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Paper 11
Entered: February 16, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INFOBIONIC, INC.,
Petitioner,

v.

BRAEMER MANUFACTURING, LLC,
Patent Owner.

Case IPR2015-01705
Patent 7,212,850 B2

Before KEN B. BARRETT, TRENTON A. WARD, and SCOTT C. MOORE, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

InfoBionic, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of U.S. Patent No. 7,212,850 B2 ("the '850 patent"). Paper 1 ("Pet."). The Petition challenges the patentability of claims 1–9, 20, 21, 31–34, 37, and 38 of the '850 patent on the grounds of obviousness under 35 U.S.C. § 103. Braemar Manufacturing, LLC (Patent Owner) filed a Preliminary Response to the Petition. Paper 9 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

After considering the information presented in the Petition, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to any of the claims challenged in the Petition. Accordingly, we do not authorize an *inter partes* review to be instituted as to any challenged claim of the '850 patent.

A. Related Proceedings

One or both parties identify, as matters involving or related to the '850 patent, *CardioNet, LLC and Braemar Manufacturing, LLC v. InfoBionic, Inc.*, Case No. 1:15-cv-11803 (D. Mass), *CardioNet, LLC and Braemar Manufacturing, LLC v. The Scottcare Corp. et al.*, Case No. 2:12-cv-2516 (E.D. Pa.), and *CardioNet, LLC and Braemar Manufacturing, LLC v. MedNet Healthcare Tech. Inc. et al.*, Case No. 2:12-cv-02517 (E.D. Pa.); and Patent Trial and Appeal Board cases IPR2015-01679 (U.S. Patent No. 6,225,901), IPR2015-01688 (U.S. Patent No. 6,940,403), and IPR2015-

01704 (U.S. Patent No. 7,907,996). Pet. 1–2; Papers 7, 10.

Petitioner indicates that U.S. Patent No. 7,907,996 is a continuation of and claims priority to the ’850 patent, that U.S. Patent No. 8,945,019 claims priority to the ’850 patent, and that U.S. Patent Application No. 14/593,237 also claims priority to the ’850 patent and is pending before the Patent Office. Paper 10.

B. The ’850 Patent

The ’850 patent pertains to “processing and presenting arrhythmia event information from physiological data, for example, selectively presenting atrial fibrillation [AF] events to a medical practitioner.” Ex. 1001, col. 1, ll. 18–25. A processing system analyzes arrhythmia event data received from both a human-assessment and from a monitoring system and determines, based on a measure of correlation between those two data groups, whether to generate a graph or other presentation related to the arrhythmia events. *Id.*, col. 2, l. 64–col. 3, l. 2; col. 3, ll. 32–45.

C. Illustrative Claim

Claims 1, 20, 31, 33, and 37 are independent claims. Claim 1, reproduced below, is illustrative:

> 1. A machine-implemented method comprising:
>
> identifying atrial fibrillation events in physiological data obtained for a living being;
>
> obtaining heart rate data for the living being; and
>
> pictographically presenting, using a common time scale, information regarding the heart rate data during a defined time period and regarding duration of atrial fibrillation activity, according to the identified atrial fibrillation events, during the defined time period such that heart rate trend is presented with atrial fibrillation burden;

> wherein presenting information comprises selectively presenting the information based on a measure of correlation between the identified atrial fibrillation events and human-assessments of at least a portion of the identified atrial fibrillation events.

Ex. 1001, col. 6, ll. 4–19.

D. Applied References

Reference			**Exhibit No.**
Bock	US 6,490,479 B2	Dec. 3, 2002	Ex. 1005
Walker	US 7,490,085 B2	Feb. 10, 2009	Ex. 1006
Reinhold	US 4,531,527	July 30, 1985	Ex. 1007
ACC/AHA Guidelines for Ambulatory Electrocardiography, JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, Vol. 34, No. 3, pp. 912–948, September 1999 ("ACC Guidelines")			Ex. 1008
Chen	US 6,470,210 B1	Oct. 22, 2002	Ex. 1009

Petitioner relies also on the Declaration of Dr. Robert T. Stone, dated August 6, 2015, (Ex. 1002) in support of Petitioner's arguments.

