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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JUSTIS P. EHLERS,
SUNIL K. SRIVASTAVA, and YUANKAI TAO

Appeal 2017-010284
Application 14/172,424
Technology Center 3700

Before JEFFREY N. FREDMAN, JOHN E. SCHNEIDER, and
RACHEL H. TOWNSEND, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal^{1,2} under 35 U.S.C. § 134(a) involving claims to a system for tracking a depth of a surgical instrument in an optical coherence tomography (OCT) guided surgical procedure. The Examiner rejected the claims as failing to comply with the written description requirement, as indefinite, as patent ineligible, as anticipated, and as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part and enter a new ground of rejection.

¹ The Real Party in Interest is The Cleveland Clinic Foundation (*see* App. Br. 3).

² We have considered and herein refer to the Specification of Feb. 4, 2014 (“Spec.”); Final Office Action of Aug. 15, 2016 (“Final Act.”); Appeal Brief of Jan. 17, 2017 (“Br.”); and Examiner’s Answer of May 4, 2017 (“Ans.”).

Statement of the Case

Background

“Optical Coherence Tomography (OCT) is a non-contact imaging modality that provides high resolution cross-sectional images of tissues of interest, including the eye and its microstructure” (Spec. ¶ 19). “Real-time information could improve surgical precision, reduce surgical times, expand surgical capabilities, and improve outcomes” (*id.*).

“The systems and method described herein provide real-time processing of OCT signals during surgery, such that relative proximity information of an instrument and an anatomical structure can be extracted from an OCT scan” (Spec. ¶ 23). “Specifically, when an instrument is introduced into the surgical field, it provides a specific reflection for the laser of OCT. This information, along with the tissue reflection, is processed by the OCT scanner to create an image” (*id.*). “[T]he surgeon can be provided with immediate information regarding the distance of the instrument . . . to the target . . .” (*id.* ¶ 30).

The Claims

Claims 1–3, 6–17, and 19–21 are on appeal. Claim 1 is representative and reads as follows:

1. A system for tracking a depth of a surgical instrument in an optical coherence tomography (OCT) guided surgical procedure comprising:
 - an OCT device configured to image a region of interest, including a plane including at least a portion of a target, to provide OCT data, a cross-sectional B-scan;
 - a scan processor configured to determine a relative position of the instrument and a target within the region of interest from at least the cross-sectional B-scan, where the instrument is one of in front of the target, within the target, or

below the target, the scan processor comprising a pattern recognition system that identifies at least one of the instrument and the target with the cross-sectional B-scan; and
a output device configured to communicate the relative position of the instrument and the target to a user in a human comprehensible form.

*The Issues*³

- A. The Examiner interpreted claims 1–3, 6, 8–14, and 19–21 under 35 U.S.C. § 112(f) (Final Act. 4–6).
- B. The Examiner rejected claims 1–3 and 6–14 under 35 U.S.C. § 112(a) as lacking descriptive support (Final Act. 2–3).
- C. The Examiner rejected claims 1–3, 6–14, and 20 under 35 U.S.C. § 112(b) as indefinite (Final Act. 3).
- D. The Examiner rejected claims 1–3, 6–14, and 19–21 under 35 U.S.C. § 101 as drawn to non-patentable subject matter (Final Act. 7–8).
- E. The Examiner rejected claims 1–3, 7–9, 11, and 14–20 under 35 U.S.C. § 102(a)(1) as anticipated by Izatt⁴ (Final Act. 8–12).
- F. The Examiner rejected claims 6, 12, and 21 under 35 U.S.C. § 103 as obvious over Izatt and Mire⁵ (Final Act. 13–14).
- G. The Examiner rejected claim 10 under 35 U.S.C. § 103 as obvious over Izatt and Balicki⁶ (Final Act. 14).
- H. The Examiner rejected claim 13 under 35 U.S.C. § 103 as obvious over Izatt and Kendrick⁷ (Final Act. 14–15).

