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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DOUGLAS E. BASSETT JR. and DANIEL R. RICHARDS

Appeal 2018-007839
Application 14/356,846
Technology Center 1600

Before DONALD E. ADAMS, DEBORAH KATZ, and JOHN G. NEW,
Administrative Patent Judges.

ADAMS, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 2, 5, 7, 9, 11–14, and 16–23. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ 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 Ingenuity Systems, Inc. . . . a wholly-owned subsidiary of QIAGEN GmbH (Appellant's December 29, 2017 Appeal Brief (Appeal Br.) 3.

STATEMENT OF THE CASE

Appellant's disclosure relates to "[m]ethods and systems for filtering variants in data sets comprising genomic information" (Spec. ¶ 3).

Appellant's claim 1 is representative and reproduced below:

1. A computer system, comprising:

a database of biological information, wherein the database of biological information is a knowledge base structured with an ontology, wherein the biological information is represented, within the knowledge base, as nodes connected by edges, each edge representing an interaction between two nodes, wherein the nodes represent biological entities, and wherein two biological entities connected by one edge are one hop away from each other; and

a computer configured to implement a biological context filter by:

receiving a data set comprising variants, wherein the data set composes variant data from one or more samples from one or more individuals;

communicating with the database of biological information;

establishing associations between the variants, from the received data set, and the biological information selected by a user, wherein each association includes a relationship defined by one or more hops between a variant and the selected biological information; and

filtering the received data set based on the established associations for variants associated with the selected biological information.

(Appeal Br. 21.)

Grounds of rejection before this Panel for review:

Claims 1, 2, 5, 7, 9, 11–14, and 16–23 stand rejected under the written description provision of 35 U.S.C. § 112, first paragraph.

Claims 1, 2, 5, 7, 9, 11–14, and 16–23 stand rejected under 35 U.S.C. § 112, second paragraph.

Claims 1, 2, 5, 7, 9, 11–14, and 16–23 stand rejected under 35 U.S.C. § 101.

Written Description and Definiteness:

ISSUES

Does the preponderance of evidence on this record support Examiner’s finding that Appellant’s Specification fails to provide written descriptive support for the claimed invention?

Does the preponderance of evidence support Examiner’s conclusion that Appellant’s claims are indefinite?

ANALYSIS

“Construing a means-plus-function claim term is a two-step process. The court must first identify the claimed function. . . . Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015) (internal citation omitted).

Examiner finds that Appellant’s claims “recite the use of a generic computer in the form of a configured computer defined only by the expected functions that it is to perform. This is the only structure recited in [Appellant’s] claims and therefore invokes an interpretation under 35 [U.S.C.] 112, 6th paragraph” (Ans. 4). In this regard, Examiner finds that

Appellant's Specification "fails [to] specify any structure corresponding to the means as instantly claimed" (*id.*). Thus, Examiner finds that because Appellant's Specification lacks "any specific definition that limits the claimed functions to a specifically described 'configured' system [Appellant] has failed to demonstrate that [it] was in possession of the full scope of the claimed invention at the time the application was filed" (*id.*).

Having identified a means-plus-function claim term in Appellant's claimed invention, Examiner looks to Appellant's Specification and finds that Appellant's Specification "provide[s] a sufficient prose description regarding how the special purpose functions are achieved by a dedicated, specifically configured computer system" (Ans. 10; *see* Appeal Br. 17–18 (Appellant contends that although the claimed "functions can be achieved by any general purpose computer without special programming," "even if additional structure were deemed necessary, such structure is described in the [S]pecification in the form of process steps (e.g., algorithms).") (citing Spec.² ¶¶ 149–162, 179–182, 199–228, 237, 258–264, 269, and 271–323)).

Nonetheless, Examiner maintains the written description rejection on this record because "the claims are necessarily unbounded to a[] specific or particular configurations" and the "rejection would be overcome if the instant claims were amended to be limited to those exemplary embodiments described in the [S]pecification" (*id.*). Stated differently, although Examiner agrees that Appellant's Specification provides adequate corresponding structure to cover the claim limitation expressed in means-plus-function language, Examiner maintains the rejection because Appellant has not

² Appellant's May 7, 2014 Specification.

amended the claims to recite the specific structure disclosed in Appellant's Specification. Examiner, however, identifies no authority to support Examiner's assertion that Appellant's claims must recite the specific structure corresponding to the means-plus-function language of the claims. To the contrary, we find that 35 U.S.C. § 112, sixth paragraph states that "[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function *without the recital of structure, material, or acts in support thereof*, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof" (emphasis added).