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

References	**Basis**	**Claims**
Bock, Walker, and the ACC Guidelines	§ 103(a)	1, 2, 5, 6, 8, 20, 21, 31–34, 37, and 38
Bock, Walker, the ACC Guidelines, and Reinhold	§ 103(a)	3, 4, and 7
Bock, Walker, the ACC Guidelines, and Chen	§ 103(a)	9

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 84 U.S.L.W. 3218 (U.S. Jan. 15, 2016) (No. 15-446). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

On this record and for purposes of this Decision, we determine that no claim terms require express construction.

B. Obviousness over Bock, Walker, and the ACC Guidelines

Petitioner asserts that claims 1, 2, 5, 6, 8, 20, 21, 31–34, 37, and 38 are obvious over Bock (Ex. 1005), Walker (Ex. 1006), and the ACC Guidelines (Ex. 1008). Pet. 26–53. Patent Owner opposes. Prelim. Resp. 5–33.

Bock pertains to a computer-implemented method and apparatus for detecting atrial fibrillation. Ex. 1005, col. 1, ll. 6–10; col. 3, ll. 65–67. Patent Owner maintains that it is undisputed that Bock does not disclose the "human assessment" feature of the challenged claims. Prelim. Resp. 18. Figure 2 of Bock is reproduced below:

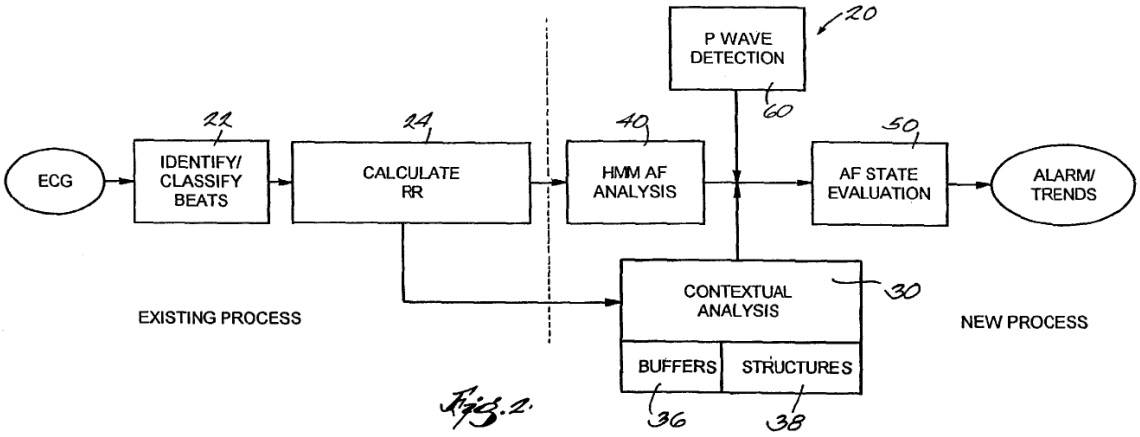

Figure 2 depicts a schematic diagram of an embodiment of Bock. Ex. 1005, col. 3, ll. 38–39. The probability engine 40 and the contextual analysis module 30 both analyze the heartbeat data. *See id.*, col. 2, ll. 39–41 ("[t]he information from the interval calculator is provided to a probability engine and to a contextual analysis module."); *id.*, col. 6, ll. 45–65; *id.*, Fig. 2 (depicting separate arrows from module 24 to both the probability engine 40 and contextual analysis module 30). "The state evaluation module 50 uses the outputs of the probability analysis module 40, the contextual analysis module 30, and the P wave detection module 60 to determine whether an AF condition exists." *Id.*, col. 6, ll. 6–9.