³ An After-Final amendment was filed on Oct. 28, 2016 to correct claims 1 and 6 but was denied entry in the Advisory Action mailed Nov. 10, 2016.

⁴ Izatt et al., US 2012/0184846 A1, published July 19, 2012.

⁵ Mire et al., US 2004/0171924 A1, published Sept. 2, 2004.

⁶ Balicki et al., US 2011/0106102 A1, published May 5, 2011.

⁷ Kendrick et al., US 2008/0161682 A1, published July 3, 2008.

A. and B. 35 U.S.C. § 112(a) and (f)

The Examiner finds that the “[c]laim element ‘a pattern recognition system that identifies’ is a limitation that invoke 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function” (Final Act. 4). The Examiner finds the “written description is not written in such a way as to provide a corresponding structure or algorithm to transform a general purpose computer into a specialized computer” (*id.*). The Examiner contends that the ordinary artisan would “not know the corresponding structure or algorithm to transform a general purpose computer into a specialized computer. Additionally, the disclosure of the term ‘process’ or ‘algorithm’ for pattern recognition without providing any specifics of the process or algorithm itself does not provide sufficient support for the term” (Ans. 17).

Appellants contend that “a pattern recognition classifier, algorithm, or system is a term of art, the boundaries of which are immediately understood by one of skill in the art” (Br. 10). Appellants contend “[c]lassifier is not a ‘nonce word’ for means that can be used to describe any function, and . . . the range of structures for providing a pattern recognition classifier are limited in a manner understood by one of skill in the art” (*id.*). Based on this interpretation, Appellants contend

the specification describes the windowing and segmentation process that can be used to provide images to the pattern recognition algorithm for analysis, and provides a number of examples of pattern recognition algorithms that could be employed for this purpose, including “support vector machines, regression models, neural networks, [and] statistical rule-based classifiers.” Specification at ¶0027.

(Br. 10). Appellants also contend the Specification teaches “a template matching algorithm [that] could be used to recognize the instrument within image data” (Br. 11, *citing* Spec. ¶ 28).

The issues with respect to this rejection are:

(i) Does the evidence of record support the Examiner’s conclusion that the phrase “pattern recognition system” invokes 112(f)?

(ii) If so, does a preponderance of the evidence of record support the Examiner’s conclusion that the phrase “pattern recognition system” lacks written descriptive support under 112(a)?

Findings of Fact

1. The Specification teaches

the instrument 18 and the target 20 can be identified in cross-sectional or full-field tomography images via an appropriate pattern recognition algorithm. Given that this recognition would need to take place in near-real time to provide assistance to a surgeon during a medical procedure, these algorithms would likely exploit known properties of both the target 20 and the instrument 18 to maintain real-time processing.

(Spec. ¶ 27).

2. The Specification teaches “[a]ppropriate pattern recognition algorithms could include support vector machines, regression models, neural networks, statistical rule-based classifiers, or any other appropriate regression or classification model” (Spec. ¶ 27).

3. The Specification teaches

template matching algorithm could be used to recognize the instrument within image data. To facilitate the template matching, the instrument 18 could be provided with one or more orientation sensors (*e.g.*, an accelerometer, gyroscopic arrangement, magnetic sensor, etc.), and an appropriate template could be selected from a plurality of available

templates according to the determined orientation relative to the OCT scanner 12.

(Spec. ¶ 28).

Principles of Law

Generic terms such as “mechanism,” “element,” “device,” and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word “means” because they “typically do not connote sufficiently definite structure” and therefore may invoke § 112, para. 6.

Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1350 (Fed. Cir. 2015).

When a patent claims a genus using functional language to define a desired result, “the specification must demonstrate that the applicant has made a generic invention that achieves the claimed result and do so by showing that the applicant has invented species sufficient to support a claim to the functionally-defined genus.” *AbbVie Deutschland GmbH & Co., KG v. Janssen Biotech, Inc.*, 759 F.3d 1285, 1299 (Fed. Cir. 2014).