In sum, notwithstanding Examiner's assertion to the contrary, an element of a claim may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, but is instead constructed to cover the corresponding structure described in Appellant's Specification or equivalents thereof. On this record, Examiner clearly acknowledged that Appellant's Specification provided sufficient corresponding structure to satisfy the means-plus-function element of Appellant's claimed invention. Thus, Examiner's written description rejection is reversed.

The definiteness rejection on this record is based on the same rationale applied in Examiner's written description analysis and, therefore, fails for the same reasons set forth above (*see* Ans. 6–7 and 10).

CONCLUSION

The preponderance of evidence on this record fails to support Examiner's finding that Appellant's Specification fails to provide written descriptive support for the claimed invention. The rejection of claims 1, 2,

5, 7, 9, 11–14, and 16–23 under the written description provision of 35 U.S.C. § 112, first paragraph is reversed.

The preponderance of evidence also fails to support Examiner’s conclusion that Appellant’s claims are indefinite. The rejection of claims 1, 2, 5, 7, 9, 11–14, and 16–23 under 35 U.S.C. § 112, second paragraph is reversed.

Subject Matter Eligibility:

ISSUE

Does the preponderance of evidence of record support Examiner’s finding that Appellant’s claimed invention is directed to patent ineligible subject matter?

PRINCIPLES OF LAW

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. The Supreme Court, however, 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. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Gottschalk*, 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 191 (“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 *Gottschalk* and *Parker*); *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, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (“Revised Guidance”). 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. 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. 51.

ANALYSIS

Applying the Revised Guidance to the facts on this record, we find that Appellant’s claims are not directed to patent-eligible subject matter.

The Revised Guidance instructs us first to determine whether any judicial exception to patent eligibility is recited in the claim. The Revised Guidance identifies three judicially-expected groupings identified by the courts as abstract ideas: (1) mathematical concepts, (2) certain methods of organizing human behavior such as fundamental economic practices, and (3) mental processes.

Appellant’s independent claim 1 includes the following steps:

establishing associations between the variants, from the received data set, and the biological information selected by a user, wherein each association includes a relationship defined by one or more hops between a variant and the selected biological information; and

filtering the received data set based on the established associations for variants associated with the selected biological information.

(Appeal Br. 21.) According to Appellant’s claimed invention, the “received data set” “comprises variant data from one or more samples from one or more individuals” (*id.*). In addition, Appellant’s claimed invention states that “biological information is represented, within [a] knowledge base, as noted connected by edges, each edge representing an interaction between two nodes, wherein the nodes represent biological entities, and wherein two

biological entities connected by one edge are one hop away from each other” (*id.*).

Thus, Appellant’s claim 1 comprises both mathematical concepts and mental processes under the Revised Guidance, wherein existing data is manipulated to generate additional data by establishing associations between variants in existing data and then organizing, or filtering, the existing data based on the established associations. Therefore, Appellant’s claim 1 recites abstract ideas. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017) (“[A]n invention directed to collection, manipulation, and display of data was an abstract process”); *see also Digitech Image Techs., LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (“Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible”); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) (“The mere manipulation or reorganization of data . . . does not satisfy the transformation prong”).

Having determined that Appellant’s claim 1 recites an abstract idea, a judicial exception, the Revised Guidance directs us to next consider whether the claims integrate the judicial exception into a practical application. On this record, Appellant’s claimed system does not integrate the judicial exception into a practical application.

In addition to the abstract ideas discussed above, Appellant’s claimed system comprises a database of biological information and a computer configured to implement a biological context filter (Appeal Br. 21).

Appellant’s computer, i.e. processor, is configured to, *inter alia*, receive a data set comprising variants from one or more samples from one or more individuals and communicate with the database of biological information (*id.*). Receiving, i.e. collecting, data is an abstract process. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d at 1340 (“[A]n invention directed to collection, manipulation, and display of data was an abstract process”). In addition, “generic computer components such as an ‘interface,’ ‘network,’ and ‘database’ . . . do not satisfy the inventive concept requirement.” *Mortgage Grader, Inc. v. First Choice Loan Services Inc.*, 811 F.3d 1314, 1324–1325 (Fed. Cir. 2016).

We recognize Appellant’s contention that its

claim 1 contains an “inventive concept” in the claim’s combination of a variant filter with a specific type of database structure for biological information. This design focuses the attention of a researcher or clinician on potentially relevant genomic variants. . . . The inventive concept herein harnesses this technical feature of database technology in a variant filtering system by associating variant data from samples of one or more individuals with biological information in the database of biological information.

(Appeal Br. 14 (citing Spec. ¶ 2).) Stated differently, Appellant contends that “the claimed improvement is allowing computers to produce ‘filtered results’ of variants that previously could only be produced by human operators” (*id.* at 10). We are not persuaded. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d at 1373 (“a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”).