Walker pertains to refining the processing and analysis of medical diagnostic image data. Ex. 1006, col. 71, ll. 28–37. Figure 26 of Walker is reproduced below:

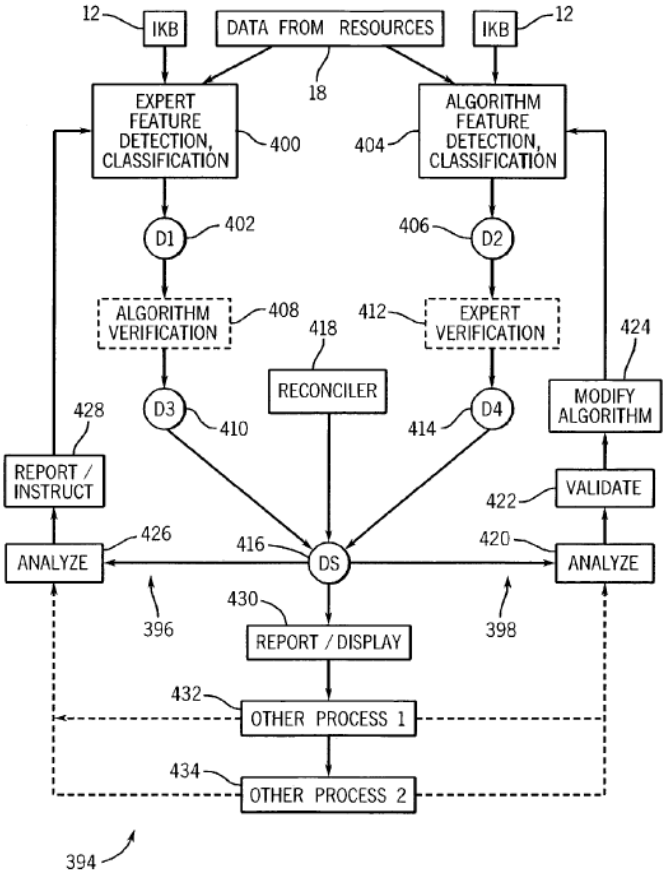

Figure 26 of Walker depicts "a flowchart illustrating a technique for refining or training a computer-assisted algorithm and a medical professional." *Id.*, col. 5, ll. 15–17. Walker explains that "[t]he process may include separate, although interdependent modes, such as a professional training mode 396 [the left upper portion of Figure 26] and an algorithm training mode 398 [the upper right portion]." *Id.*, col. 71, ll. 44–47. Both modes start with the same "data from resources" (element 18).

An expert or medical professional (step 400) performs a feature detection and classification analysis of the "data from resources" (element 18), typically as part of a diagnostic image reading process. *Id.*, col. 71, ll. 60–66. The expert's analysis results in the creation of a dataset D1, which may be an annotated medical diagnostic image. *Id.*, col. 72, ll. 3–

6. "Any suitable technique can be used for producing the dataset, such as conventional annotation, dictation, interactive marking, and similar techniques." *Id.*, col. 72, ll. 6–8. In parallel, an algorithm performs a similar analysis of the same set of "data from resources" (element 18) and generates dataset D2, "which may be similarly annotated for display." *Id.*, col. 72, ll. 9–23. The algorithm-produced dataset D2 optionally may be verified by the expert (step 412) resulting in dataset D4 (element 414), and the expert produced dataset D1 optionally may be verified by the algorithm (step 408) resulting in dataset D3 (element 410). *Id.*, col. 72, ll. 24–28, 51–55. The dataset D4 "may be reconstructed, when the data represents images, and may be annotated to indicate features identified by the algorithm and the changes made to such identification or classification by the expert or medical professional." *Id.*, col. 72, ll. 63–67. The datasets D3 and D4 are joined in a union dataset 416 (labeled DS in Figure 26 and referred to as D5 in the text) "which may again comprise of one or more images displaying the origin of particular features detected and classified, along with changes made by either the algorithm or the expert during verification." *Id.*, col. 73, ll. 1–5. A reconciler 418 resolves conflicts between the detection and classification performed by the algorithm and the expert and conflict that result from the modifications made during the verification steps 408 and 412. *Id.*, col. 73, ll. 5–14. After creation of the dataset DS (element 416), the results maybe be reported and displayed at step 430. *Id.*, col. 73, ll. 61–63.

Petitioner relies on the ACC Guidelines for the teaching that "[i]t is critical that each classification of arrhythmia morphology and each ischemic episode be reviewed by an experienced technician or physician to ensure accurate diagnosis." Pet. 31 (quoting Ex. 1008, 917).

1. Independent Claims 1, 20, and 37

Independent claim 1 recites, with emphasis added, "[a] machine-implemented method . . . wherein presenting information comprises *selectively presenting the information based on a measure of correlation between the identified atrial fibrillation events and human-assessments* of at least a portion of the identified atrial fibrillation events." Independent claims 20 and 37 recite similar language regarding selectively presenting information based on a measure of correlation.

Petitioner asserts that the claimed "measure of correlation" should be construed to mean "an amount or degree of relationship between things or variables." Pet. 11–12. Patent Owner responds that Petitioner fails to identify in the prior art the "measure of correlation," as construed by Petitioner, between machine-identified AF events and human assessments of some of the events. Prelim. Resp. 26. Specifically, Patent Owner asserts "Petitioner fails to clearly articulate whether its proposed combination relies on Bock or Walker for 'selectively presenting . . . based on a measure of correlation' and leaves it to the Board and Patent Owner to determine how to combine the two references to render obvious the claimed invention." *Id.* at 26–27.

Petitioner asserts that Bock's presentation of information is "based on a measure of correlation between the AF state identified by engine 40 and assessment of these AF states by module 30." Pet. 30 (citing Ex. 1002 ¶ 43). We note that, even were we to find Bock discloses a measure of correlation, any correlation would be between two machine-assessments and Petitioner does not identify any teaching or suggestion in Bock that such a correlation would involve a human.

Petitioner then argues that it would have been obvious to have the AF states that are identified by Bock's engine 40 assessed by a human based on knowledge in the art (as indicated in the ACC Guidelines) and Walker's disclosure. Pet. 30–31 (citing Ex. 1002 ¶ 44). Petitioner maintains that "*Walker* selectively presents information based on a measure of correlation between algorithm-identified diagnosis and human-assessments of at least a portion of the algorithm-identified diagnosis." *Id.* at 34 (citing Ex. 1002 at ¶ 47). Petitioner identifies steps 412 and 418 as the human-assessments and those same steps as "determin[ing] how the information is presented taking into consideration the degree of relationship between the algorithm and the human diagnoses [i.e. Petitioner's definition of a measure of correlation]." *Id.* at 33. Petitioner's proposal fails to explain sufficiently how the combination teaches both (1) the human assessment and (2) measurement of a correlation between that human assessment and a machine-identified dataset. Petitioner does not explain how Petitioner's proposal results in the respective features of the claimed invention.

The purported disclosure of the "measure of correlation" feature is premised on Petitioner's assertion that "[s]ince parts of the dataset D2 that the expert does not agree with, or has changed . . ., are not included in datasets D4 and D5, they are not reported in step 430." Pet. 33 (citing Ex. 1006, col. 72, ll. 65–66; col. 73, ll. 4–5). However, Petitioner does not explain adequately why this is correct. For example, Petitioner does not persuade us that the analysis of dataset D2 results in the deletion of data in the creation of datasets D4 and D5. Walker explains that the "changes" to a dataset may be by "conventional annotation, dictation, interactive marking, and similar techniques." Ex. 1006, col. 72, ll. 6–8. This does not suggest

that the analysis produces a new dataset that does not include elements of the analyzed dataset.