Analysis

112(f) – means plus function

“[U]se of the word ‘means’ creates a presumption that § 112, ¶ 6 applies” and “failure to use the word ‘means’ creates a presumption that § 112, ¶ 6 does not apply.” *Personalized Media Communications, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 705 (Fed. Cir. 1998). “In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, ¶ 6.” *Id.* at 704.

In the present case, claim 1 solely recites a function for the “pattern recognition system” which is that the system “identifies at least one of the

instrument and the target with the cross-sectional B-scan.” Claim 1 recites no structure whatsoever for the “pattern recognition system,” neither identifying the system as software, hardware, or some other structure. We agree with the Examiner that the term “system” in the phrase “pattern recognition system” should be treated as a nonce word substitute for “means.” Appellants’ “pattern recognition system” is, for all practical purposes, just a black box that performs the claimed function.

This understanding is supported by the Specification which does not identify any specific structural components necessary for a “pattern recognition system.” While the Specification generically lists pattern recognition algorithms without any details (FF 2), the Specification does not impose any particular structure on the claimed “pattern recognition system.”

The claim limitation of “pattern recognition system” is broad enough to encompass any and all means that can accomplish the claimed function, including means that are not described or enabled in the Specification.

We recognize that Appellants contend that a “pattern recognition system” “is a term of art, the boundaries of which are immediately understood by one of skill in the art” (Br. 10). Appellants do not provide expert declarations that demonstrate that the ordinary artisan would understand the structures involved. Nor do Appellants identify any specific structure. Instead, Appellants cite to an article titled “Computers and the Human Brain” and to three definitions identified as obtained from “an online glossary on pattern recognition” in an Evidence Appendix (*see* Br. 24–29).

We have reviewed the three definitions but do not agree with Appellants that the definitions in the glossary on pattern recognition evidence that the art recognized a “pattern recognition system” as being

composed of a particular structure. The first definition “Statistical Learning” states that this is an approach “based on statistical modeling of data” (Br. 29). The second definition of “Features” lists “techniques for finding new representations include discriminant analysis, principal component analysis, and clustering” (*id.*). Similarly, the third definition of “Classification” also lists methods such as “logistic regression, generalized linear classifiers, and nearest-neighbor” (*id.*). For each of these three definitions, no specific computer device, algorithm, statistical method or other information is provided that would perform “pattern recognition” or that would represent actual structural elements of a “pattern recognition system” apart from the processor itself.

While these definitions listed might sometimes be used in a “pattern recognition system”, they are not structural components but rather concepts or approaches of which the ordinary artisan might be aware. While it may be true that these concepts could be used to guide software design on a general purpose computer, “simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to ‘the corresponding structure, material, or acts’ that perform the function, as required by section 112 paragraph 6.” *Aristocrat Techs. Austl. Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

We, therefore, agree with the Examiner that the presumption that “means plus function” analysis does not apply because the nonce word “system” is used instead of “means” has been rebutted. We proceed with our analysis of the claims under the remaining rejections using the “means plus function” interpretation. We also enter a new grounds of rejection under 35 U.S.C § 112(b) as discussed below.

Therefore, the phrase “pattern recognition system” is limited to the disclosure of the Specification (FF 1–3) consistent with 35 U.S.C § 112 (f).

112(a) – written description

We agree with the Examiner’s finding that the “written description is not written in such a way as to provide a corresponding structure or algorithm to transform a general purpose computer into a specialized computer” (Final Act. 4). That is, in cases such as this one, involving a special purpose computer-implemented means-plus-function limitation, the Federal Circuit “has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor.” *Aristocrat*, 521 F.3d at 1333.

