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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 NAHI HALMANN
_____

Appeal 2019-002307[1]
Application 11/710,773
Technology Center 3700
_____

Before HUBERT C. LORIN, NINA L. MEDLOCK, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's

Non-Final Rejection of claims 1, 3–16, 18–34, and 36–41, which constitute

all the claims pending in this application. We have jurisdiction under

35 U.S.C. § 6(b).

We AFFIRM.

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[1] Our decision references Appellant's Appeal Brief ("Appeal Br.," filed
August 6, 2018) and Reply Brief ("Reply Br.," filed January 28, 2019), and
the Examiner's Answer ("Ans.," mailed November 29, 2018) and Non-Final
Office Action ("Non-Final Act.," mailed March 14, 2018).
[2] Appellant identifies "General Electric Company" as the real party in
interest. Appeal Br. 5.

CLAIMED INVENTION

Appellant's claimed invention "relates generally to ultrasound systems, and more particularly, handheld and hand-carried ultrasound (or other medical imaging) systems." Spec. ¶ 1.

Claims 1, 25, 27, and 28 are the independent claims on appeal. Claim 1, reproduced below with indentation added, is illustrative of the claimed subject matter:

1. An ultrasound system, comprising:

a probe configured to acquire ultrasound scan data; and

a software backend comprising software run by an operating system having instructions to:

    (i)   process the acquired ultrasound scan data; and

    (ii)   perform image compounding when activated by a user input and using a number of steering frames for a plurality of different angles, at least one of the number of steering frames or the different angles determined from the user input,

    wherein the software backend is operating on a backend processor in one of a handheld device or a hand-carried device.

REJECTIONS

1.   Claims 1, 3–16, 18–34, and 36–41 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

2.   Claims 11–13 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.[3]

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[3] The Examiner indicated that "claims 11 and any depending therefrom" are interpreted under § 112, sixth paragraph. Non-Final Act. 3. However, the Examiner's rejection for lack of written description support under § 112, first paragraph, based on this interpretation does not include claims 12 and

3.   Claims 11–13 are 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 applicant, regards as the invention.

4.   Claims 1, 3–9, 11, 14, 15, 21, 24–27, 30, 31, 33, and 36–38 are rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar et al. (US 2004/0225218 A1, pub. Nov. 11, 2004) ("Guracar") and Hwang et al. (US 2002/0177774 A1, pub. Nov. 28, 2002) ("Hwang").

5.   Claim 10 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Berger et al. (US 2004/0015079 A1, pub. Jan. 22, 2004) ("Berger").

6.   Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Grunwald et al. (US 2002/0173721 A1, pub. Nov. 21, 2002) ("Grunwald").

7.   Claim 13 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Little (US 2006/0058652 A1, pub. Mar. 16, 2006).

8.   Claim 16 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Washburn et al. (US 2006/0030776 A1, pub. Feb. 9, 2006) ("Washburn").

9.   Claim 18 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Sabourin et al. (US 2005/0053308 A1, pub. Mar. 10, 2005) ("Sabourin").

13, which depend from claim 11. If claim 11 is properly rejected under § 112, first paragraph, then claims 12 and 13 are also properly rejected as well. Therefore, we treat this rejection as applying to claims 11–13.

10.   Claims 19 and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Wittrock et al. (US 6,527,721 B1, iss. Mar. 4, 2003) ("Wittrock").

11.   Claims 22 and 23 are rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Nefos (US 2005/0228281 A1, pub. Oct. 13, 2005).

12.   Claim 32 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, Sabourin, and Grunwald.

13.   Claim 34 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, and Poland (US 2003/0236461 A1, pub. Dec. 25, 2003).

14.   Claims 39 and 40 are rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, Poland, and Entrekin et al. (US 6,126,598, iss. Oct. 3, 2000) ("Entrekin").

15.   Claim 41 is rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, Poland, and Miller (US 2005/0113696 A1, pub. May 26, 2005).

16.   Claims 28 and 29 are rejected under 35 U.S.C. § 103(a) as unpatentable over Guracar and Urbano (US 2007/0161904 A1, pub. July 12, 2007).

ANALYSIS

Written Description

Claims 1, 3–16, 18–34, and 36–41

Independent claim 1 recites "a software backend comprising software run by an operating system having instructions to" perform the steps of

"(i) process the acquired ultrasound scan data" and "(ii) perform image compounding when activated by a user input and using a number of steering frames for a plurality of different angles, at least one of the number of steering frames or the different angles determined from the user input" (Appeal Br. 29; Claims App'x.). Independent claims 25, 27, and 28 contain similar limitations.

