non-Final Act. 5–8.

Claims 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, and 28 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Non-Final Act. 9–11.

Claims 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, and 28 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Non-Final Act. 11–12.

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellant’s arguments. We have considered in this Decision only those arguments Appellant actually raised in the Briefs. Any other arguments Appellant could have made but chose not to make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

To the extent consistent with our analysis herein, we adopt as our own the findings and reasons set forth by the Examiner in (1) the action from

³ The Examiner has withdrawn an obviousness rejection of all pending claims. *See* Ans. 3; Non-Final Act. 12–31.

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which this appeal is taken (Non-Final Act. 5–12) and (2) the Examiner’s Answer in response to Appellant’s Appeal Brief (Ans. 3–16) and concur with the conclusions reached by the Examiner. We highlight the following for emphasis.

35 U.S.C. § 112, FIRST PARAGRAPH

The Examiner determines Appellant’s Specification lacks written description support for “‘a wine core matrix’ or any central/main matrix being used,” “the user preferences matrix and the wine core matrix having a same number of descriptors,” and “applying the descriptor matrix to the wine core matrix to project the wine core matrix to a proxy space.” Non-Final Act. 9–10.

Referring to claim 1, Appellant contends that “wine core matrix” is a “training database,” as used throughout the Specification. Appeal Br. 73–75 (citing Spec. ¶¶ 111, 57, and 48). The Examiner responds as follows:

[T]he specification appears to *estimate a matrix* from the information stored in the training database, rather than disclosing that the training database is itself a “wine core matrix”. As such, the examiner maintains that the “wine core matrix” was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventors, at the time the application was filed, had possession of the claimed invention.

Ans. 13.

Appellant does not persuasively rebut the Examiner’s reasoning.⁴ Accordingly, on this record, we are unpersuaded of error based on this argument.

⁴ Note, Appellant did not file a Reply Brief and we find no persuasive rebuttal to the Examiner’s finding in the Appeal Brief.

Referring again to claim 1, Appellant argues support for “the user preferences matrix and the wine core matrix having a same number of descriptors” may be found at Specification paragraphs 60, 61, 64, 65, and 107. Appeal Br. 75–77. Appellant argues as follows:

Each component of V may be describing the likes of the user for the particular set of wines in the training database and for correlation, the descriptors (which are a part of the wines and is used for the similarity function between the wine and user matrices) must have the same number.

Appeal Br. 76.

The Examiner determines that “because the appellant’s specification does not appear to disclose a wine core matrix, let alone the specific details on the numbers of descriptors,” Appellant’s Specification, at best, “appears to disclose describing all wines utilizing a common set of descriptors, rather than ‘a wine core matrix having a same number of descriptors’ as claimed.” Ans. 13.

Because we do not find a persuasive rebuttal to the Examiner’s finding, we are unpersuaded of error based on this argument.

Referring again to claim 1, Appellant argues that support for “applying the descriptor matrix to the wine core matrix to project the wine core matrix to a proxy space” may be found at paragraph 69 of the Specification. Appeal Br. 77. Appellant argues that the “specification indicates that a ‘dynamic’ database may be generated based on the user’s wines of current interest, thereby the dynamic database may be all or a subset of the training database,” and “[u]ncorrelated vectors of those wines are projected into the user proxy space.” Appeal Br. 77 (citing ¶ 69).

The Examiner responds as follows:

[Paragraph 69] does not disclose that “the dynamic database may be all or a subset of the training database” as argued by the appellant. Rather, [paragraph 69] explicitly discloses “a dynamic database which is *distinct from the training* discussed herein.” Furthermore, [paragraph 69] discloses that “future wine requests may be filtered by the operator V in order to transform all wines from a new ‘dynamic’ database into the user’s proxy space.” At best, the specification appears to disclose filtering future wine requests by the operator V in order to transform all wines from a new ‘dynamic’ database (*which is distinct from the training*) into the user’s proxy space, rather than “applying the descriptor matrix to the wine core matrix to project the wine core matrix to a proxy space” as claimed. As such, the appellant's arguments are not persuasive.

Ans. 14.

Appellant does not persuasively rebut the Examiner’s finding. Moreover, we have reviewed other portions of the Specification that Appellant cites as disclosing the claimed wine core matrix (Appeal Br. 3 (citing, e.g., Spec. ¶¶ 36, 38, 49, 57, 58, 88, 111–12, Fig. 4)) and to the claims as originally filed (Spec. 42–46). We are unable to discern written description support from these additional disclosures. Accordingly, we are unpersuaded of error in the Examiner’s rejection of claim 1 as lacking written description support. Appellant repeats the above arguments for independent claims 13 and 28, albeit under separate headings, and does not argue the dependent claims. *Id.* at 78–86. Accordingly, we sustain the Examiner’s rejection of all pending claims under 35 U.S.C. § 112, first paragraph, as lacking written description support.