The Federal Circuit finds that the “specification can express the algorithm ‘in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.’” *Noah Systems, Inc. v. Intuit Inc.*, 675 F.3d 1302, 1312 (Fed. Cir. 2012)(citing *Finisar Corp. v. DirectTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008)). *Noah* states “[s]imply disclosing software, however, ‘without providing some detail about the means to accomplish the function[,] is not enough.’” *Id.* (citing *Finisar*, 523 F.3d at 1340–41).

As applied to the instant situation, the Specification provides neither a mathematical formula, a flow chart, nor any prose description of a “pattern recognition system.” At best, the Specification refers to pattern recognition algorithms by name (FF 2–3), but provides no details whatsoever on how to accomplish the function required by the claims. As noted by *Noah*, this is insufficient to provide sufficient structure in the Specification to avoid pure functional claiming, i.e., such disclosure is not “adequate disclosure” to

qualify as “corresponding structure” that performs the claimed function. *Noah*, 675 F.3d at 1311–12, 1314–17.

This failure is particularly acute as to claim 1, because Appellants’ arguments distinguishing the prior art Izatt reference (discussed below), focus solely on the “pattern recognition system”, demonstrating that this system is the point of novelty relative to Izatt (*see* Br. 13–14). While the presence of functional language at the point of novelty may not be prohibited (*see Williamson*, 792 F.3d at 1360 (*J. Newman* dissenting)), the absence of a mathematical formula, prose, a flow chart, or other types of detailed descriptive support for the means plus function language reasonably supports the Examiner’s finding that the Specification fails to provide adequate descriptive support for the corresponding structure of the claimed “pattern recognition system” (Final Act. 4).

We, therefore, agree with the Examiner that Appellants have not provided sufficient disclosure to show possession of the invention requiring a “pattern recognition system” that is reasonably interpreted as a means-plus-function limitation.

Because the lack of corresponding structure for a means-plus-function claim term is also a basis for a rejection for indefiniteness, we enter a new ground of rejection for indefiniteness as further discussed below. *See, e.g., In re Dossel*, 115 F.3d 942, 946 (Fed. Cir. 1997) (“Failure to describe adequately the necessary structure, material, or acts in the written description means that the drafter has failed to comply with the mandate of § 112 ¶ 2 . . . the mandate that all claims must particularly point out and distinctly claim the subject matter which the applicant regards as his invention

Conclusions of Law

(i) The evidence of record supports the Examiner's conclusion that the phrase "pattern recognition system" invokes 112(f).

(ii) A preponderance of the evidence of record supports the Examiner's conclusion that the phrase "pattern recognition system" lacks written descriptive support under 112(a).

C. 35 U.S.C. § 112, second paragraph

"a cross-sectional B-scan"

The Examiner finds:

Regarding claim 1, it is unclear as to what is meant by "an OCT device configured to image a region of interest, including a plane including at least a portion of a target, to provide OCT data, a cross-sectional B-scan." A "cross-sectional B-scan" is not taking action or having an action taken upon it. It is unclear as to what is done with the cross-sectional B-scan.

(Final Act. 3).

Appellants respond

While Applicants attempted to clarify this claim in the non-entered Amendment After Final, it is respectfully submitted that, in normal English usage, the comma separated phrase is read as identifying the preceding noun. . . . Accordingly, it is submitted that the claim fairly reads that the OCT data is a cross-sectional B-scan in a manner clear to one of skill in the art, and reversal of this rejection is respectfully requested.

(Br. 12).

We find that the Examiner has the better position. While Appellants proffer one interpretation, the phrase is reasonably subject to multiple interpretations. Appellants' interpretation that "a cross-sectional B-scan" in

claim 1 refer to the preceding noun of “OCT data” is one option. However, the “cross-sectional B-scan” might also refer to the “plane” that includes a portion of a target or to the phrase “image a region of interest” using a “cross-sectional B-scan.”

Miyazaki stated that “if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite.” *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008).

Here, where the claim is amenable to multiple plausible claim constructions, we think this indefiniteness can best be addressed by claim amendments proposed by Appellants. *See In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) (“[D]uring patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.”)

“sufficiently small”

The Examiner finds the “term ‘sufficiently small’ is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention” (Final Act. 3).

Appellants contend “one of skill in the art would understand a ‘sufficiently small’ interval to be an interval for which the change is perceived as immediately responsive for a movement of an instrument” (Br. 12).

We agree with Appellants that the phrase “sufficiently small” does not render the claim scope unclear to one skilled in the art. As noted above by

Appellants, the Specification describes the parameters necessary for “sufficiently small” as a “real time” processing where the information is “communicated to the surgeon in a manner that a human being would perceive as immediately responsive” (Spec. ¶ 45). A person of skill in the art would understand that the claim term is reasonably interpreted to allow some variation in the precise interval of time so long as the device remains immediately responsive. “This court has repeatedly confirmed that relative terms such as ‘substantially’ do not render patent claims so unclear as to prevent a person of skill in the art from ascertaining the scope of the claim.” *Deere & Co. v. Bush Hog*, 703 F.3d 1349, 1359 (Fed. Cir. 2012).

New Ground of Rejection

Pursuant to our authority under 37 C.F.R. § 41.50(b), we enter a new ground of rejection for claims 1–3, 6–17, and 19–21 under 35 U.S.C. § 112(b) for indefiniteness.

Specifically, we construe the “pattern recognition system” recited in independent claims 1, 15, and 19 as a “means-plus-function” limitation subject to 35 U.S.C. § 112, sixth paragraph as discussed above. We conclude that claims 1, 15, and 19 and their dependent claims are rendered indefinite under 35 U.S.C. § 112(b) due to the Specification’s failure to disclose corresponding structure for performing any of the recited functions.

As discussed above in the written description rejection, the Specification lists “pattern recognition algorithms” by name (FF 2), but lacks any detailed explanation of the algorithms sufficient to implement the claimed function. The Court has found claims that invoke means plus function claiming indefinite where “a person skilled in the art would need to

consult algorithms outside the specification to implement the claimed function.” *Eon Corp. IP Holdings LLC v. AT & T Mobility LLC*, 785 F.3d 616, 624 (Fed. Cir. 2015).

In the *ex parte* context where “the patent drafter is in the best position to resolve the ambiguity in the patent claims, it is highly desirable that patent examiners demand that applicants do so in appropriate circumstances so that the patent can be amended during prosecution rather than attempting to resolve the ambiguity in litigation.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008).

Without any support in the Specification identifying algorithms or other structure for the “pattern recognition algorithm” term, we find that there is insufficient structure for the means-plus-function term and conclude that the claims are indefinite.

D. 35 U.S.C. § 101

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. But the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g., Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012) and *Alice*. 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 75–77). 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.”)

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)).

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).

USPTO Section 101 Guidance

The United States Patent and Trademark Office (“USPTO” or “the Office”) published revised guidance on the application of § 101. USPTO’s January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* (“Memorandum” or “Office Guidance”).⁸ Under that guidance, we first look to whether the claim recites the following:

(1) any judicial exceptions, including certain groupings of abstract ideas (*i.e.*, mathematical concepts, certain methods of organizing human interactions such as a fundamental economic practice, or mental processes);
and

⁸ Available at <https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf>.

(2) additional elements that integrate the judicial exception into a practical application (*see* 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.

Analysis

The Examiner rejects all pending claims as directed to ineligible subject matter under 35 U.S.C § 101. Final Act. 7–8. At core, the rejection contends that the apparatus recited in claim 1 comprises an abstract idea because the “idea of analyzing images for relative positions can be considered a fundamentally basic part of human intelligence.” *See* Final Act. 7. In light of the recent Office Guidance, however, we do not reach that conclusion.