In rejecting independent claims 1, 25, 27, and 28 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement, the Examiner found that these claims "incorporate 'software' for which no corresponding algorithm(s) are disclosed" (Non-Final Act. 5). According to the Examiner, "[s]ince no description of the corresponding algorithm(s) has been provided, the claims fail to satisfy the written description requirement for computer-implemented functions" (*id.*).

Whether a Specification complies with the written description requirement of 35 U.S.C. § 112, first paragraph, is a question of fact and is assessed on a case-by-case basis. *See, e.g.*, *Purdue Pharma L.P. v. Faulding, Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000) (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991)). The disclosure, as originally filed, need not literally describe the claimed subject matter (i.e., using the same terms or *in haec verba*) in order to satisfy the written description requirement. But the Specification must convey with reasonable clarity to those skilled in the art that, as of the filing date, Appellant was in possession of the claimed invention. *See id.*

Here, the Specification discloses an algorithm in prosaic terms that a person of ordinary skill in the art would understand indicates the inventor had possession of the claimed subject matter. For example, as to the

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limitation of claim 1 that the software includes instructions to "perform image compounding . . . using a number of steering frames for a plurality of different angles," paragraph 53 discloses that "three different angles are used to acquire scan data" and paragraph 54 discloses that "frames representing a left steering frame, a right steering frame, and a no steering frame are combined to produce a compound image." As to the claim 1 limitations that the image compounding is "activated by a user input" and that the number of frames/angles is "determined from the user input," paragraph 55 discloses that "the user may select the number of frames used to construct the compound image manually."

In light of the above disclosure, we agree with Appellant (Reply Br. 3) that the Specification provides adequate written description support for claims 1, 25, 27, and 28. Accordingly, the rejection of claims 1, 25, 27, and 28 and dependent claims 3–16, 18–24, 26, 29–34, and 36–41 is not sustained.

Written Description and Indefiniteness
Rejections of Claims 11–13

The Examiner determined that each of the recited modules in claim 11 is properly interpreted under § 112, sixth paragraph (Non-Final Act. 3). The Examiner further determined that "[t]he modules are not corresponded with any structure(s) in the specification, as they appear to be purely components of software" (*id.* at 4).

Based on this interpretation, the Examiner rejected claims 11–13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement (*id.* at 5–6) and under 35 U.S.C. § 112, second

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paragraph, as being indefinite (*id.* at 6–7). According to the Examiner, "while the application discloses generic computer hardware, the specification fails to disclose the corresponding algorithms for the claimed functions of at least 'geometric transformation,' 'interpolation,' 'compounding,' 'battery management,' 'heat management,' 'frame processing,' 'scan conversion' and 'resolution selection'" (Ans. 17).

In this case, the correct analysis of claims 11–13 under 35 U.S.C. § 112 involves two questions: (1) whether each of the nine "module" limitations recited in claim 11 is a "means-plus-function" limitation that invokes the application of 35 U.S.C. § 112, sixth paragraph; and (2) once the term "module" is treated as a "means-plus-function" limitation, whether Appellant's Specification discloses sufficient corresponding structure, i.e., an algorithm for performing the function of that "module." *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (en banc).

Appellant disagrees with the Examiner's interpretation and argues that "the module limitations are not means-plus-function limitations, and are associated with corresponding structure" (Appeal Br. 16), namely the backend processor. For the first time in the Reply Brief, Appellant further argues that even if the modules are properly interpreted as means-plus-function limitations, the Specification provides adequate written description support for these limitations because "finite steps are provided in prose related to the modules" (Reply Br. 5) (citing Spec. ¶ 36).

Although the Specification does not provide an express definition for the term "module," the Specification uses the term "module" in contradistinction to hardware elements and generally indicates that a "module" encompasses a software module. *See, e.g.*, Spec. ¶ 36 ("software

backend 82 may include one or more modules or, if hardware implemented, processing elements."); *Id.* ¶ 70 ("the software may be in the form of a collection of separate programs, a program module within a larger program or a portion of a program module.").

"It is well-established that the corresponding structure for a function performed by a software algorithm is the algorithm itself." *EON Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 621 (Fed. Cir. 2015) (citing *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348–49 (Fed. Cir. 1999)). An applicant may express the algorithm in any understandable terms including as a mathematical formula, in prose, in a flow chart, or "in any other manner that provides sufficient structure." *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008).

We see no evidence in the record that the Examiner has properly analyzed the relevant disclosure in the Specification as to any of the nine modules recited in claim 11. For example, as to the claimed "compounding module," the Specification discloses that "[t]he compounding module combines a plurality of steering frames corresponding to a plurality of different angles to produce a compound image" (Spec. ¶ 36). Image compounding is described in additional detail in paragraphs 51–55, with reference to Figures 11–13. For example, "Figure 12 is a schematic illustration of spatial compounding . . ." (*Id.* at 52). We see no indication that the Examiner analyzed this disclosure to determine whether the Specification sufficiently discloses an algorithm for image compounding that corresponds to the structure of the "compounding module" of claim 11. *See* MPEP 2181:

If the specification explicitly discloses an algorithm, the sufficiency of the disclosure of the algorithm must be determined in light of the level of ordinary skill in the art. *Aristocrat*, 521 F.3d at 1337, 86 USPQ2d at 1241; *AllVoice Computing PLC v. Nuance Commc'ns, Inc.*, 504 F.3d 1236, 1245, 84 USPQ2d 1886, 1893 (Fed. Cir. 2007); *Intel Corp.*, 319 F.3d at 1366-67, 65 USPQ2d 1934, 1941 (knowledge of a person of ordinary skill in the art can be used to make clear how to implement a disclosed algorithm). The examiner should determine whether one skilled in the art would know how to program the computer to perform the necessary steps described in the specification (i.e., the invention is enabled), and that the inventor was in possession of the invention (i.e., the invention meets the written description requirement).

We decline to perform that analysis in the first instance. Accordingly, even if we agree with the Examiner that each of the nine modules recited in claim 11 invokes means-plus-function interpretation under 35 U.S.C. § 112, sixth paragraph, we do not sustain the rejections of claims 11–13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement and under 35 U.S.C. § 112, second paragraph, as being indefinite because the Examiner has not properly analyzed the Specification to identify the corresponding structure, i.e., the algorithm that corresponds to the function of each module.

Obviousness

The Rejection of Claims 1, 3–9, 11, 14, 15, 21, 24–27, 30, 31, 33, and 36–38 under 35 U.S.C. § 103(a) as unpatentable over Guracar and Hwang.
Independent Claims 1, 25, and 27 and Dependent Claims 3–9, 11, 14, 15, 21, 24, 26, 30, 31, 33, and 36–38

We are not persuaded by Appellant's argument that the Examiner erred in rejecting independent claims 1, 25, and 27 under 35 U.S.C. § 103(a)

because the combination of Guracar and Hwang fails to disclose or suggest the subject matter of these claims (*see* Appeal Br. 18–23; *see also* Reply Br. 5–7).

Instead, we agree with, and adopt, the Examiner's findings and rationales as our own (*see* Non-Final Act. 8–10 (citing Guracar ¶¶ 5–7, 17, 19, 23, 24, 27, 35, 37, 42, and 58–59)). We add the following discussion for emphasis.

In rejecting claims 1, 25, and 27, the Examiner finds that Guracar discloses all of the claim limitations except that "it is not particularly set forth [in Guracar] that the system or personal computer is a handheld device or a hand-carried device" (Non-Final Act. 8–9). In particular, the Examiner finds that Guracar's compound processor 22 performs "image compounding . . . using a number of steering frames for a plurality of different angles" as recited in claim 1 and similarly recited in claims 25 and 27 (*id.* at 8). And the Examiner finds that "the compound processor 22 may comprise a personal computer, as in [paragraph 27 of Guracar], for which an operating system is standard" (*id.* at 9–10). The Examiner reasons that

> It would have been obvious to those ordinarily skilled in the art at the time of invention to incorporate the components of Guracar et al. into a handheld or hand-carried case, as shown in Hwang et al., or embodying the personal computer of Guracar et al. as a laptop, as there are clear advantages to reducing the size of computing systems.

Id. at 9. As to the limitation that the software and processor are "backend" as claimed, the Examiner finds:

> While it is not set forth that the compound processor 22 of Guracar et al. is a backend processor, since it is a computational processor, it relates to data access and is not

> performing functions merely for display or presentation.
> Therefore it is deduced that the processor is necessarily a
> functional backend processor. See also Hwang et al. at [0017]
> which details program memory and back end processing.

Id. at 9.

> Appellant reproduces limitations (i) and (ii) of claim 1 and argues that

>> The Office Action seemingly points to Guracar at [0035]
>> as disclosing these limitations. See March 14, 2018 Office
>> Action at pages 8-9. However, Guracar at [0035] indicates that
>> a "marker processor 30 is operable to identify one or more
>> markers." See Guracar at [0035]. Further, the "marker
>> processor 30 or compound processor 22 is operable to combine
>> the correction frame of data responsive to the low pass filter
>> with the compounded frame of data responsive to the
>> electronically steered component frames of data or combine
>> with a component frame prior to compounding." See id.

>> Neither Guracar, nor Hwang, even mentions "software,"
>> in general, or "software backend," in particular.

Appeal Br. 19. Appellant makes essentially the same arguments for independent claims 25 and 27. *See id.* at 20–23.

> Responding to Appellant's arguments in the Answer, the Examiner

states:

>> The compound processor 22 and its associated software
>> perform backend processing, since their functions are
>> computational, relating to data access. The functions associated
>> with the compound processor and its associated software are
>> not merely for display or presentation of information.
>> Therefore it is deduced that the processor is necessarily a
>> functional backend processor. Deducing that compound
>> processor 22 is a backend processor is based on the definition
>> of backend processing.

Ans. 21.

Appellant disagrees with the Examiner's interpretation of "backend" and argues that "the processor of Guracar is not necessarily a functional backend processor" (Reply Br. 6). As best understood, Appellant's position is that "software backend" as recited in claims 1, 25, and 27 should be interpreted to mean a software backend that "replaces the mid-processor, scan converter, and host computer" (*Id.* (emphasis omitted) (citing Spec. ¶ 35)).

Appellant fails to direct us to any specific definition in the Specification for the term "software backend" or "backend processor" which would serve to distinguish the claimed "software backend" or "backend processor" from the personal computer that performs image compounding disclosed in Guracar and relied on by the Examiner. The Specification does not contain any express definition for "backend," "software backend," or "backend processor." Paragraph 35 of Appellant's Specification merely describes, by way of example, "various embodiments" in which "the software backend 82 replaces the mid-processor, scan converter, and host computer." *See In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) ("[d]uring examination [of a patent application, a pending claim is] given [the] broadest reasonable [construction] consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art") (internal citation and quotations omitted); *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1231 (Fed. Cir. 2005) (although the specification can be examined for proper context of a claim term, limitations from the specification will not be imported into the claims).

We agree with the Examiner that Guracar's disclosure of compound processor 22 implemented as a personal computer meets the claimed "software backend" and "backend processor" limitations of claim 1 under a broadest reasonable interpretation in light of the Specification.

Guracar is directed to "spatial compounding" in ultrasound systems and, more particularly, "to compounding component frames of data associated with different angles to reduce speckle and produce a more continuous border in specular targets, such as muscle layers." (Guracar ¶ 1). Figure 1 of Guracar depicts "a system 10 for identifying clinical markers in steered spatial compounding ultrasound imaging" (*id.* ¶ 18). "The system 10 includes a transmit beamformer 12, a transducer 14, a receive beamformer 16, a detector 18, a scan converter 20, a compound processor 22, a display 24 and a marker identification circuit 26" (*id.* ¶ 19). Paragraph 27 of Guracar discloses that

> In one embodiment, the compound processor 22 comprises a personal computer, motherboard, separate circuit board or other processor added to an ultrasound system for image processing using transfers of data to and from the ultrasound image generation pipeline or processing path (i.e. receive beamformer 16, detector 18, scan converter 20 and display 24).

Webster's dictionary defines the term "back end" as follows:

> The portion of a program that handles the processing tasks that the program is designed to perform, but in such a way that it is not apparent to the user. In a local area network (LAN) with client/server architecture, the back-end application may be stored on the file server, while front-end programs handle the user interface on each workstation. See front end.

"back end," Webster's New World™ Computer Dictionary, 10th ed. Houghton Mifflin Harcourt, 2003.[4] This definition is consistent with the Examiner's position that Guracar's compound processor 22 is a backend processor because "it relates to data access and is not performing functions merely for display or presentation" (Non-Final Act. 9).

We also agree with the Examiner (Ans. 21) that a person of ordinary skill in the art would understand that a personal computer necessarily includes operating system software for managing the computer's basic operations as well as application software for performing higher-level operations. *See, e.g.*, "personal computer (PC)," Webster's New World™ Computer Dictionary, 10th ed. Houghton Mifflin Harcourt, 2003 ("A small computer equipped with all the system, utility, and application software, as well as the input/output devices and other peripherals, that an individual needs to perform one or more tasks.")[5]

Equally unpersuasive is Appellant's argument that "[t]he only reason to modify Guracar to present a backend processor comes from Appellant's specification, evidencing impermissible hindsight reasoning." This argument is unpersuasive because the Examiner does not propose to modify Guracar to include a backend processor. Rather, as explained above, the Examiner finds that Guracar's compound processor 22 is a backend processor.

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[4] https://search.credoreference.com/content/entry/webstercom/back_end/ (last visited Oct. 31, 2019)
[5] https://search.credoreference.com/content/entry/webstercom/personal_computer_pc/ (last visited Oct. 31, 2019)

In view of the foregoing, we sustain the Examiner's rejection of independent claims 1, 25, and 27 under 35 U.S.C. § 103(a). For the same reasons, we also sustain the Examiner's rejection of dependent claims 3–9, 11, 14, 15, 21, 24, 26, 30, 31, 33, and 36–38, which are not argued separately.

The Rejection of Dependent Claim 39 under 35 U.S.C. § 103(a) as unpatentable over Guracar, Hwang, Poland, and Entrekin.

The Examiner finds that Entrekin discloses the subject matter of dependent claim 39. *See* Non-Final Act. 15–16 (citing Entrekin, Abstract; 1:11–16; 1:27–31; and 2:26–40).

Regarding claim 39, the Appellant argues that "the Office Action relies on a portion of Entrekin that indicates that an ultrasound system automatically senses motion of a scanhead and adjusts a number of images being compounded accordingly" and "there is nothing in the cited portions of Entrekin that expressly or necessarily describes an application specific preset value" (Appeal Br. 26).

Responding to Appellant's argument in the Answer, the Examiner finds that Entrekin discloses "in col. 2, lines 26–40, the number of compound frames is adapted based on the mode of operation" and that "[m]odes of operation represent specific applications." Ans. 24.

Appellant does not address claim 39 in the Reply Brief. *See generally*, Reply Brief.

Entrekin in column 2, lines 26–40 discloses, *inter alia*, "adapting the number of component frames used to form a spatially compound image to the mode of operation" and that "[t]he change in the number of component frames used can be switched with the setting of the mode of operation by the

user or, in the preferred embodiment, the ultrasound system automatically senses the motion of the scanhead and adaptively adjusts the number of images being compounded accordingly."

Appellant has not persuasively explained how the claimed "application specific preset value" is patentably distinct from the number of component frames associated with a "mode of operation" in Entrekin.

Accordingly, we sustain the Examiner's rejection of claim 39 under 35 U.S.C. § 103(a).

The Rejections of Dependent Claims 10, 12, 13, 16, 18, 19, 20, 22, 23, 32, 34, 40 and 41.

Each of claims 10, 12, 13, 16, 18, 19, 20, 22, 23, 32, 34, 40, and 41 depends, directly or indirectly, from claim 1. Appellant's arguments for the rejections of these claims are the same as for claim 1. Accordingly, we sustain the Examiner's rejection of dependent claims 10, 12, 13, 16, 18, 19, 20, 22, 23, 32, 34, 40, and 41 for the same reasons set forth above with respect to claim 1.

The Rejection of Independent Claim 28 and Dependent Claim 29 under 35 U.S.C. § 103(a) as unpatentable over Guracar and Urbano

In rejecting independent claim 28, the Examiner relies on Guracar in essentially the same manner as in the rejection of claim 1 (*see* Non-Final Act. 17–18). Appellant's arguments for independent claim 28 are essentially the same as for independent claim 1 (*see* Appeal Br. 27–28). Accordingly, we sustain the Examiner's rejection of independent claim 28 for the same reasons set forth above with respect to claim 1. For the same reasons, we

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also sustain the Examiner's rejection of dependent claim 29, which is not argued separately.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3–16, 18–34, 36–41	112, first paragraph	Written Description		1, 3–16, 18–34, 36–41
11–13	112, first paragraph	Written Description		11–13
11–13	112, second paragraph	Indefiniteness		11–13
1, 3–9, 11, 14, 15, 21, 24–27, 30, 31, 33, 36–38	103(a)	Guracar, Hwang	1, 3–9, 11, 14, 15, 21, 24–27, 30, 31, 33, 36–38	
10	103(a)	Guracar, Hwang, Berger	10	
12	103(a)	Guracar, Hwang, Grunwald	12	
13	103(a)	Guracar, Hwang, Little	13	
16	103(a)	Guracar, Hwang, Washburn	16	
18	103(a)	Guracar, Hwang, Sabourin	18	
19, 20	103(a)	Guracar, Hwang, Wittrock	19, 20	
22, 23	103(a)	Guracar, Hwang, Nefos	22, 23	
32	103(a)	Guracar, Hwang, Sabourin, Grunwald	32	

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
34	103(a)	Guracar, Hwang, Poland	34	
39, 40	103(a)	Guracar, Hwang, Poland, Entrekin	39, 40	
41	103(a)	Guracar, Hwang, Poland, Miller	41	
28, 29	103(a)	Guracar, Urbano	28, 29	
Overall Outcome			1, 3–16, 18–34, 36–41	

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>