35 U.S.C. § 112, SECOND PARAGRAPH

The Examiner determines the claims are indefinite because the independent claims recite “a wide range of wine descriptors,” which “is a relative phrase which may differ from one person’s interpretation to another” and “[t]he examiner is unable to ascertain the scope of the claims because a ‘wide range’ is not clearly defined in the claims.” Non-Final Act. 11. The Examiner also finds that claim 1’s “determining one or more wines to recommend based on a shortest distance in the proxy space between the wines of the wine core matrix and the projection of the user wine preferences matrix in the proxy space” is indefinite because:

It is unclear to the examiner how to determine a shortest distance in the proxy space between the wines of the wine core matrix and the projection of the user wine preferences matrix if the wine core matrix is not projected in the proxy space. The examiner notes that the wine core matrix is projected into the proxy space in lines 20–21 [of claim 1], however, the claims do not specify that this projection is used to determine a shortest distance in the proxy space. Because the examiner is unclear how to determine “a shortest distance in the proxy space between [the projection of] the wines of the wine core matrix and the projection of the user wine preferences matrix” if the wine core matrix is not projected into the proxy space, the claims are rendered indefinite.

Id. at 11–12. (bracketing added to emphasize the apparently omitted modifier).

Appellant’s arguments against the Examiner’s rejection (Appeal Br. 86–91) are unpersuasive of error for the reasons stated by the Examiner (Ans. 14–16), which Appellant does not persuasively rebut. That is, we agree with the Examiner that the subjective “phrase ‘wide range’ may differ from person to person.” *Id.* at 15. We also agree with the Examiner “that it is unclear how to determine the distance between the wines of the wine core

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matrix (which are not specified as being projected into the proxy space) and the projection of the user wine preferences matrix in the proxy space” (*id.* at 16). The lack of written description support for the claimed wine core matrix exacerbates this lack of clarity.

Accordingly, we sustain the rejection of all pending claims under 35 U.S.C. § 112, second paragraph, as being indefinite.

35 U.S.C. § 101

Principles of Law

To constitute patent-eligible subject matter, an invention must be a “new and useful process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof.” 35 U.S.C. § 101. There are implicit exceptions to the categories of patentable subject matter identified in 35 U.S.C. § 101, including: (1) laws of nature; (2) natural phenomena; and (3) abstract ideas. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014). The U.S. Supreme Court has set forth a framework for distinguishing patents with claims directed to these implicit exceptions “from those that claim patent-eligible applications of those concepts.” *Id.* at 217 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)). The evaluation follows a two-part framework: (1) determine whether the claim is *directed to* a patent-ineligible concept, e.g., an abstract idea; and (2) if so, then determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to *significantly more* than the patent-ineligible concept itself. *See id.* at 217–18.

The U.S. Patent and Trademark Office (USPTO) published guidance on the application of the two-part analysis. USPTO, *2019 Revised Patent*

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Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (January 7, 2019)

(“2019 Revised Guidance”); *see also* USPTO, *October 2019 Update*:

Subject Matter Eligibility, available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf (Oct. 17, 2019) (“Oct. 2019 Update”). 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) (*see* 2019 Revised Guidance, 84 Fed. Reg. at 54 (step 2A, prong one)); and

(2) additional elements that integrate the judicial exception into a practical application (*see id.* at 54–55 (step 2A, prong two); 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 2019 Revised Guidance, 84 Fed. Reg. at 56.

Step 2A, Prong One

The Examiner determines that “the claimed invention is directed to the age-old idea of recommending wines.” Non-Final Act. 6. The Examiner

likens the claims to the claims in several cases our reviewing court has found patent ineligible for various reasons. First, the Examiner determines “the abstract idea of recommending wines is similar to the concepts that have been identified as abstract by the courts, such as collecting information, analyzing it, and displaying certain results of the collection and analysis.” *Id.* at 6 (citing *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)). The Examiner determines that “the abstract idea of recommending wines is also similar to the concepts that have been identified as abstract by the courts, such as encoding and decoding image data.” *Id.* at 7 (citing *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322 (Fed. Cir. 2017)). The Examiner further determines that “the abstract idea of recommending wines is also similar to the concepts that have been identified as abstract by the courts, such organizing information through mathematical correlations.” *Id.* (citing *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)). The Examiner concludes that these cases show our reviewing court has determined that, as here, a claimed process that “start[s] with data, add[s] an algorithm and end[s] with a new form of data [is] directed to an abstract idea.” *Id.*

We agree with the Examiner’s determination that the claims recite an abstract idea. In particular, the claims here are similar to the claims in *Electric Power Group*, which were directed to methods of receiving data, analyzing the data, and displaying the results. *Elec. Power Grp.*, 830 F.3d at 1351–52. There, the court explained the claims were directed to ineligible abstract ideas because “[t]he advance they purport to make is a process of gathering and analyzing information of a specified content, then displaying the results, and not any particular assertedly inventive technology for performing those functions.” *Elec. Power Grp.*, 830 F.3d. at 1354.