As an initial matter, claim 1 does not recite, with any level of particularity, mental processes as contemplated under the Office Guidance. To the contrary, claim 1 requires “an OCT device,” “a scan processor . . . comprising a pattern recognition system that identifies at least one of the instrument and the target with the cross-sectional B-scan,” and an “output device.” The Examiner provides no evidence that the function of a processor that uses a pattern recognition system on a cross-sectional B-scan

is capable of being performed by purely mental processes. Rather, this element would appear to require apparatus for generating and detecting light waves, as well as instrumentation for visualizing an instrument in a patient. *See Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 869 (Fed. Cir. 2010) (“The fact that some claims in the ’310 and ’228 patents require a ‘high contrast film,’ ‘a film printer,’ ‘a memory,’ and ‘printer and display devices’ also confirm this court’s holding that the invention is not abstract.”). And, to the extent claim 1 could be construed as reciting a judicial exception, it, nevertheless, recites additional elements that integrate the judicial exception into a practical application, and thus, “presents functional and palpable applications” within the field of the invention. *See id.* at 868. In particular, claim 1 recites a combination of structural elements including an OCT device, a scan processor, and an output device, designed to provide improved location and orientation information regarding a surgical instrument inserted into the body. For these reasons, we reverse the rejection under 35 U.S.C § 101.

E.–H 35 U.S.C. § 102(a)(1) and 103 rejections

Because we enter rejections of claims 1–3, 6–17, and 19–21 as indefinite, we reverse, *pro forma*, the Examiner’s prior art rejections because the claims are not sufficiently definite to allow determination of whether Izatt and the other prior art render the independent claims obvious.

In particular, Izatt teaches recognition of patterns such as “a recognizable shape of an area of a surgical instrument” (*see* Izatt ¶ 56) that the Examiner might ordinarily find renders the claimed “pattern recognition system” obvious under the burden shifting rationale of *In re Best*, 562 F.2d

1252, 1254–55 (CCPA 1977). However, in light of the indefiniteness of the claims, it is not clear what structural elements would be used “to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.” *Best*, 562 F.2d at 1255.

Therefore, we reverse these rejections consistent with *Steele* because “substantial confusion exists in the record at all levels of the prosecution as to the proper interpretation to be given to the appealed claims. We believe that this confusion arose and has continued because the claims do not particularly point out and distinctly claim the invention as required by 35 U.S.C. § 112.” *In re Steele*, 305 F.2d 859, 863 (CCPA 1962). “Our decision is not to be construed as meaning that we consider the claims on appeal to be patentable [over the cited art] as presently drawn.” *Id.*

SUMMARY

In summary, we agree that claims 1–3, 6, 8–14, and 19–21 are properly interpreted under 35 U.S.C. § 112(f).

We affirm the rejection of claims 1–3 and 6–14 under 35 U.S.C. § 112(a) as lacking descriptive support.

We affirm the rejection of claim 1 under 35 U.S.C. § 112(b) as indefinite. Claims 2, 3, and 6–14 fall with claim 1.

We reverse the rejection of claim 20 under 35 U.S.C. § 112(b) as indefinite.

We reverse the rejection of claims 1–3, 6–14, and 19–21 under 35 U.S.C. § 101 as drawn to non-patentable subject matter.

We do not reach the prior art rejections.

We reverse, *pro forma*, the rejections of claims 1 and 4-15 under 35 U.S.C. § 102(a)(1) and 103(a) as anticipated and/or obvious over Izatt, Mire, Balicki, and Kendrick.

We entered a new ground pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.” Section 41.50(b) also provides:

When the Board enters such a non-final decision, the appellant, within two months from the date of the decision, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. The new ground of rejection is binding upon the examiner unless an amendment or new Evidence not previously of Record is made which, in the opinion of the examiner, overcomes the new ground of rejection designated in the decision. Should the examiner reject the claims, appellant may again appeal to the Board pursuant to this subpart.

(2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. The request for rehearing must address any new ground of rejection and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

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Further guidance on responding to a new ground of rejection can be found in the Manual of Patent Examining Procedure § 1214.01.

AFFIRMED-IN-PART; 37 C.F.R. § 41.50(b)