Lastly, we find persuasive Patent Owner's argument that Petitioner has not articulated clearly Petitioner's proposed combination. Prelim. Resp. 26–27. In arriving at the conclusion that Walker discloses the claimed measure of correlation, Petitioner points to multiple datasets and multiple review steps, including step 418 and dataset D5 (which is a union dataset necessarily involving dataset D3 and expert feature detection at step 400 (*see* Ex. 1006, col. 73, ll. 1–2, Fig. 26)). Pet. 33. Petitioner, thus, relies upon the relatively complex, multistep method of Walker but does not articulate adequately to what extent and how Petitioner proposes that method would be incorporated into Bock's system. *Cf.* Pet. 34 (Petitioner arguing that it would have been obvious to modify Bock by incorporating the unspecified "human-assessment feature of *Walker*"). In other words, Petitioner, at most, has identified where certain features of the claimed invention are disclosed in the prior art. Even were we to find that Walker discloses a measure of correlation, we are left to speculate as to how Petitioner's combination of the references' teachings would render obvious independent claims 1, 20, and 37 and their respective dependent claims 2, 5, 6, 8, 21, and 38.

Accordingly, we are not persuaded that Petitioner has shown a reasonable likelihood of prevailing in its challenge to claims 1, 2, 5, 6, 8, 20, 21, 37, and 38 of the '850 patent on the ground that they would have been obvious to a person of ordinary skill in the art at the time of the invention over Bock, Walker, and the ACC Guidelines.

2. Independent Claim 31

Independent claim 31 calls for "a processing system configured to receive arrhythmia information from the monitoring system and configured to receive human-assessed arrhythmia information from the monitoring station." Petitioner argues "[a]s discussed with claim 1, it would have been obvious for a POSITA to have the [algorithm-based] assessment [of Bock's contextual analysis module 30] performed by a human in light of the knowledge of one of ordinary skill in the art and the disclosures of *Walker* and the *ACC Guidelines* to improve the accuracy of *Bock's* algorithm-based diagnosis." Pet. 42 (citing Pet., "Section IX.A.1.v"; Ex. 1002 at ¶ 66). The cross-referenced portion of the Petition, Section IX.A.1.v, is the analysis of the "measure of correlation" feature discussed above. *Id.* at 28–35.

For reasons the same as those above, we determine that Petitioner has not articulated clearly Petitioner's proposed combination. *Cf.* Prelim. Resp. 23 (Patent Owner arguing that Petitioner's expert "does not explain *how* Bock which discloses a system that indisputably does not include human assessment should be modified to include human assessment."). We understand Petitioner to propose modifying Bock "by incorporating the human-assessment feature of *Walker*." Pet. 34. However, it is not readily apparent which of Walker's components Petitioner contends is encompassed by "the human-assessment feature" of Walker or how Petitioner proposes modifying Bock's module 30. As such, we are left to speculate as to how Petitioner's combination of references' teachings would have rendered obvious independent claim 31 and its dependent claim 32.

Accordingly, we are not persuaded that Petitioner has shown a reasonable likelihood of prevailing in its challenge to claims 31 and 32 of

the ’850 patent on the basis that they would have been obvious to a person of ordinary skill in the art at the time of the invention over Bock, Walker, and the ACC Guidelines.

3. Independent Claims 33 and 37

Claim 33 recites a system comprising “monitoring means,” “display means,” and “processing means.” Claim 37 recites an apparatus comprising “means for identifying,” “means for obtaining,” “means for pictographically presenting,” and “means for selectively presenting.”[1] Petitioner contends that all these are means-plus-function terms governed by 35 U.S.C. § 112 ¶ 6. Pet. 15–24. Patent Owner does not dispute that contention at this time, but argues, *inter alia,* that Petitioner has failed to identify properly for those terms the corresponding structure for computer-implemented functions—a disclosed algorithm. *See* Prelim. Resp. 6. Patent Owner argues that, because of that failure, Petitioner also has failed to specify where each claim element is located in the prior art. *Id.* We find Patent Owner’s arguments persuasive.