Here, similar to the claims in *Elec. Power Grp.*, limitations [a]–[c] of claim 1 (and the corresponding limitations of claims 13 and 28) amount to gathering information of a specific content, limitations [d]–[h] amount to analyzing the information, and limitation [j] amounts to displaying the result.

Appellant does not show error in the Examiner’s determinations as they relate to Step 2A, Prong One. Appellant argues the Examiner “overgeneralizes portions of the claim without reference to the individual elements and without reference to the claims as a whole” and “assumes that the claim must be abstract because of an end result, namely providing a wine recommendation.” Appeal Br. 38, 40. Appellant asserts certain limitations “clearly are not ‘mental processes’” and the process is not “merely ‘an abstract idea’ that merely includes collecting information, analyzing it, and displaying results.” *Id.* at 41. Appellant also argues that “the application of mathematics do[es] not absolutely render an otherwise patentable concept abstract” and that “the Examiner has concluded that since there is math, the entire claim must be abstract rather than seeing the operations that are expressed.” *Id.* at 41–42.

Appellant’s arguments do not persuade us of error. Rather, we agree with the Examiner as follows:

[Limitations [e]–[i]] above can be performed mentally because they are directed to a purely mathematical procedure which transforms a number of correlated variables (i.e. wine characteristics) into uncorrelated vectors (i.e. a descriptor matrix), applies the descriptor matrix to a wine core matrix and a user wine preferences matrix to project the matrices into a proxy space and finally determines wines to recommend based on a distance calculations in the proxy space. ***This type of purely mathematical procedure is precisely the type of concept which***

is related to organizing or analyzing information in a way that can be performed mentally or is analogous to human mental work (see MPEP 2106.04(a)(2), subsection III). For example, the appellant’s specification describes an example utilizing principal component analysis as the mathematical transformation procedure in [0056]–[0061]. Principle component analysis is a statistical procedure invented well before the advent of computers and can be performed by a human using a pen and paper. The claims of the instant application invoke a computer as a tool to perform various calculations including this type of mathematical procedure.

While the appellant argues that “the Examiner has concluded that since there is math, the entire claim must be abstract”, the above highlighted portion makes it clear that this is not the examiner's position. Rather, it is submitted by the examiner that adding one abstract idea (e.g. the mathematical algorithm steps recited in claim 1 lines 8–27) to another abstract idea (e.g. recommending wines) ***does not render the abstract idea of recommending wines any less abstract***. In *RecogniCorp*, the Court explains that claims that are directed to a non-abstract idea are not rendered abstract simply because they use a mathematical formula, however, a claim directed to an abstract idea does not automatically become eligible merely by adding a mathematical formula. ***In this case, because the claims are directed the abstract idea of recommending wines, the addition of mathematical analysis cannot save it.***

Ans. 4–5, 7.

We note Appellant’s preemption argument (Appeal Br. 42), but find it unpersuasive of error. Rather, we agree with the Examiner as follows:

[W]hile preemption is the concern underlying the judicial exceptions, it is not a standalone test for determining eligibility. Even though a preemptive claim may be ineligible, the absence of complete preemption does not demonstrate that a claim is eligible (see MPEP 2106.04). In this case, a supposed lack of preemption in the field of recommending wines does not demonstrate that the claims are patent eligible.

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Ans. 7; *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 573 U.S. at 216).

For these reasons, we agree with the Examiner that claim 1 recites an abstract ideas.

Step 2A, Prong Two

With reference to Step 2A, we agree with the Examiner’s determination as follows:

[T]he additional elements or combination of elements in the claims, other than the abstract idea per se, amount to no more than mere instructions to implement the idea on a computer, and/or recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known in the field of information retrieval. The claims recite a method, system and computer readable medium which only performs generic computer functions such as collecting information, analyzing it, and displaying certain results of the collection and analysis.

Non-Final Act. 8.

Appellant also argues that the claims recite an improvement to “what sommeliers perform mentally,” that the recited process “enable[s] projections into the proxy space” and “add[s] efficiency to [the] problem of statistical classification with large data sets.” Appeal Br. 40.