Appellant further contends that “another claimed improvement is being able to filter a collection of variant information that uses inconsistent

terms to describe a property which may be associated with a variant. Thus, the claimed improvement relates to an improvement in accuracy and effect provided by computer” (*id.* at 10–11). Stated differently, as is done in the human mind, Appellant’s algorithm is capable of recognizing different terms that may be used to describe similar properties. This is again “merely an abstract idea [that] is not patent-eligible under § 101.” *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d at 1373.

For the foregoing reasons, we find that Appellant’s claim 1 is, at best, similar to the claims at issue in *Mayo*, which involved acquiring patient information, but did not require any particular use of the acquired information. *See Mayo*, 566 U.S. 66, 79; *cf. Vanda Pharms. Inc. v. West-Ward Pharms. Int’l Ltd.*, 887 F.3d 1117, 1135 (Fed. Cir. 2018) (The claims at issue in *Vanda* were not directed to an abstract idea, under *Alice* step one, because they involved using the acquired data to direct a treatment program).

Therefore, on this record, we conclude that the judicial exception set forth in Appellant’s claim 1 is not integrated into a practical application.

Having determined that the judicial exception is not integrated into a practical application, the Revised Guidance requires us to evaluate the additional elements individually and in combination to determine whether they provide an inventive concept, such as a specific limitation beyond the judicial exception that is not well-understood, routine, conventional in the field, or simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. *See Revised Guidance*, 84 Fed. Reg. at 51.

Appellant contends that Examiner's assertion that Appellant's "claimed computer system is 'simply being used in the most routine and conventional manner that computer[s] are used in general practice; as the convenient vehicle serving as a computational workhorse for performing numerous and complicated [sic] associated with abstract analysis of data,'" fails to meet the evidentiary standard set forth in *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018) (*see* Reply Br. 1 (alteration original) (citing Ans. 9)). We are not persuaded. As Appellant explains, "the claimed functions of 'receiving,' 'communicating,' 'establishing,' and 'filtering' are coextensive with the structure disclosed, e.g. a computer system. These functions can be achieved by *any general purpose computer without special programming*" (Appeal Br. 17 (emphasis added)). *See Riverwood-Int'l Corp. v. R.A. Jones & Co., Inc.*, 324 F.3d 1346, 1354 (Fed. Cir. 2003) ("Valid prior art may be created by the admissions of the parties").

Appellant further contends that Examiner failed to establish an evidentiary basis on this record to support a finding that "a 'database of biological information' represented 'as nodes connected by edges, each edge representing an interaction between two nodes, wherein the nodes represented biological entities, and wherein two biological entities connected by one edge are one hop away from each other' is well-understood, routine, and conventional" or "that it is well-understood, routine, and conventional to 'establish[] associations between [] variants, from [a] received data set, and the biological information,' and 'filter[] the received data set based on the established associations for variants associated with the selected biological information'" (Reply Br. 3 (alteration original); *see also* Appeal Br. 11–12). In this regard, we recognize that Appellant's Specification described

databases and provided citations to a number of patents and patent publications describing databases known to those of ordinary skill in this art (*see, e.g.*, Spec. ¶¶ 179–182; *see generally* Transcript³ 3:10–4:8). During Appellant’s October 2, 2019 Oral Hearing Appellant’s counsel acknowledged that Appellant’s Specification “describe[s] types of databases,” but contended that Appellant organized its database differently from other known databases (Transcript 3:14–15). Specifically, Appellant’s counsel explained

[i]n this case [Appellant is] arranging biological entities[, i.e.] . . . genes that are represented in a graph-based format and then [Appellant] establish[es] associations between genetic variants and those biological entities based on a number of hops, that is the traversal through the graph and those number of hops represent the degree and type of associations that would give you indications of whether some genetic variant is clinically relevant.

(*Id.* at ll. 15–21; *see also id.* at 3:22–4:8 and 5:22–6:4.) Appellant’s counsel, however, acknowledged that “a hop is a term of art” “and edges . . . and so forth, yes would be known I guess as *a common data structure*” (*id.* at 4:16–20 (emphasis added)). *See Riverwood-Int’l Corp. v. R.A. Jones & Co., Inc.*, 324 F.3d at 1354 (“Valid prior art may be created by the admissions of the parties”). Thus, we find that notwithstanding Appellant’s contention to the contrary, common database structures that are within the scope of Appellant’s database were well-known, routine, conventional in this art (*cf.* Appeal Br. 12–15; Reply Br. 3).

³ Transcript of Appellant’s October 2, 2019 Oral Hearing, entered into the record October 15, 2019.

For the foregoing reasons, we are not persuaded by Appellant’s contention that its well-known, routine, conventional database is similar to “the database structure in [*Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)]” (Appeal Br. 8). In contrast to Appellant’s contention, the *Enfish* Court held that claims to a data storage and retrieval system for computer memory was not directed to an abstract idea because they involved more than storing, organizing, and retrieving memory in a logical table. *Enfish*, 822 F.3d at 1336-37. The claims in *Enfish* were directed to a *self-referential* table (“means for configuring” algorithm) that functions differently than conventional database structures. *Id.* at 1337. The unconventional database structure, or technological improvement, in *Enfish* provided increased flexibility, faster search times, and smaller memory requirements. *Id.* In contrast, as discussed above, Appellant’s claims involve a well-known, routine, conventional, database operating on a generic computer. The same is true of Appellant’s contention that its “independent claim 1 is patent-eligible under step one for the same reasons that the claims in [*McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016)] were found patent-eligible” (Appeal Br. 8; *see id.* at 8–10). *See, McRO*, 837 F.3d 1314–15 (finding claims not abstract because they “focused on a specific asserted improvement in computer animation”).

As Appellant’s counsel explained, in contrast to the type of technological problem solved in *Enfish*, Appellant’s “invention solves the technological problem of how to enable automation on a computer of a previously subjective manual process” (*id.* at 4:23–5:2; *see also* Appeal Br. 8 (Appellant contends that “[t]he claimed invention provides specific

benefits over conventional filtering mechanisms, including reducing the amount of variant information that needs to be processed.”) (citing Spec. ¶ 2); Appeal Br. 14–15 (Appellant’s “claim 1 contains an ‘inventive concept’ in the claim’s combination of a variant filter with a specific type of database structure for biological information”). We note, however, that “merely ‘configur[ing],’” as here, “generic computers in order to ‘supplant and enhance’ an otherwise abstract manual process is precisely the sort of invention that the *Alice* Court deemed ineligible.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1056 (Fed. Cir. 2017) (citing *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 220–25 (2014)).

“[M]erely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea.” *See Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015). Therefore, we are not persuaded by Appellant’s contention that the well-known, routine, conventional “database structure of the claimed invention . . . increases the speed and scalability of processing compared to conventional filtering mechanisms” (Appeal Br. 8).

Appellant contends:

Here, claim 1 contains an “inventive concept” in the claim's combination of a variant filter with a specific type of database structure for biological information. This design focuses the attention of a researcher or clinician on potentially relevant genomic variants. (Specification, ¶ [0002].) The inventive concept herein harnesses this technical feature of database technology in a variant filtering system by associating variant data from samples of one or more individuals with biological information in the database of biological information.

(Appeal Br. 14.) Appellant further contends that its “specific method of filtering is not well-understood, routine, or conventional is evidence by the

lack of any prior art being found to render it obvious or not novel” (*id.* at 15). We are not persuaded.

Initially, we note that “[t]he ‘novelty’ of any element or steps in a process, or even of the process itself, is of *no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) (emphasis added).

Further, as discussed above, the collection (i.e. receipt) and manipulation (i.e. filtering) of data is an abstract process. *See Intellectual Ventures I LLC*, 850 F.3d at 1340 (“an invention directed to collection, manipulation, and display of data was an abstract process”); *see also CyberSource Corp.*, 654 F.3d at 1375 (“The mere manipulation or reorganization of data . . . does not satisfy the transformation prong”); *Digitech Image Techs, LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, (Fed. Cir. 2014) (“Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible. ‘If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.’”) (citation omitted).

For the foregoing reasons, we find that Appellant’s claimed invention is not patent eligible.

CONCLUSION

The preponderance of evidence of record supports Examiner’s finding that Appellant’s claimed invention is directed to patent ineligible subject

matter. The rejection of claim 1 under 35 U.S.C. § 101 is affirmed. Claims 2, 5, 7, 9, 11–14, and 16–23 are not separately argued and fall with claim 1.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 2, 5, 7, 9, 11–14, and 16–23	112 ¶ 1	Written Description		1, 2, 5, 7, 9, 11–14, and 16–23
1, 2, 5, 7, 9, 11–14, and 16–23	112 ¶ 2	Indefiniteness		1, 2, 5, 7, 9, 11–14, and 16–23
1, 2, 5, 7, 9, 11–14, and 16–23	101	Subject Matter Eligibility	1, 2, 5, 7, 9, 11–14, and 16–23	
Overall Outcome			1, 2, 5, 7, 9, 11–14, and 16–23	

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).

AFFIRMED