In a petition for *inter partes* review, Petitioner must identify, for a term proposed to be construed as a means-plus-function term, “the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3). “[I]n a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed

[1] In discussing the recitations of claims 33 and 37, we use shorthand designations and do not reach the issue of the appropriate identity of any claimed function. *Cf., e.g.*, Prelim. Resp. 7 (arguing that Petitioner failed to properly identify the entire correct function).

structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.'" *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (quoting *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 Fed. Cir. 1999); *id.*, (quoting *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005) ("the corresponding structure is the algorithm."). In addition to identifying the algorithm disclosed in the Specification, Petitioner "must specify where each element of the claim is found in the prior art patents or printed publications relied upon." 37 C.F.R. § 42.104(b)(4); *see also Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 582 F.3d 1288, 1299 (Fed. Cir. 2009) ("[A] challenger who seeks to demonstrate that a means-plus-function limitation was present in the prior art must prove that the corresponding structure—or an equivalent—was present in the prior art.").

Petitioner, in setting forth its claim construction arguments, asserts that "[t]he specification [of the '850 patent] does not identify particular structure corresponding to the function of each means-plus-function claim term . . . [and] Petitioner identifies what Patent Owner may argue is the corresponding 'structure.'" Pet. 15. For most of the terms identified by Petitioner as means-plus-function terms, Petitioner contends that the corresponding structure is unspecified digital circuitry or a computer with unspecified "software/hardware" configured to perform the recited functions.[2] *See, e.g.*, Pet. 19 (identifying the corresponding structure for the

[2] For some elements, Petitioner states that Patent Owner may argue that the corresponding structure disclosed in the Specification is "the commercially

"processing means" of claim 33 as "digital electronic circuitry; and/or a computer system with software/hardware configured to perform the recited functions; or equivalents thereof."); *cf. id.* at 46–47 (Petitioner arguing that module 50 of Bock, as modified by Walker, performs the function of the "processing means" and can be implemented through software or circuitry.) Without an adequate identification from Petitioner of the claimed structures, we cannot compare the disclosures of the prior art references to the claim limitations as construed by Petitioner.

Petitioner has failed to comply with the requirement to identify with specificity the corresponding structures in the Specification and where those structures or equivalents are found in the prior art. *See* 37 C.F.R. § 42.104(b)(3). Accordingly, we are not persuaded that Petitioner has shown a reasonable likelihood of prevailing in its challenge that claims 33 and 37 of the '850 patent and the respective dependent claims 34 and 38 would have been obvious to a person of ordinary skill in the art at the time of the invention over Bock, Walker, and the ACC Guidelines.

C. Obviousness over Bock, Walker, the ACC Guidelines, and Reinhold; and Obviousness over Bock, Walker, the ACC Guidelines, and Chen

Petitioner's second and third proposed obviousness combinations address claims that depend from one of the independent claims discussed above in the context of Petitioner's first proposed obviousness combination. Petitioner does not rely on Reinhold or Chen in any manner that cures the

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available CardioNet Mobile Cardiac Outpatient Telemetry (MCOT) device." Pet. 16 (citing Ex. 1001, col. 2, ll. 39–44); *id.* at 17, 20–21, 22. In articulating the grounds, however, Petitioner does not assert that the prior art references disclose an MCOT. We acknowledge that Petitioner identifies also a monitor and an LCD screen for some elements. *E.g.*, Pet. 23.

deficiencies of the underlying first ground or otherwise articulate reasoning that overcomes those deficiencies. Pet. 53–60. Accordingly, we are not persuaded that Petitioner has shown a reasonable likelihood of prevailing in its challenge to claims 3, 4, and 7 of the ’850 patent on the basis that they would have been obvious to a person of ordinary skill in the art at the time of the invention over Bock, Walker, the ACC Guidelines, and Reinhold, or claim 9 on the basis that it would have been obvious over Bock, Walker, the ACC Guidelines, and Chen.

III. CONCLUSION

We determine Petitioner has not demonstrated there is a reasonable likelihood of establishing the unpatentability of claims 1–9, 20, 21, 31–34, 37, and 38 of the ’850 patent.

IV. ORDER

For the foregoing reasons, it is

ORDERED that the Petition is *denied* as to all challenged claims, and no trial is instituted.

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