We are not persuaded by Appellant’s arguments. Rather, we agree with the Examiner as follows:

To show that the involvement of a computer assists in improving the technology, the claims must recite the details regarding how a computer aids the method, the extent to which the computer aids the method, or the significance of a computer to the performance of the method. Merely adding generic computer components to perform the method is not sufficient.

Thus, the claim must include more than mere instructions to perform the method on a generic component or machinery to qualify as an improvement to an existing technology (see MPEP 2106.05(a), subsection II). ***In this case, the focus of the claims of instant application is not a physical-realm improvement, but rather, an improvement in wholly abstract ideas, namely, the recommendation of wines based on mathematical analysis.*** The examiner acknowledges appellant's argument that the claims "can overcome problems in the prior art, including inefficiency", however, even if this is the case, adding efficiency to the problem of statistical classification is still only an improvement to the abstract idea itself, which does not impart patentability.

The claims here require no improved computer resource, but instead, require computers and basic functions that are already available, to use as tools in executing the claimed process. If a claimed process can be performed without a computer, the Federal Circuit has indicated that it cannot improve computer technology. Furthermore, mere automation of manual processes or increasing the speed of a process where these purported improvements come solely from the capabilities of a general-purpose computer are not sufficient to show an improvement in computer-functionality (see MPEP 2106.04(a), subsection I).

Ans. 5–6.

Furthermore, we are unable to identify any additional recitations that implement the underlying abstract idea with, or use the underlying abstract idea in conjunction with, "a particular machine or manufacture that is integral" to claim 1, or that effect "a transformation or reduction of a particular article to a different state or thing," or that apply or use the underlying abstract idea "in some other meaningful way beyond generally linking the use of the [underlying abstract idea] to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception." 2019 Revised Guidance, 84 Fed. Reg. at 55.

For these reasons, claim 1 does not include additional recitations that integrate the recited abstract idea (i.e., certain methods of organizing human activity through fundamental economic principles or practices such as risk mitigation) into a practical application.

Step 2B

Having determined that claim 1 is directed to an abstract idea, we now consider whether any additional recitations or combination of recitations amount to significantly more than the underlying abstract idea. *See* 2019 Revised Guidance, 84 Fed. Reg. at 56.

Appellant argues “Applicant’s Specification does not indicate that any of the elements above, alone or in combination are ‘sufficiently well-known.’ Further, the Examiner has not cited any evidence in Applicant’s Specification indicating that the elements above are ‘sufficiently well known.’” Appeal Br. 45.

We are not persuaded, but rather agree with the Examiner “that the additional elements or combination of elements in the claims, other than the abstract idea per se, amount to no more than mere instructions to implement the idea on a computer.” Ans. 9.

Claim 1 recites, for example, a “wine database,” which the Specification discloses “is a database or any data structure that comprises wine identifiers with corresponding wine characteristics.” Spec. ¶ 38. The Specification also broadly discloses technologies such as the processor of a digital device, memory, storage, and a communication network interface in broad terms that demonstrate that the technology recited in the claims—the additional recitations—were well-understood, routine, or conventional. *Id.* ¶¶ 160–66.

For these reasons, we determine that claim 1 does not include additional recitations that, considered individually or in combination, transform the abstract ideas to which claim 1 is directed into a patent-eligible invention.

Other Claims

Appellant contends that independent claim 13 and 28, and dependent claims 3–6, 8, 9, 12, 15–21, 23, 24, and 27, are patent-eligible for the same or similar reasons as claim 1, or recite additional elements that integrate the alleged abstract idea into a practical application. *See* Appeal Br. 11–14. Appellant does not provide specific arguments to support these contentions, but instead merely reproduces recitations from the other claims. *Id.* Therefore, for the reasons discussed above, we also sustain the Examiner’s 35 U.S.C. § 101 rejection of claims 3–6, 8, 9, 12, 15–21, 23, 24, and 27.

DECISION SUMMARY

In Summary:

| Claims Rejected | 35 U.S.C. § | Basis | Affirmed | Reversed |
|---|-----------------------|---------------------|---|-----------------|
| 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, 28 | 101 | Eligibility | 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, 28 | |
| 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, 28 | 112, first paragraph | Written Description | 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, 28 | |
| 1, 3–6, 8, 9, 12, 13, 15– | 112, second paragraph | Indefiniteness | 1, 3–6, 8, 9, 12, 13, | |

| Claims Rejected | 35 U.S.C. § | Basis | Affirmed | Reversed |
|------------------------|--------------------|--------------|---|-----------------|
| 21, 23, 24, 27, 28 | | | 15–21, 23, 24, 27, 28 | |
| Overall Outcome | | | 1, 3–6, 8, 9, 12, 13, 15–21, 23, 24, 27, 28 | |

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED